

# THE UK SKILLS AND PRODUCTIVITY AGENDA: THE EVIDENCE BASE FOR THE SSDA'S STRATEGIC PLAN 2005-2008

RESEARCH REPORT 6  
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# **The UK skills and productivity agenda: The evidence base for the SSDA's Strategic Plan 2005-2008**

Research report 6  
September 2004

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# **Sector Skills Development Agency**

## **Research Series**

### **Foreword**

In October 2002 the Department for Education and Skills formally launched Skills for Business, a new UK-wide network of employer-led Sector Skills Councils (SSCs), supported and directed by the Sector Skills Development Agency (SSDA). The purpose of SfB is to bring employers more centre stage in articulating their skill needs and delivering skills-based productivity improvements that can enhance UK competitiveness and the effectiveness of public services. The remit of the SSDA includes establishing and progressing the network of SSCs, supporting the SSCs in the development of their own capacity and providing a range of core services. Additionally the SSDA has responsibility for representing sectors not covered by an SSC and co-ordinating action on cross cutting and generic skills issues.

Research, and developing a sound evidence base, are central to the SSDA and to Skills for Business as a whole. It is crucial in: analysing productivity and skill needs; identifying priorities for action; and improving the evolving policy and skills agenda. It is vital that the SSDA research team works closely with partners already involved in skills and related research to generally drive up the quality of sectoral labour market analysis in the UK and to develop a more shared understanding of UK-wide sector priorities.

The SSDA is undertaking a variety of activities to develop the analytical capacity of the Network and enhance its evidence base. This involves: developing a substantial programme of new research and evaluation, including international research; synthesizing existing research; developing a common skills and labour market intelligence framework; taking part in partnership research projects across the UK; and setting up an expert panel drawing on the knowledge of leading academics, consultants and researchers in the field of labour market studies. Members of this panel will feed into specific research projects and peer review the outputs; be invited to participate in seminars and consultation events on specific research and policy issues; and will be asked to contribute to an annual research conference.

The SSDA takes the dissemination of research findings seriously. As such it has developed this dedicated research series to publish all research sponsored by the SSDA and results are being made available in both hard copy and electronically on the SSDA website.

Lesley Giles

Head of Research at the SSDA

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## **Introduction**

This report presents a summary of the evidence base upon which the strategic priorities for the Sector Skills Development Agency SSSDA are founded. The reader is referred to the SSSDA's strategic plan 2005-2008 for details of the Agency's priorities (SSDA, 2004a).

The first section of the report examines the productivity gap between the UK and other countries. Evidence of the relationship between skills, productivity and business performance is reviewed in section two. Section three outlines the nature and extent of the skill deficiencies facing organisations in the UK. The supply of available workforce skills is examined in section four. Section five examines the importance of using the skills that we do have more effectively in the workplace by 'working smarter'. The review closes with a look at the shape of employment in the future. The SSSDA's focus upon employers' demand for skills and the importance of a sectoral approach to skills across the UK is evident throughout the report.

## The Productivity Performance Gap

The UK's economic performance over the last 20 years in terms of economic growth, has been weak compared to that of the USA. However, compared to the EU as a whole it has been strong, securing real increases in GDP above the EU average throughout the last 20 years (O'Mahoney and van Ark 2003). This superior performance has, however, been entirely due to the UK achieving more rapid employment growth compared to other EU countries, rather than to productivity growth. Indeed in terms of productivity, UK performance has been weak. In consequence, sustaining and achieving economic growth, means tackling the UK's productivity gap.

### Productivity Matters

Productivity matters. Earnings, from both wages and profits, and government revenue, can only increase if productivity increases over time. Halving the productivity gap with the USA is broadly equivalent to adding around £80 billion to GDP. This is equivalent to £2000 for every worker in the country and adding £20 billion to the profits of UK plc. Even raising productivity by just 1% point is worth £10 billion.

### The Productivity Gap

So what is the extent and nature of the UK's productivity gap? Table 1 shows that productivity levels in the UK are lower than in all of the 'EU 15' countries except Portugal, Spain and Greece<sup>1</sup>. GDP per hour worked is some 9% points below the EU average, 16% points below that in the USA and even further below France, Belgium, Netherlands and Ireland in particular. The productivity gap with the EU has however narrowed, though only slightly, over the last 20 years. The gap with the USA has also narrowed but more significantly. Progress however only took place in the 1980s and early 1990s, since when the gap began to widen slightly again.

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<sup>1</sup> The 'EU 15' refers to the members of the EU prior to the joining of the 10 new accession states in May 2004. The table also excludes Luxembourg. The data refer to output per hour worked rather than per employee. Using the latter generates larger differentials with the USA and somewhat lesser ones with the EU, on average. However, such data in part reflects differences in holidays, length of working week and double job holding. For these reasons, data on output per hour worked is preferable.



**Table 1: GDP per hour Worked as % of the USA, 1980-2002**

	GDP per hour worked as % of USA				
	1980	1990	1995	2000	2002
<b>Austria</b>	90.0	91.9	94.8	100.9	99.0
<b>Belgium</b>	95.2	103.5	109.8	114.1	108.8
<b>Denmark</b>	90.2	94.3	100.4	98.5	98.1
<b>Finland</b>	67.2	78.2	84.8	88.7	88.0
<b>France</b>	93.7	108.3	109.9	106.2	106.1
<b>Germany</b>	96.2	89.2	102.5	103.4	102.5
<b>Greece</b>	59.8	57.5	56.0	58.3	61.2
<b>Ireland</b>	58.2	75.1	84.6	101.2	104.2
<b>Italy</b>	94.6	99.4	105.3	100.3	96.8
<b>Netherlands</b>	108.3	113.7	115.2	107.6	104.5
<b>Portugal</b>	46.2	47.3	53.2	56.1	54.3
<b>Spain</b>	68.8	79.8	84.4	75.4	72.3
<b>Sweden</b>	85.3	82.1	85.5	86.7	87.1
<b>United Kingdom</b>	72.4	77.7	85.2	84.6	83.5
<b>European Union</b>	84.9	88.9	95.7	93.7	92.1
<b>USA</b>	100.0	100.0	100.0	100.0	100.0
<b>Japan</b>	61.4	71.3	73.6	74.9	72.7

Source: O'Mahoney and van Ark (2003)

Table 2 provides an insight into UK relative productivity growth. Productivity growth has slowed considerably since the mid 1990s both by historical standards and compared to much of the rest of the EU. Whilst productivity growth over recent years has exceeded the EU average, the UK's performance falls behind 7 or 8 other EU countries in the period since 1995. Productivity growth has also been below that in the USA since the mid 1990s, a reversal of the previously higher productivity growth than in the USA in the 1980s and early 1990s (European Commission 2003 – European Competitiveness Report). Given the scale of the productivity gap this productivity performance is weak.

**Table 2: Annual Growth Rates of Labour Productivity (GDP per hour) 1980-2002**

	GDP per hour			
	1980 -90	1990 -95	1995 -00	2000 -02
<b>Austria</b>	1.7	1.8	3.2	0.8
<b>Belgium</b>	2.3	2.3	2.8	-0.7
<b>Denmark</b>	1.9	2.4	1.6	1.5
<b>Finland</b>	3.0	2.8	2.9	1.4
<b>France</b>	2.9	1.4	1.3	1.7
<b>Germany</b>	2.5	4.0	2.2	1.3
<b>Greece</b>	1.0	0.6	2.8	4.2
<b>Ireland</b>	4.1	3.6	5.7	3.2
<b>Italy</b>	2.0	2.3	1.0	-0.1
<b>Netherlands</b>	1.9	1.4	0.6	0.3
<b>Portugal</b>	1.7	3.5	3.1	0.1
<b>Spain</b>	3.0	2.3	-0.3	-0.4
<b>Sweden</b>	1.1	2.0	2.2	2.0
<b>United Kingdom</b>	2.2	3.0	1.8	1.1
<b>European Union</b>	2.3	2.6	1.5	0.8
<b>USA</b>	1.4	1.1	2.0	1.7
<b>Japan</b>	3.0	1.8	2.3	0.2

Source: O'Mahoney and van Ark (2003)

### The Sectoral Dimension

These economy wide figures obscure considerable sectoral diversity in productivity performance. For example, whilst there is a productivity gap with the USA, France and Germany in nearly all sectors of the economy, (O'Mahoney and De Boer 2002), the gap is greater in some sectors than others as Table 3 shows.

**Table 3: Sectors with the Greatest Productivity Lead Over the UK**

	<b>Manufacturing</b>	<b>Services and Other Sectors</b>
<b>US / UK</b>	Petroleum Chemicals Basic Metals Electrical/Electronic Equipment Motor Vehicles Textiles Mineral Products Wood Products	Agriculture Utilities Distribution Financial and Business Services
<b>France / UK</b>	Petroleum Chemicals Basic Metals Metal Products Motor Vehicles Textiles Wood Products	Financial and Business Services
<b>Germany / UK</b>	Basic Metals Office Equipment Wood Products	Financial and Business Services

Source: O'Mahoney and De Boer, (2002)

Moreover, the sectoral pattern is changing over time. In some sectors, compared to the USA at least, the gap has narrowed over recent years, e.g. in electricity, gas and water. Whilst in other sectors it has widened e.g. wholesale/retail; financial services; hotels/restaurants; and machinery and equipment (Griffith, Harrison, Haskel and Sako 2003).

Two thirds of the productivity gap with the USA is now accounted for by four sectors – wholesale and retail; financial intermediation; business services; and machinery and equipment. Only a small part (10%) of the total productivity gap is due to the different economic structure of the UK i.e. its relative concentration on lower productivity sectors. It is primarily due to UK sectors' productivity levels and productivity growth lagging behind those in the USA (Griffith *et al.*, 2003).

It is now possible to present an assessment of international sectoral productivity differences across the EU (and USA) at a disaggregated level thanks to the 'Groningen' data base ([www.ggdc.net](http://www.ggdc.net)). Each countries' performance in terms of GDP per hour worked (excluding Luxembourg) in 55 sectors is given as a percentage of the average for the EU (15) states. Overall, the UK performs above the EU (15) average in 16 of the sectors, below average in 37 and equal to the EU (15) average in 3 sectors (Forestry, Fishing and Public administration). Particularly strong performances are evident by the UK in respect of Mining and Quarrying; Water transport; Radio and television receivers; Sale, maintenance and repair of motor vehicles; and Inland transport. Indeed, the UK is ranked top for its performance in the latter three sectors. In all, the UK performs in the top five countries in 11 of the sectors as can be seen in Table 4 below.

Sectors where the UK performs weakly in relation to the EU average are Aircraft and spacecraft; Railroad equipment and transport equipment; Hotel and catering; Supporting and auxiliary activities; Renting of machinery and equipment; and Research and development. The UK is ranked among the bottom five countries in 21 of the 55 sectors (see Table 4 below).

**Table 4: UK International Sectoral Productivity Performance**

<b>STRONG<sup>1</sup></b>	<b>WEAK<sup>2</sup></b>
Mining and quarrying	Fishing
Leather and footwear	Textiles
Electronic valves and tubes	Wood and wood products
Radio and television receivers	Pulp, paper and paper products
Scientific instruments	Mineral oil refining, coke and nuclear fuel
Electricity, gas and water supply	Rubber and plastics
Sale, maintenance and repair of motor vehicles and motorcycles	Other electrical machinery and apparatus
Wholesale trade (except of motor vehicles and motorcycles)	Other instruments
Inland transport	Railroad and transport equipment
Water transport	Construction
Air transport	Retail trade (except motor vehicles and motorcycles)
	Hotels and catering
	Supporting and auxiliary transport activities; travel agents
	Financial intermediation (except insurance and pension funding)
	Activities auxiliary to financial intermediation
	Real estate activities
	Renting of machinery and equipment
	Research and development
	Other business activities
	Education
	Health and social work

Notes<sup>1</sup>: In top 5 of 'EU 15' countries

Notes<sup>2</sup>: In bottom 5 of 'EU 15' countries

Source: Calculated from [www.ggdc.net](http://www.ggdc.net)

## Connecting Skills and Productivity

This section provides a very brief review of the evidence linking skills and business performance. An extensive review of the evidence has just been published by the SSDA (Tamkin *et al.*, 2004) and the reader is referred to that source for more detail). It looks first at the benefits of skills and training that are enjoyed by the individual. This is important for the discussion of skills and productivity, as higher returns in the form of wages and employability reflect, in part, the higher productivity of which they are capable. It then moves on to discuss the effect of training and skills on business performance and more specifically productivity.

### Benefits to the Individual

A number of studies have looked at the benefits accruing to the individual of attaining higher skills. Work commissioned by the SSDA (Tamkin *et al.*, 2004), reports that there is now considerable evidence to support the view that greater education and higher level qualifications lead to higher salaries and a reduced likelihood of unemployment. This is the case particularly for academic qualifications. The acquisition of basic skills has also been demonstrated to benefit the individual's position in the labour market and the returns they receive from it (Machin *et al.*, 2001). However, an exception to the evidence supporting the view that higher skills lead to greater benefits exists in respect of the return to individuals from relatively low level vocational qualifications (Sianesi, 2003; McIntosh, 2003).

Table 5 below summarises the evidence.

**Table 5: Wage Premia from Obtaining Qualifications (%)**

Qualification	Men	Women
CSE/lower GCSEs	9	5
O level/higher GCSEs	21	19
A level	17	19
First degree	28	25
Higher degree	8	18
Professional qualifications	35	41
Nursing	13	21
Teaching	Nil	27

Qualification	Men	Women
Level 1-2 NVQs	Nil	Nil
BTEC First	Nil	Nil
Level 3-5 NVQs	6	5
RSA Higher	4	12
C&G Craft	7	Nil
C&G Advanced	7	Nil
ONC/BTEC National	10	8
HND/HNC	15	9

Notes:

1. The wage premiums are additive. For example, a man with 'O' levels/higher GCSEs and 'A' levels and a first degree will earn 66% more than a man with no qualifications.
2. Results control for age, ethnicity, region, firm, size, public/private sector.

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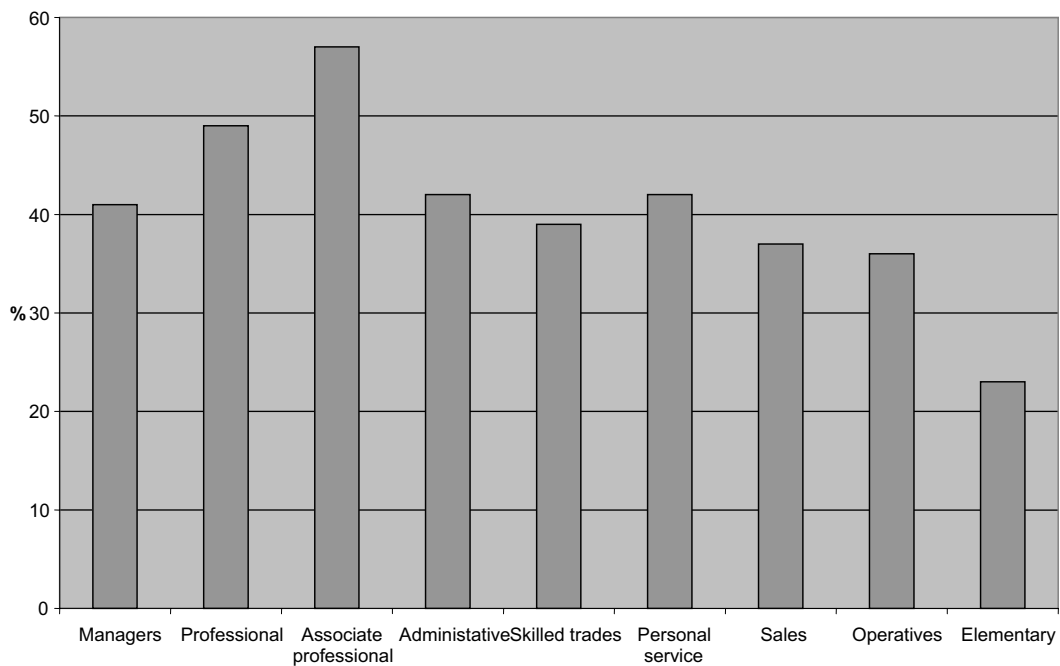
Source: Campbell (2002) using data from Dearden *et al.* (2001)

It seems that once engaged in learning and training the likelihood of subsequent learning and training is increased. Jenkins *et al.* (2003) looked at the benefits to individuals produced by lifelong learning. They found that one episode of post compulsory learning

increased the likelihood of further learning opportunities being taken. Lifelong learners were also less likely to be unemployed. Similarly, returns from higher skills to individuals are likely to be amplified as the those with higher levels of training and qualifications are more likely to receive further training (Blundell, *et al.*, 1999), thus increasing their propensity to received higher returns. This indicates that the 'skill-rich' get richer because of exposure to a greater number of training opportunities than those who are 'skill-poor'. For example, training provided by a current or previous employer has been associated with improved salary levels, greater chance of promotion and reduced chances of redundancy (Blundell *et al.*, 1999). Several studies (Booth, 1991; Blanchflower and Lynch, 1992; Blundell, Dearden and Maghir, 1996; Dearden *et al.*, 2000a) have investigated the wage gains accruing to those with higher training. All have found significant positive effects.

What is more, the type of training undertaken affects returns to the individual. It is generally thought that off-the-job training has a greater effect on wage levels than on-the-job training (Blundell *et al.* 1996). However, as Figure 1 illustrates, not all occupations receive the same level of off-the-job training. Of each of the nine occupational groups (SOC 2000) only Associate professional and technical occupations received training for half or more of its workforce in the previous 12 months. From Figure 1 it is evident that lower skilled occupations receive the least training and higher skilled occupations receive the most (Spilsbury, 2002).

**Figure 1: Off-the-job Training by Occupation**



Source: Spilsbury (2002)

### **Benefits to the Firm**

It is not only the individual that obtains benefit from training and qualifications. For example, a 5% point increase in the training rate (the proportion of the sectors

employees who participate in training) is associated with a 4% increase in productivity as measured by value added per worker. This productivity effect is more than twice as great as the effect on wages (1.6%), so demonstrating that the net benefits accrue to employers (Dearden, 2000a). Assuming proportionality in the relationship between training and productivity, a 1% increase in the training rate could add around £8 billion to national output – equivalent to around £200 per worker and £2 billion on the bottom line of UK companies.

Researchers have attempted to identify whether higher skill levels among the workforce have contributed to the success of high performing firms. Overall, the association between a highly skilled workforce and organisational performance has been confirmed as a positive one (Tamkin *et al.*, 2004).

Using productivity as a proxy for organisational performance Haskel and Hawkes (2003) show top performing manufacturing companies were associated with a workforce with, on average, an extra qualification level than the workforce of bottom performing companies. Haskel *et al.* (2003) noted those in the UK's top 10% of productive firms had workers with on average 2 years additional education than firms in the bottom 10%. This skill difference accounted for around 8% of the productivity gap between the top and bottom 10% of firms. This is explained by the higher level of skills within these high performing manufacturing companies which leads to innovation and more sophisticated production processes, in turn leading to higher quality and higher value products (Haskel and Hawkes, 2003). High performing companies therefore hire workers with higher skills – both 'soft' generic skills as well as 'hard' technical skills.

Similar effects are reported in the service sector. Mason and Wilson (2003) found that an additional year of education among the workforce of firms in the manufacturing and service industries in the UK increased each firm's productivity. This supports the findings of an earlier study (Lynch and Black, 1995) in the USA. Lynch and Black's research suggests an additional years education in the workforce of the manufacturing sector raised sector productivity by between 4.9% and 8.5 %. In the service industry productivity was raised by between 5.9% to 12.7%. Green *et al.* (2003) also found a strong relationship between different levels of workforce skills and the sophistication of products in the UK.

A range of studies were undertaken in the late 1980s and 1990s by the National Institute for Economic and Social Research (NIESR) on the links between skills and productivity. Firms from the engineering, food, clothing, chemical, furniture manufacture and hotel sectors in the UK have been matched with similar firms in competitor countries, so as to compare like with like. Productivity differences of between 25% and 60% exist compared to the Netherlands, France and Germany. The impact of workforce skills and development on productivity was considered alongside a range of other factors such as investment in capital equipment and maintenance practices. A clear connection between higher skills and higher productivity was identified, particularly at the intermediate level of skills. All the studies found that the higher than average labour productivity levels elsewhere in Europe were related to higher skills and levels of knowledge. Within UK manufacturing, lower skill levels were found to have a direct and negative effect on labour productivity and on the types of machinery chosen, the way that machinery was used and the introduction of new technology. The proportion of employees holding relevant vocational qualifications were generally well below those elsewhere in Europe.

A long term study of sector trends in productivity and skills (O'Mahoney et al 1994) revealed that productivity growth was greatest in those industries where the proportion of workers with higher level skills was highest as well as a positive correlation between intermediate skill levels and productivity growth in particular. Those industries where the proportion of skilled workers was rising were those that experienced the fastest productivity growth.

A recent study (Mason and Wagner, 2002) comparing the automotive sector in different countries reported that while the UK had made gains in reducing inventory and reject rates compared to other countries, value added per employee remained 15%-25% higher in Germany. There were significant differences in investment in human capital and levels of qualification. From their matched firm studies NIESR suggest that most of the productivity gap between the UK and its competitors can be attributed to differences in investment in physical capital and skills. It is estimated that as much as one fifth of the productivity gap with Germany is the result of the UK's relatively poorly qualified workforce.

Griffith (1999) has shown that foreign owned car plants in the UK have a substantial productivity advantage over UK owned plants because of both superior capital and skills inputs. Griffith and Simpson (2000) show that this applies more generally across a range of manufacturing sectors.

Higher skill levels are not just associated with higher productivity. Greater skill levels can also bring improvements in other areas of a firm's operation. For instance Reid (2000) noted that a more highly skilled workforce was connected with a more commercial orientation, strategic awareness and a propensity to innovate to retain competitive advantage among new and small businesses, all factors which can enhance a firm's chances of survival. Similarly, higher education levels are more likely to foster innovation (Albaladejo and Romijn, 2001).

Cosh et al (2003) found that half of businesses felt that the training they provide increased their profit margins. Recent data from the Skills for Business Survey of employers (IFF, 2004) shows that greatest benefit to employers of training is higher skill levels among the workforce. This unsolicited response was given by three fifths of employers. The second most common benefit of training, given by a quarter of respondents, was improved labour productivity. Further evidence on the relationship between wider 'bundles' of human resource practices and organisational performance is covered in 'working smarter' below.

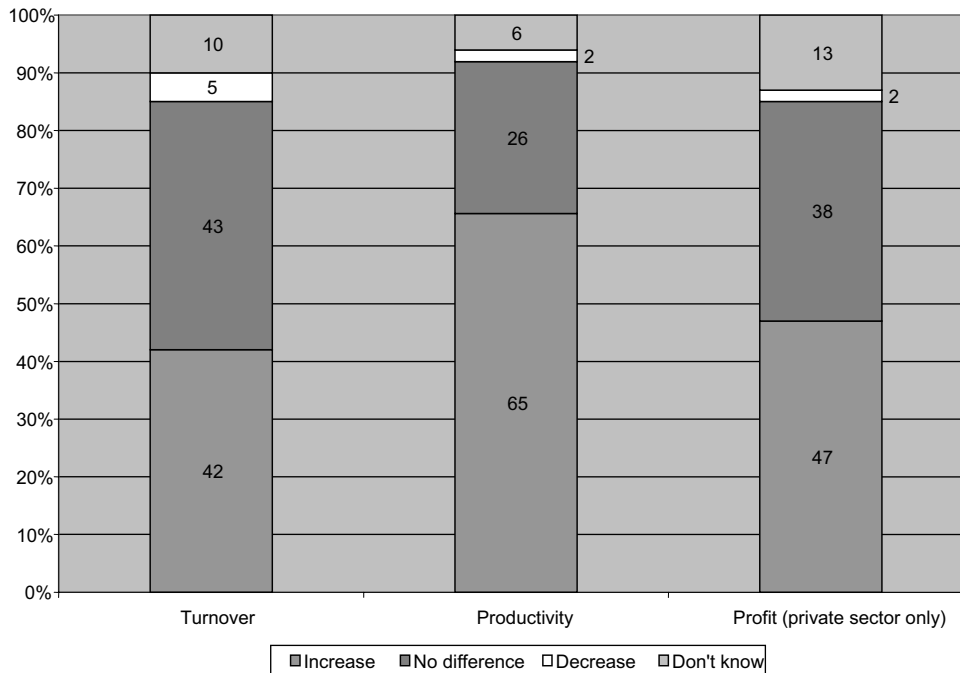
Spilsbury (2002) found that two-thirds of employers (65%) in England that provided training for their employees over the previous 12 months, attributed an increase in productivity to that training (see Figure 2). 47 percent of employers in the private sector considered that training led to an increase in profit (c.f. Dearden *et al.*, 2000a; Cosh *et al.* 2003), while 42% reported the same effect on turnover.

Examining the perceived effect of training on productivity from a sectoral perspective, all sectors perceive equally the benefits of training upon their productivity (see Figure 3). The same cannot be said for the effect of training on the profit margin of private sector employers engaged in different sectors. For example, employers in the Distribution and consumer services sector (55%) were far more likely to perceive positive impacts of



training on profits than those in Agriculture (35%) and Finance and business services sectors (33%)

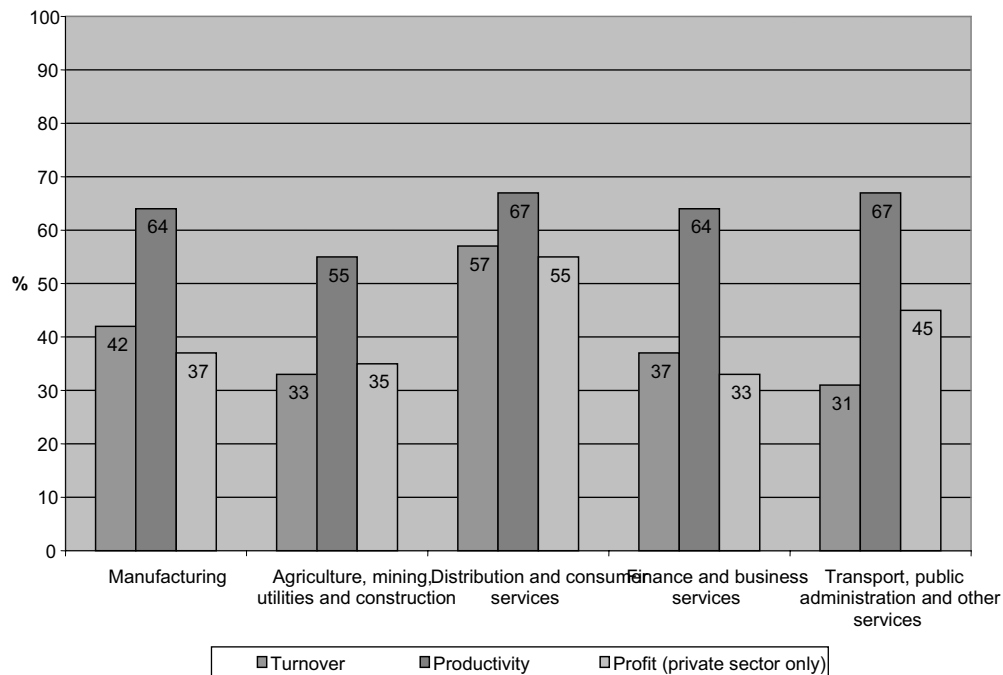
**Figure 2: Perceived Impact of Training**



Source; Spilsbury (2002)

It is also possible to look at the benefits which employers perceive to occur on business performance by the type of training provided – off-the-job leading to qualifications, any off-the-job, any on-the-job and both on and off-the-job (Spilsbury, 2002). Again, productivity remains the area of performance that benefits most from all four types of training activity according to employers. However, employers report that the type of training provided makes little difference to each area of performance. For example, the proportion of employers reporting positive impacts on productivity of each of the four types of training ranges from 68% to 71%; for profit (private sector employers only) it ranges from 46% to 49%; and for turnover it ranges from 40% to 43%. The message here seems to be that no single method of training is more effective than any other at positively influencing performance.

**Figure 3: Percentage of Employers Reporting Increased Performance due to Training by Sector**



Source: Spilsbury (2002)

In the same way that the type of training generates returns to the individual (Blundell *et al.*, 1996), it also seems that the type of training and whether it is delivered on or off-the-job also makes a difference to the benefits derived for the business. In manufacturing greater productivity appears to be achieved through off-the-job training. However, in service industries the type of training undertaken is more important in producing higher productivity, for example training in information and communications technology (Lynch and Black, 1995; see also Barrett and O'Connell, 1998). Lynch and Black suggested that generic, off-the-job training produced greater returns to productivity than firm specific training. However, Barrett and O'Connell (1998) find that generic and transferable training has lesser impacts on a firm's performance.

To summarise, most forms of qualifications and training leading to the enhancement of skills produce benefits to individuals in terms of increased earnings, further training opportunities and a reduce likelihood of unemployment. However, the benefits to individuals are exceeded by those that accrue to the firm. Numerous studies suggest that a more highly skilled workforce is associated with higher productivity and other positive organisational outcomes.

## Skill Deficiencies: Skills Shortages and Gaps

The skills needed by employers are not always available within their workforce or in the wider labour market beyond the firm. This situation can manifest itself either as a skills gap (in the former case) or a skills shortage (in the latter case). Skill shortage vacancies (SSVs) are vacancies that are hard to fill because of a lack of applicants with the required experience, qualifications or skills. Skill gaps arise when existing employees are less than fully proficient in jobs. The National Employer Skills Survey (IER/IFF, 2004) provides data on SSVs and skill gaps for England, whilst Skills in Scotland (FSS, 2003) provides comparable data for Scotland, Future Skills Wales Generic Skills Survey (FSW, 2003) for Wales and the Northern Ireland Skills Monitoring Survey (DELNI, 2003) for Northern Ireland.

### Skill Shortages

In **England**, approximately 8% of all establishments report having hard-to-fill vacancies (HtFVs). The single most common reason for the existence of HtFVs is that applicants do not have the required skills (45% of employers with a HtFV). Other skill related reasons for the existence of HtFVs include a lack of work experience (25%) and a lack of qualifications (18%). Overall, 4% of employers report the existence of SSVs. This equates to 135,000 vacancies that are difficult to fill because employers cannot recruit workers with the desired experience, qualifications or skills. Of all establishments that are recruiting (i.e. have one or more vacancies), 25% experience SSVs. Table 6 shows that within England there has been no change in the proportion of establishments reporting SSVs over recent years, that the overall volume of SSVs has declined somewhat and that the density of SSVs has decreased slightly.

**Table 6: Density and Number of Vacancies in England**

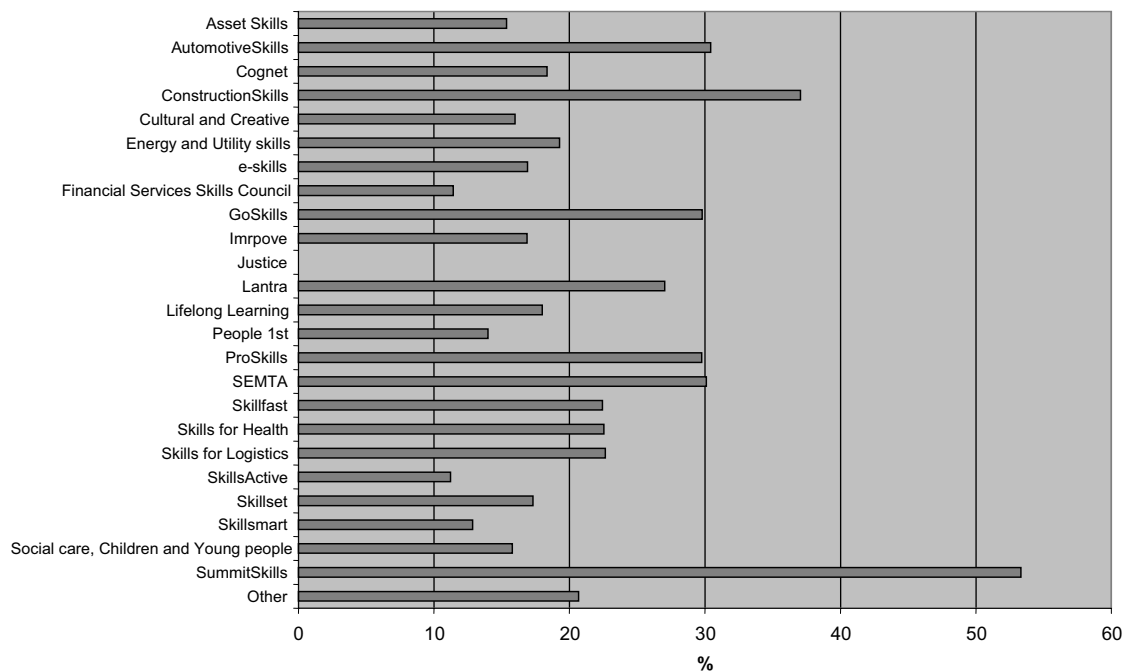
	% of all establishments reporting	Number (000s)	% of all employment	HtFVs and SSVs as a % of all vacancies
<b>2003 - All establishments</b>				
All vacancies	17	679	3.1	n.a
HtFVs	8	271	1.2	40
SSVs	4	135	0.6	20
<b>2001 - All establishments</b>				
All vacancies	14	766	3.7	n.a
HtFVs	8	358	1.7	47
SSVs	4	159	0.8	21

IER/IFF (2004)

The likelihood of an employer reporting an SSV increases with the size of their establishment. However, compared to their share of total employment, small establishments experience disproportionately high levels of SSVs. For instance organisations with 24 or less employees account for two thirds of all SSVs but only 34% of all employment. Establishments of 25-99 employees account for 19% of SSVs and 26% of employment and for establishments of 100 or more staff the figures are 15% of SSVs and 40% of employment.

SSVs also vary greatly by sector, geography and occupation. Looking first at sectoral variations, SSVs are disproportionately concentrated in Wood and Paper (46%), Construction (38%), Transport (35%), Agriculture (32%) as a percentage of all vacancies in each sector. Figure 4 shows SSVs as a proportion of all vacancies in each SSC footprint area. SummitSkills and ConstructionSkills have the highest density of SSVs at 53% and 37% respectively. The sectors with the lowest density are Financial Services and SkillsActive (both 11%).

**Figure 4: SSVs as a % of all Vacancies in Sector by SSC**

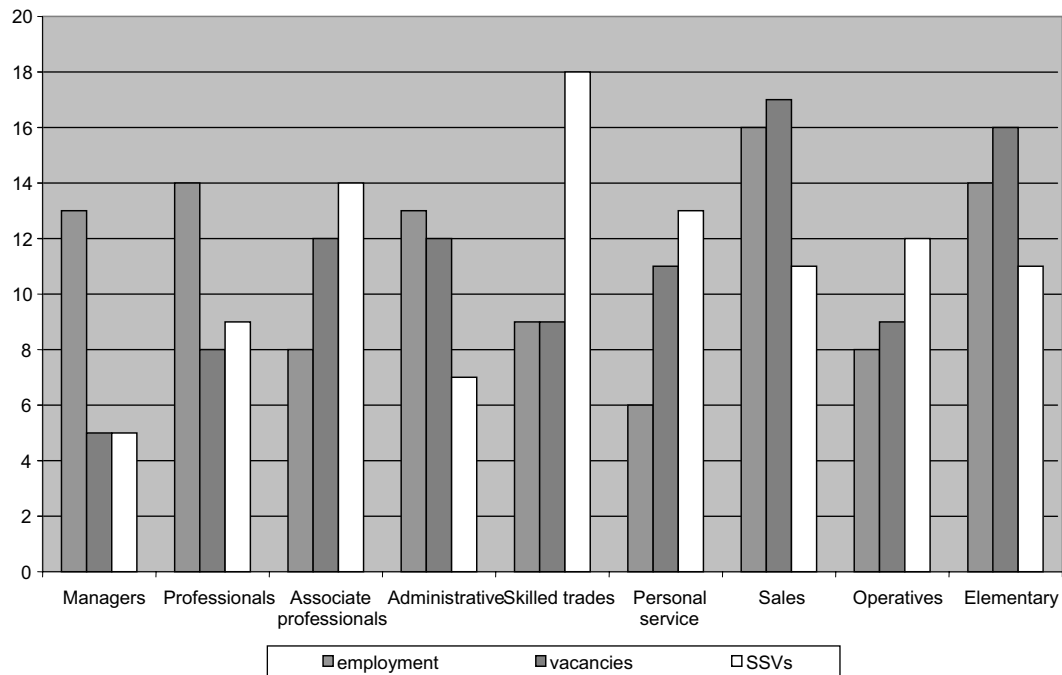


Source: IER/IFF (2004)<sup>2</sup>

When assessing SSVs by occupation, several occupations have a greater proportion of all SSVs than their share of employment and vacancies. Associate professionals, Skilled trades, Personal services and Operative occupations have disproportionate levels of SSVs, as can be seen in Figure 5. Skilled trades have the largest share of all SSVs at 18%, double its natural share of all vacancies or employment, with large shares also being experienced amongst Associate professionals (14%), Personal services (13%) and Operatives (12%). Professional occupations have a slightly higher share of all SSVs than their share of vacancies but not employment. As a percentage of employment in each occupation, SSVs are highest in Personal service (1.5%), Skilled trade (1.3%), and Associate professional (1%) occupations. Managers and Administrative and secretarial occupations were reported as having the lowest level of SSVs as a percentage of employment. Across the English regions, SSVs as a proportion of vacancies, are highest in the West Midlands (24%) and least in the South West (17%).

<sup>2</sup> Data for Justice was not available

**Figure 5: SSVs by Occupation**



Source IFF/IER (2004)

Geographically, the four constituent countries of the UK are broadly similar in terms of the number of SSVs as a percentage of employment, as can be seen Table 7. However, differences become apparent between the countries when other measures are considered. Not surprisingly the absolute number of SSVs vary but more telling are the proportion of establishments reporting skill related vacancies and SSVs as a proportion of all vacancies in each country.

**Table 7: SSVs in the Countries of the UK**

	% of all establishments reporting SSVs	No. of SSVs (000s)	Vacancies as a % of all employment	SSVs as a % of all vacancies
Wales	7	12.5	0.5	25
England	4	135	0.6	20
N.Ireland	4	3.1	0.5	20
Scotland	4	12.1	0.6	17

Sources: DELNI (2004); IER/IFF (2004); FSW (2003); FSS (2003).

As a percentage of all vacancies, SSVs are least common in **Scotland** (FSS, 2003). The occupations in Scotland with the highest levels of SSVs as proportion of employment are Skilled trades (1.6%) and Personal services (1.2%). The occupations with the lowest levels are Professionals (0.2%) and Administrative and secretarial (0.2%).

Four out of ten vacancies (37%) in Skilled trades occupations were a SSV compared to Personal services in which 17% were due to a skills shortage (FSS, 2003). Around half (49%) of all managerial and senior official vacancies were considered hard-to-fill by employers in Scotland and of these 81% were hard-to-fill because of a lack of skills

among applicants. Overall SSVs accounted for 40% of all vacancies in this occupation. Professional and Associate professional and technical occupations were reported as having similar levels of hard-to-fill vacancies as Managers (44% and 47% respectively) but SSVs account for a much lower proportion of all vacancies in these occupations (13% and 16% respectively).

Analysis by sector in Scotland shows that SSVs as a proportion of employees are highest in Other services (1.8%), financial intermediation (1.3%) and construction (1.2%), and the lowest rate was reported in Public administration and defence (0.1%). As a proportion of all vacancies in an industry the highest incidence of SSVs are in the Financial Intermediation (45%), Construction (33%) and Transport, storage and communication industries (29%). Scotland displays a similar pattern to England in that smaller establishments are more likely to report an SSV (FSS, 2003).

**Wales** reports the highest proportion of establishments with SSVs but has a similar number of skill related vacancies to Scotland. This shows that skill related vacancies are distributed more widely across employers in Wales than they are in Scotland. FSW (2003) also identifies Wales as having the highest level of SSVs as a proportion of all vacancies compared with England and the other countries of the UK. This indicates that the labour market in Wales is less able to meet the demands of employers when they attempt to recruit staff than in other countries i.e. there are insufficient people in the market place with the requisite type and level of skills, qualifications and experience (FSW, 2003).

Data regarding skill related vacancies by size of establishment and industry are not available from FSW (2003), although data is available for hard-to-fill vacancies. The smaller the firm the more likely it is to have a difficult-to-fill vacancy. Two thirds (66%) of micro firms report hard-to-fill vacancies compared to 44% of the largest (250 or more employees). More than half of hard-to-fill vacancies reported in Wales exist in just two sectors; Distribution, hotels and catering and Public administration, education and health. Together, though, these two sectors account for 30 percent of employment in Wales (FSW, 2003).

The number of SSVs in **Northern Ireland** is the lowest of all UK countries but on all other measures in Table 7 its position is similar to that of England. SSVs are more prevalent in the private sector at 38% of all employers compared to 19% in the public sector. Manufacturing (26%) and Wholesale and retail (21%) each account more than one fifth of all SSVs in the private sector in Northern Ireland. In the public sector, Health and social care has the highest share of all SSVs by far. Education also has more than one fifth of all SSVs in the public sector. Approximately, one in two vacancies in the following occupations were difficult-to-fill for skill related reasons: Managers and senior officials (56% of all hard-to-fill vacancies), Skilled trades (46%), Professional occupations (45%) and Operatives (43%) (DELNI, 2003).

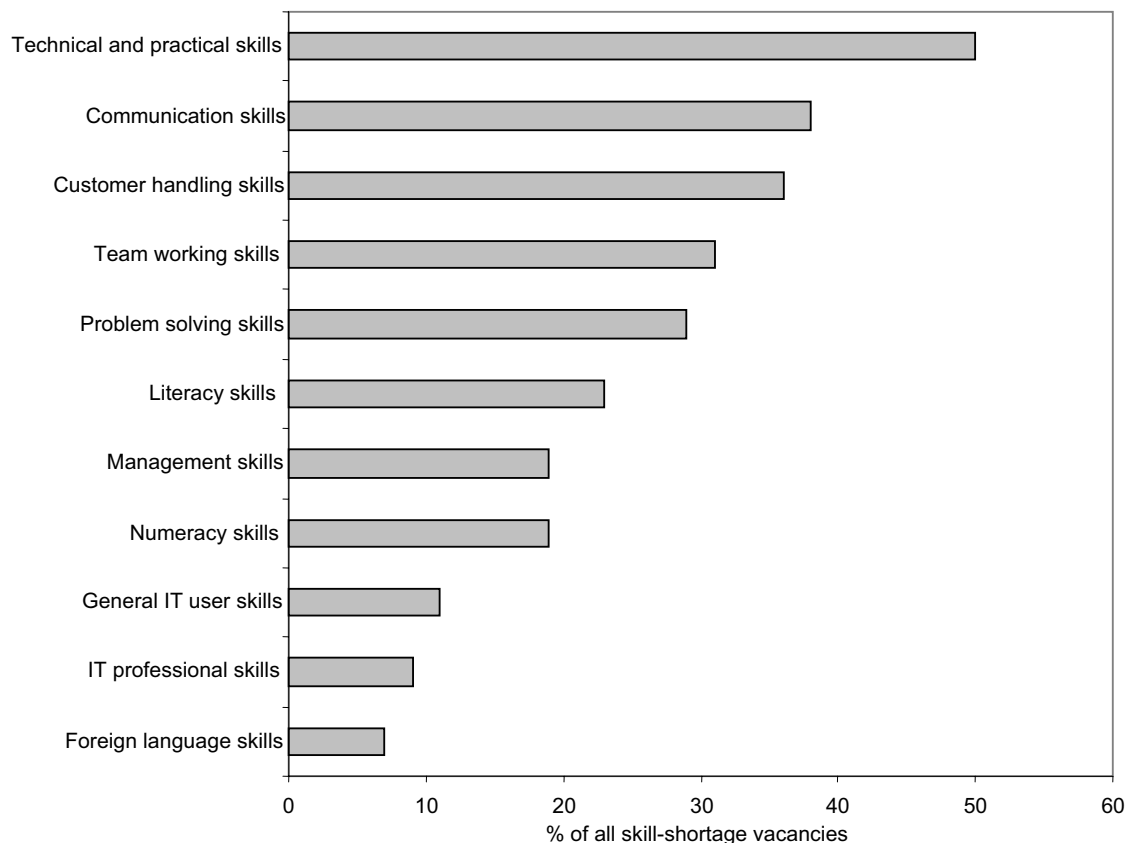
IER/IFF (2004) obtained information about the particular skills establishments found it difficult to obtain and which resulted in a persistent vacancy. Figure 6 shows the skills sought in connection with SSVs. Technical and practical skills other than IT were the most frequently cited for those SSVs investigated by the survey. Communication skills, customer handling, team working and problem solving were also commonly cited.

The skills demanded also vary by occupation. The key results to emerge were:

- Technical/practical skills other than IT were sought in connection with a significant number of SSVs, but especially so amongst skilled trades occupations and operatives.
- A lack of communication skills amongst applicants was most important for administrative and secretarial occupations and sales and customer service vacancies, but was also significant for managers, personal service and elementary occupations.
- Customer handling skills were found particularly difficult to obtain from applicants for the same set of occupations.
- Team working was less of a skills problem amongst professional and associate professionals, but sought more in connection with managers, operatives in personal service, sales and customer service occupations and elementary occupations.
- Problem solving was mentioned mainly in relation to managers and senior officials, and administrative and secretarial occupations.
- Literacy and numeracy problems were reported mainly in relation to administrative and secretarial and elementary occupations and, to a lesser extent, for sales and for managers and senior officials.
- Management skills were mentioned mainly in relation to managers and senior officials.
- General IT skills were reported as a problem mainly for administrative and secretarial occupations and for managers and senior officials.
- More advanced IT professional skills also tended to be reported as a problem for the recruitment of professionals as well as for administrative and secretarial occupations and for managers and senior officials.
- Foreign language skills were mentioned rarely in relation to any occupation.

The most common effect of an SSV on an organisation is that it increases the workload for other employees. In England, almost 85% of employers with an SSV reported this effect (IER/IFF, 2004). In addition, more than half experienced customer service difficulties and more than two fifths experienced a loss of business. In Scotland, the most commonly reported effect of SSVs was that of experiencing difficulty meeting customer service objectives (FSS, 2003). The implications for organisational performance of inefficient working, failing to meet customers needs and above all losing business are stark.

**Figure 6: Skills Sought in Connection with SSVs**



Source IER/FF (2004)

### **Skills Gaps**

A skill gap occurs when an employer regards a member of their staff as not being fully proficient in their job. The demands placed on employees are a function of the organisation's objectives and what it is trying to achieve. Therefore skill gaps often occur when organisations attempt to better their performance. For instance Green *et al.* (2003) found higher levels of product specification are associated with higher workforce skill levels and higher levels of skills need and that a third of establishments with skill gaps are being prevented from moving up market by their current workforce skills.

Alternatively, gaps can occur when an employee is new in post or when the labour market is tight. As employment rises and unemployment falls so the supply of available proficient labour declines. Consequently, employers might recruit employees who previously would not have been considered for the post. Therefore the number of employees not fully proficient rises.

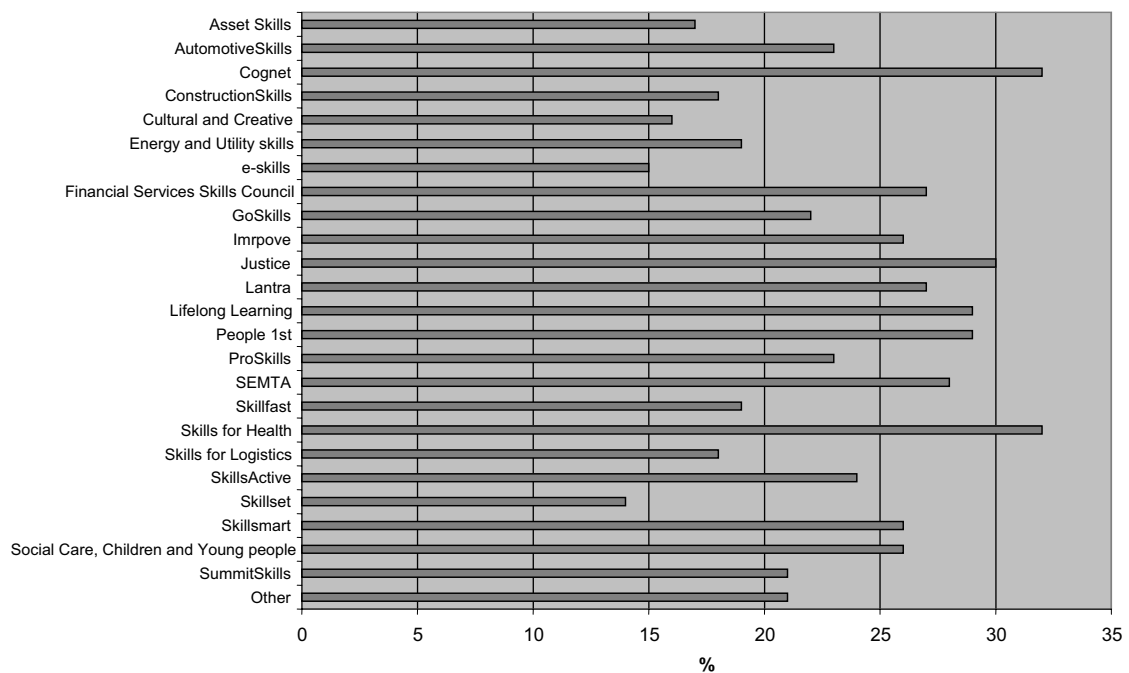
Results from NESS for **England** demonstrate that skill gaps are a far bigger problem than skill shortages. In total, 2.4 million employees were considered to have a skills gap by their employers. This is equivalent to 11% of all employment in England and is a situation that affects more than one fifth of employers (22%). The incidence of skill gaps by establishment size is the same as that for SSVs with large organisations being more likely to experience skill gaps among their workforce than small organisations.



Approximately 60% of organisations with 100 or more staff report skill gaps compared to just 14% of micro firms. Unlike SSVs, skill gaps as a proportion of employment increase with size of establishment. Micro firms (1-4 employees) report 8% of their employees are less than fully proficient in their roles. For the largest establishments (500 or more employees) 14% of their workforce have a skill gap. Employers report several causes of skill gaps including poor motivation, lack of training, failing to keep pace with change, recruitment problems and high turnover.

When examining skill gaps by sector, however, there is less variation from the national average than there is for SSVs. Communications (15%), Hotels and catering (14%) and Food, drink and tobacco (14%) are the three sectors which experience the highest numbers of skill gaps as a percentage of employment in the sector. Education (8%), Computing and related services (8%) and Printing and publishing (8%) report the lowest number of skill gaps as a percentage of employment within the sector. Figure 7 presents the proportion of establishments reporting skill gaps by SSC footprint. It is Cogent and Skills for Health (both 32%) that have the highest percentage of establishments reporting skills gaps, followed by Justice (30%) – Skillset (14%) and e-skills (15%) have the lowest proportions of employers reporting staff less than fully proficient in their roles.

**Figure 7: The Proportion of Establishments Reporting Skill Gaps by SSC**

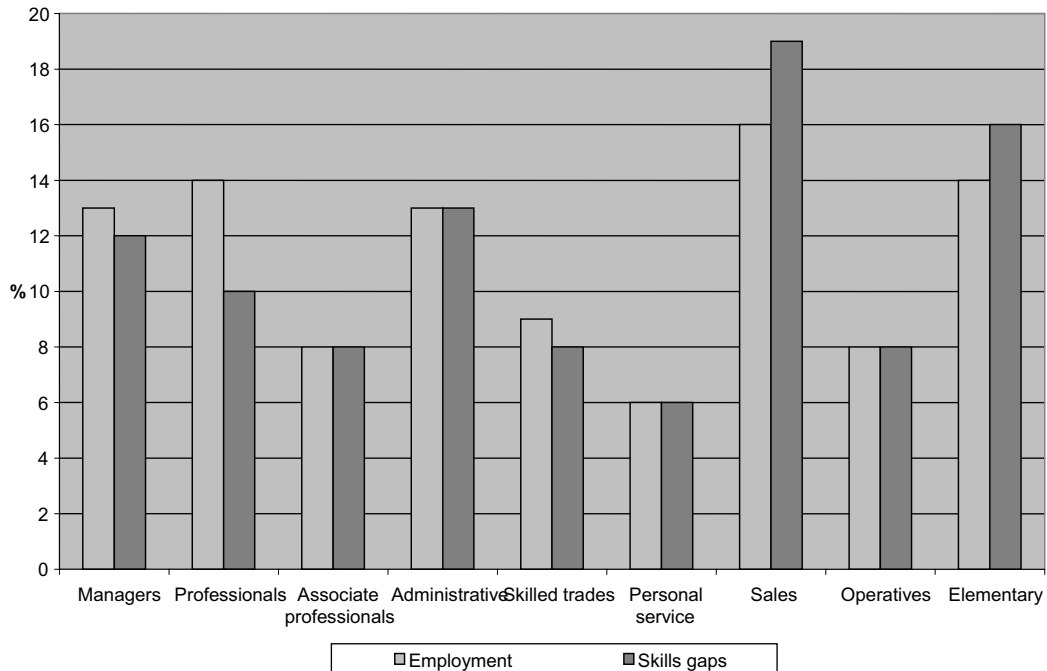


Source: IER/IFF (2004))

Skill gaps in England are distributed across occupations largely in proportion to each occupation's share of employment. However, Sales and customer service occupations and elementary occupations experience skill gaps over and above their share of employment. For instance, Sales occupations have 16% of all employment and 19% of all skill gaps; elementary occupations account for 14% of employment but 16% of all skill gaps. Professional occupations are conspicuous by their low level of skill gaps (10%)

relative to their share of employment (14%). Figure 8 illustrates the level of skill gaps by occupation. In general, Associate professional, Managerial occupations, Administrative, Skilled trades, Personal service and Operatives do not suffer skill gaps out of proportion to their share of employment.

**Figure 8: Incidence of Skill Gaps by Occupation**



Source: IER/IFF (2004)

Within the 9 English regions it is the West Midlands that has the highest density of skill gaps (as a proportion of employment) at 15% followed by Yorkshire and The Humber at 13% (see Table 8). Yorkshire and The Humber is also the region with the highest percentage of employers reporting skill gaps.

**Table 8: Incidence of Skill Gaps by English Region**

	% share of all employment	% share of all skill gaps	% of employers reporting skill gaps	Number of skill gaps as a % of employment
London	18.3	16.9	16	10
South East	16.6	15.7	22	10
West Midlands	10.5	14.5	24	15
North West	13.1	12.1	22	10
Yorkshire and The Humber	9.5	11	29	13
Eastern	10.3	10	21	11
South West	9.5	8.3	23	10
East Midlands	8	7.7	25	11
North East	4.4	3.9	26	10
<b>Total</b>	<b>100</b>	<b>100</b>	<b>22</b>	<b>11</b>

Source: IER/IFF(2004)

It has already been highlighted that 22% of all establishments in England are affected by one or more skill gaps. Table 9 shows that in absolute terms this affects 1,915,000 establishments and 11% of all jobs, the highest of all countries. The proportion of establishments affected in **Scotland** is slightly higher than in England at nearly a quarter (24%), although as a percentage of jobs the density of skill gaps is slightly lower. However, for **Wales** with a broadly similar proportion of establishments reporting skill gaps (19%) as England, skill gaps affect a much lower proportion of jobs (5%). This is because skill gaps affect fewer employees per establishment in Wales than in England. **Northern Ireland** has the lowest level of skill gaps of the UK's four countries across all the measures presented in Table 9. This can be interpreted in two ways. Either, there is a better supply of appropriately skilled labour to meet the needs of employers in Northern Ireland or, businesses are setting less ambitious objectives thereby placing lower demands on the skills of their employees than those in the other UK countries.

**Table 9: Incidence of Skill Gaps Among the Four Countries of the UK**

	% of establishments reporting skill gaps	Number of establishments with skill gaps (000s)	Skill gaps as a % of all employment
England	22	1,915	11
Scotland	24	187	9
Wales	19	-	5
N.Ireland	13	43	3

Source: DELNI (2004); IER/IFF (2004); FSW (2003); FSS (2003).

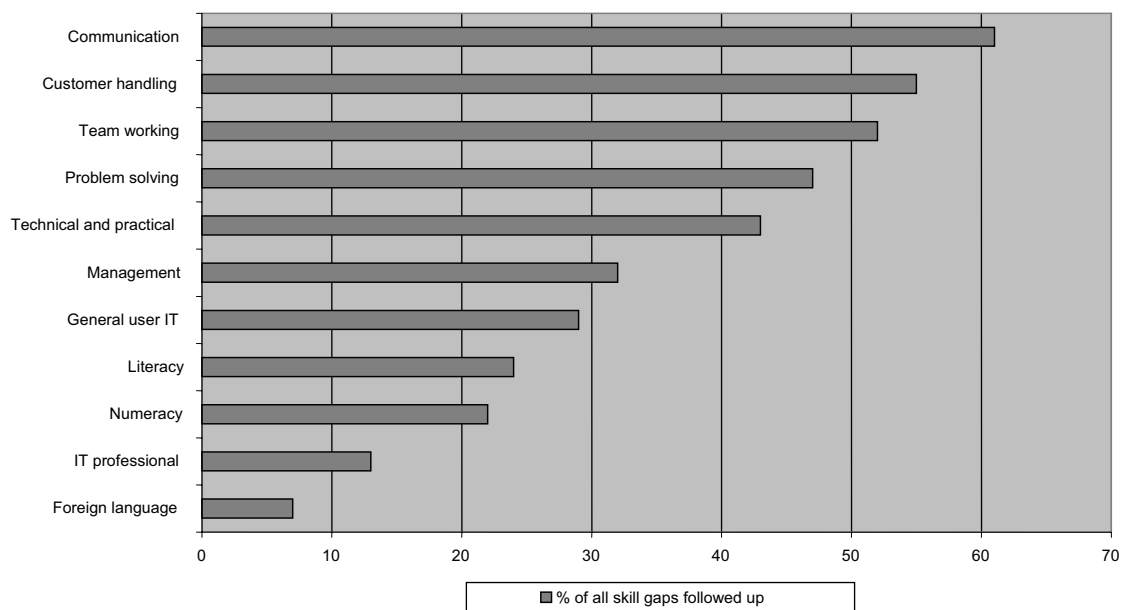
Three occupations account for 40% of all skill gaps in **Scotland**; Sales and customer service (20%), Elementary (18%) and Process, plant and machine operatives (12%). Those with the lowest share of all skills gaps in that country are Associate professionals and technical (6%), Skilled trades (7%) and Professionals (8%). The least 'skill intensive' occupations therefore have the greatest proportion of skill gaps and vice versa. As a proportion of all employees it is the lower skilled sectors of Hotels and restaurants (17%), Wholesale and retail (11%) and Manufacturing (11%) that suffer most with skill gaps. Those least affected, as a proportion of employees, are Energy and water (5%), Construction (6%), Financial intermediation (6%) and Real estate and activities (6%). The proportion of employers experiencing skills gaps in each industry presents a different pattern. For example 45% of all Public administration and defence employers report at least one skill gap while 14% of employers in the industry of Other service activities experience a skill gap. The distribution of skill gaps as a proportion of employees by size of establishment is more narrow than in England, ranging between 8% and 10% of employees for all sizes of establishment.

In **Wales**, skill gaps are most commonly reported for Managers (9%). Associate professional and technical, Skilled trades and Process, plant and machine are the occupations with the lowest percentage of establishments reporting gaps (all 2%). By sector, manufacturing (23%), Construction (22%) and Public administration, education and health (22%) have the highest percentage of establishments reporting gaps. The sector with by far the lowest percentage of establishments reporting gaps is Energy and water (8%). As in England the proportion of establishments with skill gaps increases as firm size increases. Just 12% of firms with 10 or less employees report a skill gap compared to 80% of firms with 250 or more employees.

Again the increasing rate of skill gaps with size of establishment is reported in **Northern Ireland**. Eleven percent of firms with 1-4 employees had a skill gaps compared to 22% of firms with 50 or more workers. One fifth of employers in Mining and quarrying and Financial service sectors reported at least one employee less than proficient in their role. Public administration had the fewest employers reporting a gap. The occupational groups that have the largest skills deficit were Sales (55%), Personal service (53%), Associate professionals (47%) and Skilled trades (41%). Managers (26%), Administrative and secretarial (30%) and Elementary occupations are reported has having the lowest proportions of skill gaps.

Employers in England identifying skill gaps among their workforce were asked to specify the skills in which their employees were not fully proficient (IER/IFF, 2004). The key areas in which employees are viewed as lacking skills can be classified as relatively soft skills areas, i.e. communication (61%), customer handling (55%), team working (52%) and problem solving (47%). That said, technical and practical skills were lacking from just over two in five (43%) of the employees with skill gaps that were followed up. This is illustrated in Figure 9.

**Figure 9: Skills Lacking**



Source IER/IFF (2004)

It is useful to consider the occupational spread of skill gaps. The key findings are:

- Communication and customer handling skills were particularly lacking in sales and customer service and personal service occupations, though were widespread across all occupational groups.
- Team working was a common skill lacking in all occupations, but was most frequently cited with respect to personal service occupations.

- Technical and practical skills were lacking in over two-thirds of associate professional and skilled trades skill gaps.
- Management skills tended to be mentioned with respect to management occupations, although professionals and associate professionals were also frequently cited as lacking this skill.
- General IT user skills were most likely to be mentioned with respect to administrative occupations and, to a lesser extent, managerial, professional and associate professional occupations.
- Literacy skills were mentioned in fewer instances, but were more likely to be mentioned with respect to transport and machine operatives and personal service occupations.
- Numeracy skills were also cited less. When they were mentioned they tended to be mentioned with respect to the lower level occupations.
- IT professional skills were particularly lacking from professionals and administrative occupations.

The impact of skill gaps was investigated by IER/IFF (2004). The most common impact cited by 35% of employers is that skill gaps make it difficult to achieve customer service aims. Twenty per cent of employers cited a loss of business as an impact of skill gaps. Providing further training or increasing trainee programmes was the course of action adopted by 84% of all employers acknowledging a skill gap. Whilst it is positive finding that such a high proportion of employers with skill gaps respond with training, 16% of employers are not increasing the skill levels of the employees whose skills are deficient. Furthermore, just less than 1 in 10 employers take no action.

## Workforce skills

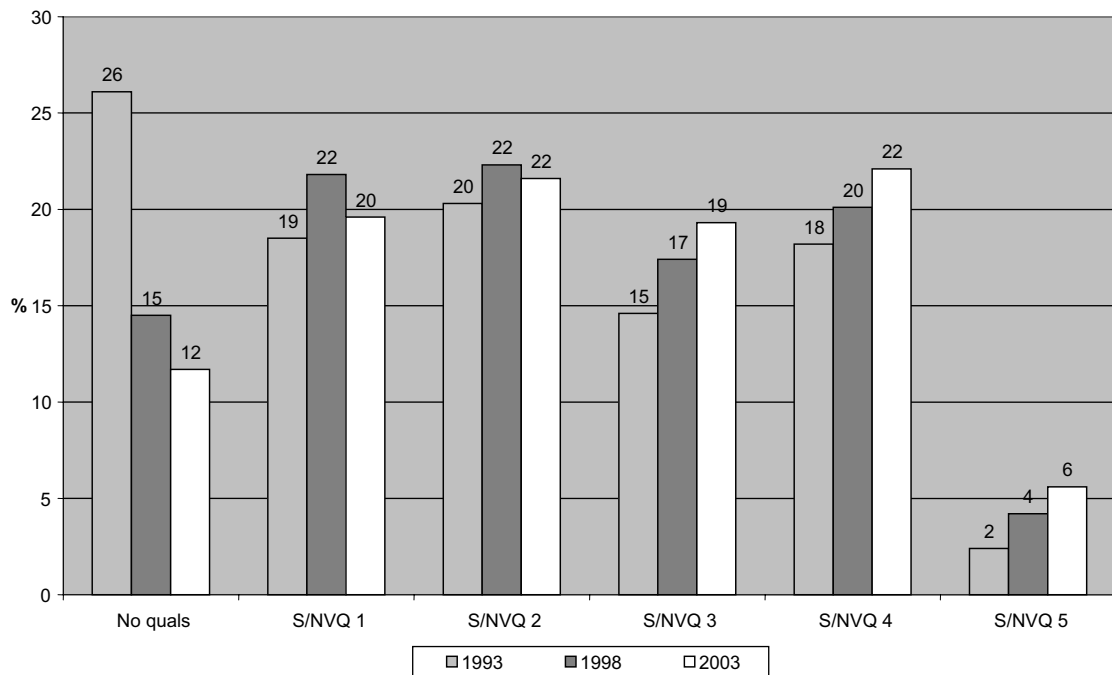
A well educated and well trained labour force is important for the social and economic well-being of countries and individuals. Education and training provides individuals with the knowledge, skills and competencies to participate effectively in society and the economy. Qualifications in the UK are categorised according one of five levels as in Figure 10. Equivalent qualifications for each level are listed in Table 10.

Unemployment has reached its lowest point since the 1970s and the unemployed, together with others that are economically inactive present a potential but currently unused source of labour. Yet there is a substantial skills deficit amongst this group that reduces their employability and constrains economic expansion. For example, 21% percent of those who are unemployed in the UK have no qualifications. Of those who are economically inactive this figure is 31% (NS/DfES, 2003). In addition, the previous employment of the economically inactive tends to be in lower level occupations which are projected to decline. (Campbell, 2002; Wilson *et al.* 2004).

The proportion of the economically active with no qualifications in England has fallen from 26% to 12% over the ten years to 2003 (see Figure 10). The proportion of those qualified to levels 1 and 2 has also declined. This is partly due to older and less qualified workers reaching retirement age and leaving the workforce.

Along with the decrease in the proportion of the workforce without qualifications, there has been an upwards shift in the average level to which those in the workforce are qualified in England. This can be seen from the increase in qualifications at levels 3, 4 and 5 in Figure 10 This is due to the combined effect of older, less qualified workers leaving the workforce and younger more highly qualified people entering from education. The expansion of higher education has created a greater supply of people entering the workforce with qualifications equivalent to NVQ level 4. The proportion of NVQ level 5 qualifications in the workforce has also more than doubled in the period 1993-2003, although in absolute terms remain only a small proportion of the qualifications held among those economically active.

**Figure 10: Highest Qualification Held by Economically Active Population in England**



Source: Hogarth and Wilson (2004)

Whilst the above provides a useful generic categorisation of qualification levels there remains much variation between vocational and academic qualifications held by the working population. Table 10 lays out these variations for England. It is clear that academic qualifications are more common than vocational qualifications at levels 1-4 except for level 3 where BTEC national awards dominate.

**Table 10: Highest Qualification Held by Workforce in England**

Qualification	%
<b>No Qualifications</b>	<b>11.3</b>
<b>NVQ level 1 total</b>	<b>19.3</b>
GCSE (below grade C)	15.4
GNVQ foundation	0.1
BTEC 1 <sup>st</sup> certificate	3.8
<b>NVQ level 2 total</b>	<b>21.6</b>
GCSE (grade A-C)	12.1
GNVQ intermediate	0.6
BTEC 1 <sup>st</sup> diploma etc	9.0
<b>NVQ level 3 total</b>	<b>19.5</b>
A level and equivalent	6.5
GNVQ advanced	0.7
ONC BTEC national etc	12.3
<b>NVQ level 4 total</b>	<b>22.6</b>
First degree and equivalent	13.5
HE below degree level	1.9
HNC BTEC and RSA higher	4.3
Nursing and Teaching	3.0
<b>NVQ level 5 Higher degree</b>	<b>5.7</b>
<b>Total</b>	<b>100</b>

Source: Labour Force Survey (2003).

Table 11 shows that there were 408,000 NVQs awarded in the United Kingdom in 2001/02. The greatest proportion of awards were made at level 2, constituting three fifths (231,000) of all NVQs awarded in 2001/02 (NS/DfES, 2003). Level 3 qualifications were the second most common in 2001/02 at 114,000 (28%), then level 1 at 47,000 (12%) and finally levels 4 and 5 combined represented 4% of all NVQs awarded in 2001/02.

**Table 11: Full Vocational Qualifications Awarded**

000s	1995/96	1999/00	2000/01	2001/02
Level 1	62	65	50	47
Level 2	218	262	231	231
Level 3	65	113	103	114
Level 4 and 5	9	15	15	17
<b>Total</b>	<b>354</b>	<b>454</b>	<b>428</b>	<b>408</b>

Source: (NS/DfES, 2003)



The total number of vocational qualifications awarded in 2001/02 (408,000) is higher than the total in 1995/96 (354,000), although recent years have witnessed a decline since the peak of 1999/00 (454,000). The number of qualifications awarded at level 1 in 2001/02 has declined compared to 1995/6. There is a general upward trend in the number of awards made at levels 2, 3 and 4 and 5 combined over the period 1995/6 – 2001/02.

### Country and Regional Variations

Table 12 shows the highest qualification achieved by the working age population of the UK and of each country in the UK. The proportion of the population that has no qualification shows the largest variation between countries followed by level 1. All other levels of qualification differ little between countries. Two thirds of Northern Ireland's working age population are qualified to level 2 or below. At 50%, Scotland has the lowest percentage of working age population qualified to level 2 or below. Fifty seven percent of the working age population in England and Wales are qualified to level 2 or below. However, a low percentage of the working age population qualified to level 2 or below means a greater percentage of that population is qualified to level 3 and above. For example, Scotland has 50% of its working age population qualified to level 3 and above, the highest of all UK countries.

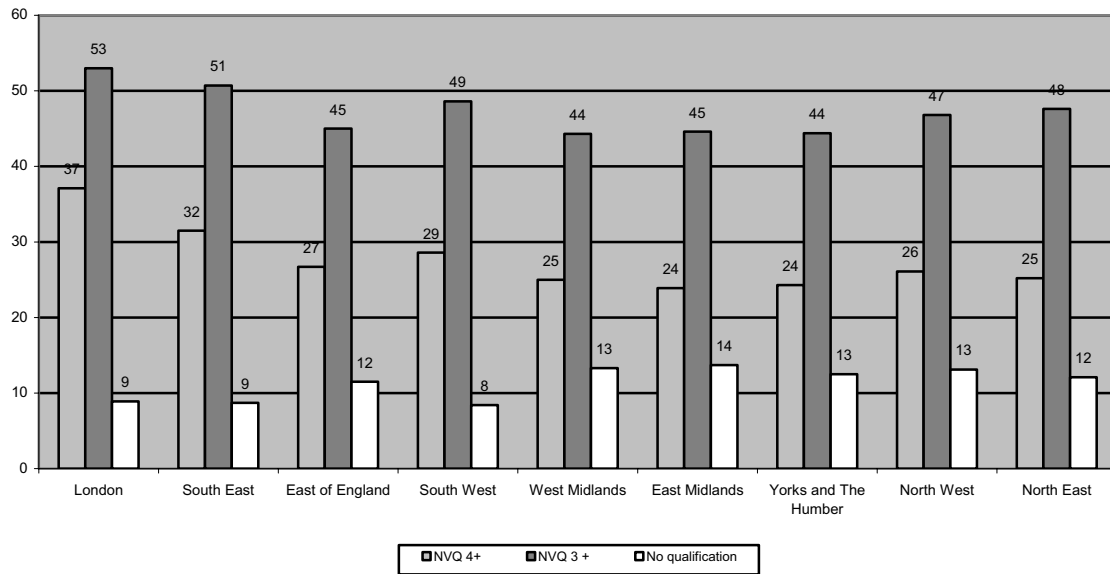
**Table 12: Highest Qualification Held by Working Age Population**

	No qualifications	NVQ 1	NVQ 2	NVQ 3	NVQ 4	NVQ 5
UK	15	19	22	19	20	5
England	15	20	22	19	20	5
Wales	17	17	23	19	19	5
Scotland	15	15	20	22	24	4
Northern Ireland	24	12	24	19	16	4

Source: NS/DfES (2003)

Overall, there are only small differences in the supply of skills across the nine English regions (though the variations across localities are very substantial (Hogarth and Wilson 2004; Campbell 1999)). The regional differences are evident in Figure 11. London, the South East and the South West have the highest proportion of workers who have obtained level 3 qualifications and above. When considering qualifications at level 4 and above the disparities become more marked between London and the other English regions. At a sub-regional level and beyond Bloom et al (2004) point out that there are skill rich and skill poor areas such as particular boroughs in London. In skills poor areas, the combination of weak supply and demand can create a low skills equilibrium (see section on skills vacancies and gaps).

**Figure 11: Percentage of Workforce with no Qualifications, NVQ Level 3 and Above and NVQ Level 4 and Above.**



Source: Hogarth and Wilson (2004)

### Sectoral Patterns

There is considerable variation in the level to which the workforce of different sectors in the UK economy are qualified (LFS, 2003). This is evident from Table 13 and Figure 12.

Across the whole economy 30% of the workforce are qualified to **level 4** and above. At almost two thirds of its workforce the education sector has the highest proportion of employees qualified to level 4 and above than any other sector in the economy. Those qualified to level 5 in this sector account for more than one fifth of the workforce. Such a high level of attainment is perhaps not surprising given the nature of the sector. The computing and related sector has the second highest proportion of workers qualified to level 4 and above at 58%. At the other extreme, the Textiles and clothing, Manufacturing nes and recycling, Transport equipment, Construction, Retail and Hotels and restaurant sectors all have less than 15% of their workforces qualified to level 4 or above. In the Sale and maintenance of motor vehicles only 7% of the workforce are qualified to the same level.

The Education sector has the lowest proportion of **level 3** qualifications of all sectors in the UK economy at just 11%. The highest proportion of level 3 qualifications among the sector is found in Construction and Sale & maintenance of motor vehicles, both with 33%. Within the UK economy 22% of workforce hold a level 3 qualification as their highest award. Five sectors equal or are within 1% of this UK average; Retail trade, Transport equipment, Communications, Mining and quarrying and Chemicals and non metallic minerals.

Of the entire workforce, 47% are only qualified to **level 2 or below**. Nine sectors have 60% or more of their workforce qualified to level 2 and below. These are; Textiles and clothing (69%), Agriculture (65%), Food and drink (64%), Hotels and restaurants (64%), Retail trade (63%), Transport equipment (63%), Wholesale trade (62%), Wood and paper (61%), Manufacturing nes and recycling (60%).

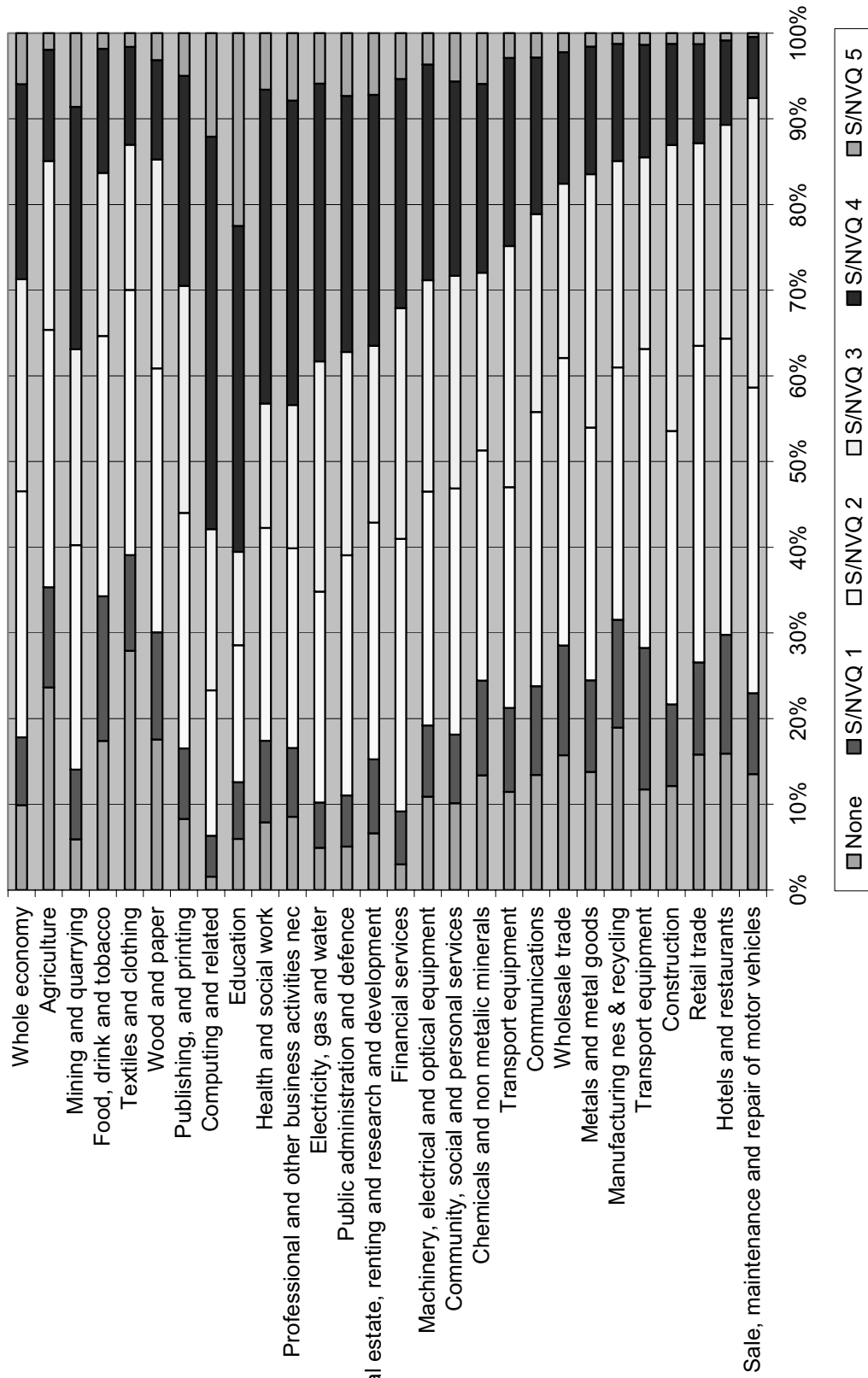
Agriculture, Textiles and clothing, Wood and paper, Manufacturing nes and recycling, Retail trade and Hotels and restaurants, Food and drink and Wholesale trade have 15% or more of their workforce without any qualifications. Within Textiles and clothing nearly one third (28%) of the workforce has no qualifications.

**Table 13: Qualifications by 27 Sectors**

	None	S/NVQ 1	S/NVQ 2	S/NVQ 3	S/NVQ 4	S/NVQ 5
Whole economy	10	9	28	22	24	6
Agriculture	23	12	30	20	13	2
Mining and quarrying	6	8	26	23	28	9
Food, drink and tobacco	17	17	30	19	14	2
Textiles and clothing	28	11	31	17	11	2
Wood and paper	17	12	31	24	12	3
Publishing, and printing	8	8	27	26	24	5
Computing and related	2	5	17	19	46	12
Education	6	7	16	11	38	22
Health and social work	8	10	25	14	36	7
Professional and other business activities nec	8	8	23	17	35	8
Electricity, gas and water	5	5	24	27	32	6
Public administration and defence	5	6	28	24	30	7
Real estate, renting and research and development	7	9	27	20	29	7
Financial services	3	6	32	27	27	5
Machinery, electrical and optical equipment	11	8	27	25	25	4
Community, social and personal services	10	8	29	25	23	6
Chemicals and non metallic minerals	13	11	27	21	22	6
Transport equipment	11	10	26	28	22	3
Communications	13	10	32	23	18	3
Wholesale trade	16	13	33	20	15	2
Metals and metal goods	14	11	29	29	15	2
Manufacturing nes & recycling	19	12	29	24	13	1
Transport equipment	12	16	35	22	13	1
Construction	12	9	32	33	12	1
Retail trade	16	11	37	23	11	1
Hotels and restaurants	16	14	34	25	10	1
Sale, maintenance and repair of motor vehicles	13	9	35	33	7	0

Source: SSSA (2004b)

**Figure 12: Highest Qualifications by Sector**



Source: SSSA (2004b)

Data is also available for highest qualification by SSC footprint, see Table 14 and Figure 13. Four SSC's stand out as having a high proportion of employees in their footprint that are qualified to **level 4 or 5**; Lifelong Learning (64%), Skills for Health (52%), e-skills UK (50%) and Creative and Cultural Industries (50%). This compares to the average of 50% for the entire UK workforce. Lifelong Learning has almost one third of its workforce qualified to level 5. Six SSCs cover employees that have noticeably fewer qualifications at levels 4 and 5. Skillsfast-uk, SummitSkills, People 1<sup>st</sup>, Skills for Logistics, Skillsmart and AutomotiveSkills have less than 15% of their employees within their footprint qualified to this level.

SummitSkills, ConstructionSkills and AutomotiveSkills each have 30% or more of the workforce within their footprint qualified to **level 3**. Lifelong Learning (13%) and Skills for Health (12%) are the only two SSCs with less than 15% of their workforce in their footprints qualified to level 3. The average for the UK workforce is 22%.

At 67% of employees within businesses covered by Skillsfast-uk and Skills for Logistics qualified to **level 2 and below**, these two SSCs represent the lowest qualified workforces. Another six SSCs have 60% or more of workers in their footprints qualified to level 2 or below (Improve, Skillsmart, People 1<sup>st</sup>, Lantra, GoSkills and Assest Skills). Six SSCs also represent employers whose workforces have a high proportion of people without qualifications. Fifteen per cent or more of employers' workforces covered by Skills for Logistics, Skillsmart, Improve, Asset Skills, Lantra and Skillsfast-uk lack any qualifications.

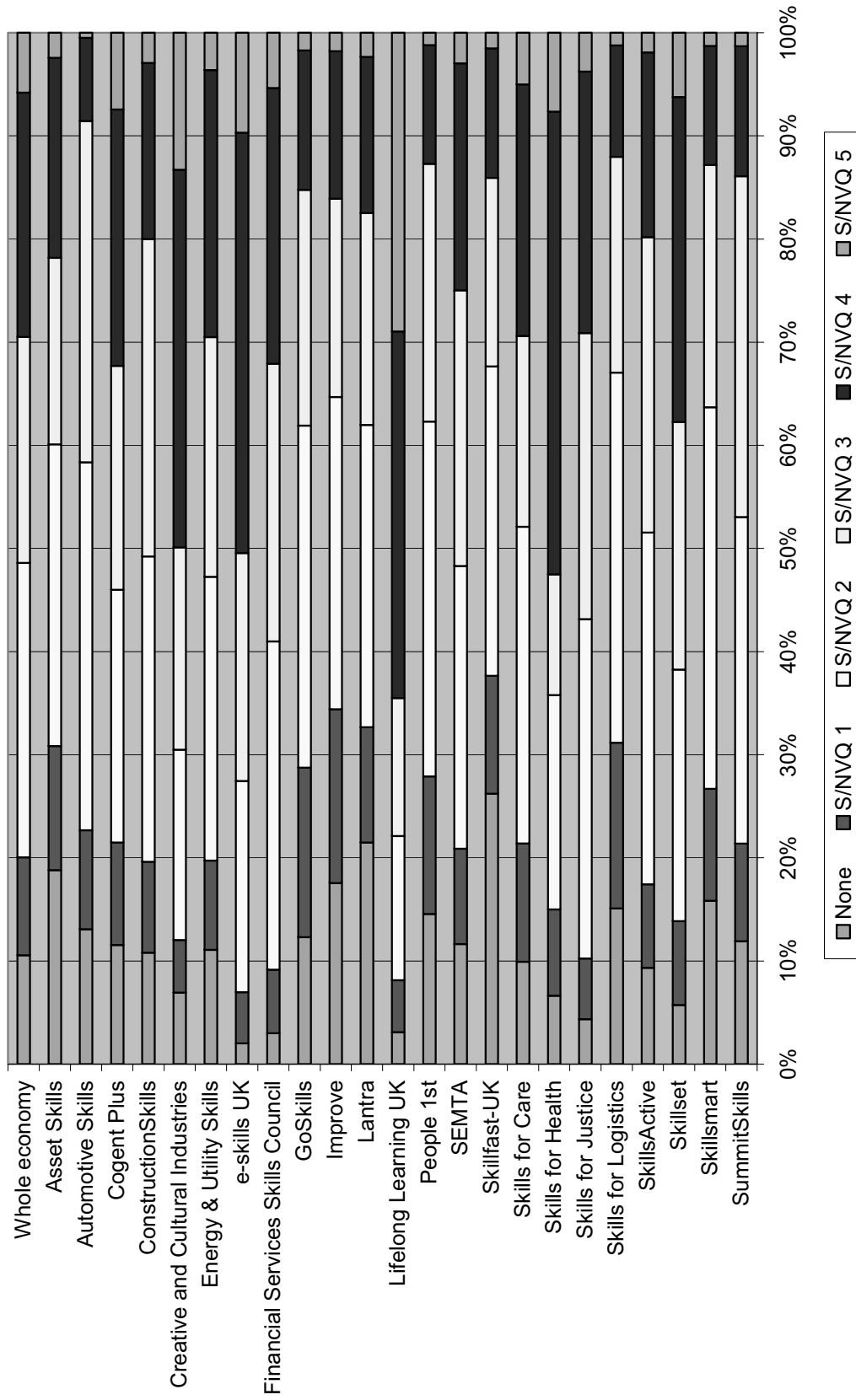
**Table 14: Qualifications by SSC<sup>3</sup>**

	None	S/NVQ 1	S/NVQ 2	S/NVQ 3	S/NVQ 4	S/NVQ 5
Whole economy	10	9	28	22	24	6
Asset Skills	19	12	29	18	19	2
Automotive Skills	13	9	35	33	8	0
Cogent Plus	11	10	24	22	25	7
ConstructionSkills	11	9	29	31	17	3
Creative and Cultural Industries	7	5	18	20	36	13
Energy & Utility Skills	11	9	27	23	26	4
e-skills UK	2	5	20	22	41	10
Financial Services Skills Council	3	6	32	27	27	5
GoSkills	12	16	33	23	13	2
Improve	17	17	30	19	14	2
Lantra	21	11	29	20	15	2
Lifelong Learning UK	3	5	14	13	35	29
People 1st	14	13	34	25	11	1
SEMTA	12	9	27	26	22	3
Skillfast-UK	26	11	30	18	12	1
Skills for Social Care, Children and Young People	10	11	31	18	24	5
Skills for Health	7	8	21	12	45	8
Skills for Justice	4	6	33	28	25	4
Skills for Logistics	15	16	36	21	11	1
SkillsActive	9	8	34	28	18	2
Skillset	6	8	24	24	31	6
Skillsmart	16	11	37	23	11	1
SummitSkills	12	9	31	33	12	1

Source: SSDA (2004b)

<sup>3</sup> Data for Proskills is not available

Figure 13: Highest Qualifications by SSC<sup>4</sup>



Source: SSDA (2004b)

<sup>4</sup> Data for Proskills is not available

## **Socio-economic Variations**

The distribution of qualifications within the UK workforce varies considerably by socio-economic group. These are given in Table 15.

It is evident from the Table 15 that even low levels of qualification enhance the likelihood of employment (and also returns to the individual (Dearden *et al.*, 2000a)). Compared to those in employment, the economically inactive or unemployed are up to three times more likely to have no qualifications. The converse is that those with higher levels of qualifications are much more likely to be employed.

It is the oldest members of the workforce that are most likely to have no or few qualifications. Nearly 20% of those aged over 50 have no qualifications compared to less than one in ten of those aged between 25 and 50. This contributes to the cohort effect where by the average level of qualification in the workforce is rising as an increasing proportion of entrants to the labour market come from higher education with higher qualifications, and older less qualified workers exit the labour market.

There is little difference between the proportions of white and non-white members of the workforce without qualifications or with level 1 qualifications. However, at levels 2 and 3 the gap starts to widen between whites and non whites in favour of the former, although the gaps remains relatively small (2% at level 2 and 4% at level 3). Interestingly, higher proportions of the non white workforce hold qualifications than white at levels 4 and 5 . When using a white/non-white distinction for ethnicity as Table 15 does, it is important to recognise that there is in fact greater variation within minority groups in the workforce in terms of the qualifications they hold than between whites and non-whites. Those of Bangladeshi, Pakistani and Afro Caribbean heritage are much less likely to hold qualifications than those of black African or Indian heritage, for example. Interestingly too, people of non-white ethnic origin were far more likely to be studying towards a qualification than people of white ethnic origin; 27% compared to 17% (NS/DfES, 2003).



**Table 15: Distribution of Qualifications Within UK Workforce by Socio-economic Characteristics**

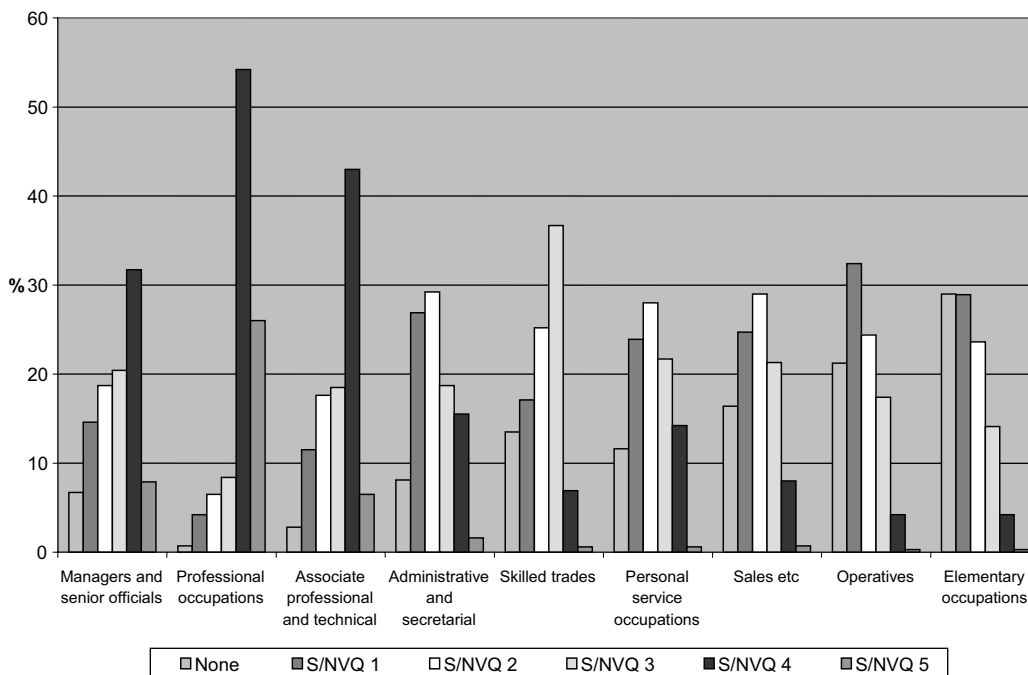
	No qualifications	NVQ 1	NVQ 2	NVQ 3	NVQ 4	NVQ 5	Total
<b>Economic status</b>							
Economically active	11.7	19.6	21.6	19.3	22.1	5.6	100
In employment	11.3	19.3	21.6	19.5	22.6	5.7	100
ILO unemployed	20.8	26.8	22.0	15.3	12.4	2.7	100
Inactive	30.9	20.1	19.6	17.1	10.4	1.9	100
All of working age	15.7	19.7	21.2	18.8	19.7	4.8	100
<b>For those economically active</b>							
<b>Age</b>							
16-24	8.8	20.0	30.8	27.0	12.2	1.2	100
25-49	8.7	20.6	20.2	18.2	25.5	6.8	100
50-59	18.8	17.8	19.6	17.7	20.8	5.4	100
60+	25.7	15.2	20.8	17.3	16.3	4.8	100
<b>Gender</b>							
Male	11.6	17.8	20.5	22.7	21.5	5.9	100
Female	11.9	22.0	23.0	15.1	22.9	5.1	100
<b>Ethnicity</b>							
White	11.7	19.6	21.8	19.6	21.9	5.4	100
Non-white	12.1	20.6	19.8	15.4	25.0	7.1	100
<b>Occupation (SOC 2000)</b>							
Managers and senior officials	6.7	14.6	18.7	20.4	31.7	7.9	100
Professional occupations	0.7	4.2	6.5	8.4	54.2	26.0	100
Associate professional and technical	2.8	11.5	17.6	18.5	43.0	6.5	100
Administrative and secretarial	8.1	26.9	29.2	18.7	15.5	1.6	100
Skilled trades	13.5	17.1	25.2	36.7	6.9	0.6	100
Personal service occupations	11.6	23.9	28.0	21.7	14.2	0.6	100
Sales etc	16.4	24.7	29.0	21.3	8.0	0.7	100
Operatives	21.2	32.4	24.4	17.4	4.2	0.3	100
Elementary occupations	29.0	28.9	23.6	14.1	4.2	0.3	100

Source: Labour Force Survey (2003)

## Occupational Variations

The distribution of qualifications by occupation reveals further inequalities. These are illustrated by Figure 14. Within Professional occupations 80% of the workforce are qualified to level 4 and above compared to 40% of Managers and senior officials and 50% of associate professional and technical occupations. For Administrative and secretarial occupations and Personal service occupations this proportion drops to 17% and 15% respectively. One matter of concern is the 21% of managers qualified to level 2 and below and the 7% without qualifications. This may be partly a function of the number of self-employed within this occupational group.

**Figure 14: The Distribution of Qualifications by Occupation**



Source: Labour Force Survey (2003)

Those occupations which have high proportions of their workforce with qualifications at level 2 or below are Administrative and secretarial (64%), Skilled trades (56%), Personal services (64%) Sales (70%), Operatives (78%) and Elementary (82%). For skilled trades there is a significant proportion (37%) of all workers qualified to level 3. Managers, Professionals and Associate professionals occupations are by far the occupations with the most highly qualified workforces. More than half of all Professionals are qualified to level 4 and more than one quarter to level 5.

Whilst those in 'low skilled' jobs may not necessarily require high level qualifications to perform well, there is a need for their skills to be maintained and updated to keep pace with new forms of production and working practices that create demands for new skills and behaviours (Bloom *et al.*, 2004). This can be provided through on or off-the-job training. However, the appropriateness of education, particularly that gained at school, for the workplace is questioned by Bloom *et al.* (2004: 26). A greater emphasis should

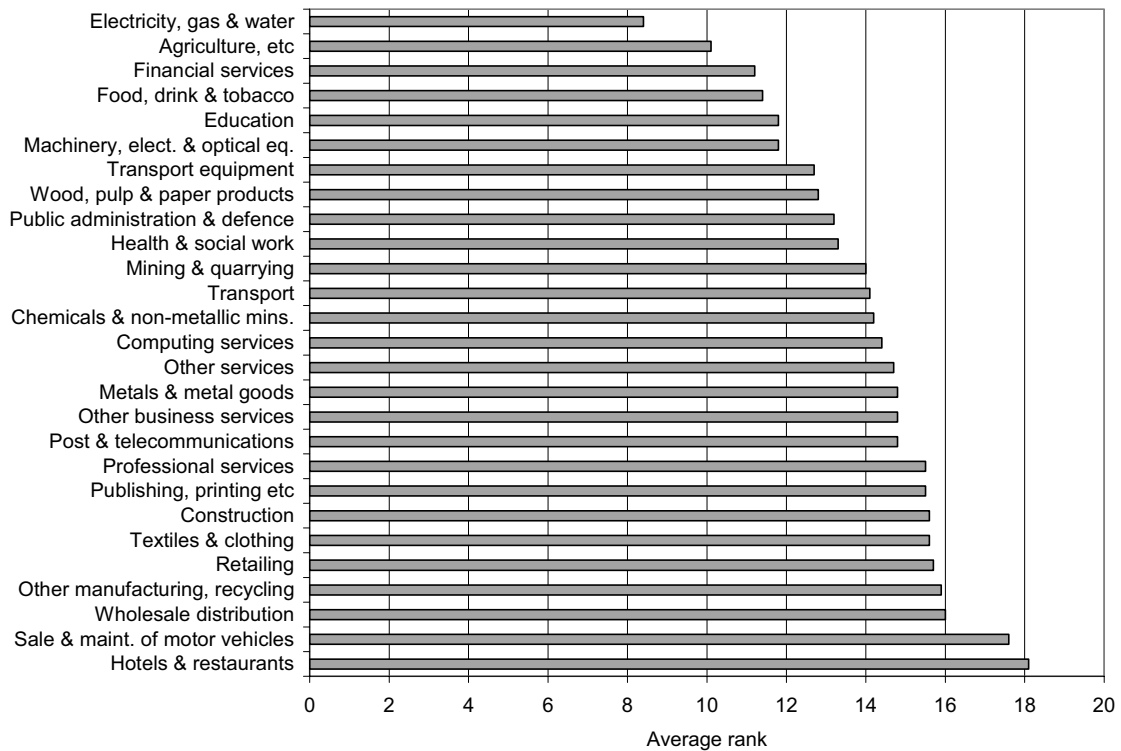
be placed on embedding tacit knowledge acquired in everyday experience and applied in context as opposed to formal knowledge. McIntosh (2003) noted that those in lower skilled occupations seem to be less interested in training and those in unskilled occupations do not see the relevance of training because they do not use the skills at work.

This is reinforced by the Work Skills in Britain report (Felstead *et al.*, 2002). By measuring generic skills as well as the qualifications held by the workforce the report serves to show the incidence of over qualification in more precise terms. Despite a third of employees in the labour market possibly being over qualified in that they hold higher than necessary qualifications for their job, over half state that their skill levels are matched to their position. This supports the fact that the skills base is equally as important as qualifications.

Low skilled occupations are not the only occupations to experience such problems. The abilities of managers are amongst the most problematic of employers' skills gaps (see section on international comparisons below) but do not occur out of proportion to the occupation's share of employment (see section on skills deficiencies) Forty percent of managers and senior officials are qualified to NVQ level 4 and above but 21% are qualified to level 1 or have no qualifications at all (Labour Force Survey, 2003). One in four employers report insufficient management skills amongst their managers (Hogarth and Wilson, 2002) and the cause of this is likely to be a lack of training (Keep and Westwood, 2002; Bloom *et al.* 2004). Bloom *et al.* note that although the provision of training has improved and there has been an increase in the number of qualifications awarded by business schools, the most innovative forms of training are available only to a small number of high level managers. Furthermore, at the present rates it would take 500 years to qualify the UK's stock of existing managers with MBAs.

An important contribution to knowledge of skill levels amongst management occupations has been made in a report to the SSDA by Bosworth and Wilson (2004). Whilst evidence documenting changes in management skills has been increasing, it has been generalised across the economy, ignoring the extent to which they impact on individual sectors. Until now it has not been possible to identify those sectors experiencing the most significant challenges in terms of current and future management skills and training requirements. Figure 15 illustrates the degree to which the 27 sectors are experiencing management skill problems. This has been developed using a range of key economic and labour market indicators. Sectors are ranked from 'least problematic' (Electricity, gas and water) to 'most problematic' (Hotels and restaurants).

**Figure 15: Management Skill Problems by Sector**



Source: Bosworth and Wilson (2004).

Two sectors stand out as having the most pressing management skill priorities: Hotels and restaurants and Sale and maintenance of motor vehicles. The former is one of the most significant sectors in employment terms, accounting for over 6 per cent of UK employment, and is predicted to experience rapid growth throughout the next decade. The sector faces significant management skills and development needs, as managers constitute over a third of total employment in the sector. These needs will only increase as the sector is projected to grow as a consequence of replacement demand, with 173,000 additional managers required between 2002 and 2012 (Wilson *et al.*, 2004). Therefore, there is a need for the sector to offer management training, advice and development dedicated to the needs of small businesses and the self-employed in order to counter the high business failure rate and enhance entrepreneurial dynamism.

At 20% the proportion of managers qualified to level 4 and above is lower than the all industry average of 39%. However, the proportion of establishments in the sector providing management training (31%) is slightly above the all industry average of 28%. However, the high levels of staff turnover within the sector suggest that a significant proportion of this training could be induction training, which by implication places increased demands on the capabilities of existing managers as they have to train new staff. Despite above average levels of management training, establishments within the sector report significant management skill gaps, with over 10 per cent of establishments reporting a lack of proficiency amongst managers. This indicates that the sector needs to prioritise management training and enhance qualification levels in order to meet the increasing demand for managerial skills.

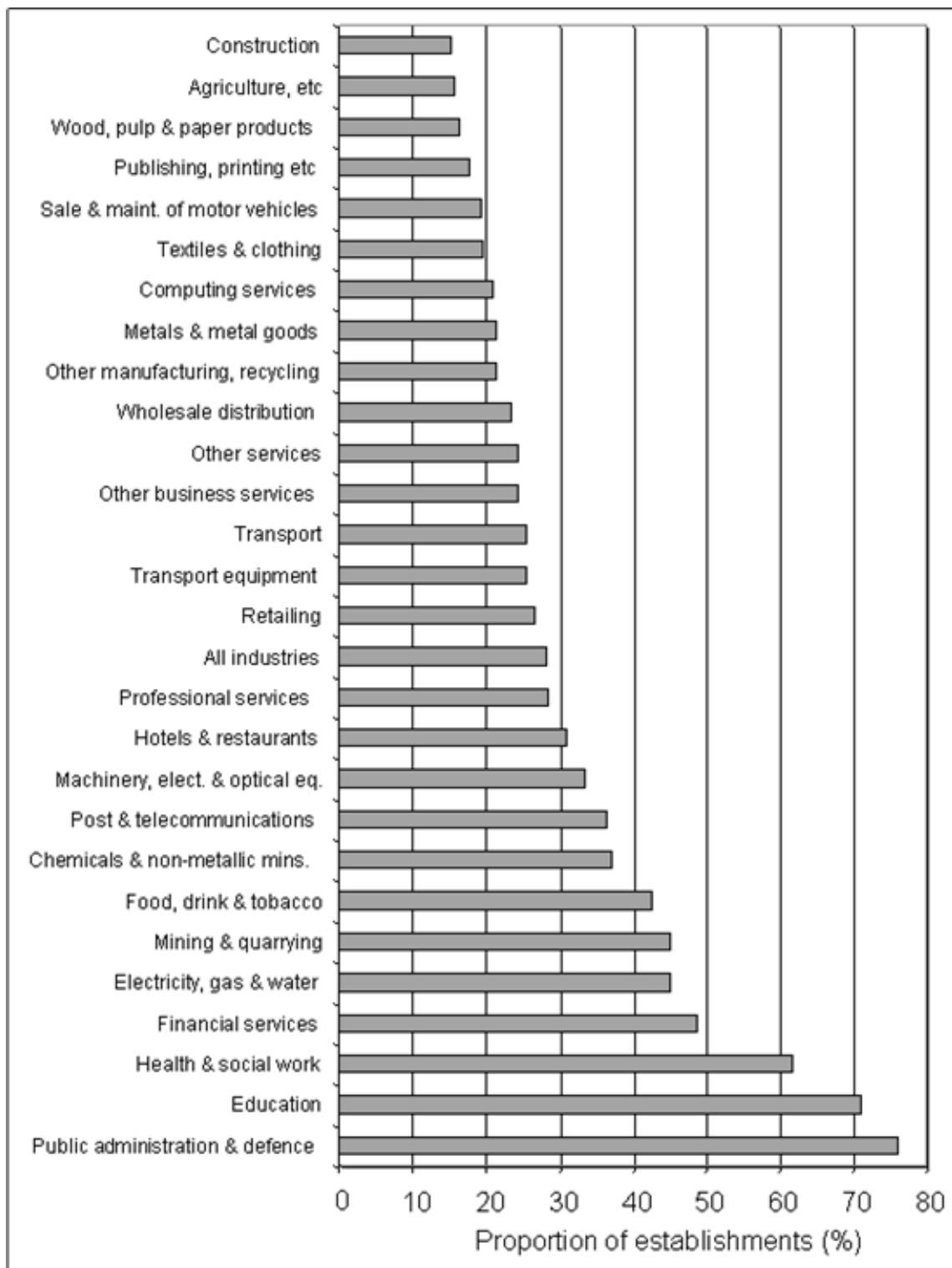
Within the Sale and maintenance of motor vehicles, current provision of management training in the sector would appear insufficient, with only 19 per cent of establishments providing training to managers – below the all industry average of 30 per cent. However, whilst 25 per cent of corporate managers report being in receipt of training, only 11 per cent of managers and proprietors do. This is a particular problem given that a third of all managers within the sector fall within the managers and proprietors category. In addition, only 14 per cent of managers are qualified to level 4 and above, again well below the 39 per cent figure for all industries.

Considering training across all sectors, a significant proportion of establishments have provided training to their managers over the past 12 months. Based on data from NESS 2003, Figure 16 illustrates the sectoral variations in proportion of establishments that provide training to their managers. On average just over 28 per cent of establishments report that managers received some training over the past three months. Construction, Agriculture, Wood and paper, Publishing, Sale and maintenance of motor vehicles and Textiles and clothing are conspicuous for their low levels of training provided to managers. High levels of training (over 60% of establishments in the sector) are offered to Managers in Health and social work, Education and Public administration.

There are marked differences between corporate managers and managers & proprietors, with the former much more likely to receive training. Variations across sectors are large, partly due to different mixes of the two managerial categories but also due to variations in the average size of establishment (larger establishments are more likely to offer some form of training). These patterns are repeated if the focus is on establishments rather than individuals.

The Sector Management Priorities report (Bosworth and Wilson 2004) identified several relationships between variables in the link between training and skills problems. Managers without qualifications are significantly less likely to receive training. The higher the proportion of managers with S/NVQ4 or higher in a sector, the more likely managers in that sector are likely to receive training. Training is greater the higher the management vacancy ratio and the greater the reported incidence of skills gaps. Further analysis also shows a positive link between training, skills gaps and the proportion of managers with S/NVQ4 or higher, i.e. that training is greater the higher the qualifications of the managerial workforce).

**Figure 16: Proportion of Establishments Providing Training to Managers**



Source: Bosworth and Wilson (2004).

Whilst the provision of training to managers in the UK is highly variable, Keep and Westwood (2002) demonstrate that managers in the UK receive less training compared

to their counterparts in the USA, Japan, Germany and France, (see Table 16). Managers in the UK appear poorly trained compared to their counterparts in the US, Japan, Germany and France. They have the lowest average terminal education age and the least number of days spent on off and on-the-job training.

**Table 16: Training of Managers in the UK**

	UK	USA	Japan	Germany	France
Average terminal education age	19.5	22	21	21	22
Graduate (%)	49	74	78	72	61
Off-the-job training (days)	4	7	5.5	5.5	6
On-the-job training (days)	4.5	8	6.5	6.5	6

Source: Keep and Westwood (2002)

Improving the skills of managers therefore has the potential to increase the competitiveness of the UK economy. Combined with the projection that the number of managerial and senior official occupations will increase by more than half a million by 2012 (Wilson *et al.*, 2004) the need for management training will increase and become an even more salient issue in the drive to raise productivity.

### International Comparisons of Skill Levels

It is essential to place the skills of the UK workforce in the context of the skills available in other major countries, as the relative position of the UK in skills acquisition is of considerable importance to international competitiveness and productivity performance. Figure 17 allows a comparison of OECD countries based on the educational attainment of their adult population as represented by ISCED levels 1-5. The countries are ranked by the percentage of each country's adult population achieving qualifications equivalent to either ISCED level 1 or 2. Countries with a higher proportion of such poorly qualified individuals are placed on the left of the graph and countries with a higher proportion of highly qualified individuals are placed on the right.

It can be seen that Portugal and Turkey have the highest percentage achieving only levels 1 and 2 combined (both 91%). This is due in both cases to a very high proportion of the population holding only level 1 as their highest qualification (80% and 75% respectively). These two countries have a correspondingly low proportion of their populations qualified to level 4 and above. These two countries are therefore, on this basis, the most 'skill poor' of all OECD countries. Mexico and Spain exhibit a broadly similar distribution of qualifications within their populations to that of Portugal and Turkey, though in the case of Spain there is a much higher population of the adult population qualified to level 4 and above. The US and Canada have the lowest proportion of their populations qualified to level 2 and below (63% and 46% respectively) and the highest proportions qualified to level 4 and above (37% and 41% respectively). These two countries can therefore be considered, on this basis, as the most highly qualified or 'skills rich' of all OECD countries.

The UK is ranked 15<sup>th</sup> out of the 30 countries, with some 74% of its adult population possessing only level 2 or below. This is similar to, for example, Germany (73%) and France (77%) though the UK has one of the lowest proportions of any population qualified to level 1 (17%). The proportion qualified to level 2 is inferior, for example, to Australia, Sweden, Ireland and New Zealand.

Educational attainment among a country's economically active population is generally higher than amongst its adult population as a whole. It is the educational attainment of those participating in the labour market which is more likely to affect a country's economic performance. Figure 18 shows the highest qualification of those participating in the labour market (i.e. those in work or actively seeking work) for each OECD country.

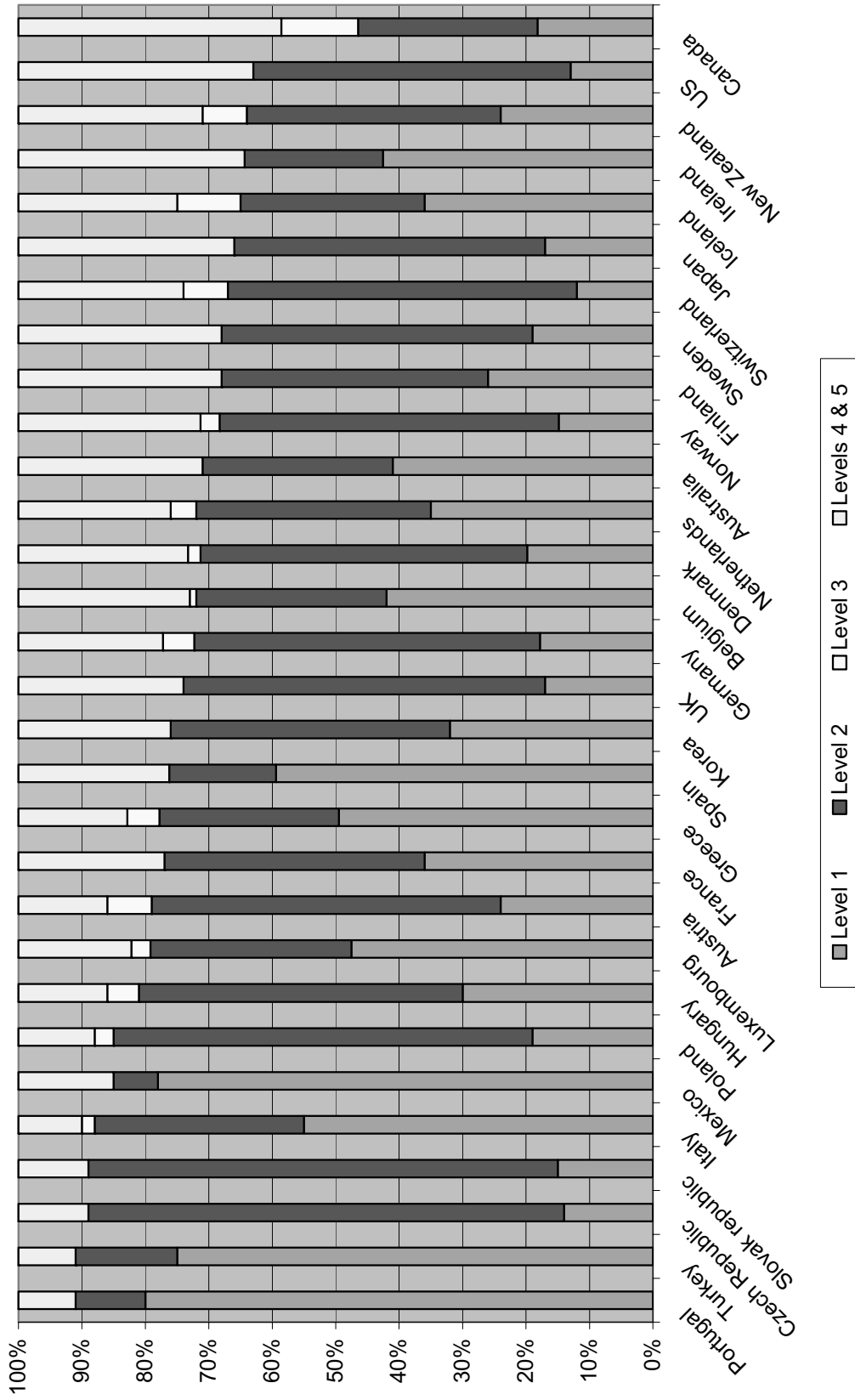
The UK retains its position (14<sup>th</sup> of 30) relative to other OECD countries based on the proportion of the economically active population qualified to level 2 or below. However, there are some notable differences between Figure 17 and Figure 18. For example, Germany has a similar proportion of its adult population qualified to level 2 and below to the UK, however, the proportion of Germany's economically active population that is qualified to level 2 and below is lower than that for the UK. In other words, a lower proportion of Germany's workforce is made up of individuals qualified to level 2 and below, leaving a higher proportion that are qualified to a combination of levels 3, 4 and 5. Thus, Germany's workforce is better qualified than the UK's workforce, despite the population of each country being similarly qualified.

With the 2<sup>nd</sup> most highly qualified workforce of all OECD countries in Figure 18, Ireland's workforce is 'better qualified' than that of the UK as are those in , for example, Finland, Sweden, Canada and the USA.

When considering the percentage of the youth population participating in Education the UK performs badly relative to other countries if younger age groups are compared (OECD, 2002). For ages 15-19, the OECD average is 80% of a country's population participating in education. However, the UK is ranked 24<sup>th</sup> of 27 OECD countries with 70% of the population in education. At 34% of 20-24 year olds in education, the UK is ranked in 20<sup>th</sup> place with an OECD average of 37%. However, the situation improves for 25-29 year olds. With an OECD average of 13%, the UK's participation rate of 13% positions the it 11<sup>th</sup> out of 27 OECD countries for this age group.

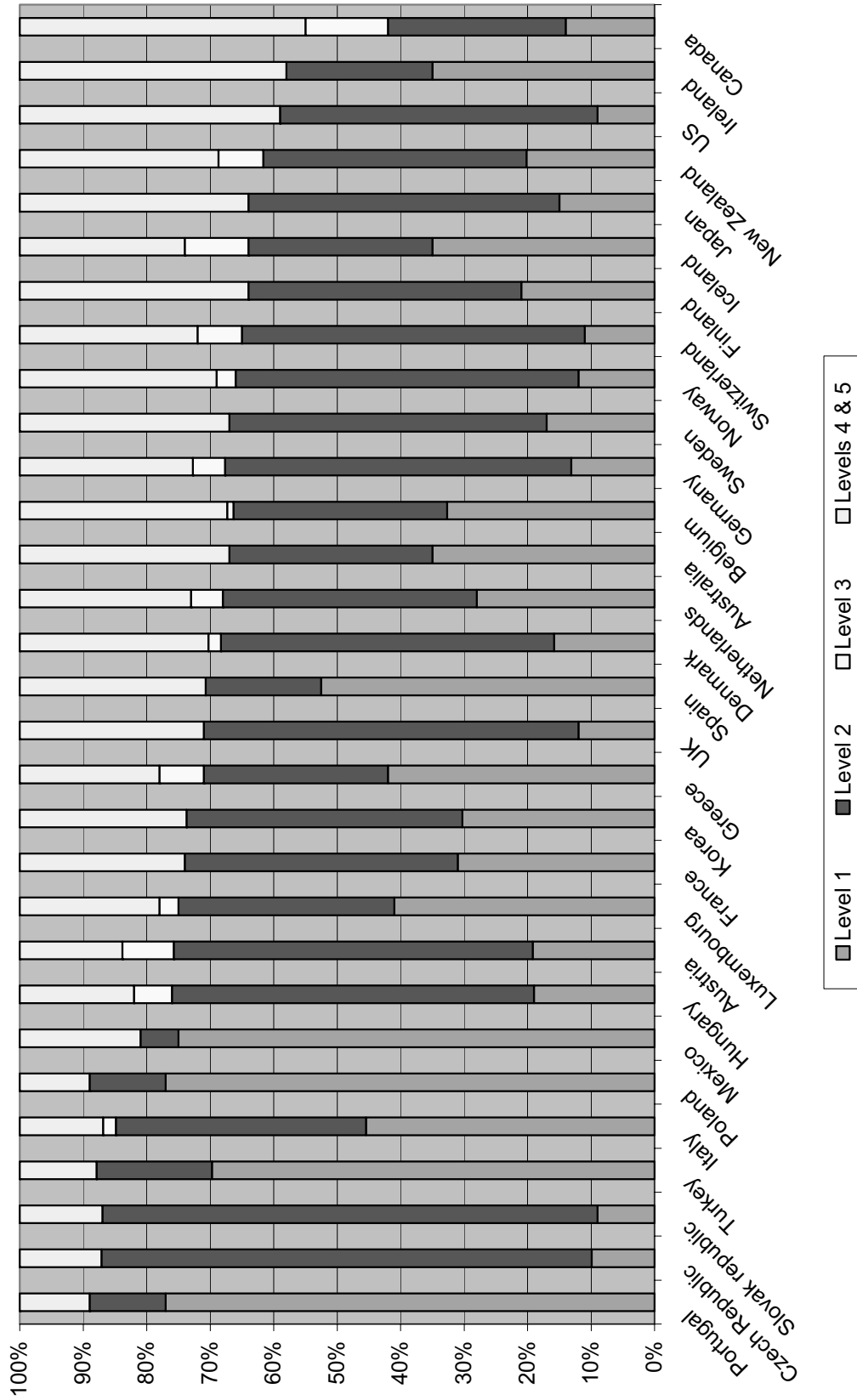


Figure 17: Highest Level of Qualification of Adult Population Aged 25-64 (2001)



Source: OECD (2002)

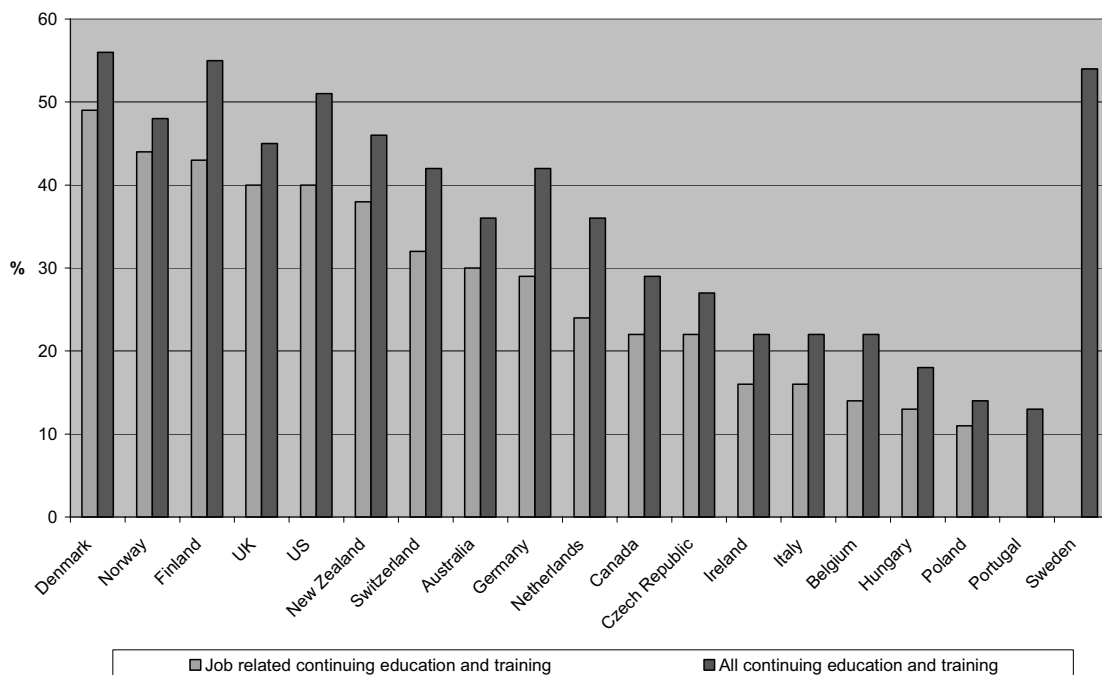
Figure 18: Highest Qualification of the Economically Active Aged 25-64 (2001)



Source: OECD (2002)

Whilst the UK does not have a particularly highly qualified labour force compared to other OECD countries it does display high levels of job related training and performs well above the OECD average. Figure 19 compares the participation rate in continuing education and training, and job related education and training of those OECD countries with the available data. The participation rate of job related training in the UK is equal to that of the US (40%) and above that, for example, of Germany (29%), Canada (22%) and Ireland (16%). Only Finland, Norway and Denmark have a higher rate of participation in job related training than the UK.

**Figure 19: Participation Rate in Job Related and all Continuing Education and Training of Those Aged 25-64.**



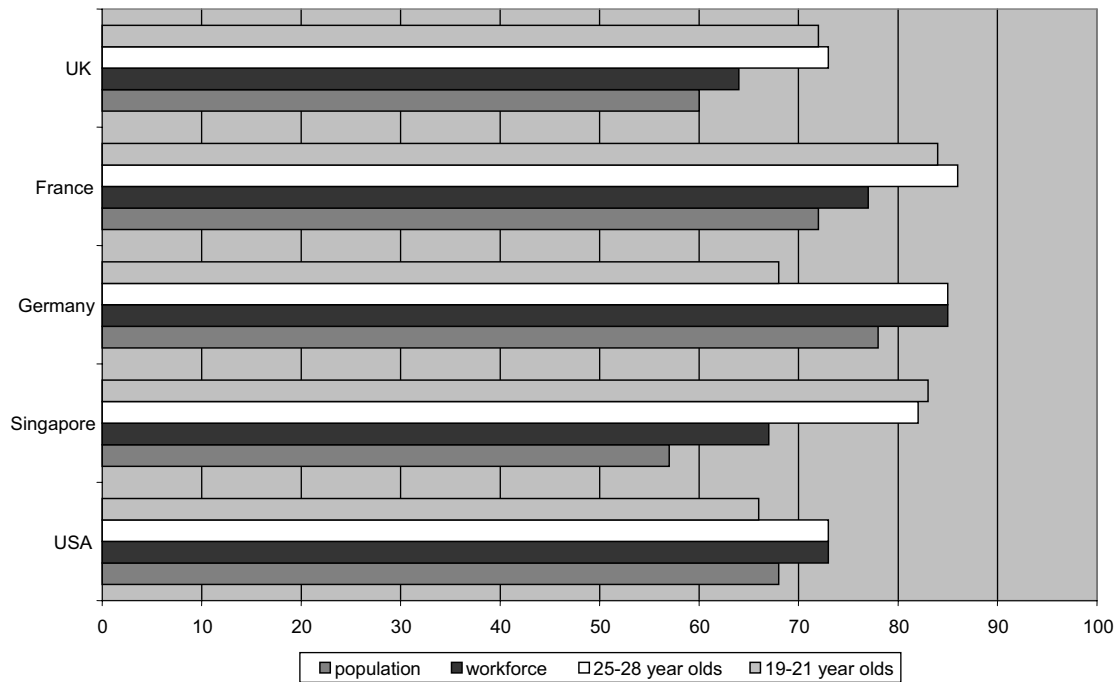
Source: OECD (2002).

With around 45% of the population aged 25-64 participating in continuing education and job related training, the UK is ranked 7th out of the 19 OECD countries with available data, for all continuing education and job related training (see Figure 19).

A recently published study (Steedman *et al.*, 2004) comparing qualification levels in the UK with Germany, France the US and Singapore, identifies the UK as having the lowest proportion of its workforce qualified to level 2 and above, see Figure 20. At 64% the UK is similar to Singapore (67%) but behind the US (73%), France (77%) and Germany (85%). Whilst the UK is behind, its growth in the proportion of those holding qualifications at level 2 and above is increasing the fastest at 2.7% per year compared to 1.3% for France and 0.8% for Germany. Much of this growth is due to young people being better qualified. The UK's performance improves if higher qualifications are considered. For example, at level 3 and above the UK at 44% has a higher proportion than France and Singapore (41% and 39% respectively). At level 4 and above, the UK's

performance is further enhanced with 25% being qualified to this standard. This is second only to the US with 34%.

**Figure 20: Comparison of Qualifications at Level 2 and Above**



Source: Steedman *et al.* (2004)

Although the UK has the lowest proportion of its workforce qualified to level 2 of the five countries compared by Steedman *et al.*, it is catching up the fastest. Average annual growth rates of qualifications at level 2 and above in the UK are greater for 25-28 year olds, the whole workforce and the population than any of the other four countries compared, see Table 17. The only exception is the rate for 19-21 years in the UK which is second only to France.

**Table 17: Average Annual Growth Rates of Qualifications at Level 2 and Above for 1998-2003**

	UK	France	Germany	Singapore	US
19-21 year olds	0.84	0.91	0.38	n/a	-0.03
25-28 year olds	3.37	0.89	-0.3	n/a	-0.46
Workforce	2.09	1.34	0	n/a	0.56
Population	2.25	1.44	0	n/a	0.54

Source: Steedman *et al.* (2004)

## Working Smarter

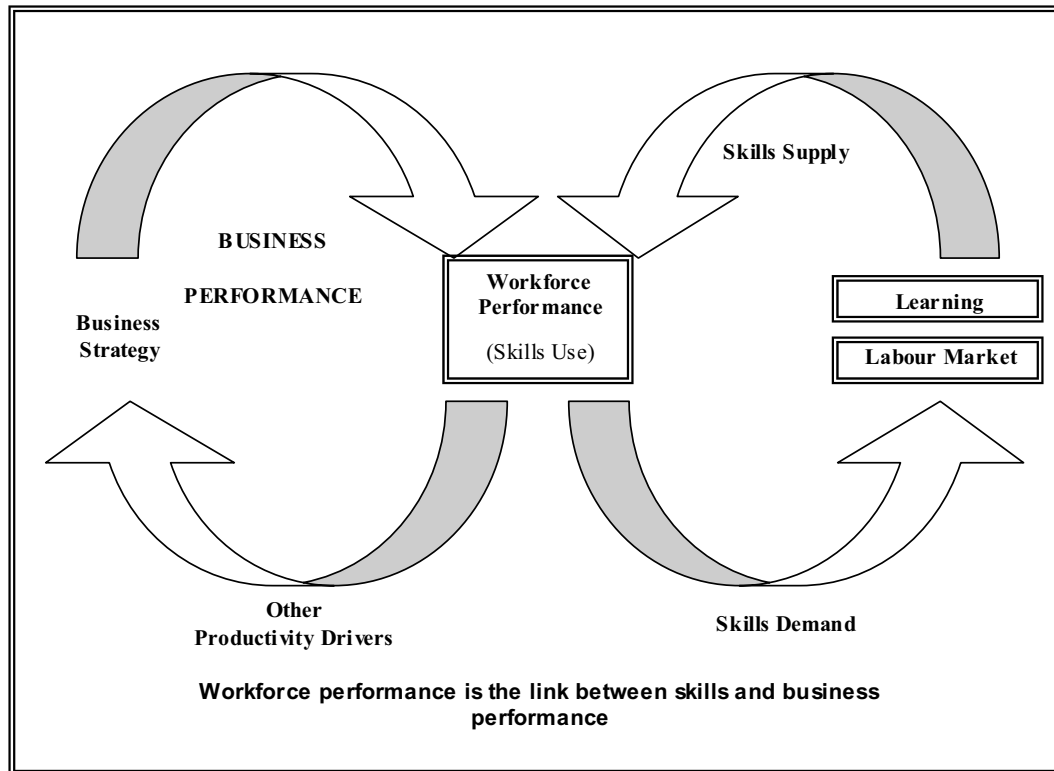
This section widens our focus from the relationship between skills acquisition and availability and productivity. It looks at how organisational performance is affected by a wider array of workplace changes and human resource management (HRM) practices, of which skills is one element. It's concern is with the efficient and effective use of the workforce; quality work, not more work; working smarter not harder, to produce services and products that have a higher value and contribute to a increase in GDP/hour. It is about how we work for maximum organisational effectiveness. It is about how we use the skills we have in the workplace.

Green *et al.* (2003) find that higher value products are associated with higher skill levels and skill needs. As we have seen in the Connecting skills and productivity section of the Evidence base, up-skilling the workforce can positively affect productivity (Tamkin *et al.*, 2004; Haskel and Hawkes, 2003; Haskel *et al.*, 2003; Mason and Wilson, 2003; Reed and van Reenan, 2000), although Keep *et al.* (2002) suggest such an effect is limited. What is agreed though is that enhanced skills are likely to have a greater effect on productivity when 'bundled' together with changes in working and HRM practices, concerning the way in which skills are deployed and utilised (Tamkin *et al.*, 2004; Becker and Huselid, 1998; Becker *et al.*, 2001). It is these high performance working practices (HPWPs) and the way that they are combined in context, that produce the overall outcome of improved organisational performance or the high performance work organisation (HPWO).

The strategic importance of the workforce development and its contribution to organisational performance is growing. Lowering costs and raising output may, in the short-term, have a dramatic effect on levels of productivity but are likely to have little to do with the long term competitiveness of business (Harding *et al.*, 2003). Whilst an emphasis on cost and efficiency is needed, further performance gains can be made by increasing revenue, differentiating from competitors and gaining market share. Furthermore, the status of the UK economy as the 4<sup>th</sup> largest in the World has been achieved with the highest working hours in the EU. Employment in the UK is also at its highest for 30 years, leaving little room for further economic gains at the national level from increased employment rates. With little slack in the economy, businesses and public services must therefore look to what people produce and the value created by those outputs to close the productivity gap, raise organisational, and in turn economic performance.

Increasing workforce performance through high quality leadership and management, developing people's skills and improving work organisation and business processes, can increase the range of options available to employers in developing their business strategies and creating more high performing organisations. Figure 21 illustrates the role of workforce performance in the link between skills and business performance.

**Figure 21: The Virtuous Circle: The Link Between Skills and Business Performance**



### High Performance Working Practices

The range of activities which are concerned with working smarter are often collectively referred to as high performance working practices (HPWPs). There is no definitive list of practices that constitute high performance working and in some cases there is disagreement about what constitutes HPWPs (Lloyd and Payne, 2004; Tamkin *et al.*, 2004; EEF/CIPD, 2003). From this apparent ambiguity though springs one of the attractions and strengths of high performance working. This is its flexibility to incorporate different practices to meet the varying needs of individual organisations (EEF/CIPD, 2003). However, this ambiguity leads to problems of definition. Without a common understanding, it can be difficult to distinguish between HPWOs and average performing organisations.

Whilst there is no agreement on what precise combination of practices constitute the 'perfect system' (assuming there is a perfect system and that the precise combination of practices can be stipulated), there is a shared understanding about the general effects and that the total effect is greater than the sum of the individual parts or practices. Ashton and Sung (2002) follow Guest *et al.* (2000) in identifying 18 HPWPs (see Table 18).

**Table 18: High Performance Working Practices**

1. Realistic job previews
2. Psychometric tests for selection
3. Well developed induction training
4. Provision of extensive training for experienced employees
5. Regular appraisals
6. Regular feedback on performance from multiple sources
7. Individual performance related pay
8. Profit related bonuses
9. Flexible job descriptions
10. Multi-skilling
11. Presence of work improvement teams
12. Presence of problem solving groups
13. Information provided on firm's business plan
14. Information provided on firm's performance targets
15. No compulsory redundancies
16. Avoidance of voluntary redundancies
17. Commitment to single status
18. Harmonised holiday entitlement

The list of HPWPs in Table 18 is not exhaustive or definitive and other research (eg Becker *et al.*, 2001) has identified many more components of high performance working (see also Bassi *et al* 2003). The EEF/CIPD (2003) have grouped these 18 high performance practices under four themes. The four themes are:

1. employee autonomy and involvement in decision making
2. support for employee performance
3. rewards for performance
4. the sharing of information and knowledge

Whilst the EEF/CIPD work is primarily concerned with manufacturing many of the principles on which high performance working is founded are transferable to other sectors. These underlying dimensions are achieved by introducing sets or bundles of practices, rather than one particular practice on its own. The end result is a new way of organising work that breaks with traditions of 'command and control':

The High Performance Workplace encourages the development of workers' skills and taps into their emotional capital and tacit knowledge in order to enhance organisational performance. In addition to developing technical skills and multi-skilling, the need for ongoing problem solving, communication and teamworking requires the continuous exercise of discretion and day-to-day learning by employees. This environment of self-confidence, flexibility and continuous learning is at the heart of the performance impact of the [high performance working] approach (EEF/CIPD, 2003: p. 8).

These themes were evident in the way that manufacturing firms conducted their selection, recruitment, induction and training activities. Firms also demonstrated comprehensive and coherent performance management systems, the use of quality improvement teams, a workforce with flexible skills, job variety and responsibility,

teamworking, frequent and comprehensive communication with employees, competitive pay and conditions, performance related rewards and policies to maintain employees' work-life balance.

In Becker *et al.*'s. (2001) research, high performing firms made more use of knowledge management and business performance systems. Employees were viewed as being value adders or value creators in organisational processes. They also found that high performing firms have low rates of staff turnover and unionisation, although it is difficult to say whether these conditions are a contributory factor to the achievement of high performance or a result of it.

It is the complete combination of systems and how they inter-relate that is the key to performance enhancement within organisations (Becker *et al.*, 2001; Harding *et al.*, 2003). This leads Becker *et al.* (2001) to conclude that 'systems matter'. No matter how effective each individual system is in isolation, when combined and deployed in co-ordination with other systems within the organisation its effect can be multiplied.

Purcell *et al.*'s (2003) research for the CIPD into the people – performance link in organisations starts with the premise that human capital advantage is created by employing better people in organisations with better processes. It is the intangible assets such as culture, skill and competence, motivation and social interaction between people, teams and business units that are increasingly viewed as the source of strength in firms that are able to combine people and processes together (Purcell *et al.*, 2003). Purcell *et al.* (2003) propose that performance is a function of:

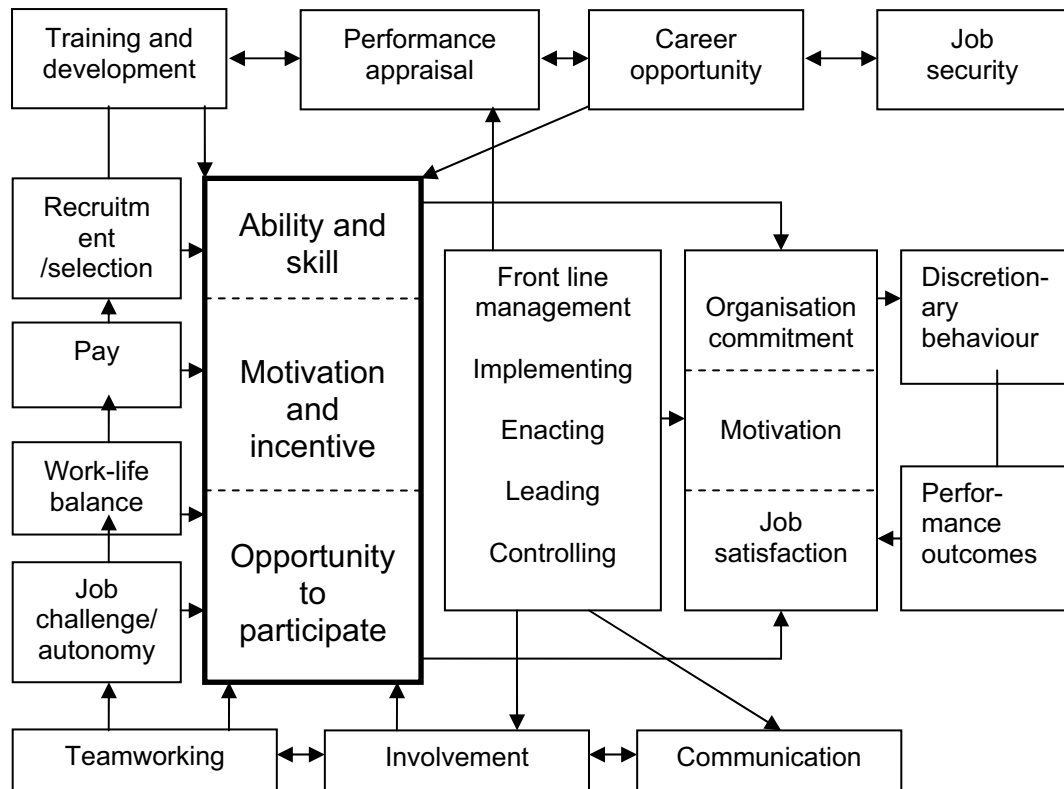
Ability + Motivation + Opportunity

For people to perform at high levels they must not only have the ability to do so but possess the necessary skills, experience and knowledge. They must also be motivated, finically and intrinsically, to work and work well. Moreover, in order to perform, employees must be given the opportunity to do so. The difficulty is finding the right mix of policies and practices for 'AMO' to be converted into action. Employers therefore need to have a basic level of 'AMO' policies in order to meet minimum industry standards for survival but more successful firms may have a more sophisticated approach to people that encourages discretionary effort in the psychological contract.

The psychological contract refers to the reciprocal expectations and obligations in the exchange between two parties (Bloom *et al.*, 2004), in this case the employer and employee. Discretionary effort refers to the additional effort dedicated by the employee to the performance of their work over and above the level expected of them by the psychological contract. Appelbaum *et al.* (2000) and Purcell *et al.* (2002) studied the links between HPWPs and company performance and emphasised the importance of such discretionary effort for successful firm performance. Every job contains both prescribed and discretionary elements with the latter dependent on the role occupant and their attitude. The link with performance is to encourage employees to act beyond their psychological contract and do more than they are formally required or prescribed. The links between employee attitude, discretionary behaviour and the operationalisation of HR practices are the core of the CIPD's research model and link HPWPs to performance. The model set out in Figure 22 has at its heart the AMO model outlined above.



**Figure 22: The People and Performance Model**



Source: Purcell *et al.* (2003)

For Harding *et al.* (2003) high performance working is more a matter of business strategy. Specifically, it is about the interrelationship between various aspects of strategy and how this feeds through to employees. The aspects of strategy that Harding *et al.* have identified in consultation with business are:

1. customers and markets
2. shareholder value
3. stakeholder value
4. managing people
5. creativity and innovation

Collectively, these aspects are referred to as the High Performance Index. This is not a shopping list of strategy dimensions from which businesses aspiring to be high performers can pick and chose. All elements need to be present to achieve high performance. Each aspect of the Index is discussed in turn.

### 1. Customers and markets

Competition is an important driver of performance because it encourages efficiency, innovation and the need to understand customers' needs better than competitors. High performance companies therefore enhance customers' experiences, understand their preferences and align the organisation's capabilities with customers' needs.

### 2. Shareholders

In theory, the aim of shareholders and the business coincides around the need for maximum return from minimum risk. However, the assessment of the risk/return ratio may differ between these two parties. It is therefore important to ensure that the organisation has well defined governance structures, financial controls and processes to deal with such tensions, otherwise it can detract from the other four areas of the High Performance Index and unbalance the organisation.

### 3. Stakeholders

The high performing organisation cannot retain internally all the resources required to meet the complex demands of modern production, service and delivery. Instead it must rely on a network of partners and suppliers that can be co-ordinated to help achieve its objectives. That said, employees are core stakeholders but are internal to the firm. High performance organisations must therefore put into place systems to manage networks and stakeholder relationships.

### 4. Managing people

As we have seen, higher levels of education and training are associated with higher skills and higher productivity. Trade union membership, board composition and performance, job design, employee satisfaction, employee involvement, pay, flexibility, diversity, recruitment, retention and workplace well-being are linked separately or in bundles to higher performance. For Harding *et al.* (2003: p. 34), HR processes should not be isolated from the organisation's strategic objectives but at the centre: "People management and engagement are central to achieving the necessary interdependency on which high performance is based".

### 5. Creativity and innovation

High performance organisations adapt, change and learn and are committed to creativity and innovation. This is more than simply a commitment to use cutting edge technology, rather a commitment to create processes that enable technology, thinking and ideas to be deployed to the benefit organisational performance, that is, to innovate. Innovation can not happen without people and it is therefore imperative that we understand the processes by which people create and innovate within businesses to understand high performance.

Each of the above five elements and how they contribute to high performance are distinct areas of research in their own right. To some extent this is necessary to achieve a sufficient depth of understanding of how each element contributes separately to high performance. However businesses have to manage across all five areas, requiring an integrated approach. Harding *et al.* (2003: p. 35) argue that the segmented approach inhibits the development of "a positive, forward looking agenda for raising the aspirations of and injecting a pro-risk, pro-innovation agenda into UK business".

Successful strategy implementation is dependent on a strategic focus by employees, HR being strategically aligned with business functions and effective knowledge

management. In turn, the latter two are necessary to foster a strategic view among the workforce. Underlying this, a balanced performance management system not only encourages employees to think and act strategically but also drives strategy implementation (Becker *et al.*, 2001).

Unique to Harding *et al.*'s approach to high performance is the attention it gives to factors external to the firm. Much existing literature considers only the internal influences on high performance and then sometimes only a limited number of influences (eg the role of technology emphasised in Accenture, 2003). This is perhaps not surprising given that internal influences are within the firm's immediate control. However, such an approach is incomplete given the inextricable link between the institutional, competitive and technological environments and a firm's operation as the former constrain and facilitate the achievement of high performance by the firm. It is companies that "decide where and how resources are to be allocated and managed in order to fulfil their strategic objectives. However, a critical part of this in the 21<sup>st</sup> century is increasingly the capacity to draw on the resources available in the external environment that drive productivity; skills, innovations, finance, networks and markets" (Harding *et al.*, 2003: p. 67). These five resources are the external dimension of the High Performance Index and relate closely to the Treasury and DTI's drivers of productivity; skills, innovation, enterprise, competition and investment (HMTreasury/DTI, 2004).

### **The Benefits of HPWPs**

The drivers of adopting HPWPs are primarily the need to increase organisational performance in the face of competitive pressures. It also provides a way for a firm to increase its shareholder and company value. In the absence of commercial pressures, public and not-for-profit sectors adopt HPWPs for reasons of efficiency and effectiveness in achieving their objectives.

The primary benefits of HPWPs for firms are in terms of the impact on business performance (see also Bassi *et al.* 2000; Bassi *et al.* 2003). Patterson *et al.* (1998) found that almost a fifth of the variance between productivity and profitability between firms could be attributed to HR practices. Other studies (e.g. Guest, 2000) have also drawn attention to the economic benefits of high performance HRM practices for firm performance. Guest (2000) identified a link between high commitment practices and financial performance of the firm. In a survey of organisations, Bevan *et al.* (2004) found that three HR practices had a major impact on productivity; flexible working practices (17% of all organisations), high training commitment (15%) and improving communication channels between staff and management (8%). It is possible, therefore, to add value to organisational processes through the strategic use of human resource management.

Becker *et al.* (2001) found strong support for positive links between the existence and operation of HPWPs within firms and financial performance, in particular shareholder value but more generally employee productivity. Within HPWPs Becker *et al.* emphasise the need for strategy implementation over strategy content. They calculated that a 35% improvement in the quality of strategy implementation resulted in a similar percentage increase in shareholder value. Whereas a similar improvement in the suitability of the strategy did not result in an increase in performance. Organisations operating high performance systems were also found to have market values significantly higher than those that did not operate HPWPs.

Employees benefit too. There is evidence of increased job satisfaction, motivation, commitment and intrinsic rewards. However, the outcomes of HPWPs for employees has received less attention than the affect on organisational performance. Autonomy over task-level decision making, membership of self directed teams and communication with people outside the work group are associated with employees trusting managers and experiencing intrinsic rewards (EFF/CIPD, 2003). Trust and intrinsic rewards in turn feed into a strong positive impact on organisational commitment and job satisfaction. In addition, high performance and increased productivity by individuals and teams is often rewarded by pay and bonuses. Furthermore, there are the additional skills that employees must acquire and utilise to work in a high performance environment, in particular IT, communication and problem solving skills (EFF/CIPD, 2003). The use of such skills creates greater experience and this, combined with higher skills, can create returns to the employee, not least through increased earnings.

In a survey of the impact of HPWPs on workers in three sectors (steel, apparel and medical electronic instruments), Appelbaum *et al.* (2002) show that employees in HPWOs earned more than those in traditional workplaces and had higher levels of organisational commitment and job satisfaction. Workers also had a greater degree of trust in managers. Many of these employee benefits are important in obtaining high levels of employee discretionary effort which is cited by Purcell *et al.* (2002) and Appelbaum *et al.* (2000) as central to achieving high performance.

Sector specific studies have provided more detailed findings of the benefits of HPWPs, allowing for a closer connection between business strategy and HRM to be observed under common conditions of technology and market pressures (Purcell *et al.*, 2003). Importantly, they also allow for the use of tailored performance measures that are more meaningful to each sector. Studies have used mortality rates in hospitals (West *et al.*, 2002) sales performance in call centres (Batt and Moynihan, 2002), added value in aerospace (Thompson, 2000), costs in the clothing industry (Berg *et al.*, 1996) and scrap rates in the steel mills (Arthur, 1992; 1994).

Where HPWPs have been adopted in the aerospace industry there is evidence of a clear link with sales and added value per employee. Aerospace firms with more HPWPs also had leaner production systems and higher training spend. A potent combination with which to maximise productivity is therefore high performance practices, lean manufacturing and training (EEF/CIPD, 2003), or in more general terms good systems, low costs and high skills.

The overall findings of research into high performance working practices presents a strong and persuasive case that skills embedded within other HR practices make a difference to a firm's performance. It is therefore important not to view skills and training in isolation from broader HRM practices that influence organisational performance such as structure, practices and strategy (IES, 2004). A more detailed review of the literature on smarter working and organisational performance is contained Tamkin, Giles, Campbell and Hillage (2004).

### **Barriers to the Adoption of HPWPs**

Despite evidence of the benefits available from adopting and implementing HPWPs only a small proportion of all firms in the UK have adopted them. According to IES (2004),

studies using the Work and Employment Relations dataset have produced varying conclusions on the penetration of high performance working practices. Estimates range from just over one quarter to as low as 2% of companies. Similarly, a survey of ten European countries (EPOC, 1997) found just over 1% of establishments were HPWOs.

It is therefore possible that the HPWO is still more vision than reality. This would suggest that barriers exist to the adoption and implementation of such practices or that organisations are simply not aware of the possibilities. Moreover, there may be a perception that HPWPs are only for large companies. Lack of awareness, knowledge and mis-perception may therefore be hindering the adoption and implementation of high performance working in the UK.

It could also be the case that the lack of an agreed, universal definition makes it difficult to distinguish between HPWOs and non-HPWOs. According to Godard and Delany (2000) there is a wide range of HRM measures used in the HPWO/HPWP literature, some of which may simply be measuring good HRM practice. Should the HPWO include policies on job security, the role of employee representatives, high levels of training, total quality management (TQM), performance related pay and teamworking as a matter of course or are these the practices that create high performance (Lloyd and Payne, 2004)? Some have linked HPWOs with a model of lean production that includes teamworking, job rotation, TQM and statistical process control (Osterman, 1995). Others focus on the importance of employee autonomy and discretion, communication systems, and employee skills (Edward and Wright, 2001). "Clearly then, depending on the practices included (and those that are not), high performance working can be understood to represent very different forms of work organisation and employment relations" (Lloyd and Payne, 2004).

There is also a similar level of ambiguity about the nature of practices bundled together to achieve high performance. For example, promoting the use of teamworking without being clear about how it is operationalised, fails to appreciate the wide range of forms of teamworking that exist (Proctor and Mueller, 2000). Teamworking can take place in a variety of work contexts; low employee autonomy and involvement and low task complexity, or high discretion, involvement and complexity.

The evidence base available to demonstrate the benefits of HPWPs is limited in the UK. In North America the study of HPWPs is more mature. Becker *et al.* (2001) have provided a comprehensive summary of the wide range of studies undertaken investigating the link between various aspects of HPWPs and organisational performance. The CIPD (2003) notes that high performing firms are hard to 'copy' because of the fine balance achieved between people, complex work and social processes.

More specifically, according to Lloyd and Payne (2004), there is limited supportive evidence about the link between HPWOs and skills, and what there is establishes statistical association rather than causality. In a review of the literature, Whitfield (2000) also discovered a dearth of empirical studies identifying a positive correlation between high performance and training. Cappelli and Rogovsky (1994, cited in Lloyd and Payne, 2004) concluded that there were some significant differences in the skill needs of employees in HPWOs, although these were soft skills such as teamworking and communication skills. Felstead and Gallie (2002) used employees' self evaluation to establish the extent of their discretion and participation and to assess of the level of

influence they on the operation of their team. Those who had more task discretion, personal influence in decision making, and worked in teams that had greater influence over their work, reported higher skill levels. However, as Lloyd and Payne point out Felstead and Gallie's analysis was not based on evaluating the impact of HPWPs but measuring the outcomes of higher skill levels.

Despite the link between the firm and its institutional environment research has shied away from an integrated perspective partly because the institutional environment contains so many intangibles that can not be quantified (Work Foundation, 2003). Performance is fundamentally dependent on the wider institutional and sectoral frameworks that are the environmental context in which businesses operate. "These frameworks determine the cultural and social norms, the propensity to innovate and invest and, of course, the skills base to which companies have access" (Work Foundation, 2003: 11).

The set-up costs of implementing HPWPs may act as a deterrent, not least in terms of the time and effort of the people involved. Once implemented there can be on-going costs associated with the increased co-ordination and acquisition of new skills required as part of high performance working but the potential rewards are much higher (EEF/CIPD, 2003). It can also be difficult to implement HPWPs within a culture that has become inflexible and where there is mistrust between employees and employers.

## The Workforce of the Future

It is important not only to understand the current state of the workforce and how to successfully harness its skills, as previous sections have attempted to do, but also to attempt to understand what the workforce and labour market of tomorrow may look like. The Working Futures report (Wilson *et al.*, 2004) commissioned by the SSSA provides this insight for the years 2002-2012. Insight into tomorrow's employment patterns enables consideration of the nature and volume of skills that will be needed.

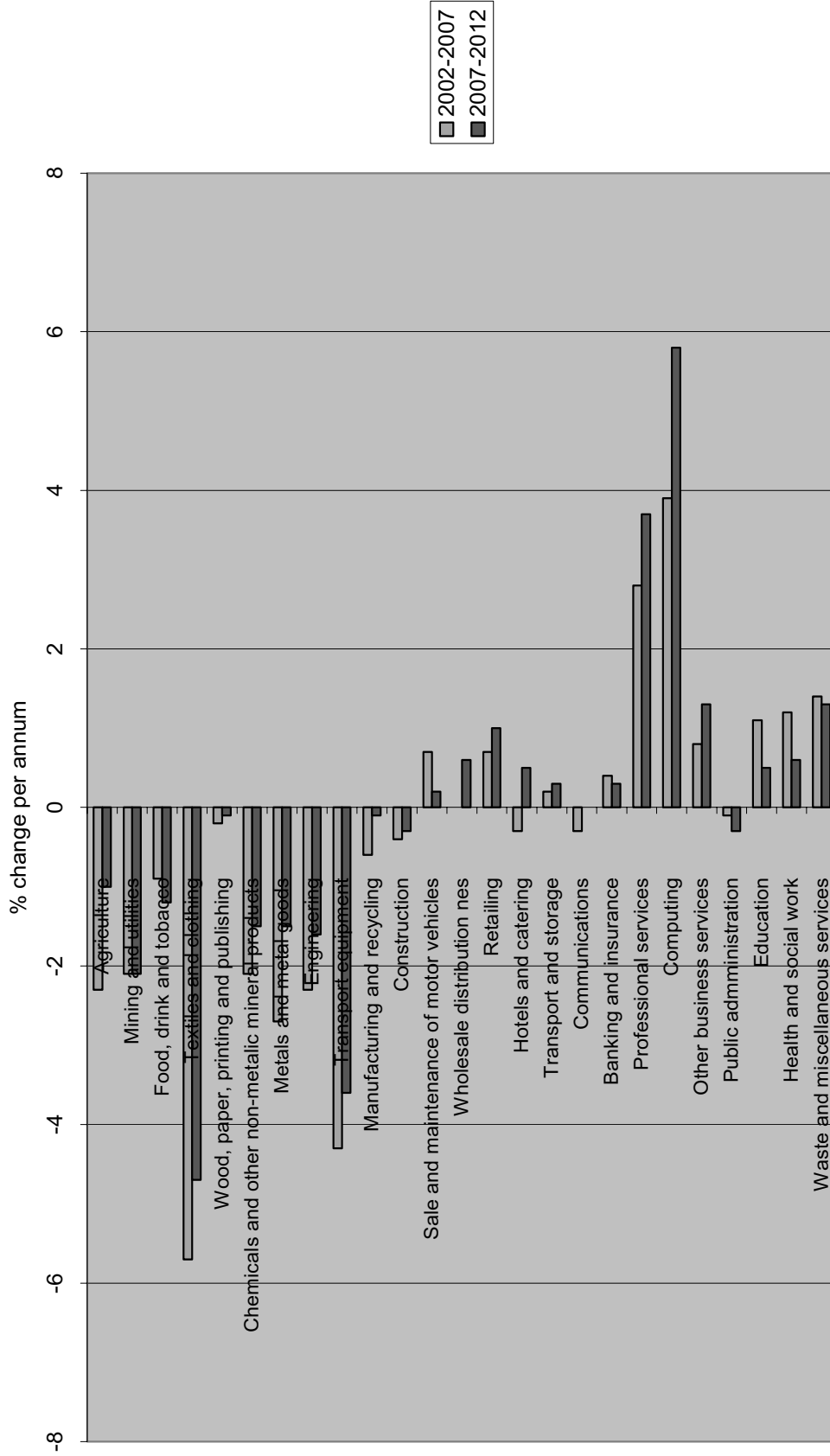
Working Futures made the most detailed and extensive projections of employment for the UK based on 14 and 27<sup>5</sup> industry classifications ever produced, reflecting the requirement of the Skills for Business Network and the Learning and Skills Council (LSC) for detailed information on individual industries. Over the period 2002-2012, total employment in the UK is forecast to expand at 0.5% per annum providing an additional 1.3 million jobs. The majority of these additional jobs are likely to be held by females.

Sectoral forecasts of employment giving the annual percentage net change in employment for each of 25 sectors are set out in Figure 23. There is roughly a 50:50 split between the sectors in terms of whether employment is forecast to expand or contract. Thirteen of the sectors are expected to witness a reduction in their employment over the period 2002-2012 and 12, an increase. Most of the sectors expected to demonstrate a reduction in employment can be broadly grouped under Primary and Manufacturing activities. The sectors where employment is forecast to reduce most dramatically are Agriculture, Mining and utilities, Food, drink and tobacco, Textiles and clothing, Chemicals and other non-metallic mineral products, Metals and metal goods and Engineering and transport equipment. Public administration is the only sector not in Primary and Manufacturing to be forecast a decline in employment. Only two sectors are forecast increases of employment in excess of 2% per annum. These are Professional services and Computing.

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<sup>5</sup> Projections were, however, made for 25 industries as 4 industries were aggregated into 2 to allow for more reliable projections. Mining was combined with Utilities, and Wood and paper was combined with Printing and publishing.

**Figure 23: Change in Employment in the UK by sector 2002-2012**



Source: Wilson et al. (2004).



If however we add 'replacement' demand to the 'expansion' demand to provide an indication of the overall job requirements by sector (net requirement), the pattern that emerges is somewhat different. This is evident from Table 19. 'Expansion demand' is far outweighed by 'replacement demand' which estimates the number of workers in the labour force that need to be replaced due to retirement, mortality and other related reasons. Taking Banking and insurance as an example, expansion demand is 42,000 but replacement demand is ten times greater at 494,000 jobs. This produces a net requirement over 2002-12 of 536,000 jobs. Over the decade replacement demand for the UK is forecast at 12.2 million jobs. Taken together the overall UK requirement is for some 13.5 million job opportunities.

**Table 19: Net Employment Requirement by Sector 2002-2012**

	Replacement demand (000s)	Expansion demand (000s)	Net requirement (000s)
Agriculture	154	-67	86
Mining and quarrying	86	-42	44
Food, drink and tobacco	194	-47	148
Textiles and clothing	104	-102	12
Wood, paper, printing and publishing	232	-10	222
Chemicals and non metallic	242	-106	136
Metals and metal goods	195	-95	100
Engineering	316	-144	172
Transport equipment	151	-129	22
Manufacturing and recycling	90	-6	85
Construction	674	-59	615
Sale and maintenance of motor vehicles	266	30	296
Wholesale distribution	497	43	540
Retailing	1294	280	1575
Hotels and catering	846	15	862
Transport	502	33	535
Communications	223	-9	214
Banking and insurance	494	42	536
Professional services	302	274	575
Computing and related	224	335	559
Other business services	1342	365	1707
Public administration	634	-31	603
Education	979	195	1174
Health	1373	289	1662
Miscellaneous	765	267	1032
<b>Total</b>	<b>12,181</b>	<b>1,322</b>	<b>13,503</b>

Source: Wilson *et al.* (2004)

The four sectors with the lowest projected replacement demand are the four sectors with the lowest expected net requirement need (Mining and quarrying, Textiles and clothing, Transport equipment and Manufacturing and recycling). The sectors with the highest projected replacement demand are also the sectors with the greatest forecast net requirement (Retailing, Other business services, Education, Health).

Forecast changes in employment by the 9 major occupational and 25 sub major occupational groups (SOC 2000) are set out in Table 20. Managers and senior officials, Professional occupations, Associate professional occupations and also Personal service occupations are expected to grow. The latter have experienced the strongest growth and are likely to do so over the coming 10 years. Administrative, clerical and secretarial occupations are predicted to witness job losses but will continue to account for a large percentage of all occupations. Other occupations expected to decline are Skilled trades, Transport and machine operatives, and Elementary occupations. It is the Skilled trades and Elementary occupations that are expected to witness the largest reductions in employment.

Variations in these forecasts of occupational employment can be anticipated by gender. Males are predicted to benefit most from the growth in Professional and Associate professional jobs. The proportion of these jobs which are part-time is also expected to increase. Significant growth in jobs, both part and full-time, for females is expected to occur in Managerial, Professional, Associate professional and Personal service occupations. In terms of occupations likely to experience job losses, it is males that fare worst, particularly among skilled trade occupations. Job losses for women are expected to be concentrated in Administrative, clerical and secretarial and Elementary occupations.

How will the future demands of the labour market be met? In addition to the evolving skills of the existing employed workforce, the 'new' sources of labour will come from those who are currently unemployed or economically inactive; migrants; and those entering the workforce from 'schooling'. We deal with each in turn.

**Table 20: Changes in Employment by Occupation**

	2002-2012	
	000s	%
<b>Managers and senior officials</b>	<b>585</b>	<b>1.3</b>
Corporate managers	662	20.4
Managers and proprietors	-77	-7.0
<b>Professional occupations</b>	<b>703</b>	<b>1.6</b>
Science and technology	203	22.5
Health	50	19.1
Teaching and research	273	19.9
Business and public service	178	23.0
<b>Associate professional and technical</b>	<b>774</b>	<b>2</b>
Science and technology	144	24.5
Health and social welfare	130	12.8
Protective service	83	20.3
Culture, media and sports	193	31.3
Business and public service	225	15.1
<b>Administrative, clerical and secretarial</b>	<b>-423</b>	<b>-1.8</b>
Administrative	-180	-6.3
Secretarial and related	-244	-24.0
<b>Skilled trades occupations</b>	<b>-540</b>	<b>-2.3</b>
Skilled agricultural	10	2.9
Skilled metal/electrical	-408	-31.2
Skilled construction and building	-90	-8.6
Textiles , printing and other	-54	-8.4
<b>Personal service occupations</b>	<b>747</b>	<b>2.1</b>
Caring	703	44.8
Leisure and other	45	7.8
<b>Sales and customer service</b>	<b>398</b>	<b>1.1</b>
Sales	202	10.5
Customer service	196	48.2
<b>Transport and machine operatives</b>	<b>-248</b>	<b>-1.2</b>
Process, plant and machine	-311	-22.0
Transport and mobile machine drivers	62	5.8
<b>Elementary occupations</b>	<b>-674</b>	<b>-2.7</b>
Elementary trades, plant storage	-213	-18.2
Elementary admin and service	-460	-20.6
<b>Total</b>	<b>1,322</b>	<b>0</b>

Source: Adapted from Wilson *et al.* (2004)

### Unemployed/Economically Inactive

Of those who are of working age in the UK, 75% (27.2 million) are employed. There are approximately 1.5 million 'ILO' unemployed in the UK, i.e. those who want work or have actively sought work in the last month and are available to start work in the next month.

There are also those people that are not currently participating in the workforce are not seeking work. This 'economically inactive' group accounts for around 20% of the working age population (7.8 million) and comprises students, those who have taken early retirement, the sick and disabled and those caring for home and family. However 27% (2.1 million) of these economically inactive people would be interested in a job under certain circumstances.

Over the last 30 years there has been an increase in the number of economically inactive people with the following characteristics:

- Low levels of qualifications
- Disability or health problems
- Over 50 years of age
- Lone parents
- Living in disadvantaged areas of the UK

Thirty two percent of those who are economically inactive have no qualifications compared 23% of the unemployed and 10% of those in employment. Table 21 shows employment, unemployment, and economic inactivity rates by social group.

**Table 21: Workforce Involvement by Social Group**

	Employment rate %	Unemployment rate %	Economic inactivity rate %
<b>Total</b>	<b>74.6</b>	<b>5.0</b>	<b>21.5</b>
Men	79.1	5.5	16.3
Women	69.7	4.5	27.1
Aged 18-24	66.8	10.0	25.7
Aged 25-34	79.5	4.8	16.5
Aged 35-49	81.9	3.3	15.3
Aged 50 – 64 (m); 50-59 (f)	69.4	3.3	28.2
Long term disabled	49.3	8.0	46.5
Not long term disabled	81.2	4.9	14.7
White	76.3	4.5	20.0
All ethnic minority groups	59.9	11.3	32.4
Asian or Asian British	58.3	10.8	34.7
Indian	68.8	8.9	24.4
Pakistani	48.1	11.6	45.6
Bangladeshi	41.6	20.4	47.7
Black or Black British	65.4	11.2	26.3
Chinese	59.9	n.a.	34.7

Source: Stanfield *et al.* (forthcoming)

It is clear that women are much more likely to be economically inactive than men. Those women who are economically inactive and want a job are much more likely to cite caring reasons for not seeking work (45% compared to 9% of men). The importance of childcare as a constraint is demonstrated by a comparison of the age of dependants and women's employment rate. The employment rate for women with pre-school children is 54%, for women with children of primary school age it is 70% and for those with children aged 11-15 it is 76%.

Long-term disabled people are much more likely to be unemployed and economically inactive. There are a number of barriers to obtaining employment for disabled people, including the severity of their disability, self-esteem and confidence of the individual, employer perceptions and the disincentives of the tax/benefit system.

Ethnic minorities, taken as a whole, are much more likely to be unemployed/inactive than their white counterparts. However the experience of ethnic minority groups is not homogenous. For example, unemployment rates are highest amongst the Bangladeshi community (20%) and lowest for the Indian Community' though at 8.9% still significantly higher than for the White people (4.5%).

The highest employment rate and economic activity rates of the population are amongst those aged 35-49. However the number of adults aged under 45 is projected to fall by nearly 1 million or 4% by 2016, whereas the number of 45-59 year olds is expected to increase by 1.8 million, or 15%, over the same period. The population is aging yet older people are less likely to participate in the labour market: labour force participation for men aged 55-59 has decreased from 80% in 1968 to less than 50% in 1999 and from 75% to 30% for men aged 60—64. The number of adults aged under 45 is projected to fall by nearly 1 million or 4% by 2016, whereas the number of 45-59 year olds is expected to increase by 1.8 million, 15% over the same period. With the number of jobs set to increase by 1.3 million over the period 2002-2012 this raises concern over who will fill these positions as the numbers of those who are currently most active in the labour are set to decline.

## **Migrants**

With the rise in employment over the period 2002-2012 and current low levels of unemployment in the UK, there remains a need for labour that it may not be possible to wholly supply from within the economy. Migration into the UK is therefore one possible way in which this need can be met.

The number of work permits issued to foreign nationals in 2002 was at its highest level since the post war years with 129,000 work permits issued (Clarke and Salt, 2003) – a substantial number compared to the levels experienced in the early 1980s of around 15,000 per year. New schemes have been added recently to the UK's work permit system. These schemes allow migrants with skills from both ends of the spectrum to work here, and offer a means of increasing the skills base and a managed approach to the contribution that migrant labour can make to the UK's economy. This is particularly so in the light of increasing competition for migrant skills from North America, Australasia and elsewhere in Europe (Clarke and Salt, 2003). The work permit system has four constituent parts:

- The main permit scheme
- Seasonal Agricultural Workers Scheme (SAWS)
- Sector Based Scheme (SBS)
- High Skilled Migrant Programme (HSMP)

1. The main permit scheme

This was developed to manage the entry of high level skills into the UK. A work permit is granted to a specific employer for a named person for a particular job.

2. Seasonal Agricultural Workers Scheme (SAWS)

The SAWS scheme places mainly students between the age of 18 and 25 to work on farms during periods of high demand for labour. Quotas are used to manage the numbers of people entering the UK through the scheme. In 2003 the quota was 25,000. In 2002 around 19,000 came to work in the UK under this scheme, 25% from Poland, 20% from the Ukraine and 18% from the Baltic states (Clarke and Salt, 2003).

3. Sector Based Scheme (SBS)

This scheme was introduced during in 2003 to address shortages in lower skilled occupations, initially in two sectors; food processing and hospitality. Permits are available where there are shortages of resident workers in certain posts which require level 2 qualifications or below. Permits are issued for 12 months for those aged 18-30.

4. High Skilled Migrant Programme (HSMP)

Another recent introduction, the HSMP allows individuals with exceptional personal skills and experience to come to the UK to seek and take employment or self-employment. Permit holders do not need a prior offer of employment and are allowed to change jobs freely during their stay. Four main occupational groups dominate this scheme; finance (banking, accountancy and investment), business managers (consultants, directors and executives), ICT (software engineers, computer specialists and telecommunications specialists) and medical occupations.

Between 1995 and 2002 applications for work permits increased 300% from around 38,000 to 155,000. In 2002, 83% (129,000) of all applications were approved (Clarke and Salt, 2003), thirty percent were for intra-company transfers – people seconded from abroad by international companies to work in the UK.

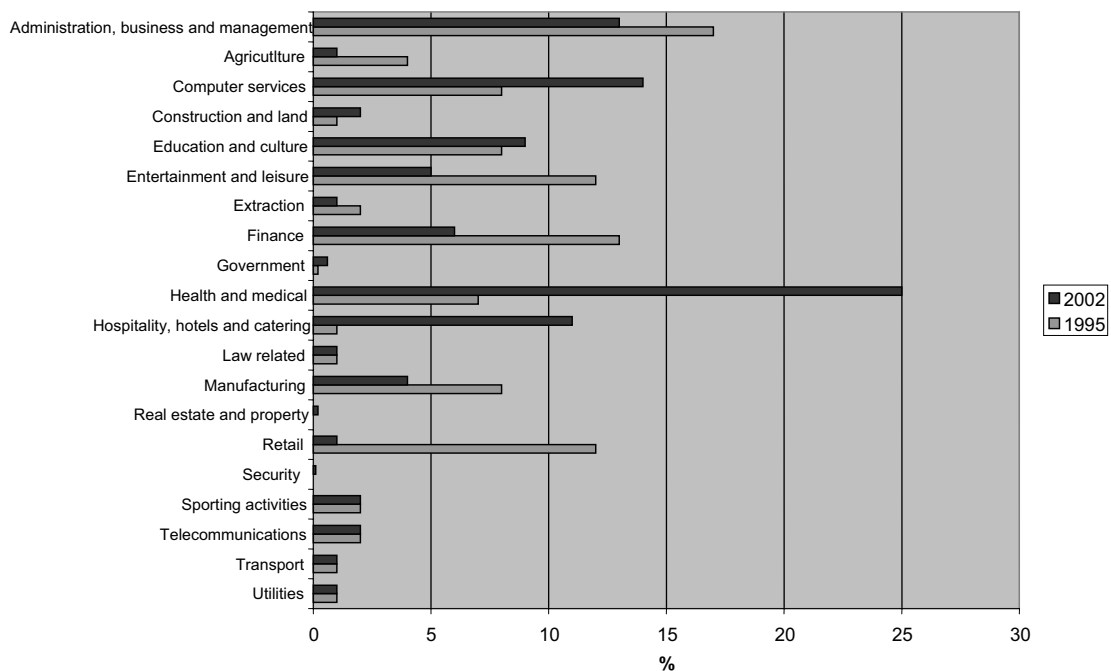
The accession of 10 states to the EU in May 2004 is unlikely to impact greatly on flows of migrant labour. The annual flows to all 15 EU countries from the 10 acceding states is predicted to peak at 370,000 in 2005 and then decline over time (IPPR, 2004). By 2030 flows are projected to reverse direction resulting in net reductions in the stocks of new member nationals. Levels of education, skills and training are relatively high in the newly acceding countries compared to other countries with similar average incomes (IPPR, 2004). Its likely that migrant workers who come to the UK after accession will be in one of 3 broad skills categories:

- high-skilled healthcare and engineering professionals (this is supported by data presented by Clarke and Salt below)
- Skilled crafts people
- Low skilled workers willing to work in service and agricultural sectors.

It is important to recognise that labour migration occurs in both directions, with both inflows to, and outflows from the UK. UK nationals leave the country each year to live in North America, Australasia, South Africa, Pakistan and elsewhere in Europe taking their skills with them. The 15 EU countries were the destination for 125,000 UK nationals in 2002 (ONS, 2004). Net in-migration to the UK (i.e. balanced against out-migration) totalled 153,000 in 2002 (ONS, 2004). This estimate is lower than for the previous three years. This figure includes non-economic migrants and is therefore higher than the number of work permits issued in this year.

Figure 24 illustrates the proportion of foreign nationals with work permits, employed in each sector of the economy and the change in these proportions between 1995 and 2002. There has been a shift from traditional commercial orientated activities such as retail and finance to the health, hospitality and information and communications technology sectors. Clarke and Salt (2003) suggest that this shift mirrors the shift in skills shortages over the same period. The industries hosting the greatest proportions of employees with work permits in 2002 were Administration, business and management services (13%), Computer services (14%), Health and medical services (25%) and Hospitality, hotels, catering and other services (11%).

**Figure 24: Work Permits Issued by Industry in 1995 and 2002**

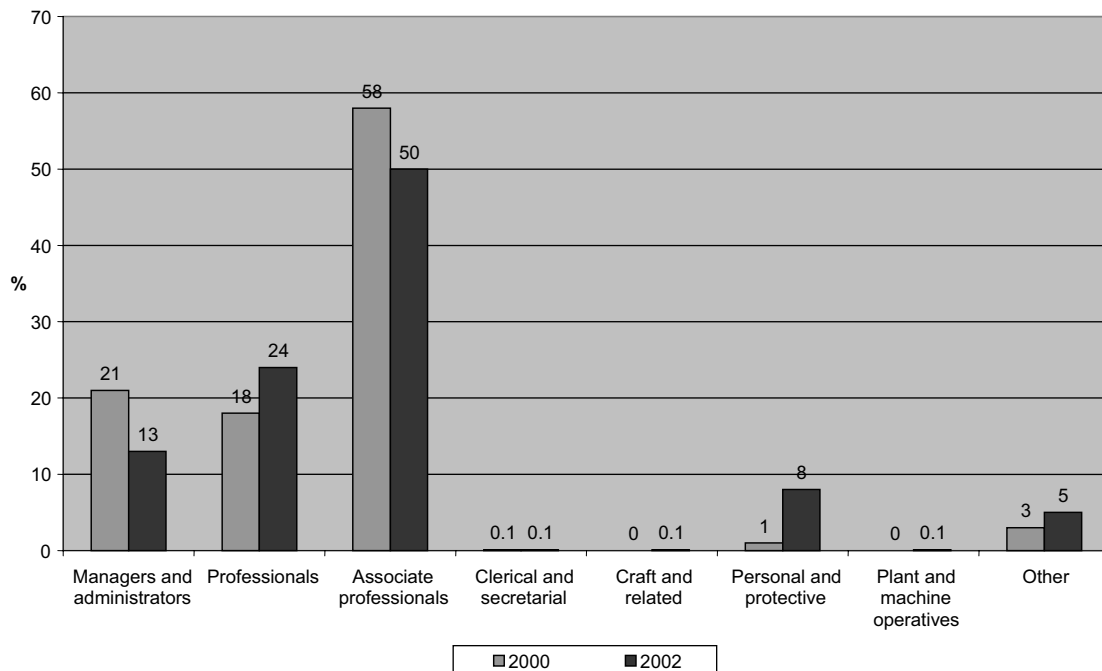


Source: Clarke and Salt (2003)

The largest occupational category for which work permits were granted between 2000 and 2002 was Associate professionals with half of all issues (44,319), despite its declining share over the period. The number of permits issued for Professional occupations (21,508) 24% of all permits, doubled in 2002 to make this the second most common occupation above Managers and administrators (11,603) or 13%. The issue of work permits is therefore limited to higher skilled occupations and within these occupations the issue of permits is still more selective. For instance within main

Associate professional group in 2002, 16,316 permits were issued for Health associate professionals. This accounts for 18% of all permits issued. Within Professional occupations it is the Engineers and technologists occupation for which the majority of permits are issued (11%) or 9,587. These two sub-occupations receive by far the greatest number of permits in each of their respective main occupational groups. Work permits issued by occupation are given in Figure 25

**Figure 25: Work Permits Issued by Occupation**



Source Clarke and Salt (2003)

The majority of labour migrants (67%) to the UK came from high income countries typically Commonwealth European and OECD countries (Bloom *et al.*, 2004; Clarke and Salt, 2003). The most common destination within the UK was London at 60% of all migrant workers (Bloom *et al.* 2004).

### **Inflows to the Labour Market from Education**

Each year approximately half a million people enter the labour market from compulsory education (schools), further education and higher education in the UK. Those leaving compulsory education in England and Wales and entering work amounted to almost 66,337 in 2002 (NS/DfES, 2003). This is made up of 65,153 school leavers from England (11% of all school leavers in England), and 2,184 in Wales (6%). Figures for Northern Ireland are 1,578 (6% of all school leavers) and 13,972 in Scotland (23% of all school leavers) (NS/DfES, 2003). From further education, 280,000 leave to start work annually in England and Wales (NS/DfES, 2003b). In 2001/2 156,465 people entered employment from higher education (HESA, undated) of which 120,300 these had completed an undergraduate or higher degree.



## Conclusion

The SSDA's vision is to create a workforce with world class-skills contributing to the highest levels of business performance in all sectors of the UK economy. To achieve this the SSDA works with SSCs, the organisations leading the effort to equip each major business and public service sector in the UK, with the skills they need for world-class performance. Together the SSCs and the SSDA make up Skills for Business, the employer-led network which has been created to drive up UK productivity and economic performance through skills, workforce development and enhanced workforce performance.

Skills for Business is about people and businesses doing things better, by understanding and acting on sector specific skill and business performance needs throughout the UK economy. It is about employers working with each other, with government and with national and regional partners to tackle shared skill and productivity issues. Skills for Business is addressing these problems head-on and in ways that work best for each of the UK's business and public service sectors. The issues the SSDA will address over the coming years are laid out in its Strategic Plan 2005-2008. The role of the evidence base is to support our strategy as well as to articulate the skills agenda and priorities as we see them at the SSDA.

Currently the UK's economy is under performing compared to many of its competitors. Whilst above EU average increases in economic performance have been achieved by the UK, this has been achieved largely through employment growth. Achieving growth this way is not sustainable, because our high employment rate and low levels of unemployment may constrain such growth; but also because of the value that each person employed produces, their productivity, is relatively low. It is essential that productivity levels be improved in a sustainable manner and skills can make a contribution to this agenda as well as to raising the employment rate.

The HM Treasury/DTI (2004) have identified five drivers of productivity: investment, innovation, skills, competition and enterprise. Given that the UK's productivity performance has been weak and that up to 20% of the productivity gap with Germany can be attributed to the UK's lower level of skills (O'Mahoney and De Boer, 2002), one purpose of this report has been to examine the link between skills and productivity and how productivity can be raised through up-skilling the labour force.

It has shown that skills can make a difference to the performance of individuals and firms and in turn increase the returns to these groups. However, there are a number of shortages in the supply of available skills and important gaps in the current stock of workforce skills. The level of skills and qualifications available within the UK labour force is also low placing the UK at a disadvantage. It has therefore become important to look at how we up skill the economy and use the skills that we have more efficiently to work smarter and more productively. Whilst it is important that we aim to provide for the skill needs of business today, we must also concern ourselves with how we supply the skills needs of tomorrow's business. With a net recruitment requirement of 13.5 million jobs between 2002-2012 and an increasingly tight labour market, the Skills for Business network must work to ensure that the right skills are available in the right place at the right time for UK plc.

If this were not enough of a challenge in itself, it is evident that the skills needs of business vary by sector. This demands that each sector, led by its respective SSC, tailors its own approach to tackling its skills needs. If business is to achieve the potential which the evidence suggests is possible, it is essential that they articulate their needs and become actively involved in providing the solution.

Based on this assessment, the SSSA has developed four strategic priorities for 2005-2008 (SSDA, 2004a):

- To increase 'smarter working' by business and the public services
- To improve workforce competence and the supply of skills needed by employers
- To develop the Skills for Business as the world leading network for improving sectoral skills and productivity performance
- To support the introduction of sector skills agreements by all SSCs

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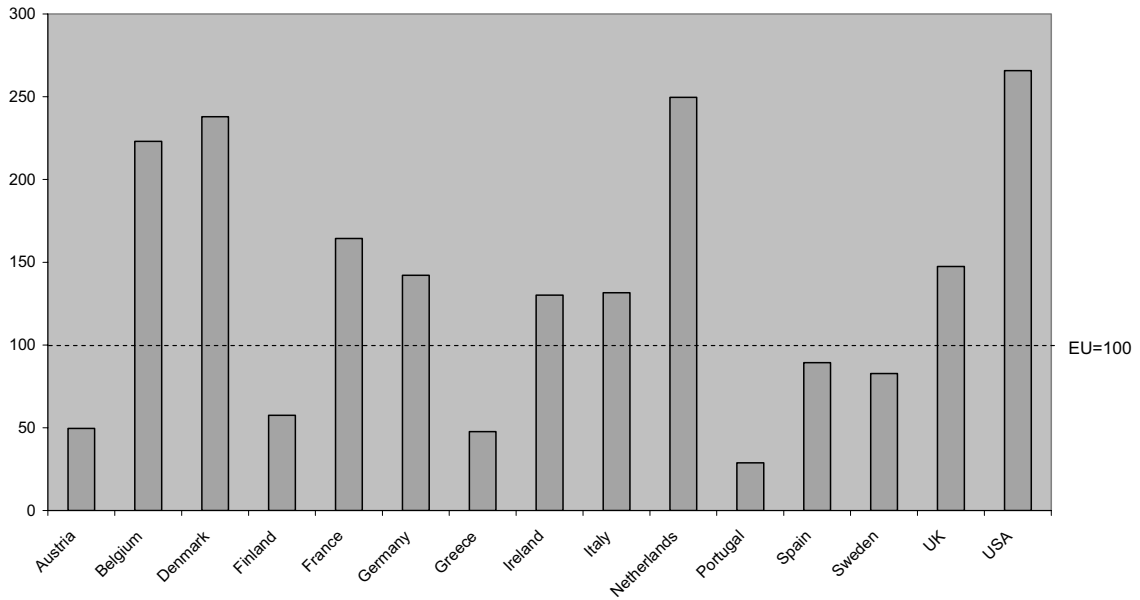
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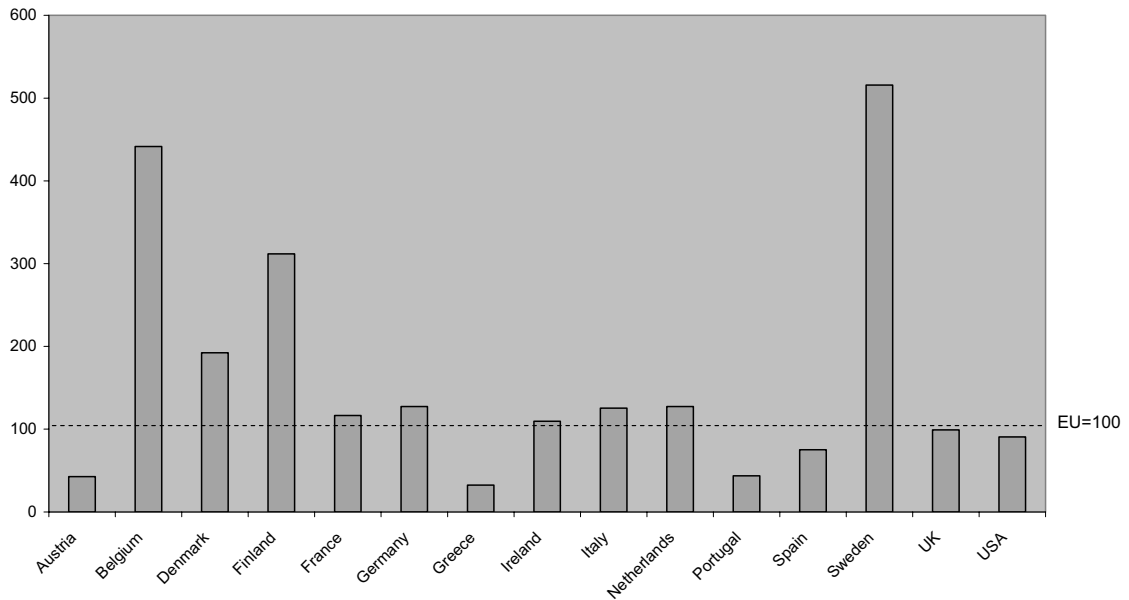


**Appendix 1: International Sectoral Productivity Differentials**  
 (Source: Groningen Growth and Development Centre, 60 Industry Database, [www.ggdc.net](http://www.ggdc.net))

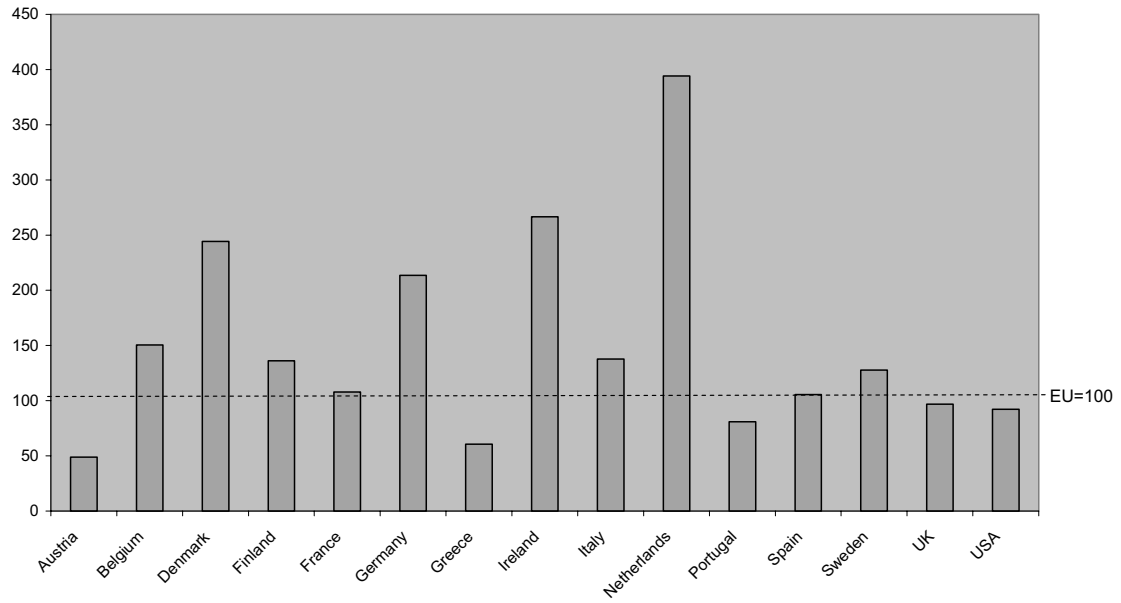
**Agriculture - Rate of GDP/Hour Compared with EU Average, 2001**



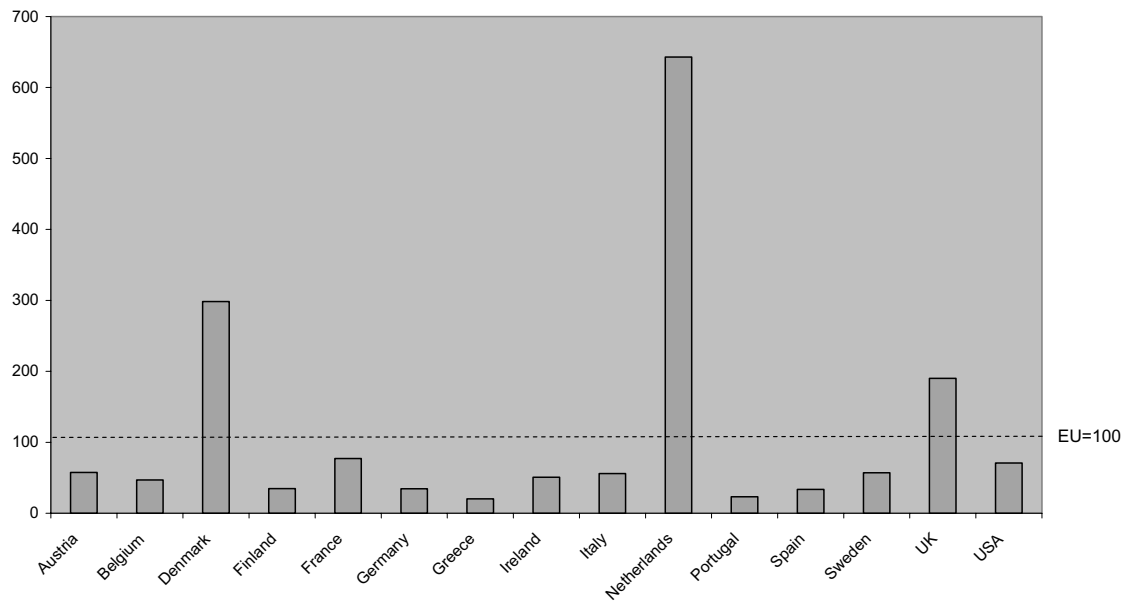
**Forestry - Rate of GDP/Hour Compared with EU Average, 2001**



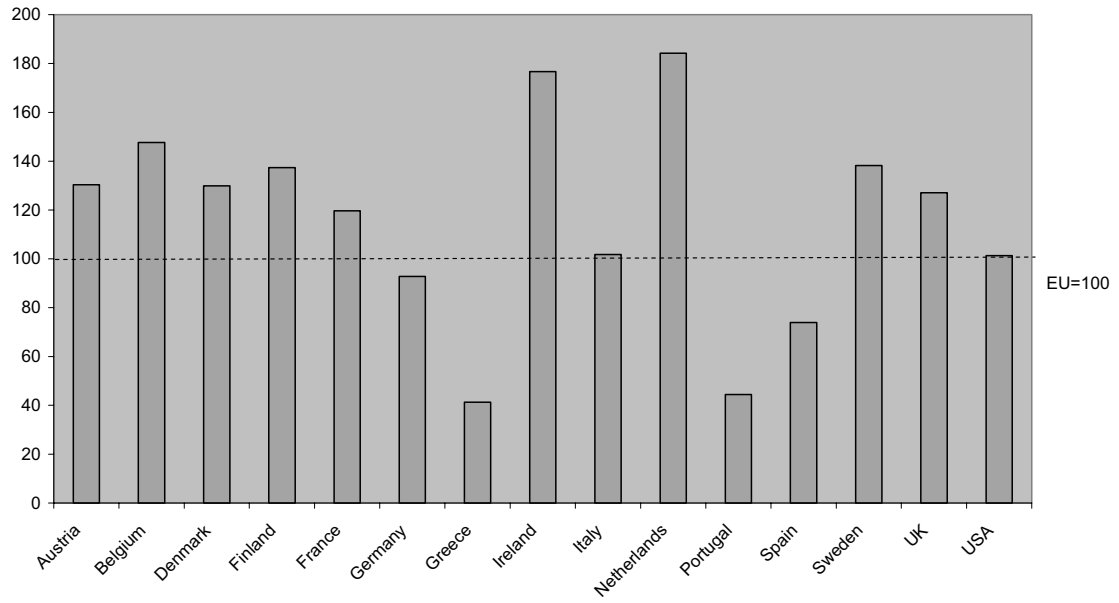
**Fishing - Rate of GDP/Hour Compared with EU Average, 2001**



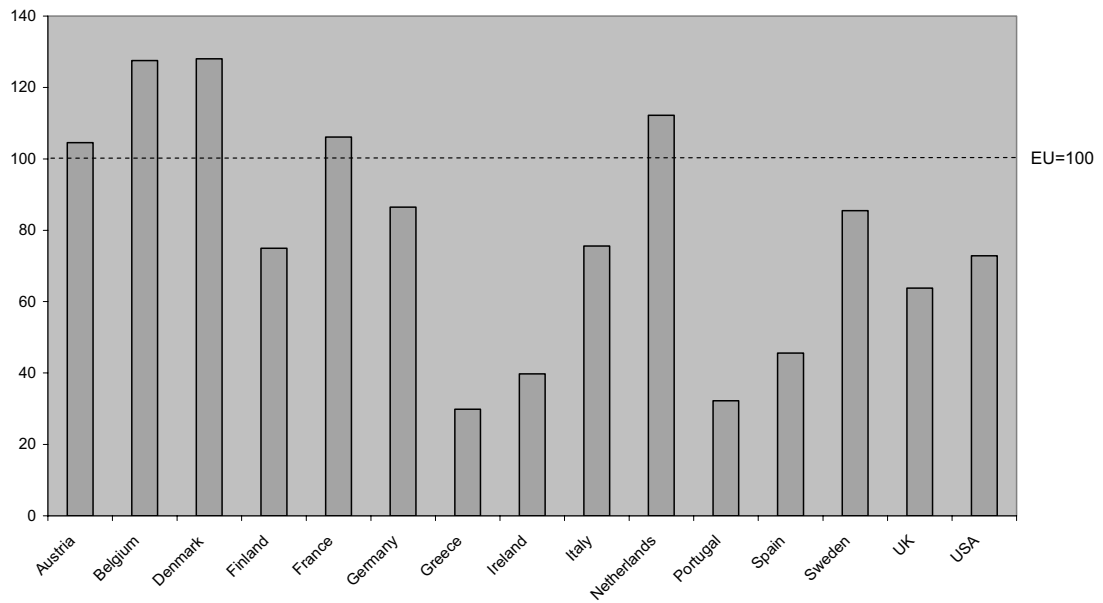
**Mining & Quarrying - Rate of GDP/Hour Compared with EU Average, 2001**



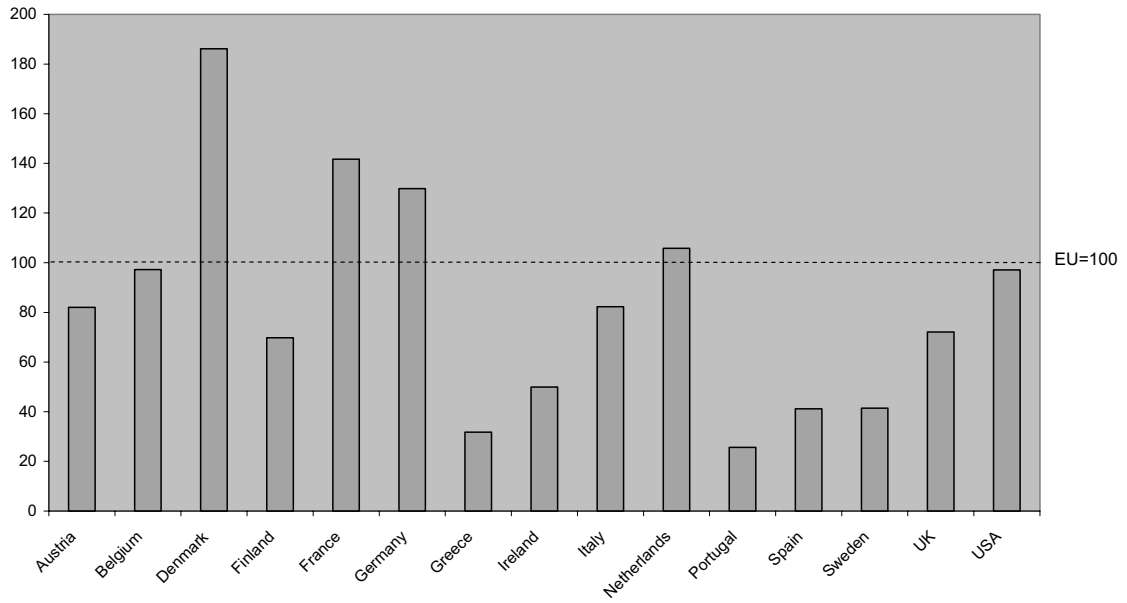
**Food, Drink & Tobacco - Rate of GDP/Hour Compared with EU Average, 2001**



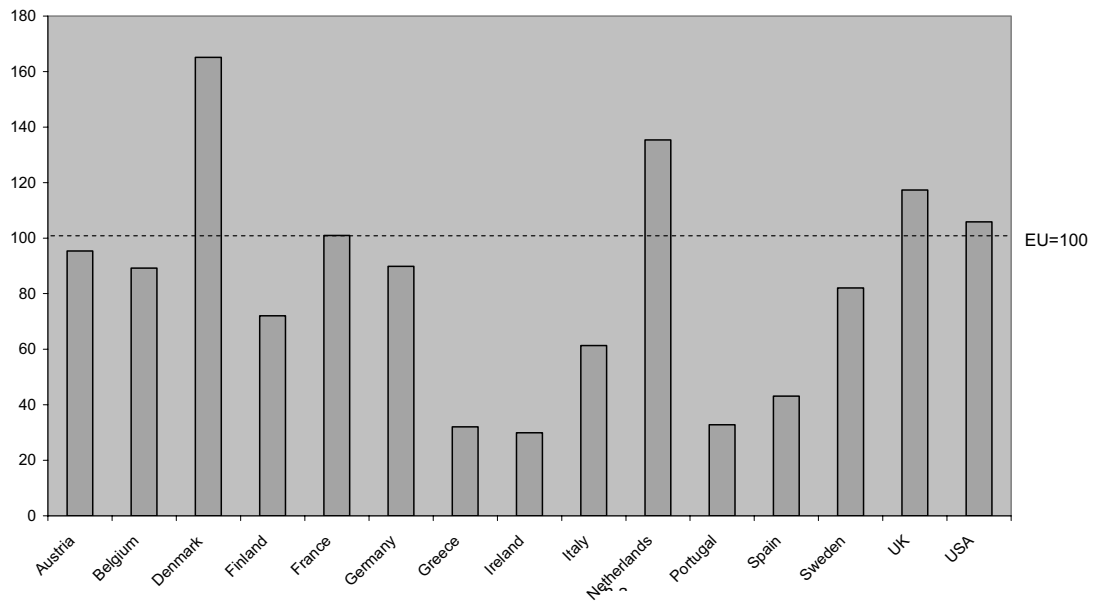
**Textiles - Rate of GDP/Hour Compared with EU Average, 2001**



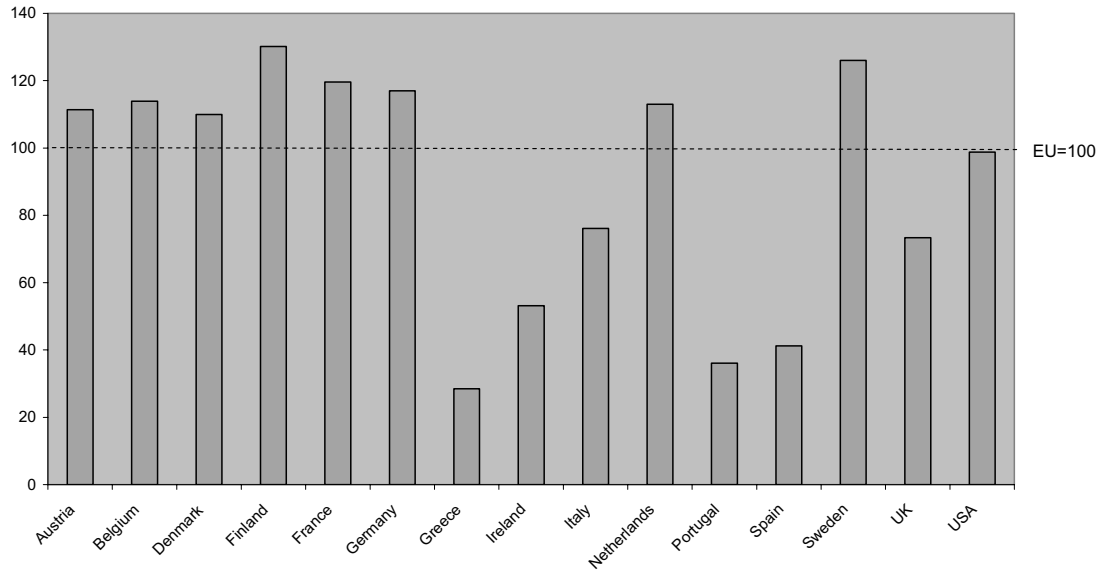
**Clothing - Rate of GDP/Hour Compared with EU Average, 2001**



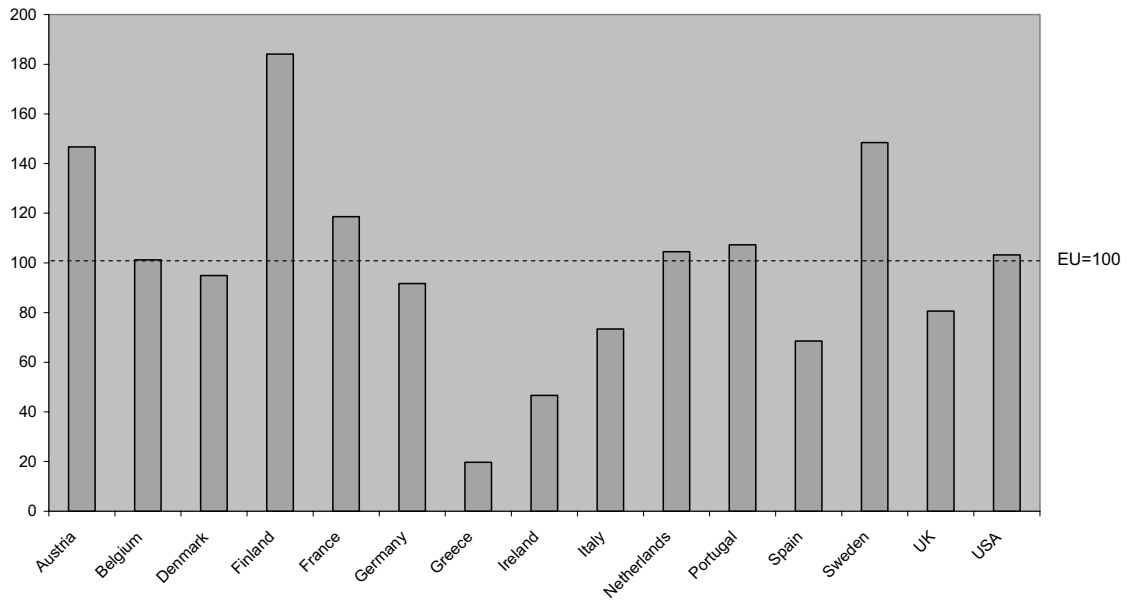
**Leather & Footwear, Rate of GDP/Hour Compared with EU Average, 2001**



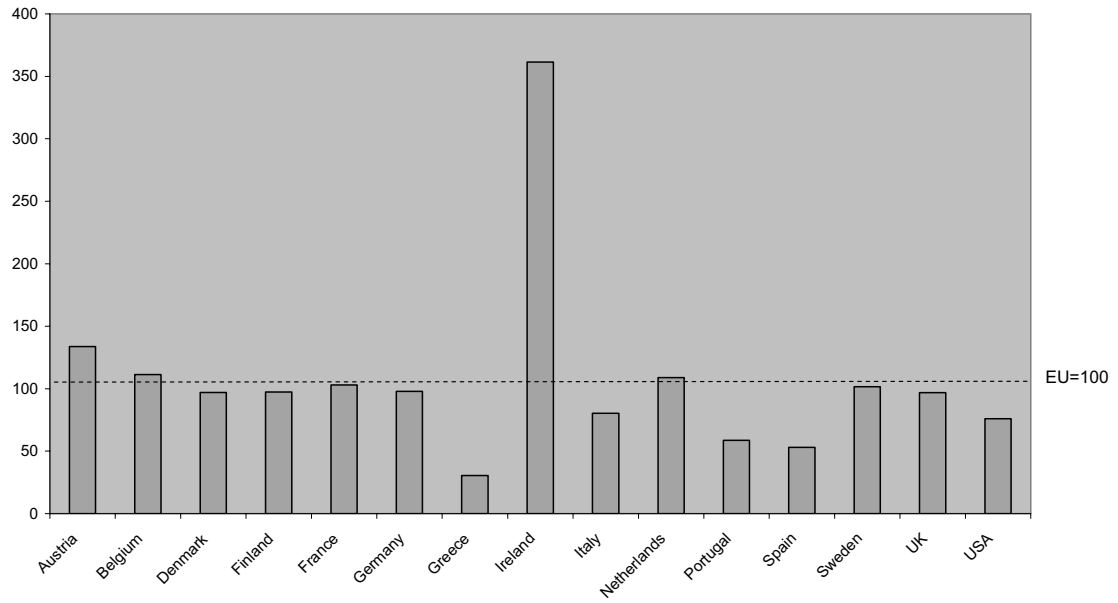
**Wood & products of wood & cork - Rate of GDP/Hour Compared with EU Average, 2001**



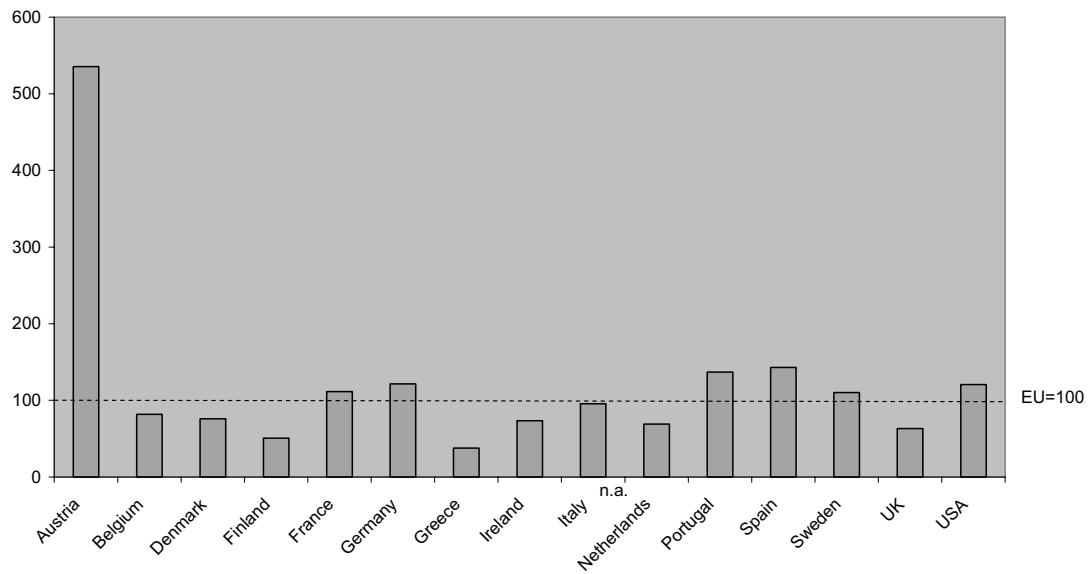
**Pulp, paper & paper products - Rate of GDP/Hour Compared with EU Average, 2001**



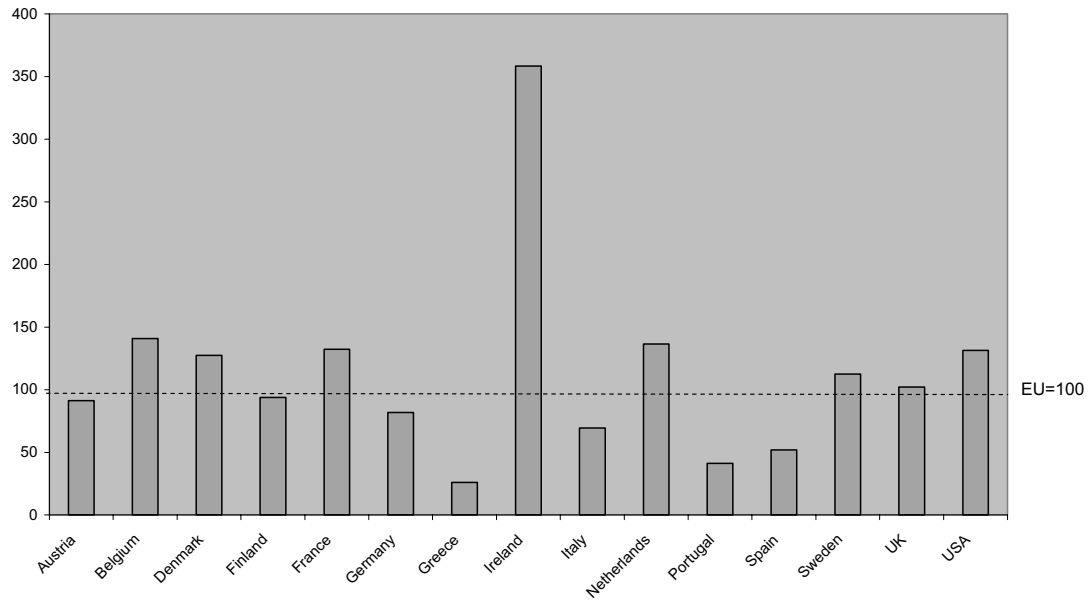
**Printing & publishing - Rate of GDP/Hour Compared with EU Average, 2001**



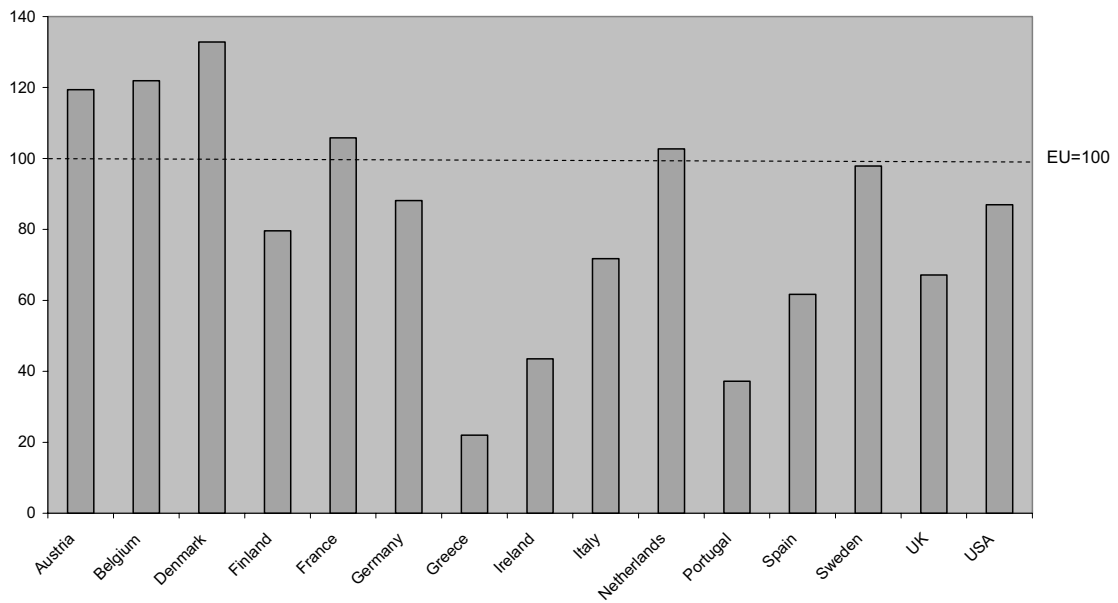
**Mineral oil refining, coke & nuclear fuel - Rate of GDP/Hour Compared with EU Average, 2001**



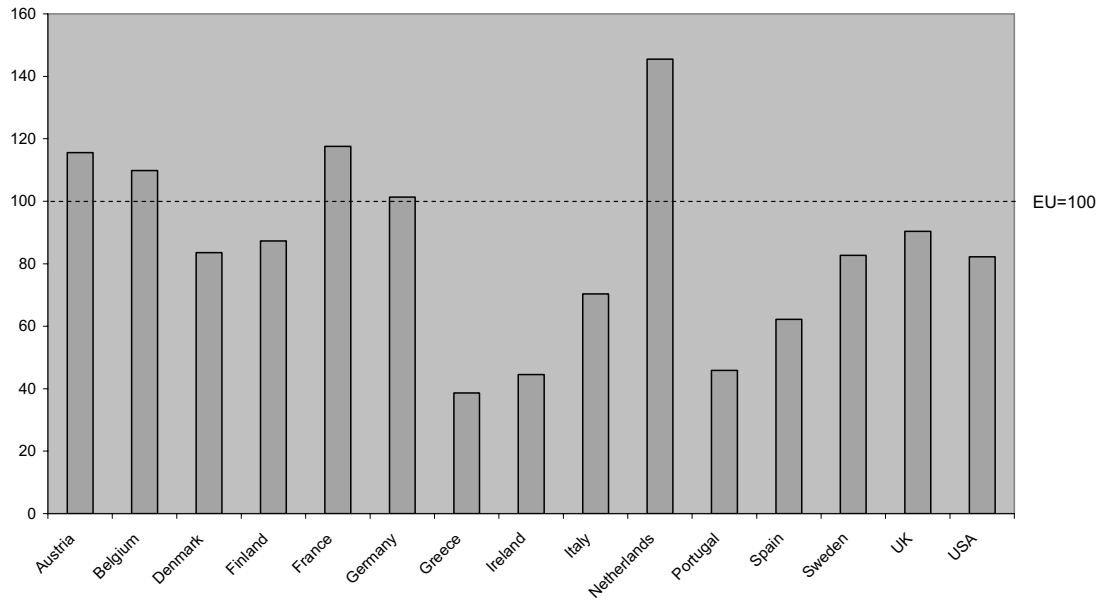
**Chemicals - Rate of GDP/Hour Compared with EU Average, 2001**



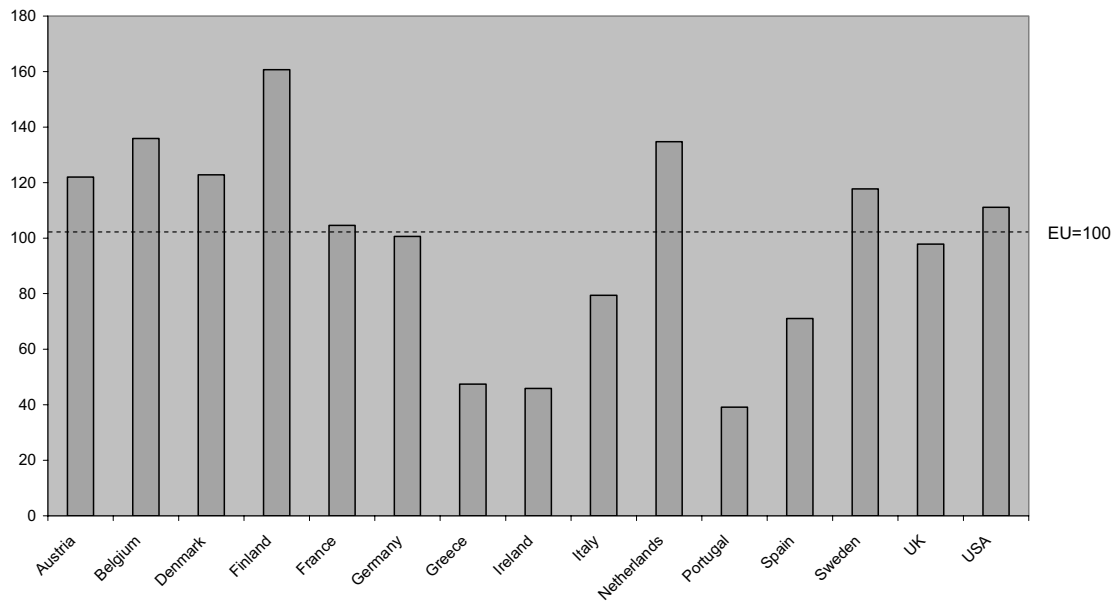
**Rubber & plastics - Rate of GDP/Hour Compared to EU Average, 2001**



**Non-metallic mineral products- Rate of GDP/Hour Compared to EU Average, 2001**

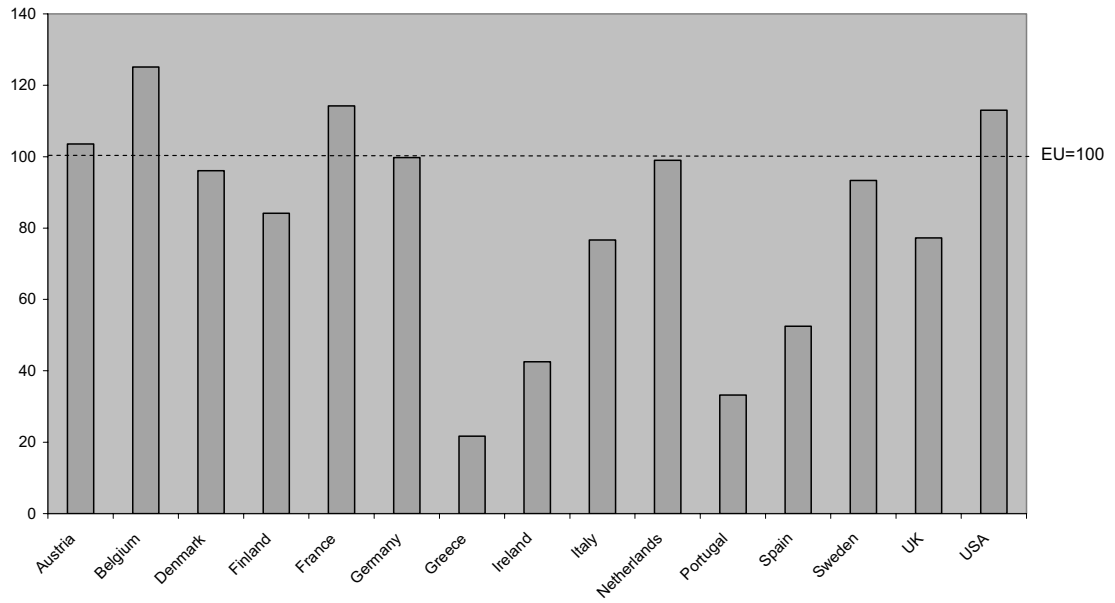


**Basic metals - Rate of GDP/Hour Compared to EU Average, 2001**

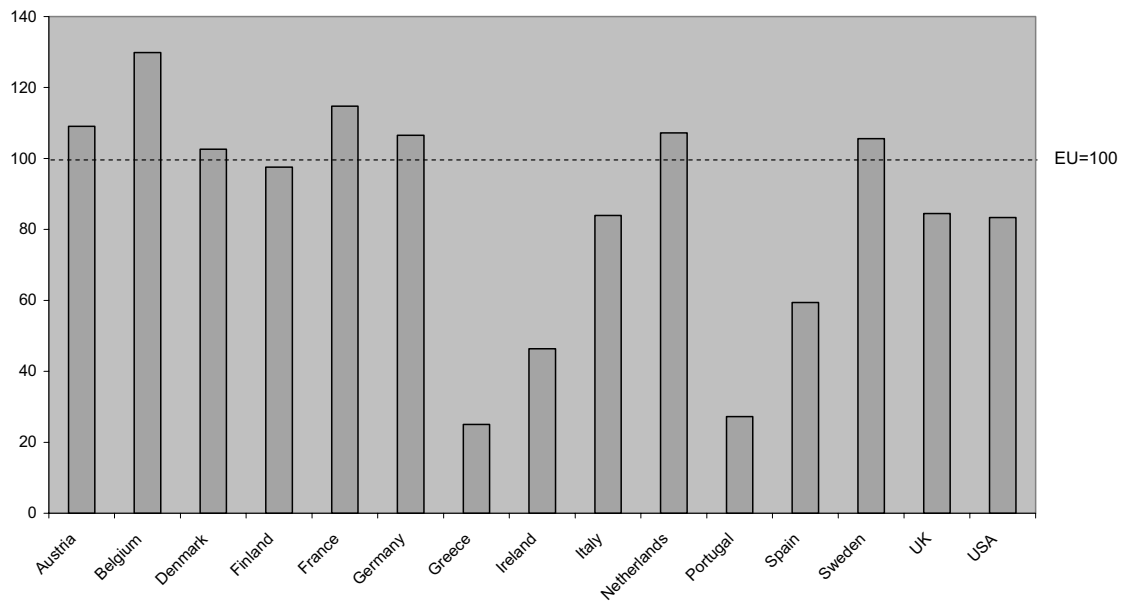




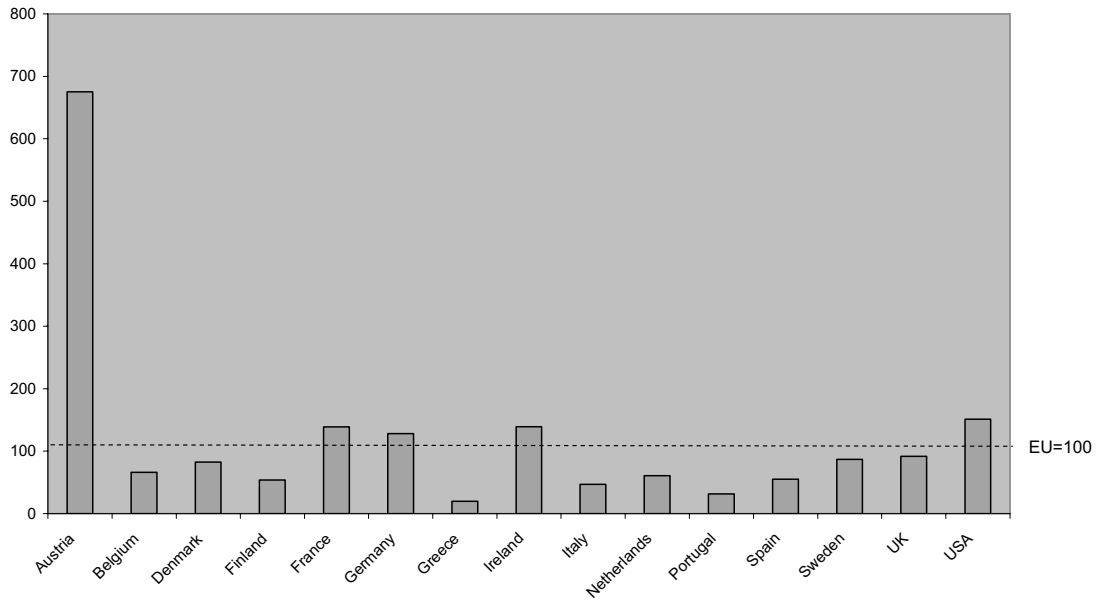
**Fabricated metal products - Rate of GDP/Hour Compared to EU Average, 2001**



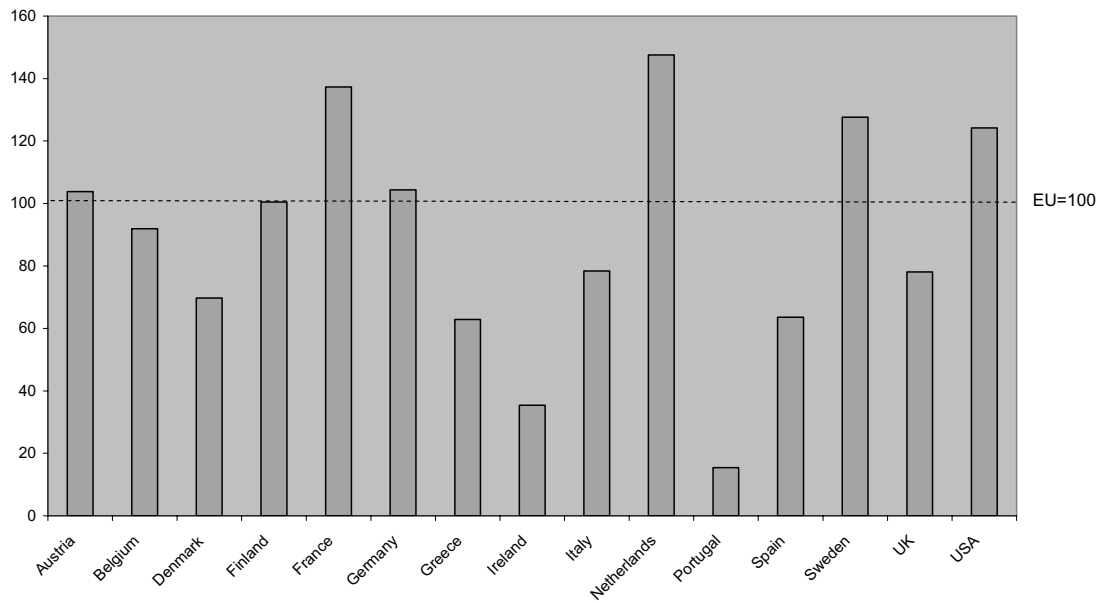
**Mechanical Engineering - Rate of GDP/Hour Compared to EU Average, 2001**



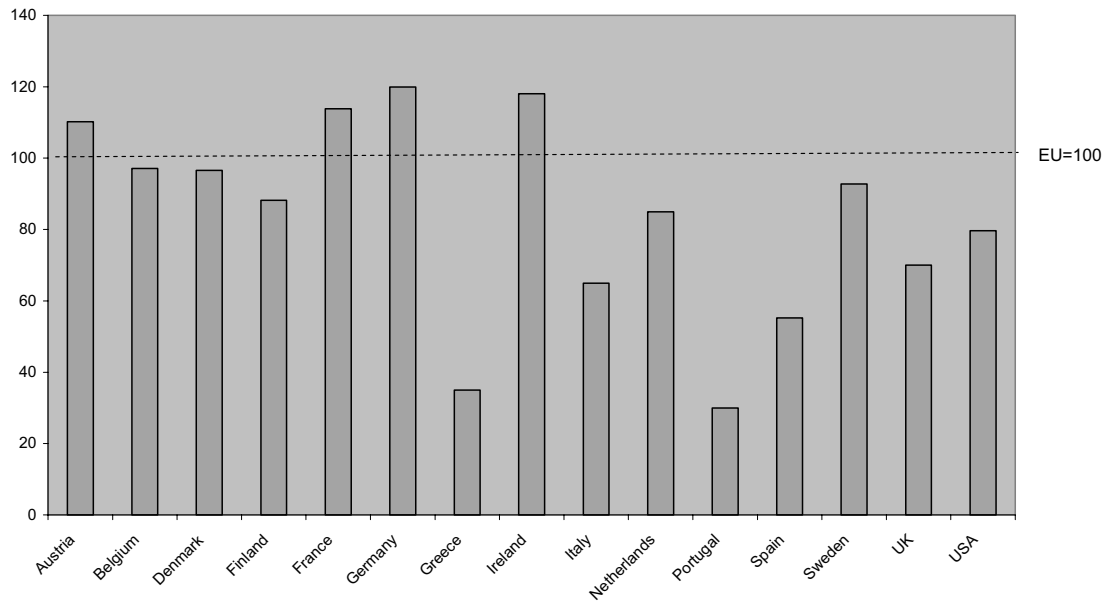
**Office machinery - Rate of GDP/Hour Compared to EU Average, 2001**



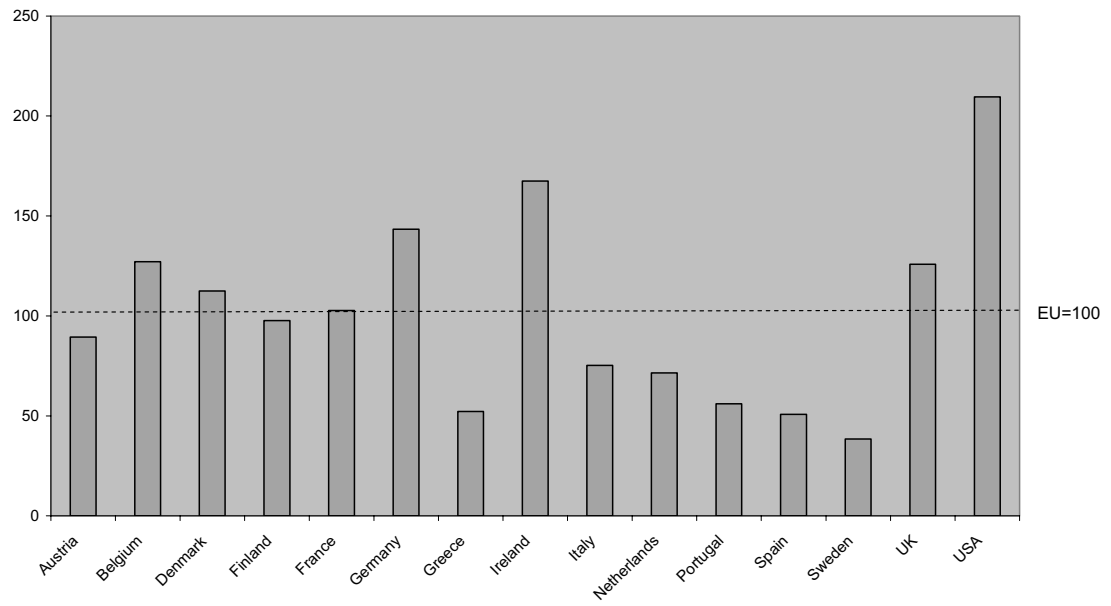
**Insulated wire - Rate of GDP/Hour Compared to EU Average, 2001**



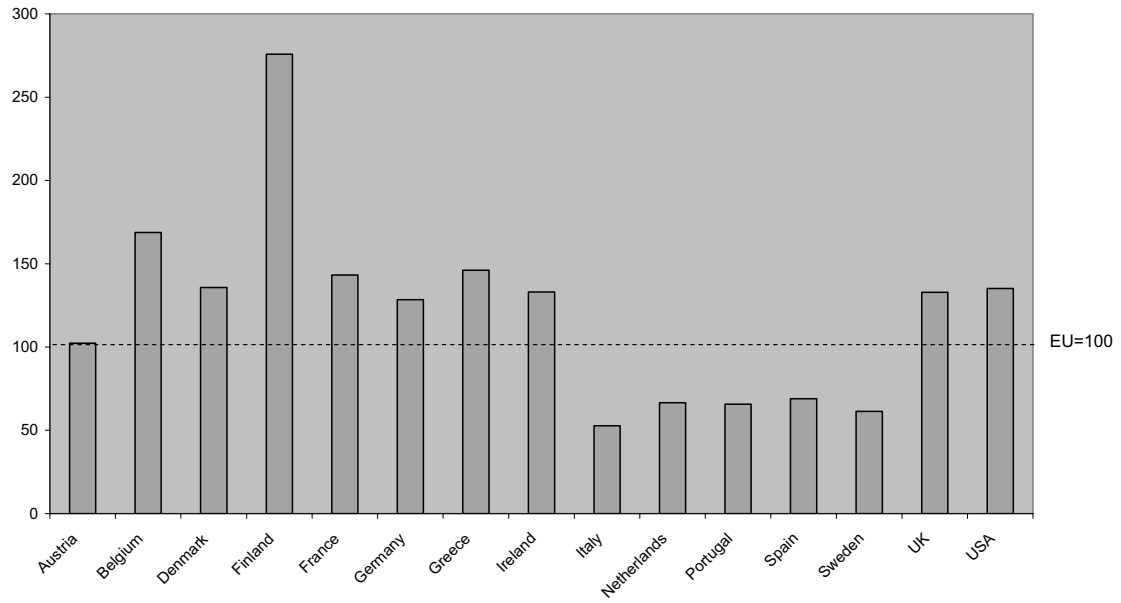
**Other electrical machinery nec - Rate of GDP/Hour Compared to EU Average, 2001**



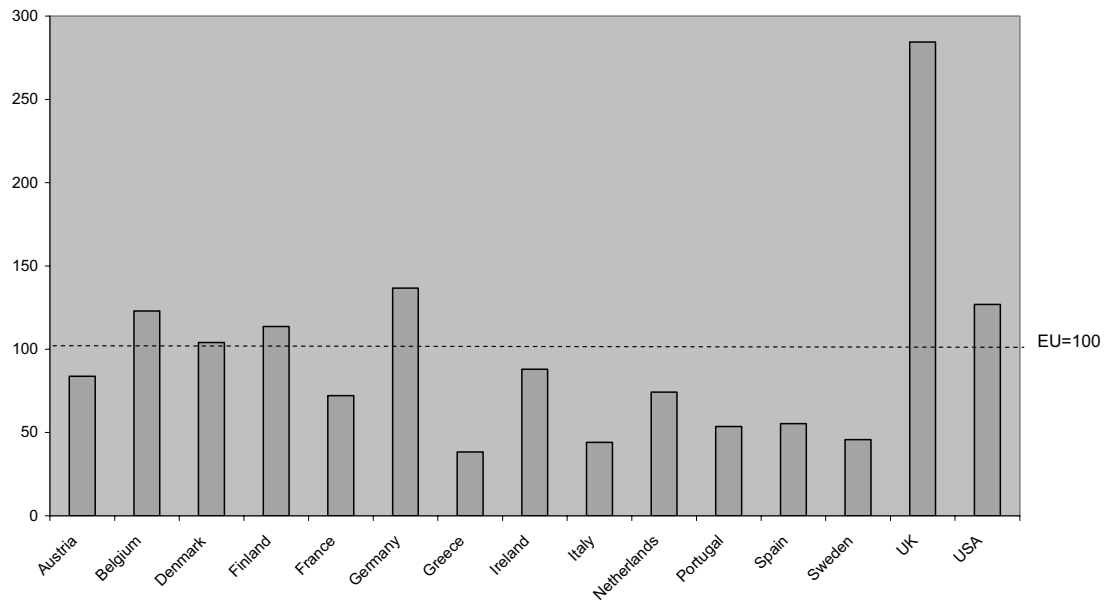
**Electronic valves & tubes - Rate of GDP/Hour Compared to EU Average, 2001**



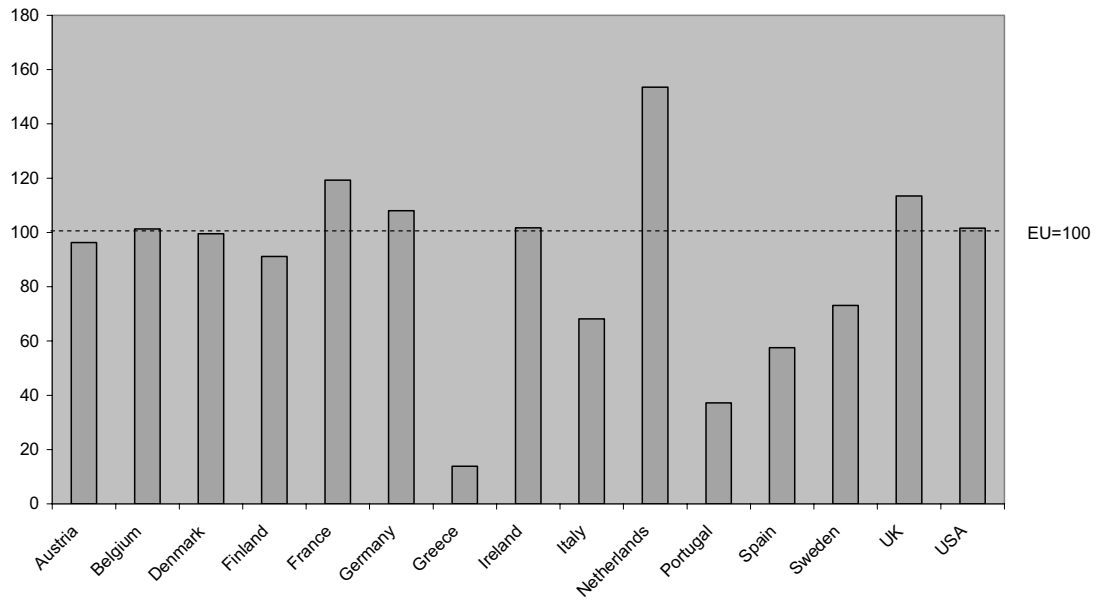
**Telecommunication equipment - Rate of GDP/Hour Compared to EU Average, 2001**



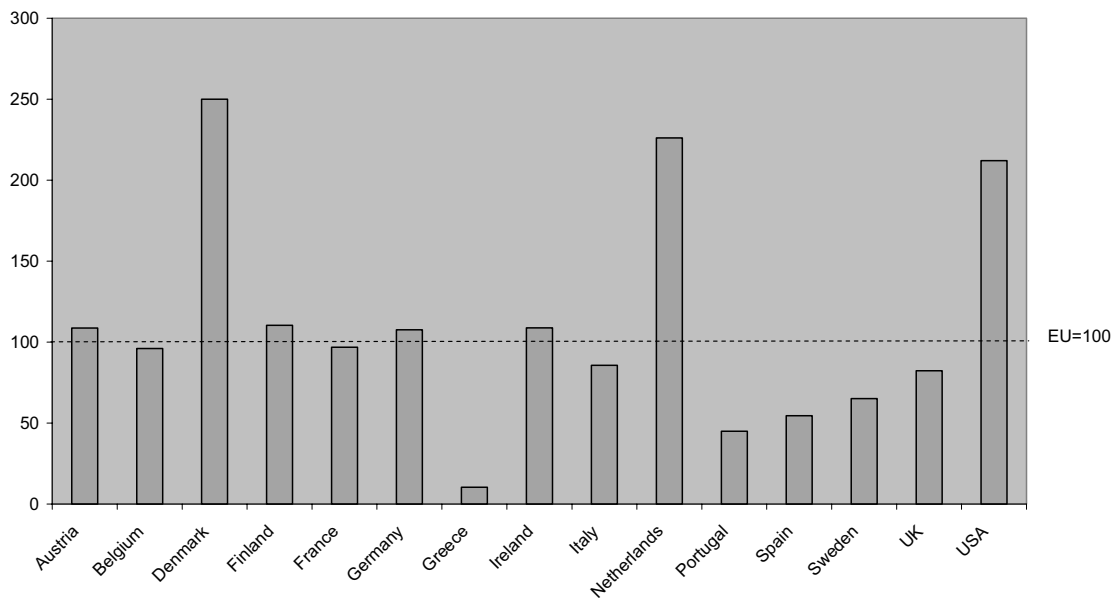
**Radio and television receivers - Rate of GDP/Hour Compared to EU Average, 2001**



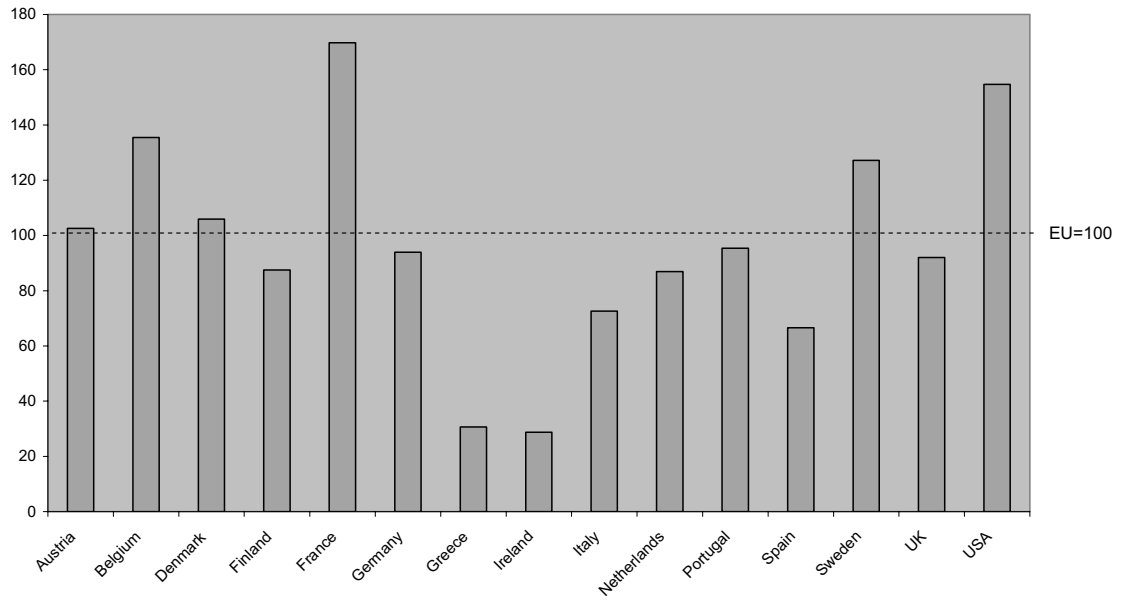
**Scientific instruments - Rate of GDP/Hour Compared to EU Average, 2001**



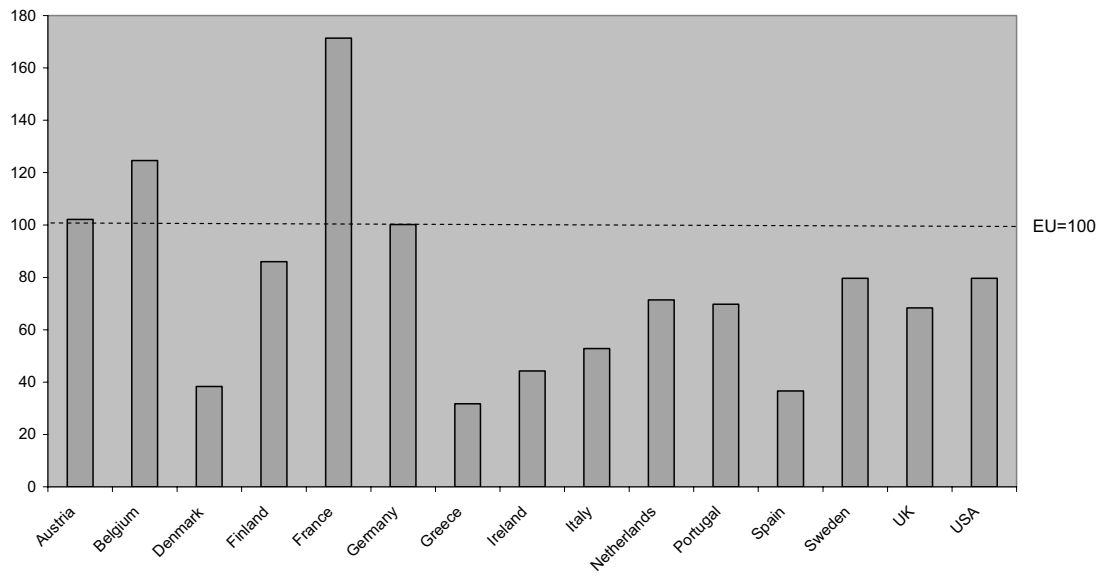
**Other instruments - Rate of GDP/Hour Compared to EU Average, 2001**



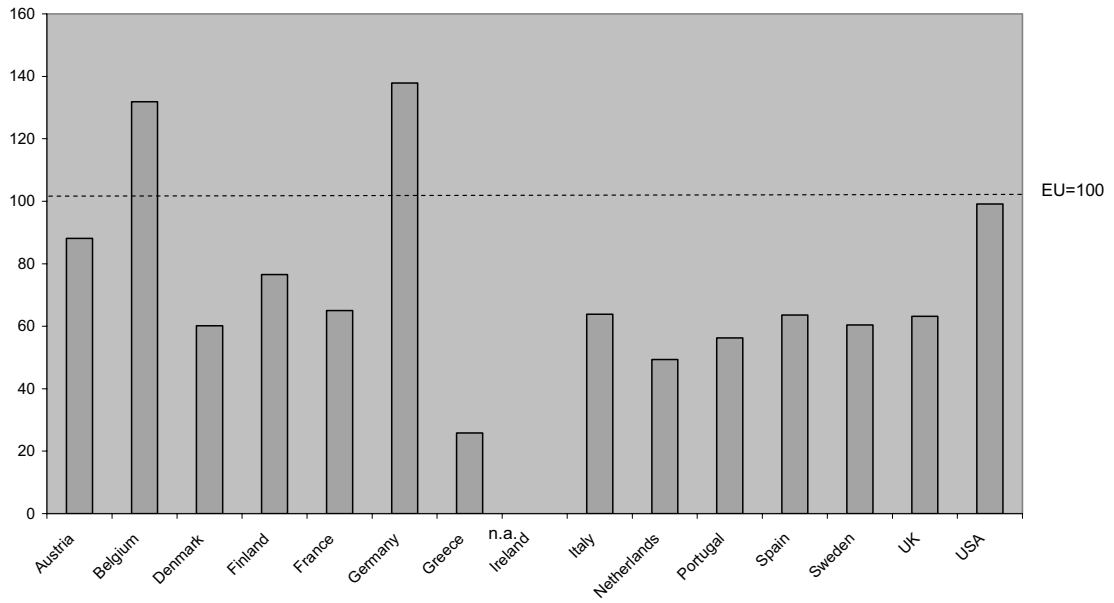
**Motor vehicles - Rate of GDP/Hour Compared to EU Average, 2001**



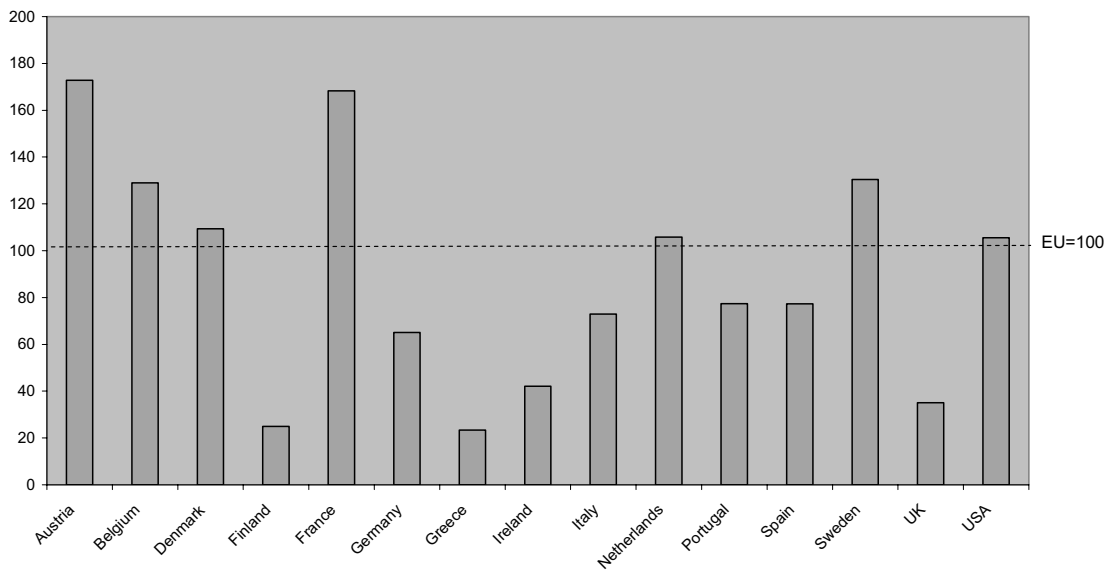
**Building & repairing ships & boats - Rate of GDP/Hour Compared to EU Average, 2001**



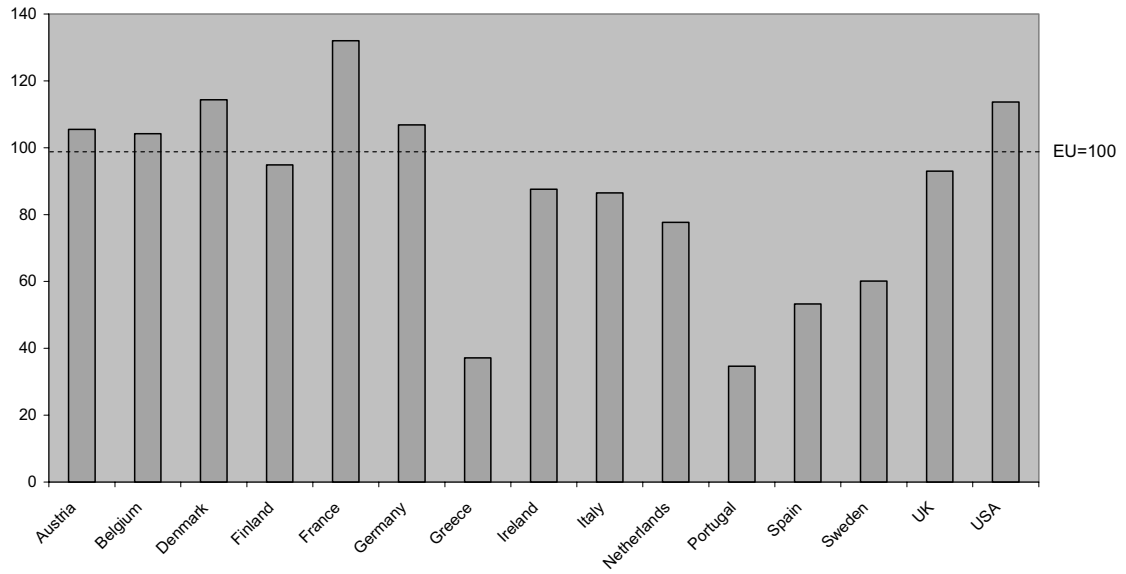
**Aircraft & spacecraft - Rate of GDP/Hour Compared to EU Average, 2001**



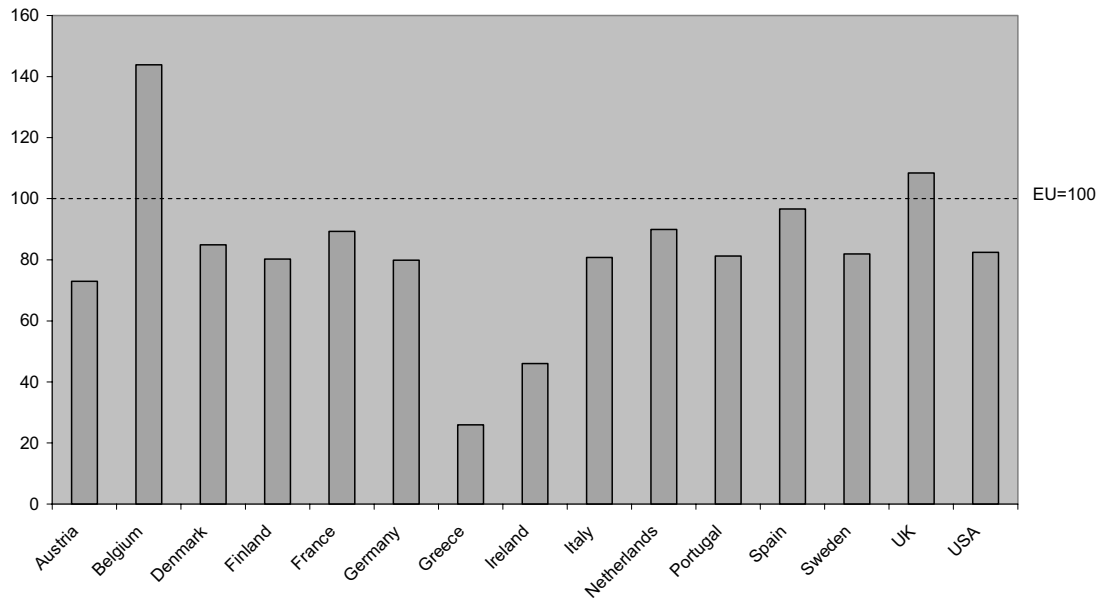
**Railroad equipment & transport equipment nec - Rate of GDP/Hour Compared to EU Average, 2001**



**Furniture, misc. manufacturing; recycling - Rate of GDP/Hour Compared to EU Average, 2001**

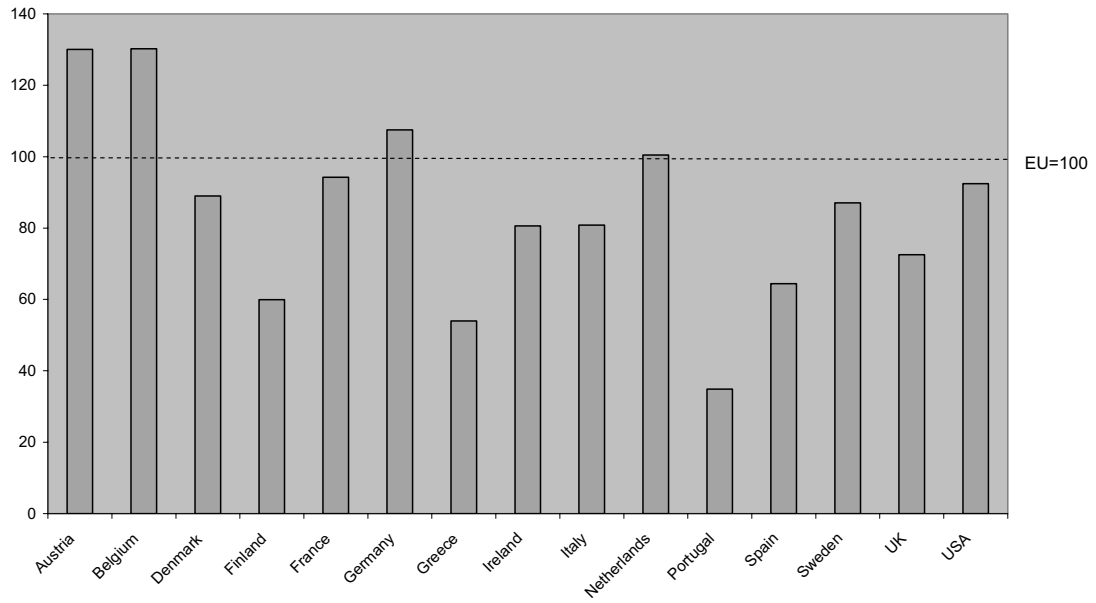


**Electricity, gas & water supply - Rate of GDP/Hour Compared to EU Average, 2001**

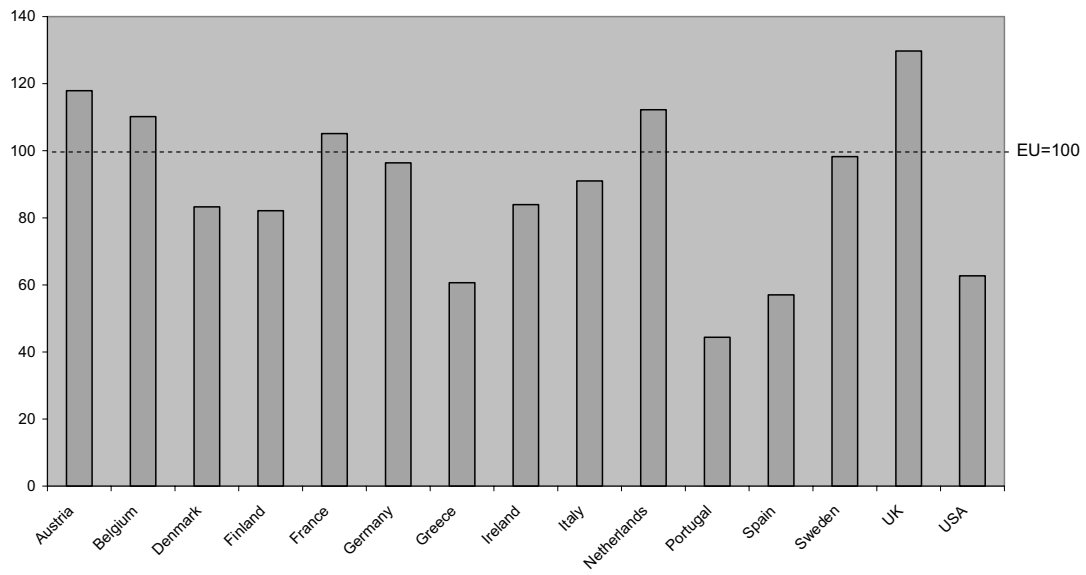




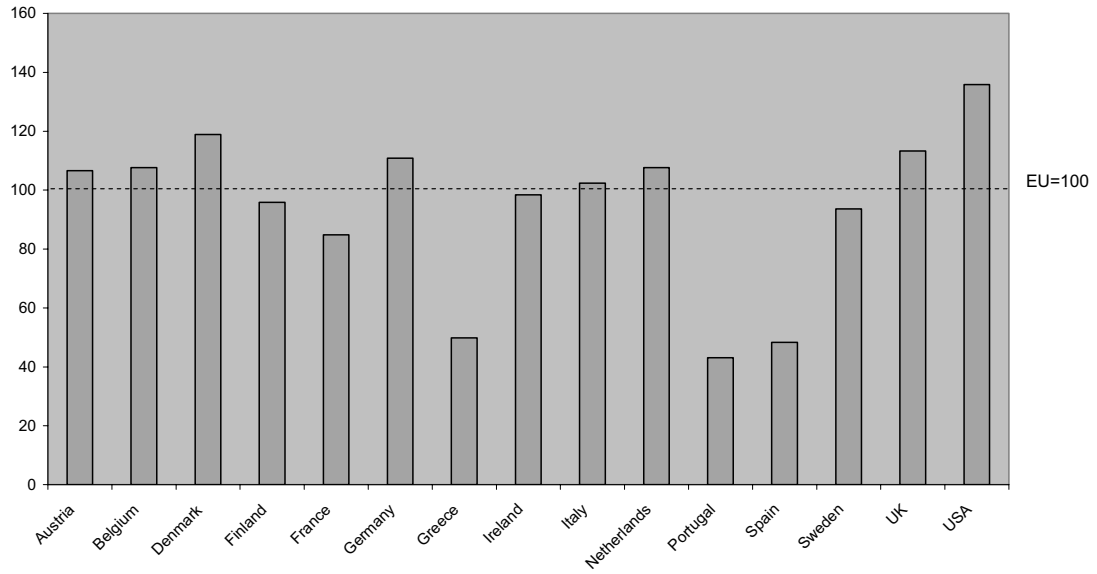
**Construction - Rate of GDP/Hour Compared to EU Average, 2001**



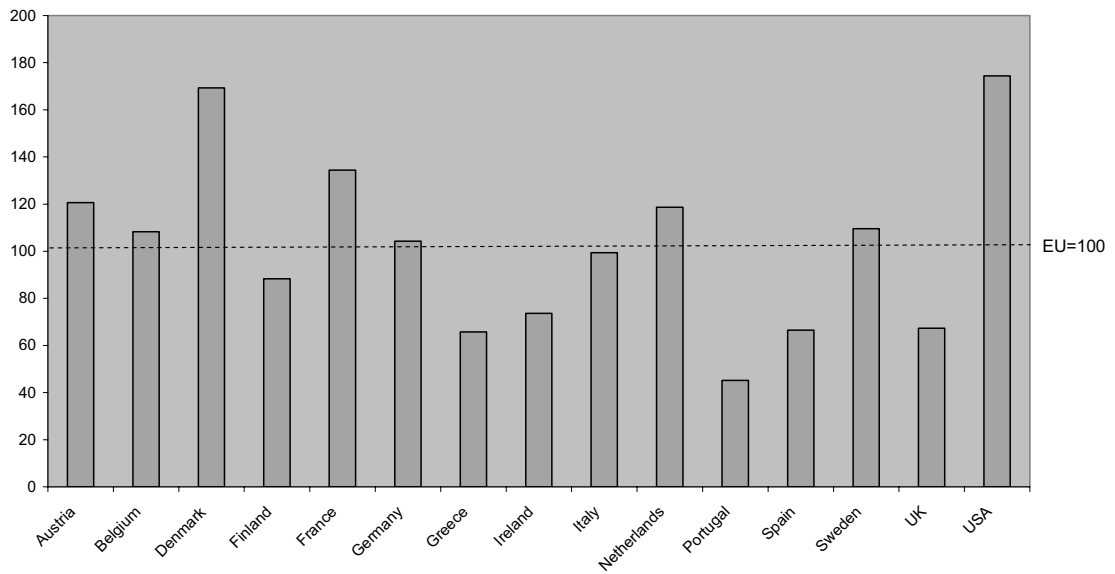
**Sale, maintenance & repair of motor vehicles & motorcycles; retail sale of automotive fuel - Rate of GDP/Hour Compared to EU Average, 2001**



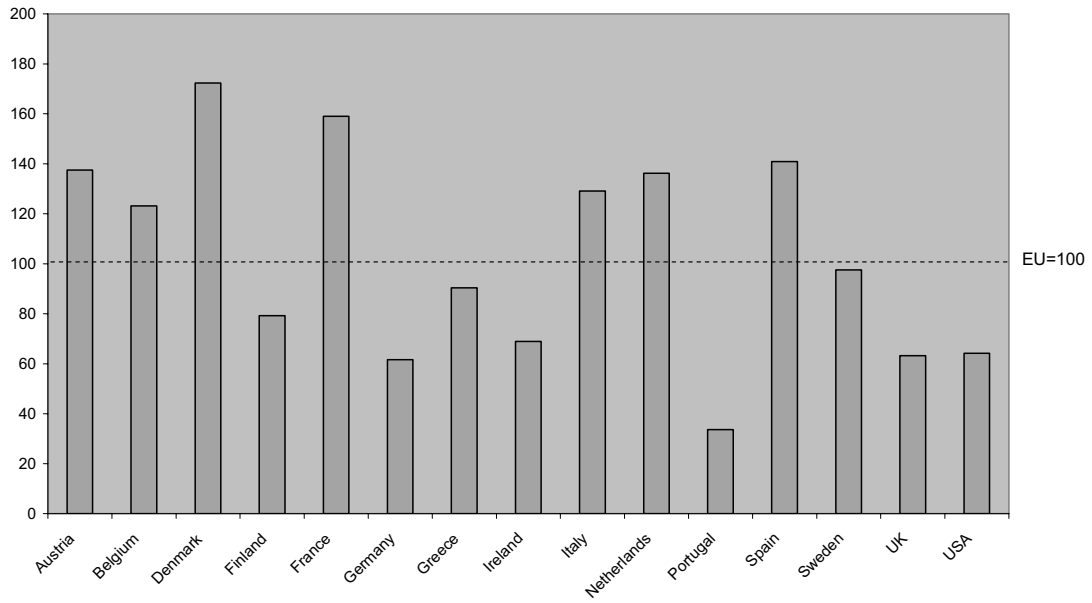
**Wholesale trade & commission trade, except of motor vehicles & motorcycles - Rate of GDP/Hour Compared to EU Average, 2001**



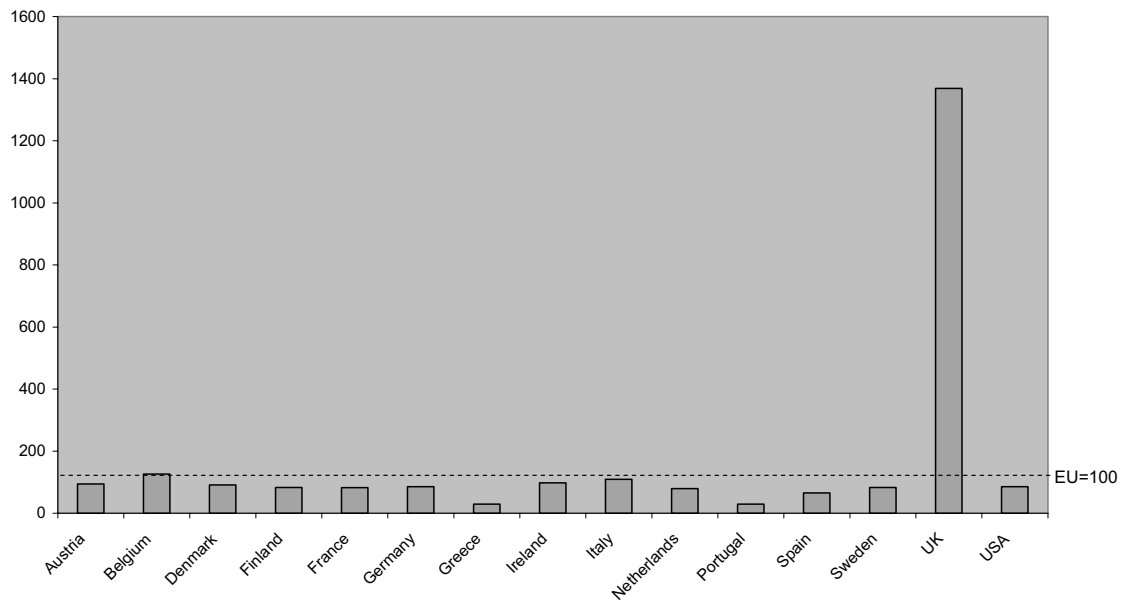
**Retail trade, except of motor vehicles & motorcycles - Rate of GDP/Hour Compared to EU Average, 2001**



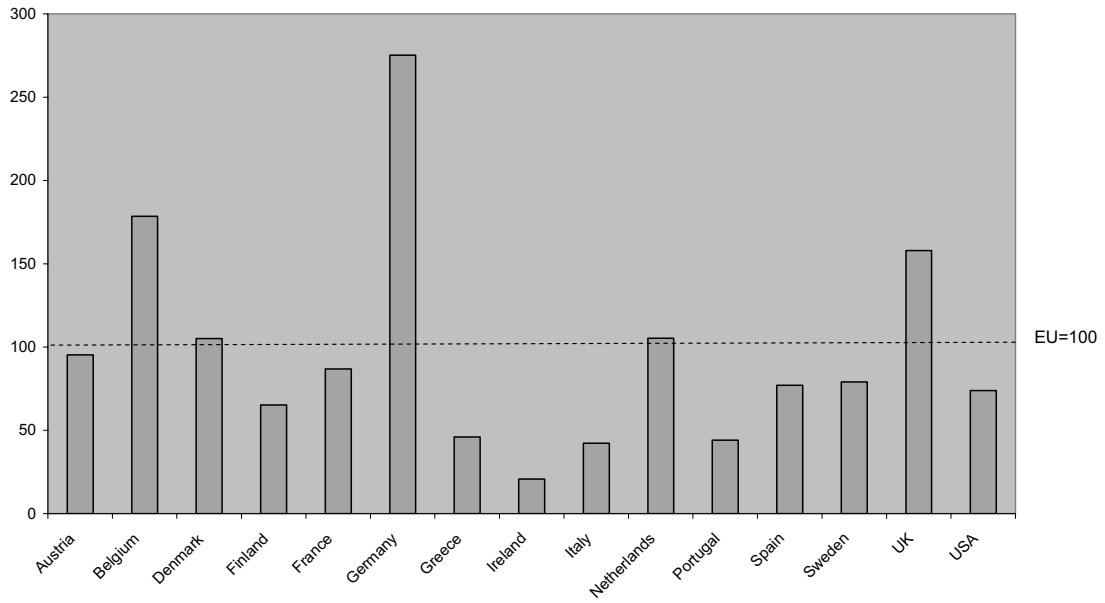
**Hotel & catering - Rate of GDP/Hour Compared to EU Average, 2001**



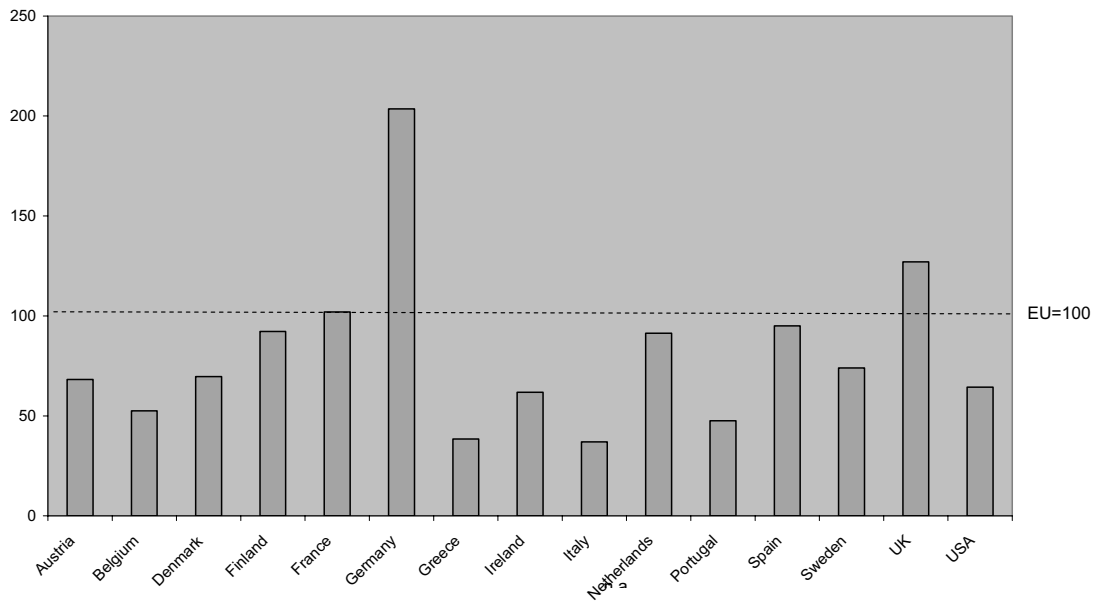
**Inland transport - Rate of GDP/Hour Compared to EU Average, 2001**



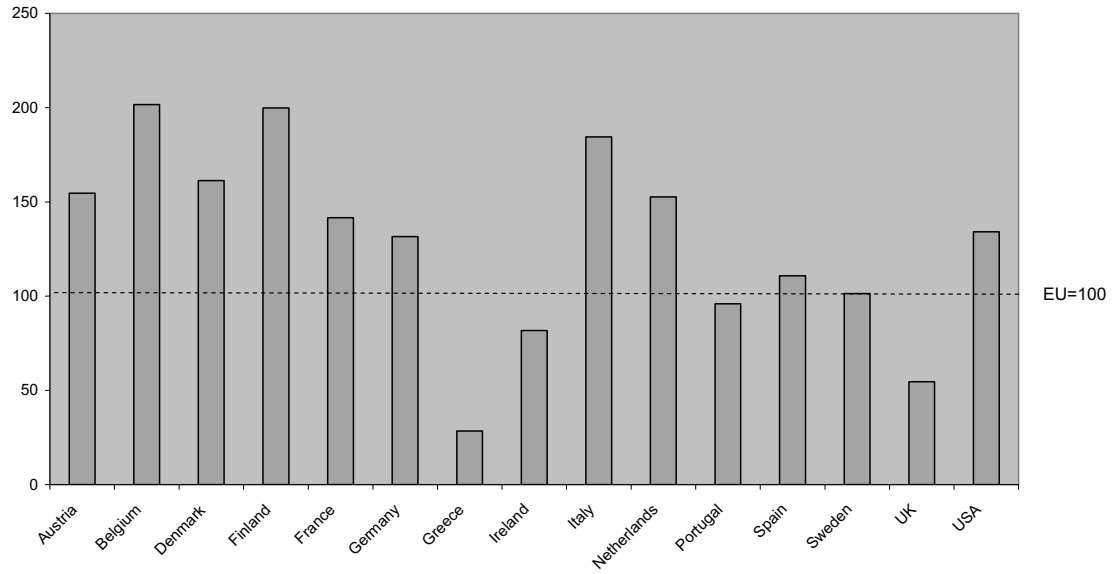
**Water transport - Rate of GDP/Hour Compared to EU Average, 2001**



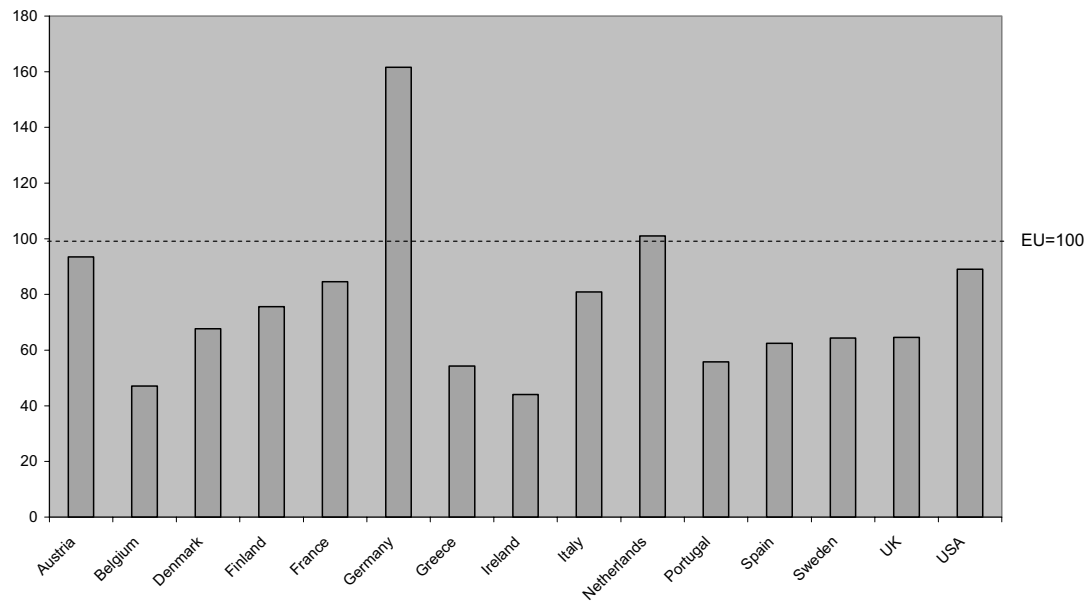
**Air transport - Rate of GDP/Hour Compared to EU Average, 2001**



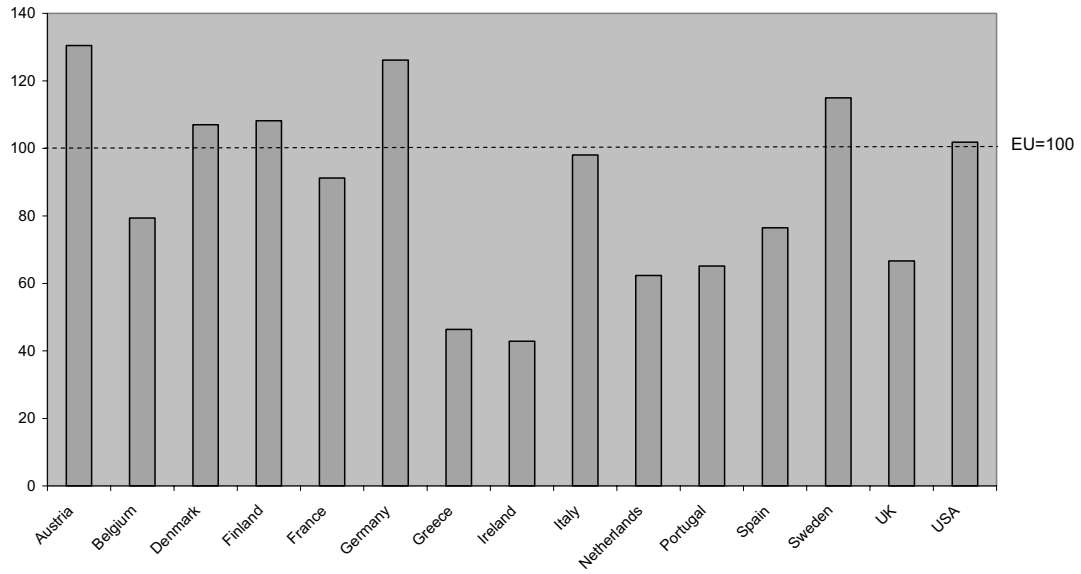
**Supporting & auxiliary transport activities; activities of travel agents - Rate of GDP/Hour Compared to EU Average, 2001**



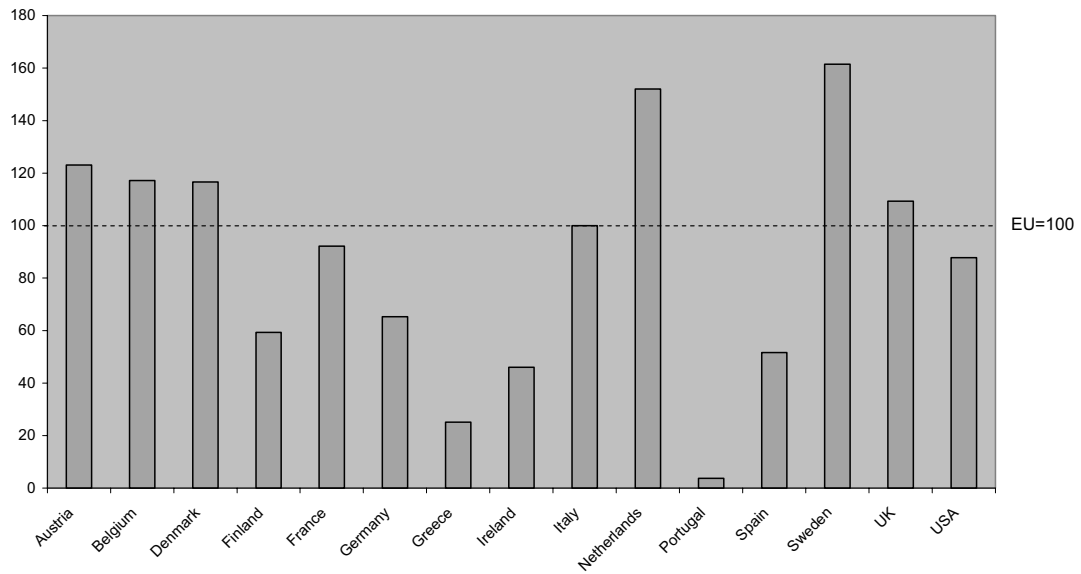
**Communications - Rate of GDP/Hour Compared to EU Average, 2001**



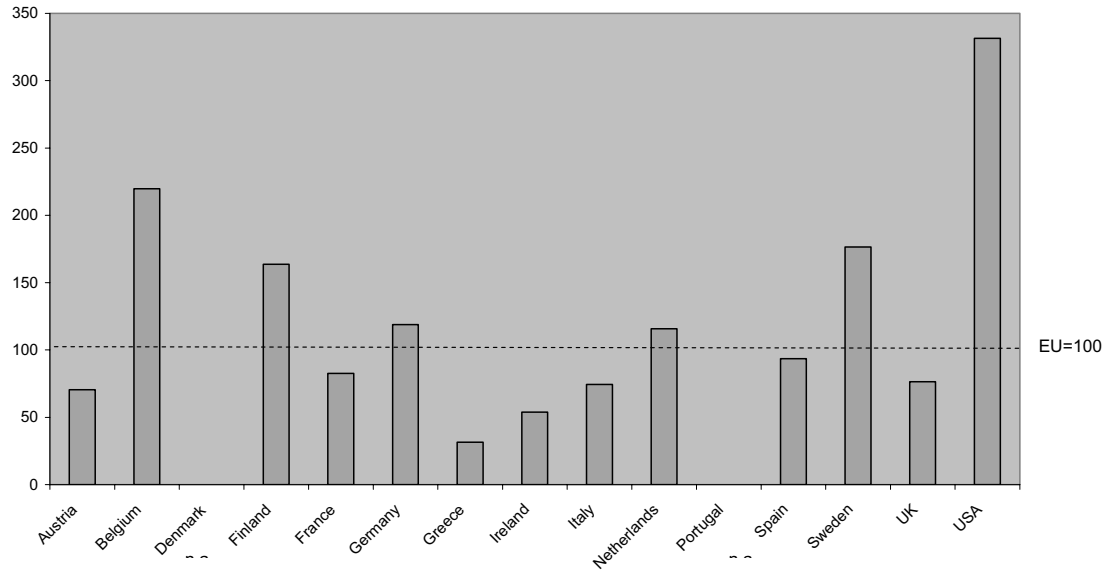
**Financial intermediation, except insurance & pension funding - Rate of GDP/Hour Compared to EU Average, 2001**



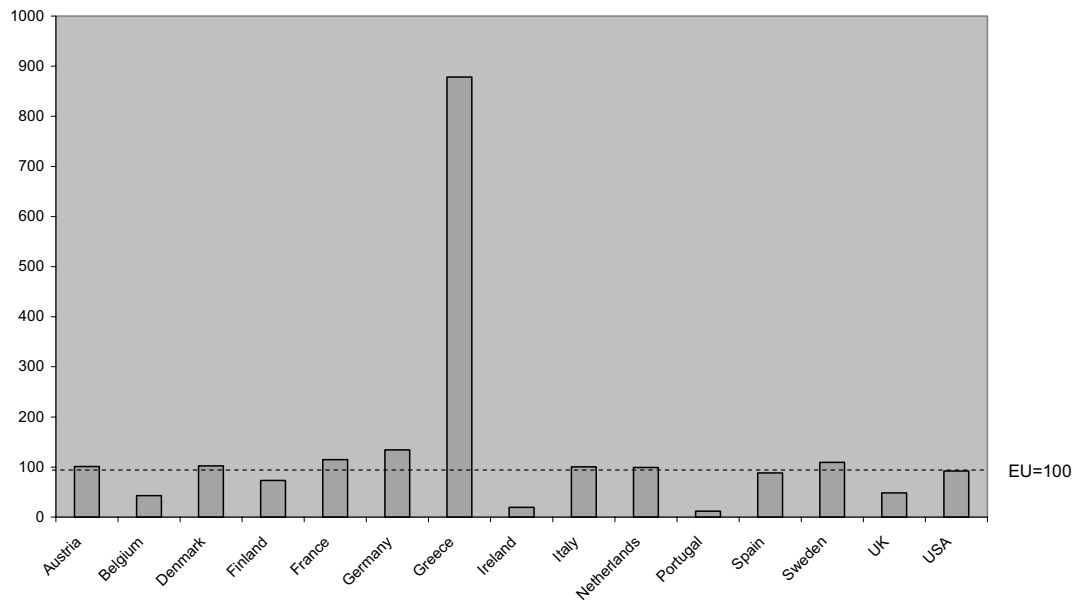
**Insurance & pension funding, except compulsory social security - Rate of GDP/Hour Compared to EU Average, 2001**



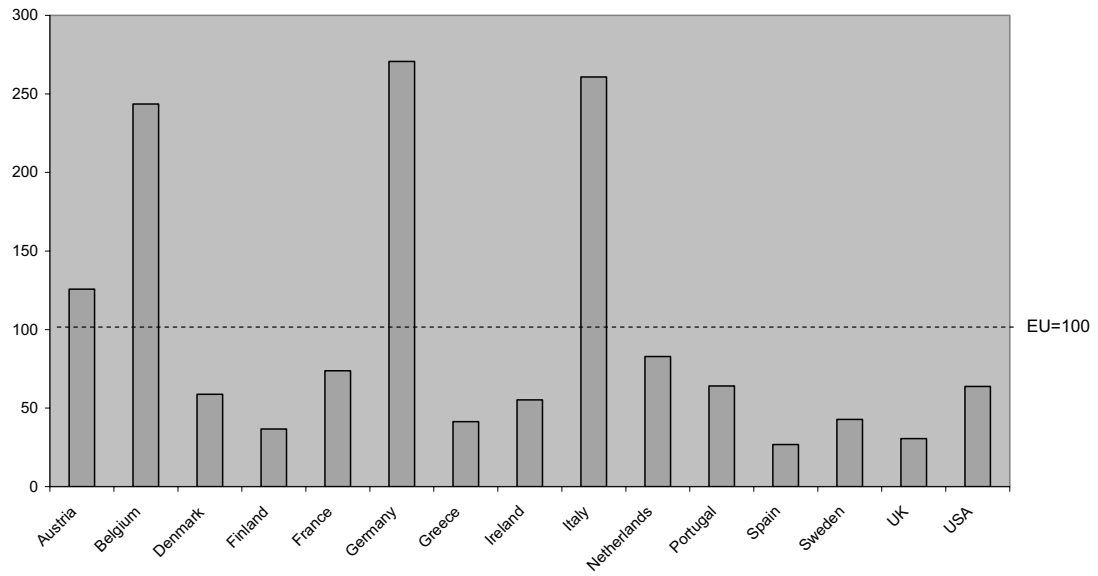
**Activities auxiliary to financial mediation - Rate of GDP/Hour Compared to EU Average, 2001**



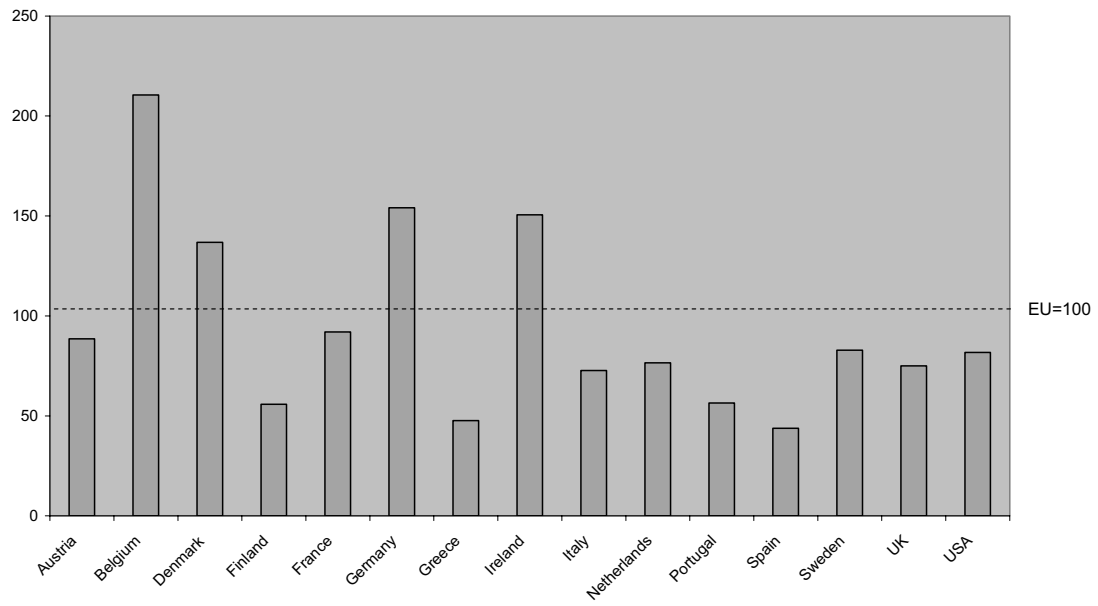
**Real estate activities - Rate of GDP/Hour Compared to EU Average, 2001**



**Renting of machinery & equipment - Rate of GDP/Hour Compared to EU Average, 2001**

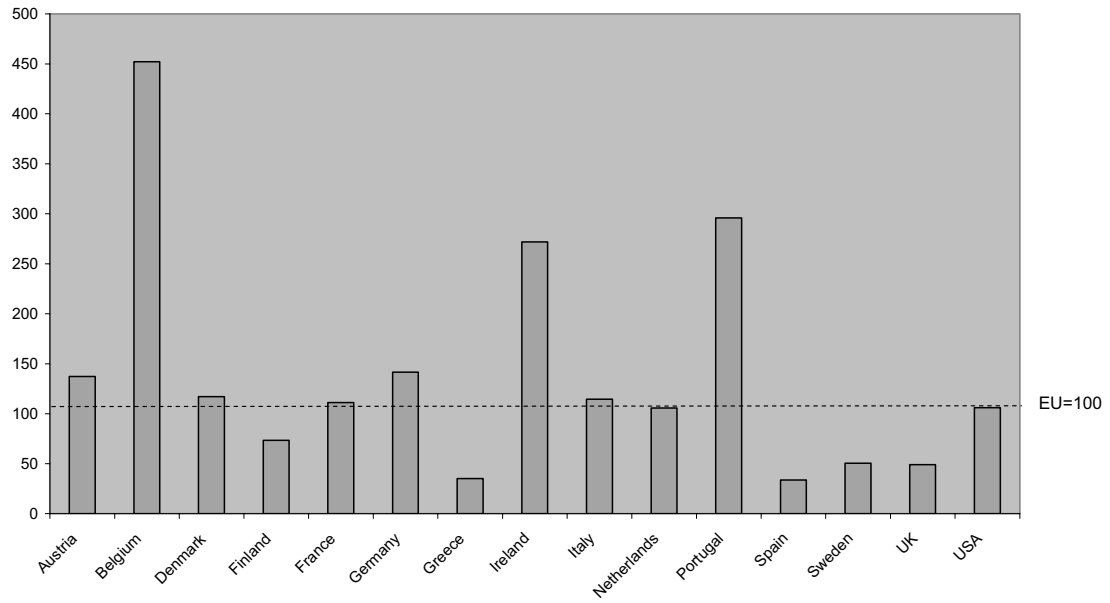


**Computer & related activities - Rate of GDP/Hour Compared to EU Average, 2001**

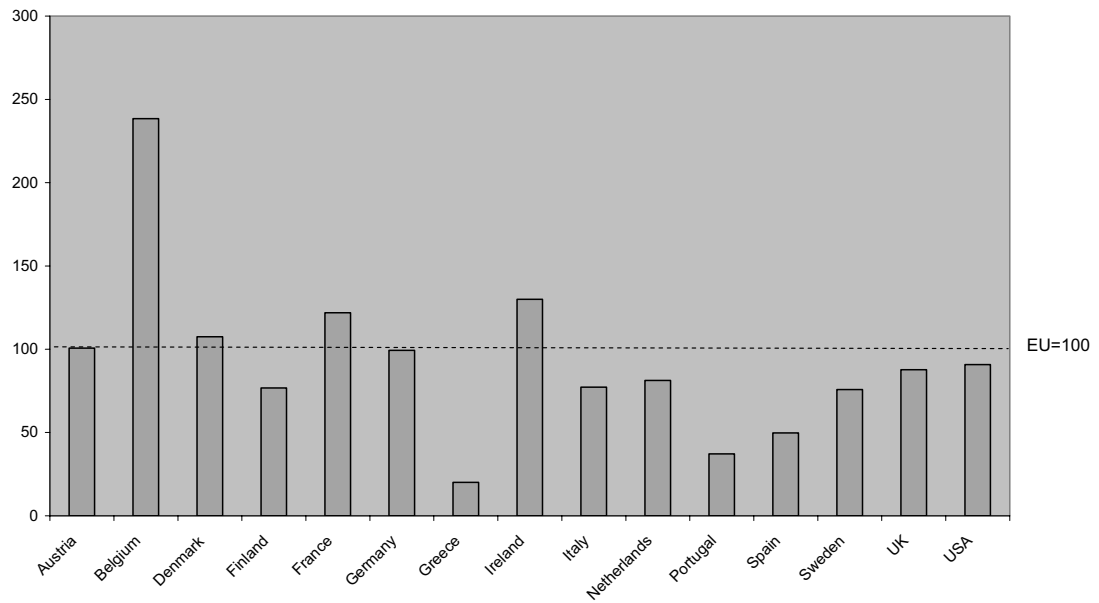




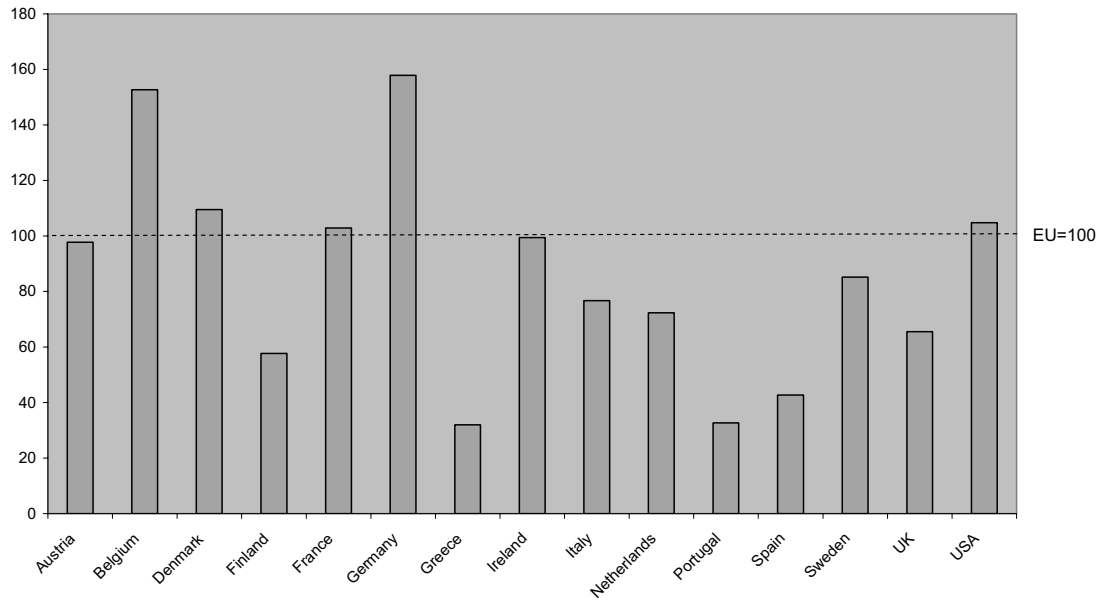
**Research & development - Rate of GDP/Hour Compared to EU Average, 2001**



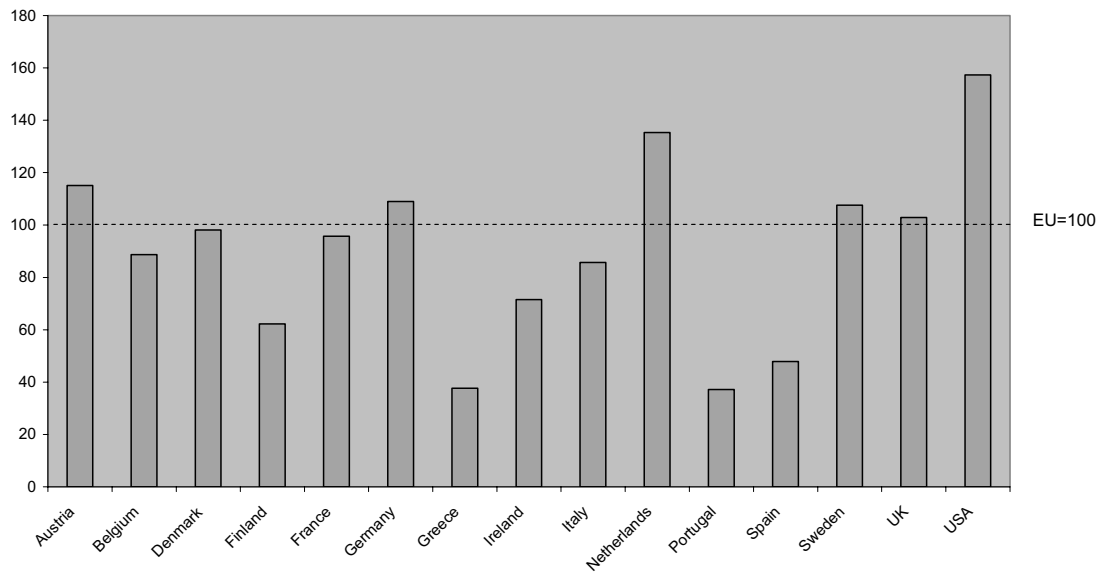
**Legal, technical & advertising - Rate of GDP/Hour Compared to EU Average, 2001**



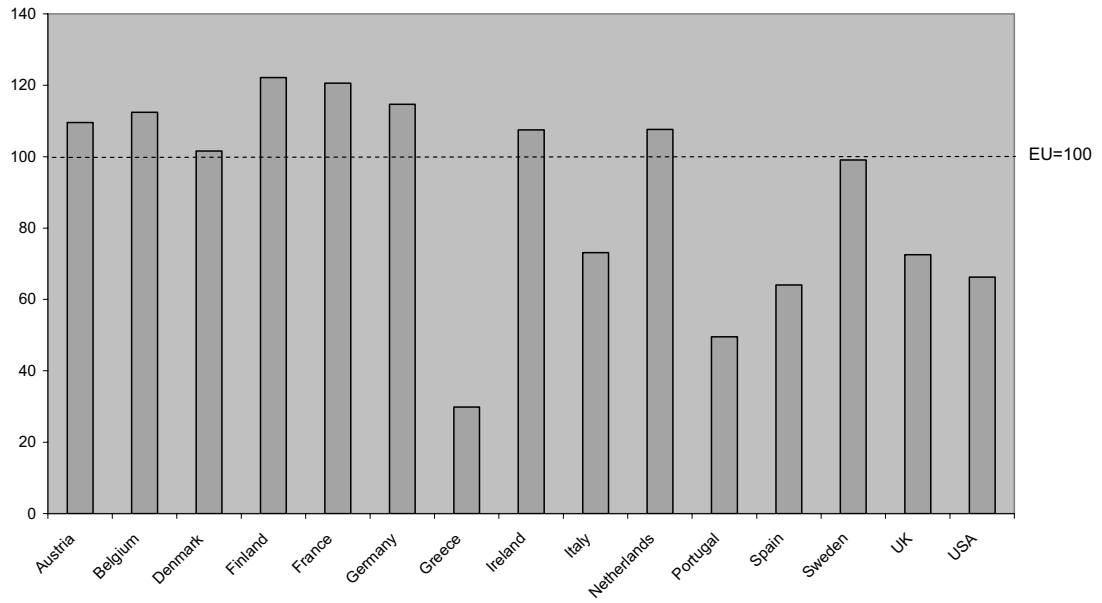
**Other business activities nec - Rate of GDP/Hour Compared to EU Average, 2001**



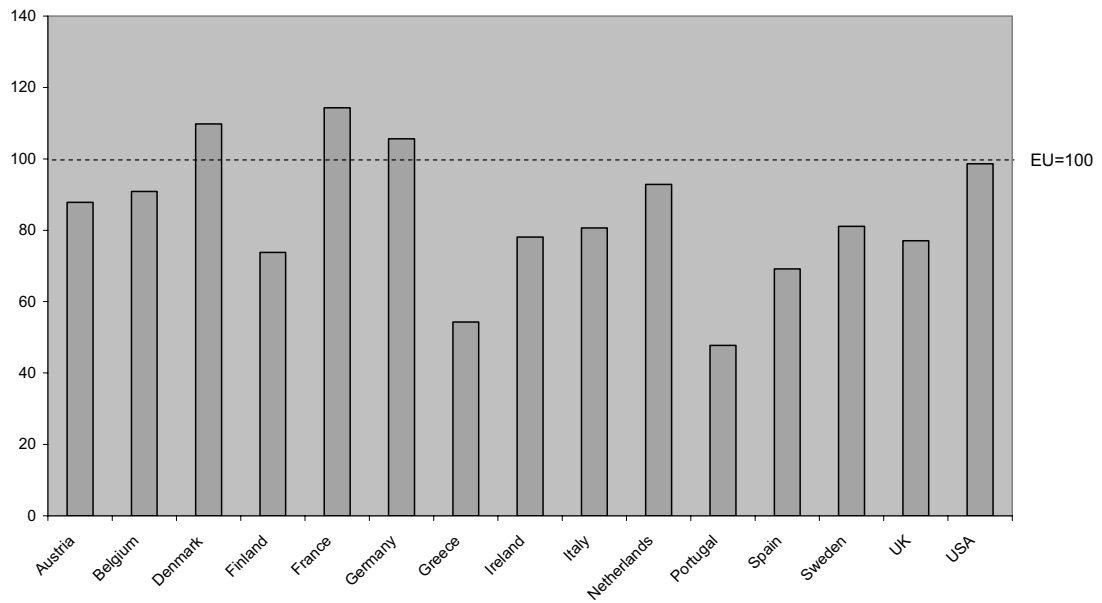
**Public administration & defence; compulsory social security - Rate of GDP/Hour Compared to EU Average, 2001**



**Education - Rate of GDP/Hour Compared to EU Average, 2001**



**Health & social work - Rate of GDP/Hour Compared to EU Average, 2001**



**Other community, social & personal services - Rate of GDP/Hour Compared to EU Average, 2001**

