

# Is the UK Moving Up the International Wellbeing Rankings?

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## Abstract

Over the last quarter of a century the UK has not moved up the wellbeing league tables. It remains near the bottom of the top ten industrialised nations. Satisfaction with life has not changed since the 1970s. Job satisfaction has declined over the 1990s. Satisfaction with democracy has gone up. As is true throughout the European Union, UK workers say that compared with five years earlier they are now under much increased stress and pressure at work. When a standard mental stress measure is used to examine employees' well-being across 15 nations, the UK is around the middle of the ranking.

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## **I. Introduction**

Economics is not just about resource allocation, demand and supply, and prices. It is also concerned with more subtle variables -- with citizens' utility, well-being and happiness. Measuring these is difficult. Over the last few decades, economists have concentrated on the pecuniary and material influences upon the quality of people's lives. They have looked predominantly at GDP, real wages, wealth, and other real variables. Textbooks will no doubt continue to focus on them. But utility, however conceived, is what ultimately lies at the bottom of the problems that matter to economists and other kinds of social scientists.

This paper is written for a National Bureau of Economic Research conference about the United Kingdom. The conference's theme is encapsulated in a question: has the economic performance of the UK been improving, and, most particularly, rising relative to that of other nations? In other words, has the UK been moving up the international league tables? In this paper we address that issue in a way unconventional to most economists (though not to applied psychologists). We look at data on subjective well-being. The paper examines whether the UK been getting happier – in an absolute and relative sense.

## **II. Has the UK Moved up the Well-being Rankings?**

The simplest way to measure well-being is by asking people questions about how they feel about their lives. In the literature on subjective well-being, psychologists have traditionally preferred life-satisfaction questions to most others. It is believed that (compared to questions about happiness levels, for example) such questions translate more readily across languages and cultures. Useful introductions to the psychology literature on well-being data include Campbell (1981) and Argyle (1987). An overview paper written from the economist's perspective is Oswald (1997). Easterlin (1974) is an early famous contribution. Two survey papers by Diener (1984, with co-authors 1999), in one of the world's leading psychology journals, are accessible to non-specialists. He discusses various economic influences upon the quality of life. Warr (1987, 1997) provides a readable account of the links between work and mental health.

A natural place to begin is with Table 1. This sets out information on random samples of British people from the years 1972 to 1998. The Eurobarometer surveys are the source. Individuals in each year are asked the question: *On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?* The sample is not an especially large one (slightly less than 2000 people per year). It is likely to be sufficient, however, for the purpose of identifying broad patterns through the years.

It can be seen from Table 1 that British people are not becoming more satisfied with their lives. There is no upward trend in well-being levels through the decades. In the earliest group of years, which averages across 1972-6, 4% of British individuals said they were not at all satisfied with their lives, and 31% said they were very satisfied. A quarter of a century later, these numbers were almost exactly unchanged. In the period 1994-8, 3% of Britons answered that they were not at all satisfied with their lives, and 31% said they felt very satisfied. Even if we look within each gender group, there is no trend up or down in reported well-being. On this criterion, nothing fundamental has changed in Great Britain. For more details, see Blanchflower and Oswald (1999a,b).

Some economists will be able to think of reasons for this lack of trend. Others will argue that such data may be illusory and wish to turn back to traditional real-income indicators. Nevertheless, the most straightforward conclusion from these numbers is that, paradoxically, the near-doubling of real incomes since the early 1970s does not appear to have fed through into greater contentment with life. To most economists, this will be surprising. Money buys happiness in all economics textbooks.

There seem to be three possible explanations.

- One possibility is that reported life-satisfaction data are so unreliable that the evidence of flat well-being in Table 1 can be ignored.

- Another is that life satisfaction data are useful and reliable, and these numbers are telling us that, whatever our preconceptions, economic progress is not buying extra ‘happiness’ (perhaps because in a rich society human beings get their happiness from relative income, so that the rising tide of economic growth does not produce more utility for the average person, who finds that unfortunately the neighbours also now have a Volvo and a snowmobile)
- A third possibility is that life satisfaction data are reliable in cross-section but not in time series, or in other words, that human beings use language in a way that automatically means they scale their answers by what they see around them, so that to report oneself as very satisfied in modern Britain it is necessary to do more than have more BMWs than one’s parents owned.

Distinguishing among these three hypotheses, and possibly others, is not likely to be easy. Economists are unused to having to think about it. The distinction between the second hypothesis (where GDP is not buying more well-being) and the third (where it may be, but citizens’ answers conceal the fact) seems particularly important. Since Richard Easterlin’s early work, economists have largely preferred not to face up to the difficulty.

Table 2 turns to Britain’s relative performance as an economy and nation – its position in an international ranking of life-satisfaction levels. Table 2 draws

upon answers to an identical life-satisfaction question asked in each of nine European nations (with the same wording as above for Great Britain).

Table 2 is derived from pooled regression equations. The estimation uses a common framework across nations and then calculates the coefficients on country dummy variables. It shows that in the 1970s Great Britain ranked at number six in the league table of these nine nations. By the end of the 1990s, it ranked at number five. Britain's place in the league table of life-satisfaction therefore altered only fractionally over a quarter of a century. Denmark is top in each period. Italy and France are consistently at the bottom of the rankings. No exactly comparable data are available for the United States, so it is not possible to know how, in this data set, the US would do in the league table of Table 2.

Measuring people's answers to well-being surveys across nations is, of course, likely to be fraught with problems. Translation difficulties and cultural differences might lead, in principle, to spurious patterns in the rankings. However, this may not be too serious if the aim is to study changes over time in the rankings. Assuming such biases stay constant, the data should be usable. The lack of movement in Britain's place in the rankings of Table 2 therefore seems of interest. At least by this type of measure, the quality of life in Britain has risen approximately neither faster nor slower than elsewhere.

There is another way to assess well-being in a society. That is to use the Human Development Index (HDI), which is produced annually by statisticians at the United Nations. The index attempts to recognise that human welfare is not adequately captured by GDP per capita. It is a composite of three main factors: longevity, knowledge, and standard of living. Longevity is measured by life expectancy. Knowledge is measured by a combination of adult literacy (given two-thirds weight) and mean years of schooling (given one-third weight). Standard of living is measured by real GDP per capita, after adjustment for the local cost of living as captured by purchasing power parity PPP prices. The three factors are then averaged to form the HDI index.

Country HDI rankings are given in Table 3. The early years were constructed retrospectively (HDI methodology dates from the start of the 1990s). As can be seen from Table 3, in 1975 there were ten countries that ranked above the United Kingdom. These were Canada, Norway, the US, Japan, Sweden, Netherlands, Iceland, France, Denmark and New Zealand. In 1997, eight of these countries still ranked above or equal to the UK. France moved to be equal to the UK, at an HDI score of 0.918. Denmark and New Zealand fell slightly below the UK. These numbers again suggest that the United Kingdom has hardly changed its position in the international league table. At best, it has improved fractionally in quality-of-life rankings. Moreover, if 1990 rather than 1997 is used as the year,

twelve nations would rank above the UK. This suggests that the appropriate judgement is probably that relative UK performance is essentially the same as it was a quarter of a century earlier. The findings are consistent with those suggested by the life-satisfaction rankings.

To provide a feel for the micro-econometric structure of well-being, Table 4 describes pooled life-satisfaction equations using Eurobarometer data from 1975 to 1998. The sample size slightly exceeds 450,000 individuals. It can be seen that life satisfaction is U-shaped in age, is low among men, high among married people, and noticeably low among the unemployed. These equations are ordered logits but the same conclusions emerge from simple OLS methods. Table 5 is in the same spirit. It looks at the UK alone and has the same general structure.

Another way to measure well-being in an advanced country is to ask people how pleased they are with the way democracy is working. Table 6 provides information on the answers to that kind of question. It produces a little more evidence of a rise for Britain up the international league tables. Again the approach is to take random samples of individuals, run regressions with a measure of satisfaction (in this case with the state of democracy in the nation) as the dependent variable, and read off the coefficients on country dummies. Luxembourg is the clear winner in this case. By contrast, Italy and Belgium come in Table 6 at the foot of the ranking. The United Kingdom starts off in the 1970s

at place 5 in the nine-nations table; it moves to number 6 through the 1980s; it then jumps in the 1990s to 4 and then 3.

### **III. Well-being at Work and Job Satisfaction**

We now turn to satisfaction with work and jobs. What has been happening to the quality of working life in the United Kingdom? The study by labor economists of job satisfaction is still in its infancy. This may be, in part, because economists are suspicious of the usefulness of data on reported well-being. However, it is known that satisfaction levels are correlated with observable phenomena (such as quit behavior).

The paper again uses multi-country data. In this case the numbers come from three sources – the International Social Survey Programme, the Eurobarometer Surveys, and the US General Social Surveys. While the literature by economists is small, it has begun to grow recently with the research of, among others, Andrew Clark and Daniel Hamermesh.

Early papers by economists on job satisfaction include Borjas (1979), Freeman (1978) and Hamermesh (1977). Blanchflower (1991) is a recent attempt to use data on feelings of job insecurity within a conventional wage equation. A fast-growing modern literature on the border between economics and psychology includes Akerlof et al (1988), Birdi et al (1995), Clark (1996, 1998), Clark and Oswald (1994, 1996), Clark et al (1995), Curtice (1993), Di Tella et al (2000),

Frey and Stutzer (1999), Judge and Watanabe (1993), Kahheman et al (1997), Levy-Garboua and Montmarquette (1997), Ng (1996, 1997), Pavot et al (1991), Sui and Cooper (1998), and Veenhoven (1991). A slightly earlier empirical paper on relativity effects and utility is Van de Stadt et al (1985). Frank (1985) contains many interesting ideas that cross disciplines. Inglehart (1990) is a large study using the Eurobarometer surveys; it reports data on overall well-being for a range of western countries. Spector (1997) is a new overview of the job satisfaction literature. Parts of his book make interesting though unfamiliar reading for an economist. Recent studies of job satisfaction among managers include Worrall and Cooper (1998) for Great Britain, and Spector et al (1999) for a group of twenty-two countries.

Unfortunately, there appears to be no consistent series on job satisfaction in Britain for a long period. An early series taken from the General Household Survey is presented in Appendix A for the period 1973-1983 and is basically flat. Table 7 contains the best modern data for 1990s Britain. They are drawn from the British Household Panel Survey. Answers are on a seven-point scale in response to a question about workers' overall job satisfaction. In this survey, almost all individuals put themselves in the top three categories (that is, the job-satisfaction levels 7,6,5). Over the period, there is no statistically significant time-trend in job satisfaction in Britain's private sector through the 1990s. By contrast, the trend is

down in the public sector (the t-statistic slightly exceeds two: regression not reported). Thus in the public sector in Britain, life has apparently been recently getting worse for workers.

The lack of upward trend in well-being in the British workplace is in the spirit of the conclusions of Blanchflower and Freeman (1994). After sifting through evidence on the reforms brought about by Prime Minister Margaret Thatcher, they concluded that there was no evidence of a fundamental change in the way the labour market worked in Great Britain. It would be desirable to have a longer run of data. We return to this, in an imperfect way, later in the paper.

As a benchmark for Britain and other European countries, it is natural to study the United States. One reason is that this is the country for which there is the longest run of randomly sampled workers. The data – drawn from the US General Social Survey -- start early in the 1970s. Table 8 gives the pattern of job satisfaction responses up to the late 1990s. The question wording is

*On the whole how satisfied are you with the work you do – would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?*

While the size of sample is not large (at just under 1000 American workers per year), and these are cross-sections rather than a longitudinal sample, the GSS reveals useful patterns in Table 8. First, the great majority of US workers express themselves as rather content with their work. Approximately half say they are

very satisfied, and forty per cent moderately satisfied. Only a tiny fraction of the population put themselves in the very-dissatisfied category. This is similar to the finding in British data, and appears to allow us to reject any simple version of the idea – traditionally found in Dickens and Marx -- that work exploits people. It also makes less plausible the commonly heard journalistic view that stress at work is overwhelming modern Americans. This is not to imply that job-satisfaction numbers should be accepted uncritically, but that the first pass through the data seems to reveal a good degree of contentment at work.

Labor economists -- raised on data and theories of rationality -- are perhaps more likely than some social scientists to expect workers to express satisfaction with their jobs. It is known that people move around a great deal early in their careers. They sort themselves into jobs that they like and out of jobs they dislike. To sample the well-being levels of a cross-section of employees, therefore, is to sample a group of individuals who are already heavily self-selected into suitable occupations.

Table 8 shows there is a small but systematic downward trend in the satisfaction numbers reported in American workplaces (a formal test can be done). Through the 1990s, for example, approximately 46% of workers gave the top answer 'very satisfied' to the satisfaction question. Yet in the 1970s, 51% of workers said very satisfied. A reason to find this unusual is that by objective

standards the safety and cleanliness (and probably physical arduousness) of working life in America have been improving through the decades. Table 8B explores this a little more. It breaks down the time movements by different sections of the population. For people over age 30, the trend towards lower reported well-being at work is more marked. Here the average proportions giving the top score are:

*1970s: 56% of over-30s Americans were very satisfied*

*1980s: 52% were very satisfied*

*1990s: 48% were very satisfied.*

The trends are not very different between men and women (which might be viewed as unexpected because of a presumption that gender discrimination has dropped over the last few decades).

Our finding of falling American job satisfaction is consistent with a small amount of earlier research. Blanchflower et al (1993) documented at best flat well-being levels through time in Britain and the US. Although not his primary concern, new work by Hamermesh (1998) documents signs of diminishing job satisfaction among young workers in the 1978-88 and 1984-1996 periods of the NLSY for the United States, and in the 1984-96 SOEP for Germany. Hamermesh is actually fairly sceptical of his results (p.21: “difficult to believe...at a time when real earnings were rising”).

If the next twenty-five years make clear that the trend is not a fluke of recent decades, it will become important to understand the reason for a downward spiral in reported well-being. One mechanical possibility is that Americans now use words differently: they are no less content with work than their parents but they put things in more vehement language when asked. On such a view, the trend down in the satisfaction scores is an illusion, and modern workers simply express themselves more critically about everything (including their own lives) than their fathers and mothers. Although this eventuality cannot be discounted, it does not seem natural to believe that use of language has changed in this way in a short space of time. Moreover, if this were true, it would presumably mean that the younger sample (the under 30s) would show up as having the largest 'decline' in job satisfaction. The older sample could be expected to be disproportionately made up of individuals using language as they did when they young. As the data show that it is the older workers who have become particularly less content, the hypothesis that declining satisfaction is an artefact of our surveys -- caused by a changed use of language -- is less compelling.

The Appendix shows in Table B1 that, in the General Social Surveys studied here, respondents do seem to have become a little less confident about job prospects over the last two decades. These data are not well known. At the end of the 1970s, around 70% of people in the US thought it was not at all likely they

would lose their jobs. By the end of the 90s, this % had dropped to the low 60s. More revealingly, in Table B2, a regression equation for 'perceived likelihood of job loss' has a statistically significant upward time trend. Perceived ease of finding another comparable job has also moved in the direction of increased insecurity: in Table B2 its time trend is down.

What of job satisfaction levels in other advanced nations? Tables 9 and 10 present cross-sectional information from the International Social Survey Programme of 1989, and from two Eurobarometers conducted in 1995 and 1996.<sup>1</sup> It can be seen from Tables 9 and 10 that, as for the US General Social Survey, there is strong bunching of ISSP and Eurobarometer answers at the high end of the job satisfaction scale. Again the old idea that the drudgery of work exploits human beings is -- at least at face value -- apparently not true.

On both Tables 9 and 10, individuals in Southern Ireland appear to record the greatest job satisfaction. Another highly satisfied nation is Denmark. By contrast, Hungary and the Mediterranean countries (Greece, Italy, Spain, France, Portugal) show up far down the job-satisfaction world league table. According to Eurobarometer data, 38% of Greek employees say they are dissatisfied.

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<sup>1</sup> For earlier work on job satisfaction using the International Social Survey Programme data, see Blanchflower (2000) and Blanchflower and Freeman (1997). Curtice (1993) and Clark (1998) also use ISSP data.

Because the surveys ask questions in different languages in different countries, there exists the chance that the Greek and other results are illusory. They may be a trick of how words translate. It is not possible to overturn such a view conclusively. But two counter-arguments are worth considering. The first is that psychologists are well aware of such – translation – objections. For this reason, as mentioned earlier, there is a preference among researchers for satisfaction questions, rather than happiness questions, because it is believed that the word ‘satisfaction’ translates with less international error from one language to the next. The second is that large differences are discovered even across nations using the same language, so differences nation-by-nation cannot be attributed solely to the language of the survey team. Moreover, in Table 10, Ireland comes out top among the three English-speaking nations here (57% very satisfied). This is despite the fact it is not a rich country: the United Nations Human Development Report estimates Ireland’s GDP per head at around half that of the US, and about two thirds of the UK’s (all measured at purchasing power parity prices). By contrast, in the United Kingdom, for example, only 38% of workers in Table 10 report themselves as very satisfied. Why the Irish should be so much more satisfied is unclear.

It should be noted that the sizes of the samples continue to be relatively small: approximately 1000 workers are sampled from each country in

Eurobarometers and slightly less than this in the International Social Survey Programme. We have no reason to doubt the quality of the sampling, but it would be comforting to have larger numbers of workers. This is another reason to treat the estimates cautiously.

International job-satisfaction league tables, derived from regression methods, are given in Table 11. One ranking uses World Values Survey data for 1981 and 1991. Britain is at number 10 in both years. Looking only at eight European nations, Britain is at number 5 in both years. Again this suggests that little fundamental has altered in the British economy relative to other nations' economies. Table 11, part B, shows too that in ISSP data between 1989 and 1997 Great Britain enters a seven-nation league table at first at number five and then at number six.

There is a strong connection in the European data between feeling secure and saying one is satisfied with a job. Table 12 summarizes the numbers (a recent study of European job insecurity is OECD, 1997). People who state their job is secure have a much larger probability of reporting themselves happy with their work. In the 1997 ISSP, for example, Table 12B shows that of those who strongly agree that they are secure in their jobs approximately 57% say "completely satisfied" or "very satisfied", while the figure is only 29% among the sub-sample disagreeing or disagreeing strongly.

The structure of job satisfaction equations is shown in Table 13. Here the sample is six countries that are present in both the 1989 and 1997 sweeps of the International Social Survey Programme (i.e. West Germany, the UK, the USA, Norway, Netherlands and Italy). Table 13 is an ordered logit for the ISSP sample of approximately four thousand workers in the two years. Men are much less satisfied; age enters positively, schooling is insignificant while unions continue to be associated with less job satisfaction. The union result goes back at least to Freeman (1978) and continues to puzzle researchers; it may simply be reverse causation led by the tendency of displeased workers to seek union representation. Most strikingly, job security enters strongly monotonically in Table 13 in both years. As a rule of thumb, its effect is the largest in the data sets we have seen. This finding may not be known to most labor economists, or even most psychologists. In the final column of the table a job satisfaction equation is estimated for the UK using data pooled across the two years. Job security is an important determinant of job satisfaction in the UK. The significant 1997 dummy suggests that job satisfaction declined between 1989 and 1997 in the UK.

Workplaces differ in many ways that are not captured in the controls of Table 13. A range of job characteristics are therefore introduced in Table 14. As would be guessed, human beings like to work independently and in workplaces with high pay and good chances of advancement. They also like to ‘help people’

and to work in healthy rather than unhealthy conditions. It might be reasonable for an economist to object that some -- perhaps even most -- of these subjective judgments could be close to generating truisms in the data, but we report them because these are the patterns found in our surveys. The result that people enjoy independence is well-known to psychology researchers. It is sometimes referred to as an example of the 'locus of control' hypothesis. Spector et al (1999) is a recent paper looking at a similarly large range of nations. As we found above for the USA, having a secure job increases job satisfaction: the easier it is to find a similar job the higher is satisfaction. In these countries also, job security is an important determinant of work satisfaction. In Table 14, job satisfaction equations for the Eurobarometer Survey #44.3 for February-April 1996 are reported. As in the tables of means, Ireland is comfortably top of the satisfaction ranking, and Greece bottom. The same microeconomic patterns are found as in other data sets. There is a well-determined U-shape in age; men are less satisfied; the self-employed, public sector people and supervisors are more satisfied; education enters here positively. It ought to be noted that there is no income variable; this data set does not provide it. Detailed job-satisfaction equations, done separately for male and female sub-samples, are reported in the second and third columns of Table 14. Variables are included that capture the quality of the job. For example, Table 14 reveals that satisfaction is greater in quiet workplaces, ones with no

gaseous vapours, ones where workers say ‘no painful or tiring positions’, where employees control the equipment, their work pace, where they do not have to carry loads or work at high speed. Working at home appears to be associated with raised satisfaction for women but not men. The ability to control the temperature and ventilation is correlated with higher satisfaction. Employees who identify a health and safety risk at their workplace are much more likely to say they are dissatisfied. Unsurprisingly, women appear to value equal opportunities at work. We find no significant evidence that the gender of one’s boss has an effect on job satisfaction for either men or women. In the full 1996 sample, Ireland retains its top spot in Table 14. In Table 14, Great Britain is in the middle of the job-satisfaction league table.

As a sense of job security plays an influential role in the satisfaction equations, it seems sensible to examine the structure of cross-section equations in which job security is in turn a dependent variable. This is what Table 15 does for the countries in the International Social Survey Programme. In the survey interviews, individuals were given the option of replying to the question “How much do you agree or disagree that your job is secure?”. Answers were coded as: strongly agree, agree, neither, disagree, strongly disagree. Most individuals do not fear imminent job loss. Across the sample of countries, 72% of people in 1989 said they either agreed or strongly agreed that their job was secure compared with

64% in 1997 for a somewhat longer list of countries. Table 15 attempts to uncover the microeconomic structure of perceived job security using the ISSP for 1987 and 1997. It estimates ordered logit equations using as independent variables: a set of country dummies, age, gender, education, whether a supervisor, union member, and public sector employee. The two years are pooled in the final column to estimate a separate equation for the UK.

Table 15 is based on two cross-sections rather than longitudinal data, and makes no identifying assumptions. It would therefore be unwise to place causal interpretations upon it. Nevertheless, the correlations are such that job security is greater among older workers, union members and, perhaps rather surprisingly, women. Translation of 'job security' in a consistent way across different languages is likely to be imperfect. However, it is worth noting that the United Kingdom performs consistently badly on the security score (see also Turnbull and Wass, 1999), and that this is true when judged against also two other English-speaking countries, namely, the US and Ireland. In contrast to the full-sample findings in the first two columns, the third column of Table 15 shows that job security in the UK sample falls by age. In addition, job security in the UK appears to have declined over time – when a 1997 dummy is included it is significantly negative (this result is not reported in Table 15). Interestingly, in the third column of Table 15, the significant interaction term between years of schooling and the

year dummy suggests that job security has fallen most in the UK for the more educated<sup>2</sup>.

These findings mean that job satisfaction equations that omit job-security measures may tend to generate upwardly-biased coefficients on public-sector dummy variables. Of course this would be likely to change over time and by country: Gardner and Oswald (1999) show that in the UK the size of the public-sector satisfaction premium seems to have fallen sharply through the 1990s.

#### **IV. Stress and Mental Well-being**

Also included in the 1996 Eurobarometer Survey was a series of questions which allow us to examine psychological health. One issue is whether declining job satisfaction and increased job security have affected workers' mental well-being. Table 16 provides the responses to a series of questions that asked workers whether they had a)...lost much sleep over worry, b)...been feeling unhappy and depressed, c)...been losing confidence in yourself, d)...been feeling you could not overcome your difficulties, e)...been feeling constantly under strain, f)...been thinking of yourself as a worthless person? These questions may appear strange to economists but are standard questions that are traditionally combined to form part of a so-called GHQ score (or General Health Questionnaire score). Among

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<sup>2</sup> This specification works much better than when the interaction term is omitted.

European medical statisticians and psychiatrists, the GHQ level is the most widely used questionnaire method for detecting low-grade mental health problems and stress (in other words, mild forms of psychological morbidity). It originates from the work of Goldberg (1972). As might be imagined, for serious mental illness GHQ is not viewed by doctors as so appropriate, and is supplanted by clinical examinations. In its most basic form, GHQ simply sums the number of times a person puts himself or herself in the stressed category. Only a semi-GHQ score can be calculated here. That is because only six questions (instead of the usual 12) are asked.

The first six columns of Table 16 report the percentage saying “not at all” to each of the stated questions. The final column gives the semi-GHQ score, which adds up the six components, and reports the aggregate outcome as a stress proxy. Table 16’s final column is interesting because it may be a moderately comparable test for stress across workers from a range of different countries. The most-stressed countries – in these samples of workers -- are Italy (with a semi-GHQ stress level of 1.35), France (0.99) and Spain (0.89). The least-stressed are Eire (0.33) and Sweden (0.46). These results are interestingly reminiscent of aspects of the job-satisfaction league tables. Great Britain is slightly above the mean level of mental well-being in the European 15. Its semi-GHQ score is 0.71 compared to

the mean for the whole sample of countries of 0.81. On this measure, British workers are fractionally less stressed than is the norm in Europe.

Tables 17 and 18 take the same data and examine the overall determinants of stress and its constituents. In Table 17, a series of ordered logits are estimated where the dependent variable takes one of the values ‘not at all’, ‘no more than usual’, ‘rather more than usual’ and ‘much more than usual’. Hence a positive coefficient is to be interpreted as showing the variable is associated with higher stress and lower mental well-being. According to the GHQ mental stress equations of Table 18, stress levels increase in age, are higher for females than males, and are strongly increased by the number of hours worked and job insecurity, and eased by a healthy financial situation. Based on the semi-GHQ score in the second column of Table 18 (where the European-15 mean GHQ = 0.95, meaning stressed on approximately one category on average), overall stress levels appear to be particularly low in Southern Ireland and especially high in Italy. The third column of Table 18 reports the results of estimating a probit equation where the dependent variable is set to one if the worker replied positively when asked if he or she worked under “a great deal of pressure”. Perceived pressure appears to be greater in the private than in the public sector, and for those with longer hours and tenure.

What has been happening through the 1990s to stress levels in these nations' workplaces? Has Britain fared worse or better than most? While imperfect because it is retrospective, Table 19 provides a starting point to answer those questions. Workers were asked in the 1996 survey to compare their current job with what they were doing five years ago (even if in the same job) and say whether there had been an increase compared to five years ago in (a) the effort they put into their job, (b) the responsibility involved in their job, (c) the stress involved in their job, (d) the tightness of supervision over their job. Table 19 gives the percentages of people who report an increase and those saying no change (the remainder, omitted, is of course the small percentage reporting a decrease<sup>3</sup>). In all cases there is evidence in Table 19 of large perceived increases in strain over time. Roughly half of all Europe's workers believe that there has been in their workplace a significant rise in effort, responsibility and stress. Approximately a quarter believe that the tightness of supervision has gone up significantly.

It is not easy to know what to make of the numbers in Table 19. Taken at face value, they seem remarkable, and perhaps worrying for the Western

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<sup>3</sup> The overall distributions, weighted to be representative of the European 15 were as follows (%)

	Not at all	No more than usual	Rather more than usual	Much more than usual
a) Sleep	46	35	15	4
b) Unhappiness	49	35	12	4
c) Lost confidence	67	24	7	2
d) Difficulties	56	31	11	2
e) Strain	42	37	16	4

democracies. A natural response is to wonder if human beings accidentally or deliberately exaggerate their difficulties. Perhaps the numbers in Table 19 are unreliable. However, one reason to question the idea that answers to such questions are automatically biased up is found in the final column: perceived tightness of supervision has worsened much less. Hence 50% saying that things are worse is not an inevitable outcome from questionnaire inquiries.

In Table 19, Britain is fairly close to the average country across the European 15. On increases in ‘tightness of supervision’ and ‘stress’, the British figures are almost identical to the mean for the sample of nations. There is more divergence in the questions about rising effort and responsibility. For example, 58% of British workers say that there has been a significant increase in the effort required in their job. Across the European 15, the average is 50% of workers saying that.

To explore the characteristics of the people most prone to view things as getting worse, the first four columns of Table 20 report probit equations. These are for the probability of giving different responses for each category (with the dependent variable set to 1 if an increase was reported and zero if a decrease or no change). The dependent variable in the final column of Table 20 is an amalgam: it is the sum of the responses in the previous four columns -- with a value of four if

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f) Worthless	78	17	4	1
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the respondent reported increases in each of the four elements and so on down to zero if no perceived increases were revealed (European 15 mean=1.75). Raised stress, effort, responsibility and tightness of supervision all turn out to be negatively correlated with age, and -- except for 'responsibility' -- lower for men than women. Increases in these strain variables are positively correlated with hours of work and greater job insecurity. Growth in the various items has been especially marked in East Germany, and least noticeable in Belgium (the excluded category). Britain fares poorly in this Table. The final column of Table 20 puts Great Britain as the third most-likely country to see increases in the amalgamated stress measure. The two above it are East Germany and Northern Ireland.

In Table 20, burdens appear to be worsened, as would be expected, by financial difficulties. For each of these equations, we also report coefficients and t-statistics on sets of industry, occupation and establishment size dummies. In each column, there is evidence that mental stress is greater for non-manuals than manual; is increasing in establishment size, but appears to flatten out around five hundred employees; and is relatively high in financial services.

Table 21 provides, for two cross-sections in the 1990s, a set of probit equations for the probability of reporting stress, tiredness, fatigue and sleep problems. The dependent variable draws on questions of the kind "How often do you find your work stressful? Always, often, sometimes, hardly ever, never." The

patterns in the table are again consistent with those in earlier tables of various kinds. Once more, for example, unionism is associated with greater stress and greater tiredness. Interpretation of the coefficients across countries is again likely to be fraught with difficulties. Ireland scores well -- although not perfectly consistently across the columns of Table 21 -- with low measured strain. By contrast a nation like Greece has notably weak performance: it comes near the top of the strain league. In Table 21, Britain also does relatively poorly.

## **V. Conclusions**

This paper studies the quality of life in the United Kingdom. Three questions are examined. First, is well-being improving? Second, where does the United Kingdom lie in international well-being league tables? Third, has it been moving up those rankings?

The paper uses information from surveys of random samples of individuals. Although it could be argued that economists should not concern themselves with workers' well-being, we find it hard to see a cogent case for such a position. 'Utility levels' are implicitly studied in most published work in economics; there are systematic patterns in these data sets; satisfaction scores are correlated with observable behavior; psychologists, who ought to know more than economists about how to measure well-being, have in their research journals used such statistics for years.

Our data come in the form of responses to questions such as “How satisfied are you with life as a whole?”, “How satisfied are you with your job?”, and “Have you lost much sleep over worry?”. People’s answers, the paper shows, are systematically correlated with personal characteristics.

There are a number of conclusions. Partly because of the lack of longitudinal data, it is not always straightforward to draw causal inferences.

- On most of the measures used here, life is not improving in the United Kingdom.
- The UK does respectably, but not outstandingly, in international league tables. It generally appears near the bottom of the top-ten countries.
- As an approximation, over the last few decades the UK’s position has neither risen nor fallen in the well-being rankings. Satisfaction with democracy, however, has increased a little in the UK relative to other nations.
- Job satisfaction levels have declined in the UK through the 1990s. This decline has been centred in the public sector. By way of comparison, there has been a slight but steady fall in job satisfaction in the US between 1973 and today. These patterns are not yet well-understood.
- Strong microeconomic patterns exist in satisfaction data. They are approximately the same in all countries. Unemployment (or expectations

of possible job loss) has one of the largest discernible negative effects on subjective well-being.

- Workers across the European Union believe they are under much greater stress and pressure than earlier in the 1990s. A significant proportion report being constantly under strain, losing sleep over worry, losing confidence in themselves, and feeling unhappy and depressed. In comparison with their situation five years earlier, workers reported dramatic increases in the amount of stress, responsibility, and effort. Life at work is perceived to be tougher than at the start of the 1990s -- in the UK and elsewhere.
- There is some evidence that strain at work has increased more in the UK than in most countries.
- Workers' mental well-being levels appear to be especially high in Ireland and Sweden, and especially low in Italy, France and Spain. The United Kingdom is in the middle of the international ranking.

**Table 1**

**Reported Well-being Levels Over the Last Quarter of a Century in Great Britain**

*The proportions of people giving different life-satisfaction answers in Great Britain 1973-98*

	1972-1976	1977-1982	1983-1987	1988-1993	1994-1998
All – not at all satisfied	4%	4	4	4	3
All – not very satisfied	11	10	10	10	10
All – fairly satisfied	54	54	55	55	57
All – very satisfied	31	32	31	31	31
Male – not at all	4	4	4	4	4
Male – not very	11	10	10	10	10
Male – fairly	55	55	57	57	58
Male – very	30	31	29	29	29
Female – not at all	4	4	3	3	3
Female – not very	12	10	10	11	9
Female – fairly	53	53	54	54	55
Female – very	32	34	32	32	32

Q: “On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?”. Approximate sample size is 2,000 people per year.

Source: Eurobarometers – Great Britain

**Table 2**

**Life-Satisfaction Country Rankings Through Time: Nine Nations with Approximately Half a Million Randomly-Sampled Europeans**

Number 1 indicates the top-ranked nation on a life-satisfaction scale (Denmark's citizens report the highest life-satisfaction levels). Number 9 indicates the bottom-ranked nation.

	<b>1973-79</b>	<b>1980-84</b>	<b>1985-89</b>	<b>1990-94</b>	<b>1995-98</b>	<b>Av73-98</b>	<b>1975-98*</b>
Belgium	3	6	7	6	6	6	7
Denmark	1	1	1	1	1	1	1
Eire	4	4	5	4	4	4	4
France	8	8	8	8	9	8	8
Italy	9	9	9	9	8	9	9
Luxembourg	5	3	3	3	3	3	3
Netherlands	2	2	2	2	2	2	2
UK	6	5	4	5	5	5	5
West Germany	7	7	6	7	7	7	8
N	92896	71185	103946	127523	77420	472970	452613

*These are constructed from the coefficients on country dummy variables in regression equations.*

Note: Regression controls in the first six columns =age, age square and male.

\* Regression controls in the last column =age, age square, male, 5 marital status dummies, 4 labor force status dummies and 12 age left school dummies. Education not available in 1973 hence it is omitted in 1973. Information on education is in 4 categories in 1995 compared with 10 for the remaining years. In all years it was possible to identify those still studying. Hence two separate education dummies were also included for 1995.

Source: Eurobarometers – various.

**Table 3****Human Development Index (HDI) Values Through Time**

	<i>1975</i>	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1997</i>
1 Canada	0.862	0.879	0.901	0.924	0.932
2 Norway	0.850	0.869	0.880	0.891	0.927
3 United States	0.865	0.885	0.897	0.911	0.927
4 Japan	0.851	0.875	0.890	0.906	0.924
5 Belgium	..	..	..	..	0.923
6 Sweden	0.859	0.869	0.880	0.888	0.923
7 Australia	0.838	0.855	0.867	0.880	0.922
8 Netherlands	0.856	0.868	0.883	0.896	0.921
9 Iceland	0.853	0.874	0.884	0.902	0.919
10 United Kingdom	0.840	0.848	0.856	0.876	0.918
11 France	0.848	0.864	0.875	0.896	0.918
12 Switzerland	..	..	..	..	0.914
13 Finland	0.834	0.855	0.871	0.893	0.913
14 Germany	..	..	..	..	0.906
15 Denmark	0.861	0.869	0.878	0.885	0.905
16 Austria	0.836	0.849	0.863	0.886	0.904
17 Luxembourg	..	..	..	..	0.902
18 New Zealand	0.843	0.852	0.862	0.872	0.901
19 Italy	0.824	0.842	0.852	0.875	0.900
20 Ireland	0.811	0.824	0.839	0.863	0.900
21 Spain	0.814	0.834	0.851	0.871	0.894
22 Singapore	0.737	0.767	0.796	0.834	0.888

Note: The HDI index amalgamates information on real income per head, longevity, mean years of schooling, and the degree of adult literacy.

Source: Human Development Report, United Nations.

**Table 4. Life Satisfaction Equations for a Sample of European Nations, 1975-1998**

	<i>All</i>	<i>Males</i>	<i>Females</i>
Age	-.0419 (35.91)	-.0459 (26.52)	-.0369 (23.21)
Age squared	.0004 (39.53)	.0005 (28.98)	.0004 (26.09)
Male	-.1499 (22.21)	n/a	n/a
Belgium	.8902 (72.14)	.8841 (49.75)	.9021 (52.49)
Netherlands	1.5829 (126.77)	1.4872 (82.73)	1.6921 (97.04)
West Germany	.6379 (52.85)	.6142 (35.37)	.6740 (40.04)
Italy	-.0444 (3.70)	.0002 (0.01)	-.0775 (4.62)
Luxembourg	1.3698 (81.02)	1.3045 (54.62)	1.4533 (60.51)
Denmark	2.2004 (170.26)	2.1316 (115.65)	2.2707 (124.93)
Eire	1.1300 (88.90)	1.0673 (58.80)	1.2149 (67.92)
UK	1.0638 (90.80)	1.0298 (60.92)	1.1153 (68.43)
Married	.3735 (40.14)	.3119 (24.17)	.4325 (31.45)
Living together	.1117 (6.98)	.0905 (4.04)	.1339 (5.82)
Divorced	-.5524 (29.63)	-.3975 (13.28)	-.6371 (26.34)
Separated	-.7222 (25.86)	-.6437 (14.18)	-.7611 (21.34)
Widowed	-.2876 (19.13)	-.3283 (12.04)	-.2083 (10.90)
Retired	-.0386 (3.28)	-.0200 (1.18)	-.0976 (5.72)
Houseswife	-.0499 (5.22)	-.1954 (3.39)	-.0804 (7.37)
Student	.0895 (3.43)	.0744 (2.12)	.0978 (2.50)
Unemployed	-1.0577 (79.47)	-1.2924 (71.36)	-.7839 (39.74)
cut1	-3.3065	-3.0962	-2.8880
cut2	-1.6546	-1.4763	-1.1995
cut3	1.2390	1.4398	1.6819
N	452613	219182	233413
LR chi2	72475.05	33840.7	39413.4
Pseudo R2	.0755	.0728	.0795
Log likelihood	-443984.58	-215387.3	-228101.2

Notes: France is the excluded country. Equations also include 12 age-left-school dummies and 23 year-dummies.

Source: Eurobarometers – various.

**Table 5. Life satisfaction equations (OLS) for the UK**

	<b>1975-1985</b>		<b>1986-1998</b>	
Age	-.0117	(6.67)	-.0142	(11.26)
Age <sup>2</sup>	.0001	(8.44)	.0001	(13.05)
Male	-.0642	(5.92)	-.0616	(8.26)
Age left school 15 yrs	.0330	(2.28)	-.0113	(0.89)
Age left school 16 yrs	.0871	(5.57)	.0550	(4.46)
Age left school 17 yrs	.1103	(5.44)	.1069	(6.77)
Age left school 18 yrs	.1077	(4.78)	.1341	(8.35)
Age left school 19 yrs	.1635	(4.10)	.1522	(5.68)
Age left school 20 yrs	.1628	(3.65)	.2036	(6.96)
Age left school 21 yrs	.2498	(8.28)	.1764	(8.32)
Age left school 22 yrs	.2101	(8.41)	.1074	(6.87)
Still studying	.1430	(3.22)	.1350	(3.32)
Married	.0692	(4.58)	.1550	(14.85)
Living together	-.0080	(0.17)	.0488	(2.52)
Divorced	-.2999	(9.20)	-.2335	(12.30)
Separate	-.3469	(7.82)	-.2253	(8.46)
Widowed	-.1723	(7.53)	-.0686	(4.20)
Retired	-.0310	(1.63)	-.0453	(3.74)
Housewife	-.0425	(3.13)	-.0772	(7.21)
Student	-.0064	(0.15)	.0344	(0.89)
Unemployed	-.5286	(23.35)	-.3961	(30.76)
Constant	3.2550	(74.34)	3.3363	(98.87)
N	25505		43745	
F	43.74		81.80	
R-squared	0.0505		0.0631	
Adj R-squared	0.0494		0.0623	
Root MSE	.72214		.7016	

Notes: column 2 also includes three further education dummies for 1995.

Source: Eurobarometers various

**Table 6**

**Satisfaction-with-Democracy**

**Rankings Across Countries Through Time**

	<b>1973-79</b>	<b>1980-84</b>	<b>1985-89</b>	<b>1990-94</b>	<b>1995-98</b>	<b>1973-98</b>	<b>1975-98</b>
Belgium	8	7	7	8	7	8	8
Denmark	6	8	5	6	8	6	7
Eire	3	4	4	3	4	4	4
France	2	2	2	5	6	3	3
Italy	9	9	9	9	9	9	9
Luxembourg	1	3	1	2	2	1	1
Netherlands	4	1	3	1	1	2	2
UK	5	6	6	4	3	5	5
West Germany	7	5	8	7	5	7	6
N	88268	67311	99364	98405	45723	399071	380101

Note: controls in columns 1- 6 =age, age square and male and year dummies.

Controls in columns 7 =age, age square, male, 5 marital status dummies, 4 labor force status dummies, year dummies and 12 age left school dummies. Education not available in 1973; hence it is omitted in 1973. Information on education is in 4 categories in 1995 compared with 10 for the remaining years. In all years it was possible to identify those still studying. Hence two separate education dummies were also included for 1995.

Question “ On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the way democracy works (in your country)?”.

Source: Eurobarometers (various)

**Table 7. Yearly Average Job-Satisfaction Levels: Public and Private Sector Workers**

**The British Household Panel Study (Annual Cross-sections)**

Year	Mean Job Satisfaction Public	Mean Job Satisfaction Private
1991	5.66 (1.39)	5.43 (1.56)
1992	5.61 (1.28)	5.46 (1.40)
1993	5.51 (1.32)	5.41 (1.38)
1994	5.44 (1.37)	5.35 (1.41)
1995	5.47 (1.30)	5.33 (1.39)
1996	5.46 (1.28)	5.38 (1.34)
1997	5.50 (1.25)	5.43 (1.32)

Notes: These columns use a 1-7 integer scale where 7 is the highest possible recorded job satisfaction answer and 1 the lowest possible answer. All means are raw averages. Standard deviations are reported in parentheses.

Source: Jonathan Gardner, Department of Economics, University of Warwick. A related research project is described in Gardner and Oswald, 1999.

**Table 8. Job Satisfaction in the USA, 1973-98**

**A) Proportions (Current Workers Only)**

*Question: On the whole how satisfied are you with the work you do – would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?*

All	1972	1973	1974	1975	1976	1977	1978	1980	1982	1983	1984	
Very satisfied	49%	50	50	56	53	49	52	47	48	53	47	
Moderately satisfied	37	37	38	33	33	39	37	37	39	35	35	
A little dissatisfied	11	8	8	8	9	10	8	12	9	8	12	
Very dissatisfied	3	4	4	3	5	2	4	4	5	4	6	
N	864	775	737	748	741	867	850	821	1009	897	875	
All	1985	1986	1987	1988	1989	1990	1991	1993	1994	1996	1998	<i>All</i>
Very satisfied	49	49	46	48	48	48	46	44	47	46	48	48
Moderately satisfied	38	40	38	40	38	39	42	42	40	40	38	38
A little dissatisfied	10	9	11	10	10	10	8	10	11	11	10	10
Very dissatisfied	3	2	4	3	4	4	4	4	3	4	3	4
N	903	838	1132	889	911	847	882	975	1903	1935	2216	23354

Weighted to control for over-sampling of blacks in 1982 and 1987

Source: General Social Surveys

**Table 8 continued**

**B) The Percentage Very Satisfied by Different Demographic Characteristics % very satisfied with work**

	All	Men	Women	Whites	Non-whites	Non-white Men	Non-white women	Age <30	Age >=30
1972	49%	48	50	51	38	39	35	34	54
1973	50	50	51	50	47	41	56	36	55
1974	50	51	49	52	34	39	28	41	54
1975	55	56	55	57	44	51	37	42	61
1976	53	54	52	54	40	38	42	40	59
1977	49	48	51	50	45	53	35	36	54
1978	52	51	53	54	34	31	36	44	55
1980	47	46	48	48	37	40	46	37	51
1982	48	48	48	49	40	43	43	37	53
1983	53	51	56	54	45	43	45	42	58
1984	47	44	49	47	43	44	43	37	50
1985	49	46	53	49	48	52	36	37	53
1986	49	53	46	50	45	47	31	40	53
1987	47	48	45	49	35	34	34	35	50
1988	48	50	46	50	39	49	40	39	51
1989	49	47	50	50	35	37	26	37	52
1990	48	46	50	49	43	46	40	39	51
1991	46	49	43	49	32	39	26	40	48
1993	44	43	46	45	41	39	43	33	47
1994	47	47	47	49	35	37	33	36	49
1996	46	47	45	47	41	42	40	39	47
1998	48	45	50	51	37	40	34	42	50
<i>Average</i>	<i>49</i>	<i>49</i>	<i>49</i>	<i>50</i>	<i>40</i>	<i>42</i>	<i>38</i>	<i>38</i>	<i>53</i>
N	23354	12204	11150	19927	3160	1721	2039	5945	17409

Note: average is simply the unweighted average of the year estimated reported in the table. Weights are used to control for statistical over-sampling of minorities in some years. Source: General Social Surveys

**Table 9. Job Satisfaction by Country (%)**

International Social Survey Programme (ISSP), 1989

	Completely satisfied	Very satisfied	Fairly satisfied	Neither	Dissatisfied	N
W. Germany	9%	34	41	11	4	605
UK	12	27	46	7	8	984
USA	15	35	37	6	7	797
Austria	17	29	39	11	4	814
Hungary	6	7	63	19	6	564
Netherlands	10	30	45	10	5	650
Italy	17	17	47	10	10	581
S. Ireland	18	33	41	5	4	474
Norway	14	28	43	12	4	1057
Israel	11	26	49	9	5	678
All	13	27	45	10	6	7204

**Table 10. Job Satisfaction by Country (%)**

A) Eurobarometers, 1995-1996

	Very satisfied	Moderately satisfied	A little dissatisfied	Very dissatisfied	N
Belgium	44%	49	6	1	1011
Denmark	50	45	3	2	997
W. Germany	34	51	11	4	1025
Greece	11	50	29	9	1003
Italy	26	56	15	4	1028
Spain	23	57	16	4	996
France	22	60	14	5	999
S. Ireland	57	38	4	1	1004
Luxembourg	40	53	5	2	494
Netherlands	46	46	7	1	1064
Portugal	21	62	13	3	998
UK	38	49	9	5	1064
E. Germany	34	56	9	2	1047
Finland	31	62	6	2	1059
Sweden	39	53	5	2	1055
Austria	44	45	9	1	1070
All	35	52	10	3	15914

Notes: Results are weighted

B) Eurobarometers, 1996

	Dissatisfied 1, 2 or 3	Neither 4	Satisfied 5	Satisfied 6	Satisfied 7	N
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Belgium	8%	14	37	31	10	432
Denmark	8	9	23	35	25	547
W. Germany	8	13	30	32	16	474
Greece	19	24	26	21	10	448
Italy	14	25	28	20	13	508
Spain	15	20	24	23	18	443
France	14	23	33	21	9	604
S. Ireland	18	16	24	25	17	433
Luxembourg	11	13	31	27	18	289
Netherlands	6	11	21	39	23	465
Portugal	15	22	30	21	12	467
UK	11	16	29	27	16	661
E. Germany	12	14	27	31	16	468
Finland	9	11	31	34	16	432
Sweden	6	126	33	33	12	563
Austria	13	16	28	28	24	535
All	12	18	29	26	15	7769

All in all how satisfied are you with your job?

Completely dissatisfied

Completely satisfied

1    2    3    4    5    6    7

**Table 11**

**Job-Satisfaction Rankings – with regression controls for age, age squared, male**

In this table, the integer 1 signifies the top-ranked nation for job satisfaction, number 2 means second from top, etc.

A. Rankings Derived from World Values Surveys

<i>All Nations</i>				<i>Top-8 in OECD</i>			
1981		1991		1981		1991	
Italy	1	Denmark	1	Italy	1	Eire	1
Netherlands	2	Canada	2	Netherlands	2	N. Ireland	2
Denmark	3	Sweden	3	Norway	3	Norway	3
Norway	4	Eire	4	Eire	4	USA	4
Eire	5	Iceland	5	N. Ireland	5	Britain	5
Canada	6	N Ireland	6	Britain	6	Netherlands	6
N. Ireland	7	Norway	7	USA	7	Italy	7
Sweden	8	USA	8	W. Germany	8	W. Germany	8
Iceland	9	Belgium	9				
Britain	10	Britain	10				
USA	11	Netherlands	11				
Belgium	12	Italy	12				
W. Germany	13	West Germany	13				
Spain	14	Spain	14				
France	15	France	15				
Japan	16	Japan	16				

B. Rankings Derived from ISSP Survey Data

1989		1997	
USA	1	Netherlands	1
W. Germany	2	USA	2
Norway	3	Norway	3
Netherlands	4	W. Germany	4
Great Britain	5	Italy	5
Italy	6	Great Britain	6
Hungary	7	Hungary	7

**Table 12A. Job Security and Job Satisfaction in Nine Countries, 1989**

<i>Job satisfaction</i>	<i>Job security</i>				All
	Strongly agree	Agree	Neither	Disagree**	
Completely satisfied	20%	10	9	8	13
Very satisfied	32	28	21	19	27
Fairly satisfied	38	49	47	45	45
Neither	7	8	17	14	10
Dissatisfied*	3	5	6	14	6
All					
Unweighted N	2196	2852	1029	951	7028

Notes: \* dissatisfied includes fairly dissatisfied, very dissatisfied and completely dissatisfied  
 \*\* disagree includes disagree and strongly disagree. Countries are UK, USA, Austria, Hungary, Netherlands, Italy, Eire, Norway, Israel. Source: ISSP 1989.

**Table 12B. Job Security and Job Satisfaction in Seventeen Countries, 1997**

<i>Job satisfaction</i>	<i>Job security</i>				All
	Strongly agree	Agree	Neither	Disagree**	
Completely satisfied	24	11	9	8	14
Very satisfied	33	34	27	21	31
Fairly satisfied	31	40	43	42	39
Neither	7	9	14	16	11
Dissatisfied*	5	5	6	13	6
Unweighted N	3434	5079	2337	2471	13321

Notes: \* dissatisfied includes fairly dissatisfied, very dissatisfied and completely dissatisfied  
 \*\* disagree includes disagree and strongly disagree. Countries are UK, USA, Netherlands, Italy, Norway, Israel, West Germany, Sweden, New Zealand, Canada, Japan, Spain, France, Cyprus, Portugal, Denmark, Switzerland. Source: ISSP 1997.

**Table 12C. Job Security and Job Satisfaction in Sixteen Countries, 1996**

<i>Job satisfaction</i>	<i>My job is secure</i>					All	N
	<u>score</u>	very true	quite true	a little true	not at all true		
completely satisfied	7	27	13	8	8	15	1196
	6	34	31	22	17	26	2108
	5	22	33	32	25	29	2079
	4	10	15	24	24	18	1211
completely dissatisfied <sup>1,2,3</sup>	6	9	15	27	12	865	
All		31	36	18	15	-	7459
		2526	2522	1356	1055	7459	

Notes: countries are Belgium, Denmark, W. Germany, Greece, Italy, Spain, France, Ireland, Luxembourg, Netherlands, Portugal, UK, E. Germany, Finland, Sweden, Austria. Results are weighted. Source: Eurobarometer 44.3OVR, February-April 1996

**Table 13. Job Satisfaction Ordered Logit Equations**

	(1) <i>1989</i>	(2) <i>1997</i>	(3) <i>UK 1989 &amp; 1997</i>
UK	.2893 (2.87)	.1195 (1.06)	
USA	.4427 (3.75)	.4286 (3.83)	
Netherlands	.1369 (1.24)	.6257 (6.38)	
Italy	-.3625 (2.91)	.0636 (0.55)	
Norway	.3272 (3.27)	.1139 (1.22)	
Age	.0161 (6.28)	.0124 (4.92)	.0177 (4.16)
Male	-.1166 (1.95)	-.1083 (1.93)	-.1948 (1.98)
Years schooling	-.0059 (0.55)	-.0090 (1.05)	.0028 (0.11)
Union member	-.3569 (5.68)	-.2383 (3.92)	-.3968 (3.97)
Strong agree secure job	1.7493 (9.83)	1.8244 (11.45)	2.3294 (9.05)
Agree secure job	1.1452 (6.56)	1.1948 (7.84)	1.6174 (6.81)
Neither agree/disagree	.7605 (4.13)	.8104 (5.05)	1.3687 (5.49)
Disagree secure job	.3454 (1.81)	.4954 (2.95)	.8999 (3.60)
1997 dummy			-.2108 (1.98)
Cut_1	-3.4904	-3.7938	-3.1296
Cut_2	-2.4760	-2.6077	-1.9735
Cut_3	-1.2097	-1.1967	-.5830
Cut_4	-.1406	-.1081	.1959
Cut_5	2.0699	1.9945	2.4040
Cut_6	3.7672	3.7444	3.9620
LR Chi <sup>2</sup>	364.4	361.9	157.7
Pseudo R <sup>2</sup>	.0318	.0286	.0365
N	3995	4428	1478

Notes: excluded categories, West Germany and strongly disagree secure job  
Source: ISSP 1989 and 1997 – t-statistics in parentheses.

**Table 14. Further Job Satisfaction Ordered Logit Equations, 1995-1996**

	All	Males	Females
Denmark	.2082 (2.04)	.0580 (0.43)	.3941 (2.47)
W. Germany	-.4845 (4.83)	-.6423 (4.90)	-.2725 (1.71)
Greece	-1.4849 (14.11)	-1.3942 (10.35)	-1.6598 (9.62)
Italy	-.9707 (9.68)	-.9426 (7.31)	-.9598 (5.89)
Spain	-.9239 (9.26)	-.8643 (6.83)	-1.0504 (6.31)
France	-.7457 (7.53)	-.6639 (5.00)	-.7629 (4.99)
Ireland	.3639 (3.48)	.4361 (3.22)	.3241 (1.91)
Luxembourg	-.4446 (3.71)	-.3708 (2.42)	-.5379 (2.74)
Netherlands	-.0801 (0.81)	-.3233 (2.55)	.3282 (2.05)
Portugal	-.8311 (8.19)	-.6439 (4.78)	-1.0151 (6.41)
GB	-.3048 (2.95)	-.3885 (2.83)	-.1855 (1.14)
E. Germany	-.1502 (1.48)	-.0858 (0.63)	-.2258 (1.43)
Finland	-.2519 (2.49)	-.4074 (3.00)	-.0604 (0.38)
Sweden	-.0558 (0.55)	.0345 (0.26)	-.1729 (1.09)
Austria	-.0540 (0.54)	-.0684 (0.52)	-.0112 (0.07)
Age	-.0237 (2.54)	-.0179 (1.45)	-.0378 (2.57)
Age <sup>2</sup>	.0002 (2.21)	.0001 (0.96)	.0004 (2.51)
Male	-.0463 (1.14)	n/a	n/a
Self-employed	.3426 (4.87)	.3837 (4.01)	.3619 (3.18)
16-19 years schooling	-.0021 (0.04)	.0125 (0.20)	-.0834 (1.06)
>=20 years schooling	-.0385 (0.67)	-.0355 (0.47)	-.0911 (0.99)
Supervisor	.2550 (5.94)	.3051 (5.57)	.1795 (2.50)
Public sector	.1019 (2.05)	-.0002 (0.00)	.1907 (2.53)
Job tenure	.0003 (1.69)	.0004 (1.92)	.0002 (0.68)
Commuting time	-.0018 (3.55)	-.0013 (2.05)	-.0027 (3.19)
Agree secure job	.9183 (20.87)	.9658 (16.26)	.8547 (12.81)
Secure job DK	.3449 (4.91)	.3613 (3.81)	.3222 (3.04)
No vibrations from hand tools	-.0643 (1.33)	-.053 (0.84)	-.0772 (1.00)
No noise	.1369 (3.12)	.0905 (1.48)	.2293 (3.55)
No high temperatures	.0483 (1.10)	.0784 (1.35)	.0327 (0.47)
No low temperatures	.0582 (1.32)	-.0371 (0.63)	.1798 (2.63)
No vapors or fumes	.1560 (3.26)	.2562 (4.10)	.0191 (0.25)
No dangerous substances	-.0523 (1.06)	-.0379 (0.61)	-.0714 (0.86)
No radiation	-.0158 (0.29)	.0159 (0.24)	-.0860 (0.86)
No painful or tiring positions	.2193 (5.16)	.2309 (3.99)	.2037 (3.18)
No carrying or moving loads	.1592 (3.67)	.1821 (3.01)	.1697 (2.64)
No repetitive arm movements.	.0377 (0.89)	.0272 (0.48)	.0237 (0.37)
No protective clothing	-.1485 (3.33)	-.1604 (2.81)	-.1106 (1.50)
No computers	.0233 (0.54)	-.0540 (0.93)	.0971 (1.44)
No work at high speed	.1101 (2.40)	.0967 (1.57)	.1346 (1.90)
No tight deadlines	.1713 (3.83)	.1947 (3.20)	.1106 (1.64)
No dealing with people	-.1476 (3.00)	-.1059 (1.67)	-.2035 (2.52)

Not working at home	-.1143 (2.69)	-.0817 (1.42)	-.2109 (3.22)
No night work	.0028 (0.05)	.0006 (0.01)	.0913 (1.05)
No Saturdays	-.0681 (1.38)	-.1346 (2.12)	.0359 (0.44)
No Sundays	.0846 (1.96)	.1232 (2.18)	.0544 (0.79)
Work pace depends colleagues*	-.0038 (0.10)	.0303 (0.61)	-.0622 (1.06)
Work pace depends customers*	-.0295 (0.70)	-.0237 (0.43)	.0771 (1.13)
Work pace depends prodn. norms*	-.1330 (3.25)	-.0823 (1.58)	-.2158 (3.16)
Work pace depends on machine*	-.0398 (0.83)	.0297 (0.49)	-.1639 (2.03)
Work pace depends on boss*	-.1562 (3.93)	-.1485 (2.79)	-.1649 (2.70)
Equal opportunities at work	.2228 (6.16)	.1058 (2.15)	.4404 (7.96)
Boss a man	.0705 (1.58)	.1225 (1.64)	.0513 (0.89)
Health and safety a risk*	.7246 (17.09)	-.6837 (12.59)	-.8296 (11.99)
Can control temperature	.1159 (2.68)	.1209 (2.07)	.1324 (2.03)
Can control lighting	.0305 (0.69)	.0498 (0.84)	.0164 (0.24)
Can control ventilation	.1217 (2.76)	.1321 (2.22)	.1048 (1.56)
Can control position of desk	.0638 (1.41)	.0201 (0.32)	.1299 (1.93)
Can control position of seat	.0500 (1.09)	-.0212 (0.33)	-.0501 (0.73)
Can control equipment used	.1689 (4.50)	.1766 (3.56)	.1720 (2.93)
Occupation dummies	10	10	10
Industry dummies	10	10	10
Size of establishment dummies	6	6	6
Cut_1	-3.8530	-3.9457	-3.6102
Cut_2	-2.0830	-2.1414	-1.8544
Cut_3	.9720	.9516	1.2252
Likelihood ratio	-13472.18	-7708.3	-5658.9
LR Chi <sup>2</sup>	3313.4	1894.4	1613.3
Pseudo R <sup>2</sup>	.1095	.1094	.1248
N	14505	8317	6189

Notes: excluded categories, Belgium, <16 years schooling

\*= a variable also included where the respondent reported they did not know the answer to this question.

Source: Eurobarometer 44.3OVR, February-April 1996

**Table 15. Job Security Ordered Logit Equations**

	(1) <i>1989</i>	(2) <i>1997</i>	(3) <i>UK 1989 &amp; 1997</i>
UK	-1.1342 (11.52)	-.9810 (8.74)	
USA	-.6603 (5.67)	-.2897 (2.56)	
Netherlands	-.6940 (6.38)	-.5204 (5.17)	
Italy	.0590 (0.47)	-.3374 (2.87)	
Norway	-.6948 (6.99)	-.2298 (2.40)	
Age	.0100 (3.98)	.0049 (1.95)	-.0091 (2.21)
Male	-.1281 (2.16)	-.1372 (2.44)	-.3867 (4.07)
Years schooling	.0527 (4.82)	.0480 (5.54)	.1524 (3.57)
Union member	.2652 (4.26)	.2254 (3.71)	.0589 (0.60)
1997 dummy			1.4944 (2.50)
Education* 1997 dummy			-.1736 (3.57)
Cut_1	-3.0292	-2.7722	-1.7530
Cut_2	-1.4681	-1.2855	-.2031
Cut_3	-.52265	-.2908	.6937
Cut_4	1.2649	1.7274	2.6903
LR Chi <sup>2</sup>	230.9	147.2	63.8
Pseudo R <sup>2</sup>	.0208	.0122	.0146
N	4041	4403	1503

Notes: Excluded country: West Germany.

Source: ISSP 1989 and 1997 – t-statistics in parentheses.

**Table 16. Mental well-being -- % saying ‘not at all’ – workers only**

Q. Would you say that you have not at all, no more than usual, rather more than usual, much more than usual?

a) ...lost much sleep over worry, b)...been feeling unhappy and depressed, c)...been losing confidence in yourself, d)...been feeling you could not overcome your difficulties, e)...been feeling constantly under strain, f)...been thinking of yourself as a worthless person?

	Not lost much sleep	Not unhappy & depressed	Not losing confidence	Can overcome difficulties	Not worthless person	Not constantly under strain	<b>Stress Level (semi-GHQ score)</b>
Belgium	43%	56	62	57	67	42	.57
Denmark	63	59	78	70	82	50	.51
West Germany	52	48	70	60	77	40	.47
Greece	38	46	77	53	90	42	.91
Italy	34	38	62	43	77	31	1.35
Spain	38	49	64	51	79	49	.89
France	42	50	60	48	74	38	.99
Eire	53	61	71	66	78	57	.33
N. Ireland	50	56	71	67	77	50	.74
Luxembourg	49	56	69	61	75	45	.65
Netherlands	52	59	72	69	83	51	.61
Portugal	39	50	71	60	76	47	.75
Great Britain	55	53	68	65	81	47	.71
East Germany	41	46	75	55	76	35	.64
Finland	45	35	61	53	65	30	.82
Sweden	61	58	79	67	83	49	.46
Austria	47	50	66	60	70	52	.82
European 15	46	49	67	56	78	42	.81
N	7857	7853	7841	7835	7833	7847	7749

Notes: Semi-GHQ score calculated as the sum of each component where 0= not at all or no more than usual and 1 if rather more than usual or much more than usual. The normal GHQ score is based on 12 questions not 6; hence we use the term semi-GHQ. The semi-GHQ score in the final column must lie between zero (not stressed on any of the six questions) and 6 (stressed on all six).

Source: Eurobarometer 44.3OVR, February-April 1996

**Table 17. Ordered Logit Mental Well-being Equations, 1996 (workers only)**

	Constantly under strain	Lose sleep over worry	Unhappy & depressed	Losing confidence	Not overcome difficulties
Age	.0036 (1.37)	.0167 (6.27)	.0127 (4.75)	.0073 (2.40)	.0071 (2.49)
Age left school	.0216 (3.20)	.0020 (0.29)	.0042 (0.61)	.0071 (0.89)	.0117 (1.61)
Male	-.2513 (4.69)	-.2794 (5.19)	-.3802 (6.95)	-.2523 (4.07)	-.3699 (6.43)
Ever unemployed last 5 yrs	-.1549 (2.30)	-.0910 (1.34)	-.1296 (1.89)	-.1893 (2.46)	-.3047 (4.29)
Private sector	-.0300 (0.48)	-.0776 (1.26)	-.1165 (1.86)	-.0148 (0.21)	-.1497 (2.28)
Financial situation very difficult	-.5245 (5.24)	-.5338 (5.33)	-.5463 (5.41)	-.3654 (3.41)	-.7212 (7.06)
Financial situation quite difficult	-1.0288 (10.62)	-.9976 (10.25)	-.9876 (10.09)	-.7823 (7.50)	-1.2393 (12.43)
Financial situation quite easy	-1.2099 (11.58)	-1.2484 (11.82)	-1.2555 (11.80)	-1.0379 (9.04)	-1.582 (14.44)
Financial situation very easy	-1.3380 (10.34)	-1.4103 (10.60)	-1.5012 (11.17)	-1.2162 (7.98)	-1.7853 (12.52)
Job tenure months	.0026 (0.76)	-.0050 (1.47)	-.0005 (0.15)	.0033 (0.83)	.0052 (1.41)
Hours	.0221 (10.65)	.0100 (4.86)	.0076 (3.63)	.0000 (0.00)	.0069 (3.18)
Self-employed	.0498 (0.29)	.0313 (0.18)	.0120 (0.06)	-.1219 (0.61)	-.0564 (0.30)
Denmark	-.1969 (1.45)	-.5785 (4.15)	.069 (0.48)	-.5685 (3.52)	-.3410 (2.27)
West Germany	-.0400 (0.28)	-.4704 (3.36)	.1995 (1.39)	-.3247 (2.03)	-.1623 (1.07)
Greece	-.0417 (0.29)	.3188 (2.25)	.4575 (3.14)	-.6751 (4.04)	.0535 (0.36)
Italy	.6665 (4.91)	.4904 (3.64)	.842 (6.03)	.1563 (1.03)	.6477 (4.52)
Spain	-.3471 (2.44)	.2719 (1.95)	.2961 (2.02)	-.0836 (0.53)	.2670 (1.79)
France	.0954 (0.73)	-.0353 (0.27)	.0942 (0.68)	-.0739 (0.51)	.1723 (1.24)
Eire	-.5837 (3.97)	-.3505 (2.42)	-.1743 (1.14)	-.2824 (1.72)	-.4486 (2.83)
N. Ireland	-.3542 (1.58)	-.2512 (1.12)	-.0481 (0.20)	-.3782 (1.47)	-.4592 (1.85)
Luxembourg	.0486 (0.30)	.0350 (0.21)	.1880 (1.12)	-.0805 (0.44)	.0233 (0.13)
Netherlands	-.0745 (0.52)	.0368 (0.26)	.2264 (1.53)	-.1666 (1.03)	-.1061 (0.68)
Portugal	-.4036 (2.86)	-.0336 (0.24)	.1034 (0.70)	-.5425 (3.35)	-.4270 (2.80)
Great Britain	-.0791 (0.58)	-.3741 (2.69)	.1784 (1.25)	-.2219 (1.44)	-.3362 (2.26)
East Germany	-.0368 (0.26)	-.2058 (1.45)	.1263 (0.85)	-.7247 (4.26)	-.2258 (1.46)
Finland	.4388 (3.06)	.0132 (0.09)	.8184 (5.55)	.1243 (0.77)	.2423 (1.57)
Sweden	-.3434 (2.59)	-.7842 (5.76)	-.1329 (0.95)	-.8215 (5.19)	-.4553 (3.15)
Austria	-.3922 (2.83)	-.1086 (0.79)	.2903 (2.03)	.0332 (0.21)	-.0312 (0.21)
Job security decrease	.3625 (4.83)	.2798 (3.70)	.2656 (3.47)	.2304 (2.67)	.3012 (3.74)

Job security no change	.0180 (0.29)	-.0372 (0.59)	.0389 (0.61)	-.0186 (0.25)	.0749 (1.11)
Job security DK	-.0583 (0.47)	-.1410 (1.11)	-.0244 (0.19)	-.3121 (2.09)	-.0336 (0.25)
Secure job – quite true	.1383 (2.33)	.1679 (2.79)	.1113 (1.82)	.2972 (4.19)	.1793 (2.76)
Secure job – a little true	.3292 (4.52)	.2934 (4.00)	.3219 (4.35)	.4450 (5.26)	.4726 (6.09)
Secure job – not at all true	.5031 (6.03)	.4268 (5.05)	.5560 (6.56)	.7855 (8.42)	.5494 (6.23)
Secure job – DK	.1186 (0.87)	.0698 (0.51)	-.0203 (0.14)	.0078 (0.04)	.3066 (2.13)
Cut_1	.49356	-.01829	.1470	.23007	-.27718
Cut_2	2.3541	1.8013	1.97202	.0604	1.6484
Cut_3	4.3236	3.6653	3.7819	3.8172	3.6973
Log likelihood ratio	-7412.8	-7272.1	7018.9	-5315.5	-6161.4
Chi square	783.7	748.9	684.2	541.8	831.4
Pseudo R <sup>2</sup>	.0502	.0490	.0465	.0485	.0632
N	6903	6907	6904	6893	6891

Notes: excluded categories Belgium; secure job – very true; Job security no change last 5yrs: financial situation neither easy nor difficult. All equations also include 13 occupation dummies, 11 industry dummies and 7 establishment size dummies.  
Source: Eurobarometer 44.3OVR, February-April 1996

**Table 18. Mental Well-being Equations, 1996(workers only)**

	Worthless Person Ordered logit		GHQ Score OLS		Work under great pressure Probit	
Age	.0106	(3.15)	.0060	(3.41)	-.0006	(0.91)
Age left school	.0044	(0.50)	.0069	(1.51)	.0058	(3.11)
Male	-.2171	(3.15)	-.2385	(6.61)	-.0190	(1.29)
Ever unemployed last 5 yrs	-.1438	(1.70)	-.1322	(2.91)	.0011	(0.06)
Private sector	-.1041	(1.33)	-.0168	(0.40)	.0344	(2.04)
Financial situation very difficult	-.3047	(2.63)	-.6911	(10.15)	-.0685	(2.53)
Financial situation quite difficult -	-.6574	(5.80)	-1.0913	(16.68)	-.1319	(5.06)
Financial situation quite easy -	-.8904	(7.09)	-1.1080	(15.84)	-.1606	(5.88)
Financial situation very easy -	-.9447	(5.72)	-1.0778	(12.63)	-.1655	(5.08)
Job tenure months	-.0023	(0.51)	-.0024	(1.04)	.0024	(2.57)
Hours	.0027	(1.02)	.0075	(5.52)	.0087	(14.99)
Self-employed	-.0141	(0.06)	-.0403	(0.35)	.0609	(1.26)
Denmark	-.6750	(4.01)	-.0651	(0.71)	.2589	(7.00)
West Germany	-.5545	(3.26)	-.1474	(1.54)	.1186	(3.02)
Greece	-1.4866	(7.34)	.2045	(2.13)	.0582	(1.47)
Italy	-.5337	(3.24)	.6967	(7.55)	.1356	(3.57)
Spain	-.7034	(4.03)	.2343	(2.44)	-.1071	(2.68)
France	-.5064	(3.28)	.1943	(2.18)	.0798	(2.16)
Eire	-.5616	(3.21)	-.2732	(2.79)	.1221	(3.00)
N. Ireland	-.5900	(2.15)	.1361	(0.92)	.3023	(5.19)
Luxembourg	-.3143	(1.62)	.1205	(1.10)	.0811	(1.80)
Netherlands	-.6556	(3.72)	.1165	(1.23)	.1506	(3.84)
Portugal	-.7828	(4.52)	-.0528	(0.55)	.0084	(0.21)
Great Britain	-.7583	(4.53)	.0617	(0.66)	.2871	(7.68)
East Germany	-.6779	(3.87)	-.0991	(1.01)	.0749	(1.86)
Finland	-.0199	(0.12)	.1569	(1.58)	.1397	(3.44)
Sweden	-.9674	(5.81)	-.2090	(2.33)	.3948	(11.27)
Austria	-.0761	(0.47)	.1456	(1.54)	.0732	(1.87)

Job security decrease	.1547	(1.61)	.2234	(4.41)	.0717	(3.47)
Job security no change	-.0405	(0.50)	-.0226	(0.55)	-.0044	(0.27)
Job security DK	-.0687	(0.43)	-.0794	(0.97)	-.0498	(1.50)
Secure job – quite true	.2880	(3.63)	-.0393	(0.99)	.0336	(2.09)
Secure job – a little true	.4457	(4.72)	.0591	(1.20)	.0711	(3.51)
Secure job – not at all true	.5989	(5.73)	.3591	(6.37)	.0720	(3.12)
Secure job – DK	-.0197	(0.10)	-.1556	(1.66)	.0560	(1.45)
Cut_1/constant	.98277		1.1425			
Cut_2	2.8386					
Cut_3	4.4813					
Log likelihood ratio	-4353.3				-4219.5	
Chi square	380.2				1043.9	
Pseudo R <sup>2</sup> R <sup>2/</sup>	.0418		.1234		.1122	
F			14.42			
N	6892		6830		6792	

Notes: excluded categories Belgium; secure job – very true; job security no change last 5yrs: financial situation neither easy nor difficult. All equations also include 13 occupation dummies, 11 industry dummies and 7 establishment size dummies  
Where probits are used the procedure is dprobit in STATA.  
Source: Eurobarometer 44.3OVR, February-April 1996

**Table 19. Changes in Mental Well-being -- % 'saying 'significant increase' or 'no change' – workers only**

(Q22) *I would like you to compare your current job with what you were doing five years ago (even if in the same job) For each of the following things say whether there has been a significant increase compared to five years ago, a significant decrease or little or no change – a) the effort you put into your job, b) the responsibility involved in your job, c) the stress involved in your job, d) the tightness of supervision over your job*

	Effort		Responsibility		Stress		Tightness of supervision	
	Increase	No change	Increase	No change	Increase	No change	Increase	No
change								
Belgium	41%	55	40	56	35	58	21	70
Denmark	45	46	50	45	45	45	12	74
West Germany	56	39	50	45	49	44	23	64
Greece	50	42	59	38	59	35	22	70
Italy	47	48	54	40	51	42	24	67
Spain	29	63	37	58	38	54	27	65
France	52	41	50	43	44	48	29	60
Eire	53	43	55	41	44	49	29	63
N. Ireland	63	35	59	35	50	40	31	53
Luxembourg	43	39	50	46	42	48	26	62
Netherlands	50	41	61	34	43	46	22	50
Portugal	35	55	46	49	42	52	23	70
Great Britain	58	33	56	34	50	38	27	55
East Germany	69	28	60	35	70	26	43	49
Finland	58	35	57	37	47	46	28	61
Sweden	53	42	55	40	47	44	22	64
Austria	45	46	56	38	48	44	38	53
European 15	50	43	51	43	48	44	26	62
N	7496		7509		7472		7171	

Source: Eurobarometer 44.3OVR, February-April 1996

**Table 20. Equations for Perceived Change in Stress Over the Last Five Years, 1996 (workers only)**

	Increased Stress Probit	Increased Responsibility Probit	Increased Effort Probit	Increased Supervision Probit	Increased All [OLS]
Age	-.0026 (3.61)	-.0059 (8.17)	-.0029 (4.03)	-.0012 (2.00)	-.0116 (6.23)
Age left school	.0013 (0.73)	-.0000 (0.05)	.0028 (1.52)	-.0013 (0.82)	.0019 (0.40)
Male	-.0409 (2.78)	.0147 (1.00)	-.0346 (2.35)	.0340 (2.68)	-.0139 (0.36)
Ever unemployed last 5 yrs	.0475 (2.57)	.0347 (1.87)	.0358 (1.94)	.0237 (1.53)	.1469 (3.07)
Private sector	-.0088 (0.52)	.0036 (0.22)	-.0029 (0.17)	-.0083 (0.57)	-.0238 (0.54)
Financial situation very difficult	-.0837 (3.01)	-.0068 (0.25)	-.0536 (1.93)	-.0311 (1.36)	-.1332 (1.79)
Financial situation quite difficult	-.1287 (4.84)	-.0121 (0.46)	-.0796 (3.00)	-.0380 (1.72)	-.2257 (12.11)
Financial situation quite easy	-.1516 (5.39)	.0063 (0.22)	-.0843 (2.98)	-.0627 (2.72)	-.2729 (0.52)
Financial situation very easy	-.1746 (5.20)	-.0245 (0.70)	-.1156 (3.39)	-.0746 (2.69)	-.3457 (3.02)
Job tenure months	.0031 (3.32)	.0004 (0.48)	.0014 (1.57)	-.0012 (1.52)	.0043 (1.79)
Hours	.0066 (11.55)	.0047 (8.24)	.0064 (11.20)	.0022 (4.50)	.0179 (12.11)
Self-employed	-.0153 (0.32)	-.0463 (0.96)	.0112 (0.24)	-.0284 (0.63)	-.0642 (0.52)
Denmark	.1599 (4.32)	.1307 (3.61)	.0713 (1.94)	-.0791 (2.50)	.2868 (3.02)
West Germany	.1793 (4.68)	.1221 (3.25)	.1742 (4.65)	.0351 (1.00)	.5002 (5.04)
Greece	.2377 (6.22)	.1903 (5.06)	.0582 (1.50)	.0169 (0.48)	.4992 (4.98)
Italy	.2005 (5.38)	.1752 (4.84)	.0818 (2.19)	.0647 (1.79)	.5027 (5.03)
Spain	.0994 (2.50)	.0054 (0.14)	-.1020 (2.58)	.1181 (3.16)	.1051 (1.04)
France	.1290 (3.53)	.1457 (4.13)	.1453 (4.10)	.1075 (3.13)	.5101 (5.45)
Eire	.1466 (3.61)	.1948 (5.05)	.1552 (3.93)	.1118 (2.92)	.6056 (5.79)
N. Ireland	.1668 (2.72)	.1992 (3.45)	.2300 (3.96)	.1265 (2.23)	.7081 (4.42)
Luxembourg	.1130 (2.52)	.1024 (2.31)	.0478 (1.08)	.0653 (1.56)	.3245 (2.80)
Netherlands	.1528 (3.95)	.2221 (6.08)	.1364 (3.61)	.0359 (1.02)	.5269 (5.27)
Portugal	.0861 (2.18)	.0790 (2.03)	-.0570 (1.46)	.0045 (0.13)	.1180 (1.17)
Great Britain	.1994 (5.26)	.2060 (5.69)	.2114 (5.76)	.0729 (2.05)	.6761 (6.88)
East Germany	.3272 (8.74)	.1872 (4.99)	.2374 (6.26)	.2133 (5.56)	.9351 (9.21)
Finland	.1275 (3.16)	.1943 (5.09)	.1856 (4.76)	.0939 (2.51)	.5821 (5.62)
Sweden	.1393 (3.79)	.1843 (5.27)	.1369 (3.83)	.0430 (1.28)	.4931 (5.25)
Austria	.1365 (3.55)	.1444 (3.89)	.0131 (0.35)	.1804 (4.90)	.4665 (4.75)

Job security decrease	.1111 (5.72)	-.1607 (8.15)	-.0069 (0.36)	-.0318 (2.05)	-.0821 (1.63)
Job security no change	-.1353 (8.31)	-.2816 (17.01)	-.1981 (12.18)	-.1619 (11.67)	-.7328 (17.24)
Job security DK	-.0445 (0.99)	-.1870 (4.25)	-.0515 (1.15)	-.0430 (1.13)	-.2164 (1.68)
Fisherman	.0166 (0.05)	-.1222 (0.35)	-.0594 (0.17)	n/a	-.3060 (0.40)
Professional	-.1128 (1.46)	.0615 (0.80)	-.0289 (0.38)	.1107 (1.83)	-.1655 (0.81)
Owner of a shop	-.1230 (1.84)	-.0238 (0.36)	-.0715 (1.09)	.1259 (2.49)	-.3490 (2.01)
Business proprietor	-.0818 (1.13)	.0893 (1.27)	.0301 (0.42)	-.0456 (0.77)	-.0189 (0.10)
Employed professional	-.1297 (1.53)	.0583 (0.67)	-.0065 (0.08)	-.1210 (1.92)	-.1987 (0.89)
General management	-.1874 (2.32)	.1169 (1.42)	.0201 (0.24)	-.1258 (2.06)	-.1638 (0.75)
Middle management	-.0973 (1.25)	.0440 (0.57)	.0247 (0.32)	-.1117 (1.84)	-.1166 (0.58)
Employed at a desk	-.1536 (2.00)	-.0290 (0.37)	-.0346 (0.45)	-.1026 (1.66)	-.2741 (1.37)
Salesman	-.1483 (1.89)	-.0918 (1.15)	-.0482 (0.61)	-.0259 (0.39)	-.2638 (1.28)
Service employee	-.1023 (1.31)	-.0408 (0.52)	-.0360 (0.47)	-.0732 (1.15)	-.2130 (1.06)
Supervisor	-.0539 (0.64)	.1273 (1.56)	.0091 (0.11)	-.0478 (0.70)	.0467 (0.21)
Skilled manual	-.1904 (2.53)	-.1420 (1.85)	-.0751 (1.00)	-.0834 (1.34)	-.4371 (2.21)
Unskilled manual	-.2467 (3.35)	-.2376 (3.13)	-.1511 (2.00)	-.0890 (1.44)	-.6579 (3.29)
Mining and quarrying	.1465 (1.27)	.0461 (0.40)	.1227 (1.07)	.1369 (1.34)	.3885 (1.32)
Manufacturing	.1179 (2.07)	.0657 (1.21)	.0690 (1.26)	.0738 (1.45)	.2930 (2.08)
Electricity, gas & water	.1405 (1.86)	.0679 (0.92)	.1627 (2.23)	.1337 (1.91)	.4159 (2.19)
Construction	.1417 (2.40)	.0895 (1.58)	.0931 (1.64)	.0811 (1.51)	.3553 (2.42)
Wholesale & retail trade, repairs	.1191 (2.12)	.0245 (0.46)	.0571 (1.07)	.0569 (1.15)	.2342 (1.69)
Hotels & restaurants	.0878 (1.37)	.0027 (0.04)	.0675 (1.09)	-.0103 (0.19)	.1398 (0.87)
Transport & communications	.1840 (3.02)	.0238 (0.40)	.0110 (0.19)	.0496 (0.91)	.2325 (1.52)
Financial intermediation	.2323 (3.67)	.1541 (2.50)	.1218 (1.95)	.1007 (1.66)	.5585 (3.41)
Real estate & business activities	.1803 (2.81)	.0176 (0.28)	.0613 (0.97)	.0574 (0.97)	.2687 (1.65)
Public administration	.1437 (2.49)	.0504 (0.91)	.0905 (1.63)	.0715 (1.38)	.2968 (2.07)
Other services	.1531 (2.74)	.0715 (1.34)	.1076 (2.02)	.0417 (0.86)	.3235 (2.35)
1-10 workers	.0698 (2.80)	.0669 (2.71)	.0703 (2.84)	.0460 (1.97)	.1904 (2.93)
10-24 workers	.1413 (4.93)	.1100 (3.88)	.1152 (4.03)	.1029 (3.78)	.3970 (5.34)
25-49 workers	.1475 (4.75)	.0968 (3.15)	.0869 (2.81)	.0783 (2.66)	.3309 (4.10)
50-99 workers	.1561 (4.74)	.0945 (2.90)	.0651 (1.97)	.1150 (3.61)	.3459 (4.04)
100-499 workers	.1788 (5.73)	.1036 (3.34)	.0896 (2.87)	.1301 (4.30)	.4183 (5.14)
>=500 workers	.1032 (3.01)	.0933 (2.76)	.0792 (2.32)	.1192 (3.63)	.3177 (3.58)

Size DK	.0456 (0.72)	-.0189 (0.30)	-.0021 (0.03)	.0331 (0.58)	.0158 0.09)
Log likelihood ratio	-4232.6	-4197.2	-4276.8	-3425.6	
Chi square/F-statistic	799.6	910.2	758.4	542.8	18.69
Pseudo R <sup>2</sup> /R <sup>2</sup>	.0863	.0978	.0814	.0734	.1469
N	6696	6727	6718	6456	6370

Notes: excluded categories Belgium; secure job – very true; job security no change last 5yrs: financial situation neither easy nor difficult; agriculture, farmer, work at home alone; farmer; agriculture, forestry and fishing, works at home alone.

The final column, *Increased All*, has as its dependent variable the number 1 to 4. If the individual reported increased strain on all four categories, he or she is assigned 4; if he or she reported increased strain on three categories, a 3 is assigned; and so on. The aim of the column is to give a simple way of judging the size of personal characteristics' effects.

Source: Eurobarometer 44.3OVR, February-April 1996

**Table 21. Probability of Reporting Strain (Dprobit equations)**

	1991 Stress	1991 Tiredness	1995-6 Stress	1995-6 Fatigue	1995-6 Sleep problems
Belgium	-.0314 (1.81)	-.0330 (3.01)	-.0327 (1.61)	-.0744 (4.98)	-.0230 (2.32)
Netherlands	-.0586 (3.35)	-.0230 (1.97)	-.0587 (2.96)	-.0978 (6.86)	-.0087 (0.86)
West Germany	-.0056 (0.33)	-.0573 (5.69)	.0005 (0.02)	-.0800 (5.45)	.0019 (0.18)
Italy	-.0298 (1.63)	-.0336 (2.92)	.1862 (8.52)	.0110 (0.68)	-.0217 (2.20)
Luxembourg	.0981 (4.18)	-.0533 (4.09)	.1410 (5.34)	-.0721 (3.90)	-.0167 (1.34)
Denmark	-.0067 (0.37)	-.0587 (5.74)	.0200 (0.95)	-.1069 (7.38)	-.0082 (0.79)
Ireland	-.0485 (2.62)	-.0558 (5.44)	-.1204 (6.02)	-.1166 (8.28)	-.0377 (3.89)
Great Britain	.0864 (4.44)	-.0149 (1.29)	.0433 (2.06)	-.0757 (5.18)	.0387 (3.28)
Greece	.1168 (5.65)	.1291 (8.27)	.2651 (11.75)	.2914 (14.34)	.0399 (3.30)
Spain	-.0622 (3.46)	-.0434 (4.00)	.0006 (0.03)	.0407 (2.39)	-.0252 (2.52)
Portugal	-.0780 (4.28)	-.0042 (0.35)	.0674 (3.09)	.0171 (1.02)	.0018 (0.16)
East Germany	-.0296 (1.80)	-.0788 (8.60)	.0897 (4.25)	-.0431 (2.83)	.0176 (1.59)
Age	.0107 (5.62)	.0008 (0.68)	.0176 (8.53)	.0048 (2.83)	.0054 (4.83)
Male*	.0222 (2.82)	.0089 (1.58)	-.0102 (1.32)	-.0306 (4.55)	.0029 (0.72)
Union*	.0730 (8.22)	.0283 (4.37)	n/a		n/a
Age <sup>2</sup>	-.0001 (5.95)	-.0000 (0.77)	-.0002 (8.28)	-.00005 (2.60)	-.00006 (4.38)
Fisherman	.1614 (2.32)	-.0031 (0.09)			
Professional	-.0285 (0.95)	-.0823 (7.30)			
Shop owner	-.0030 (0.13)	-.0856 (9.79)			
Employed professional	.1144 (3.67)	-.0689 (6.06)			
General management	.0734 (2.52)	-.0874 (8.57)			
Middle management	.0516 (2.08)	-.0953 (10.17)			
Other office employees	-.0164 (0.71)	-.1069 (12.28)			
Non-office non-manuals	.0516 (2.13)	-.0822 (8.75)			
Supervisors	.0480 (1.45)	-.0676 (5.16)			
Skilled manuals	.0261 (1.15)	-.0599 (5.82)			
Other manuals	-.0311 (1.34)	-.0651 (6.48)			
Legislators and managers			.0429 (1.87)	-.0633 (3.84)	-.0007 (0.06)
Professionals			.0715 (3.05)	-.0506 (2.97)	.0163 (1.31)

Technicians			.0126 (0.57)	-.0553 (3.35)	.0186 (1.54)
Clerks			-.0517 (2.49)	-.1119 (7.58)	-.0223 (2.19)
Service & sales workers			-.0150 (0.71)	-.0579 (3.62)	.0033 (0.29)
Craft & related trades			-.0477 (2.34)	-.0371 (2.32)	-.0133 (1.29)
Plant and machine operators			.0115 (0.49)	-.0033 (0.18)	.0149 (1.17)
Elementary occupations			-.0924 (4.51)	-.0434 (2.64)	-.0079 (0.72)
Armed forces			-.0770 (1.76)	-.0490 (1.42)	-.0124 (0.54)
Age left school dummies	9	9	2	2	2
Log likelihood	-6154.8	-3886.3	-9038.5	-7230.3	-3824.5
N	12499	12499	15986	15986	15986
Chi <sup>2</sup>	680.6	856.6	993.0	1358.7	278.1
Pseudo R <sup>2</sup>	.0524	.0993	.0521	.0859	.0351

Source: Eurobarometer

Notes: 1991 QA7. In which ways does your work affect your health – a) stressful b) overall tiredness, work that is too tiring?

Excluded category France, farmer/agriculture

Method of estimation is dprobit.

Source: Eurobarometers #35A (ICPSR 9696) Spring 1991 and #44.2, November 1995 – January 1996

## Appendix

**Appendix Table A1. Job Satisfaction in the UK, 1973-1983**

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	All
Very satisfied	42.7	44.2	44.8	44.1	41.9	44.5	42.9	44.5	42.9	41.4	39.0	43.1
Fairly satisfied	42.8	42.2	39.9	39.8	40.2	39.4	42.5	41.7	42.0	42.5	43.5	41.4
Neither	7.7	8.0	5.1	5.5	5.0	4.6	4.7	4.4	5.1	4.9	5.3	5.6
Rather dissatisfied	4.4	4.0	7.2	7.5	8.9	7.9	6.5	6.1	6.6	7.3	8.0	6.7
Very dissatisfied	2.4	1.7	3.0	3.1	3.9	3.5	3.4	3.3	3.4	4.0	4.3	3.2
N	13845	12332	12511	12056	11964	11814	11440	11541	11201	9133	8417	126254

Source: General Household Survey Series, 1973-1983.

**Table B1. Losing and Finding a Job over Time – United States 1977-1998 (%)**

a) Thinking about the next 12 months, how likely do you think it is that you will lose your job or be laid-off?

	Not at all likely	Not too likely	Fairly likely	Very likely	N
1977	66%	24	6	4	883
1978	71	21	4	4	876
1982	60	27	6	7	1016
1983	61	25	8	6	914
1985	65	23	5	6	927
1986	67	23	7	4	843
1988	66	25	4	4	607
1989	70	22	4	4	606
1990	67	25	6	3	588
1991	62	25	7	6	602
1993	61	27	8	4	668
1994	63	27	5	6	1279
1996	61	28	7	4	1338
1998	65	27	4	4	1232
All	64	25	6	5	12397

Source: General Social Survey

**Table B1. Losing and Finding a Job over Time – United States 1977-1998 (%) (continued)**

b) About how easy would it be for you to find a job with another employer with approximately the same income and fringe benefits you now have?

	Not easy at all	Somewhat easy	Very easy	N
1977	42%	30	27	878
1978	39	33	28	865
1982	51	26	22	1009
1983	51	30	19	908
1985	43	32	25	917
1986	39	33	28	847
1988	35	37	28	598
1989	38	28	35	600
1990	38	30	32	589
1991	40	36	24	596
1993	45	33	22	665
1994	46	33	21	1267
1996	40	33	27	1331
1998	33	36	31	1221
All	42	32	26	12291

Source: General Social Surveys.

**Table B2. Probability of a) Losing and b) Finding a Job in the USA, 1972-1996: ordered logits (Current workers only)**

	<i>Losing a Job</i>			<i>Finding a job</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
Age	-.0089 (5.56)	-.0085 (5.20)	-.0075 (3.43)	-.5975 (9.08)	-.0268 (17.41)	-.0278 (13.54)
Male	.0251 (0.64)	-.0843 (1.96)	-.0497 (0.87)	-.1036 (2.87)	.0429 (1.09)	.0879 (1.70)
Self-employed	-.8079 (11.86)	-.8650 (12.07)	-.9076 (9.42)	.5610 (10.13)	.3701 (6.36)	.2570 (3.38)
Black	.4577 (7.91)	.5014 (8.24)	.4958 (5.79)	-.2428 (4.30)	-.2421 (4.07)	-.1837 (2.21)
Other non-white	.1529 (1.37)	.1456 (1.27)	.1407 (0.92)	-.0056 (0.06)	-.0589 (0.56)	-.0685 (0.50)
Time	.0244 (6.83)	.0274 (7.22)	.0327 (6.27)	-.0099 (3.10)	-.0186 (5.46)	-.0200 (4.34)
Years of Schooling	-.0656 (9.13)	-.0500 (6.40)	-.0527 (5.08)	.0693 (10.53)	.0618 (8.56)	.0646 (6.80)
Log state unemployment	.5161 (7.21)	.7064 (8.10)	.7768 (6.55)	-.5975 (9.08)	-1.0182 (12.58)	-1.0155 (9.34)
Union			.2550 (3.46)			-.6222 (8.62)
Industry dummies (9)	No	Yes	Yes	No	Yes	Yes
State dummies (44)	Yes	Yes	Yes	Yes	Yes	Yes
Cut_1	.6832	.8692	1.1925	-1.7301	-2.8702	-2.7832
Cut_2	2.2473	2.4527	2.7727	-.3095	-1.4008	-1.2670
Cut_3	3.1030	3.3141	3.6608			
Chi-Squared	448.9	639.3	424.5	669.81	1142.3	763.9
Pseudo R <sup>2</sup>	.0214	.0305	.0350	.0284	.0484	.0551
N	11058	11045	6471	10981	10967	6431

Notes: losing and finding a job variables not available in years 1972-1976, 1980, 1984 and 1987.  
Union status not available in 1972, 1974, 1977 & 1982.

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