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International evidence on well-being  
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### **ABSTRACT**

National Time Accounting is a way of measuring society's well-being, based on time use. Its explicit form is the U-index, for "unpleasant" or "undesirable", which measures the proportion of time an individual spends in an unpleasant state. In this paper I review cross-country evidence on happiness and life satisfaction and consider whether these data will likely be replaced by the U-index. I find that first, that there are many similarities. According to both measures happiness is higher for the more educated, for married people, for those with higher income and for whites and lower for the unemployed; is U-shaped in age and un-trended over time in the USA although they are trended up in a number of EU countries and especially so in developing countries. Equivalent results are found using self-reported unhappiness data. Second, there is a large body of data on happiness that is unavailable on the U-index. For example, according to happiness research well-being across nations is lower the higher is the unemployment rate, the current inflation rate and the highest inflation rate in a person's adult life. Higher inequality also lowers happiness. Third, we know little about the predictive power of the U-index. Happiness and life satisfaction data seem able to forecast migration flows. Fourth, happy people are particularly optimistic about the future. Fifth, according to the happiness data the US ranks above France but the U-index suggests the reverse.

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National Time Accounting (NTA) as propounded by Krueger, Kahneman, Schkade, Schwarz and Stone (2007) - henceforth K2S3 – is a way of measuring society's well-being, based on time use. It is a set of methods for measuring, comparing and analyzing the way people spend their time, across countries, over historical time, or between groups of people within a country at a given time. The arguments for NTA build on earlier work in Kahneman *et al* (2004a, b) and Kahneman and Krueger (2006). K2S3 argue that NTA should be seen as a compliment to the National Income Accounts, not a substitute. Like the National Income Accounts, K2S3 accept that NTA "is also incomplete, providing a partial measure of society's well-being". However, national time accounting, as K2S3 note, "misses people's general sense of satisfaction or fulfillment with their lives as a whole, apart from moment to moment feelings" (p.4, 2007).

K2S3 propose an index, called the U-index (for "unpleasant" or "undesirable") which is designed to measure the proportion of time an individual spends in an *unpleasant* state. The first step in computing the U-index is to determine whether an episode is unpleasant or pleasant. An episode is classified as unpleasant by K2S3 if the most intense feeling reported for that episode is a negative one -- that is, if the maximum rating on any of the negative affect dimensions is strictly greater than the maximum of rating of the positive affect dimensions. Once they have categorized episodes as unpleasant or pleasant, the U-index is defined by K2S3 as the fraction of an individual's waking time that is spent in an *unpleasant* state. The U-index can be computed for each individual (what proportion of the time is this person in an unpleasant emotional state?), and averaged over a sample of individuals. There does seem to be some differences in the paper on how the U-index is actually calculated. For example, in K2S3's Table 5.2 the U-index is defined as where 'stressed, sad or pain exceeded happy whereas in their Table 8.2 it is defined as the 'maximum of tense, blue and angry being strictly greater than the rating of happy'.

It is apparent that K2S3 believe their index is an improvement on the use of data on life satisfaction and happiness, which they suggest has a number of weaknesses. In Kahneman *et al* (2004) these same authors have criticized the use of such data because they argue that, there are (i) surprisingly small effects of circumstances on well-being (e.g., income, marital status, etc.); (ii) large differences in the level of life satisfaction in various countries which they regard as 'implausibly large'. They go on to argue that,

"..reports of life satisfaction are influenced by manipulations of current mood and of the immediate context, including earlier questions on a survey that cause particular domains of life to be temporarily salient. Satisfaction with life and with particular domains (e.g., income, work) is also affected by comparisons with other people and with past experiences. The same experience of pleasure or displeasure can be reported differently, depending on the standard to which it is compared and the context." (Kahneman et al 2004, p. 430)

Indeed, Kahneman and Krueger (2006) argued that well-being measures are best described as "... a global retrospective judgment, which in most cases is constructed only when asked and is determined in part by the respondent's current mood and memory, and by the immediate context." Frey and Stutzer (2005) have a rather different view.

"As subjective survey data are based on individuals' judgments, they are, of course, prone to a multitude of systematic and non-systematic biases. The relevance of reporting errors, however, depends on the intended usage of the data. Often, the main use of happiness measures is not to compare levels in an absolute sense, but rather to seek to identify the determinants of happiness. For that purpose, it is neither necessary to assume that reported subjective well-being is cardinally measurable, nor that it is interpersonally comparable. Higher reports of subjective well-being for one and the same individual has solely to reflect that she or he experiences more true inner positive feelings" (2005, pp. 208-209).

In the same vein Di Tella and MacCulloch (2007) note, "one would expect that such small shocks can be treated as noise in regression analyses". Consistent with this, however, Krueger and Schkade (2007) have reported that

"..overall life satisfaction measures...exhibited test-retest correlations in the range of .50-.70. While these figures are lower than the reliability ratios typically found for education, income and many other common micro economic variables, they are probably sufficiently high to support much of the research that is currently being undertaken on subjective well-being, particularly in cases where group

means are being compared (e.g. rich vs. poor, employed vs. unemployed) and the benefits of statistical aggregation apply" (2007, p.23).

In their earliest empirical analysis, Kahneman and Kruger (2006) calculated a U-index using data from a sample of 909 working women in Texas and showed that those who report less satisfaction with their lives spend a greater fraction of their time in an unpleasant state. Of the respondents who reported they were 'not at all satisfied', 49% of their time was spent in an unpleasant state, compared with 11% who said they were 'very satisfied'. The authors also found that those who score in the top third on a depression scale spent 31% of their time in an unpleasant state whereas those who score in the bottom third on the depression scale spent 13% of their time in an unpleasant state. K2S3 extend this work and report a comparison of the U-index based on data they collected in the US and France – and I understand that results from Denmark are coming shortly. K2S3 sampled 810 women in Columbus, Ohio and 820 women in Rennes, France, in the spring of 2005 and obtained information on both life satisfaction and their U-index. The American women were *twice* as likely to say they were very satisfied with their lives as are the French women (26 percent versus 13 percent). Furthermore, assigning a number from 1 to 4 indicating life satisfaction also indicated that the Americans are significantly more satisfied, on average. In contrast to reported life satisfaction, the U-index is 2.8 percentage points *lower* in the French sample (16%) than in the American sample (18.8%). Thus, the French, according to K2S3, appear to spend less of their time engaged in unpleasant activities (i.e., activities in which the dominant feeling is a negative one) than do the Americans in their samples. Moreover, national time-use data examined by K2S3 indicated that the French spend relatively more of their time engaged in activities that tend to yield more pleasure than do Americans.

The U-index relates to a relatively short period of time. Hence, there are a number of things the U-index does not measure - it appears to miss more general factors likely to impact a citizen's overall well-being. Examples, by country, include the fact that young people have been rioting on the streets of Paris (the UK Daily Telegraph headline read '*Test for Sarkozy as Paris riots continue*', November 27<sup>th</sup>, 2007), the French soccer team has won the World Cup or the English team has been knocked out of Euro 2008, or that the country is at war in Iraq and Afghanistan, or there has been a terrorist attack or a hurricane or even forest fires in Malibu or floods in New Orleans? These may well be missed by the U-index while likely being picked up in happiness or life satisfaction measures which relate to a more general feeling of happiness. It remains unclear whether an increase in unemployment, inflation or inequality or a decline in growth, or a drop in the stock market or a rise in the possibility of recession the following year would raise the U-index? Does the U-index predict the outcomes of elections or migration flows or anything at all for that matter? As I will outline in more detail below, it certainly seems that these factors impact our measures of well-being.

In what follows I provide a somewhat selective review of evidence on well-being using cross-country data and try to provide a framework for reconciling the findings from this work with those from the U-index. I present the main findings from responses on both happiness and life satisfaction as well as on unhappiness, hypertension, stress, depression, anxiety and pain from a considerable number of cross-country data sources. I also explore the results when happiness questions are based on what happens over the preceding week and find slightly weaker results. I then move on to look at how macro variables such as the national unemployment rate, inflation and output impact life satisfaction. I find evidence that a one percentage point increase in unemployment lowers happiness more than an equivalent increase in inflation and that the

highest level of inflation experienced as an adult lowers happiness further. Further, I show that life satisfaction levels in East European countries predict flows of workers to the UK and Ireland. Finally, I examine individual's expectations and show that happy people are particularly optimistic about the future, both for themselves and the economy. Subjective well-being data are clearly correlated with observable phenomena (Oswald, 1997).

### **1. Happiness and Life satisfaction**

Data on happiness and life satisfaction in particular are now available for many countries and for a large number of time periods. As with the U-index it is possible to average these already existing data across individuals and countries to form a National Happiness Index (NHI) to generate a measure national well-being, which would be a simple and cheap alternative to K2S3's proposed NTA. A crucial question is whether or not K2S3's proposed U-index an improvement over an NHI? As I lay out in detail below, there are many similarities between the two indices in terms of their determinants. The main differences relate to country rankings.

Before presenting data on happiness and life satisfaction in seminars to the many skeptical economists who don't believe you can, or even should, *measure* well-being – although there are less of that ilk these days - I explain that the data have been validated by researchers in other disciplines. I tell them that the answers to happiness and life satisfaction questions are well correlated with a number of important factors (for references see Di Tella and MacCulloch, 2007).

1. Objective characteristics such as unemployment.
2. Assessments of the person's happiness by friends and family members.
3. Assessments of the person's happiness by his or her spouse.
4. Heart rate and blood-pressure measures of response to stress.

5. The risk of coronary heart disease
6. Duration of authentic or so-called Duchenne smiles. A Duchenne smile occurs when both the zygomatic major and orbicularis oris facial muscles fire, and human beings identify these as 'genuine' smiles (see Ekman, Friesen and O'Sullivan (1988) and Ekman, Davidson and Friesen, (1990)).
7. Skin-resistance measures of response to stress.
8. Electroencephelogram measures of prefrontal brain activity.

Happiness and life satisfaction data are easy to obtain at the macro level as the data are downloadable from the [World Database of Happiness](#) for over 100 countries. Most surveys now use a common format for the questions. In general economists have focused on modelling two fairly simple questions, one on life satisfaction and one on happiness. These are typically asked as follows.

Q1. 3-step happiness – e.g. from the US General Social Survey (GSS)

*"Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy or not too happy?"*

Q2. 4-step life satisfaction – e.g. from the European Eurobarometer Surveys

*"On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?"*

The micro data on happiness are easily obtainable from most data archives including ICPSR for the GSS, the Data Archive at the University of Essex and ZACAT in Germany for the Eurobarometers, ISSP, European Social Survey, BHPS, GSOEP, European Quality of Life Survey, European Social Surveys etc.. Life satisfaction data are also now available annually from the Latinobarometers while happiness data is available annually in the Asianbarometers (Blanchflower and Oswald, 2007). Several of the data series extend back at least to the early 1970s. Many of the data sets cover several countries.



Economists like to run regressions, so by now the standard econometric approach taken by economists is to use micro data on happiness and/or life satisfaction to estimate an ordered logit or an Ordinary Least Squares (OLS) regression with the coding such that the higher the number the more satisfied an individual is (e.g. Blanchflower and Oswald, 2004). Generally, it makes little or no difference if you use an OLS or an ordered logit. The results are similar – but not identical – for happiness and life satisfaction. The main, *ceteris paribus*, findings from happiness and life satisfaction equations across countries and time are as follows.

**Well-being is higher among:**

Women

Married people

The highly educated

Active involvement in religion

The healthy

Those with high income

The young and the old – U-shaped in age

The self-employed

People with low blood pressure

The sexually active and especially those who have sex at least once a week

Those with one sex partner

Those without children

**Well-being is lower among:**

Newly divorced and separated people

Adults in their mid to late 40s

The unemployed

Immigrants and minorities

Those in poor health

Commuters

People with high blood pressure

The less educated

The poor

The sexually inactive

Those with children

There have been a number of recent surveys of the happiness literature including Clark et al (2007); Frey and Stutzer (2002a, b) and Di Tella and MacCulloch (2006) which provide

discussions of the relevant issues. Recent findings from the statistical happiness research include the following:

(i) For a person, money does buy a reasonable amount of happiness. But it is useful to keep this in perspective. Very loosely, for the typical individual, a doubling of salary makes a lot less difference than life events like marriage or unemployment.

(ii) For a nation, things are different. Whole countries, at least in the West where almost all the research has been done, do not seem to get much happier as they get richer.

(iii) Happiness is U-shaped in age. Women report higher well-being than men. Two of the biggest negatives in life are unemployment and divorce. Education is associated with high reported levels of happiness even after controlling for income.

(iv) Happy people are less likely to commit suicide (Koivuma et al, 2001).

(v) The structure of a happiness equation has the same general form in each industrialized country (and possibly in developing nations, though only a small amount of evidence has so far been collected). In other words, the broad statistical patterns look the same in France, Britain and the United States. As Di Tella and MacCulloch note "well-being equations, (where happiness and life satisfaction scores are correlated with the demographic characteristics of the respondents) are broadly "similar" across countries, (is) an unlikely outcome if the data contained just noise" (2007, p.9).

(vi) There is some evidence that the same is true in panels of people (that is, in longitudinal data). Particularly useful evidence comes from looking at windfalls, like lottery wins.

(vii) There is adaptation. Good and bad life events wear off, at least partially, as people get used to them.

(vii) Relative things matter a great deal. First, in experiments, people care about how they are treated compared to those who are like them, and in the laboratory will even pay to hurt others to restore what they see as fairness. Second, in large statistical studies, reported well-being depends on a person's wage relative to an average or 'comparison' wage including Blanchflower and Oswald (2004); Ferrer-i-Carbonell (2005); Di Tella *et al* (2005) and Luttmer (2005). Third, wage inequality depresses reported happiness in a region or nation (controlling for many variables), but the effect is not large (Alesina et al, 2004). Some of these patterns are visible in raw data alone. Strong correlations with income, marriage and unemployment are noticeable.

For the United States there seems to be relatively little evidence that despite rising affluence, happiness or life satisfaction have trended up much over time (Blanchflower and Oswald (2004). For example, in the 2006 GSS, 13.1% of respondents said they were not too happy, 56.1% pretty happy and 30.8% very happy. In 1972, the first year happiness data are available the numbers were 16.5%, 53.2% and 30.3% respectively. As can be seen from Figure 1, average happiness levels for the US are flat, while real GDP per capita has risen. It is also apparent from Table 7.3 of K2S3 that their U-index based on time in various activities each year is also flat over time.

	1965-66	1975-76	1985	1992-94	2003	2005
All	20.1%	19.5%	19.5%	20.0%	19.3%	19.6%
Men	20.9	20.4	20.1	20.2	19.6	19.9
Women	19.4	18.7	19.0	19.8	19.2	19.4

The picture is rather more mixed among European countries. For example, in Figure 2a and 2b there is some sign of a strong long-run upward trend in Italy and to a lesser extent in Denmark, and France while the data are relatively flat in the Netherlands, Germany, the UK and Ireland. In contrast, Belgium and Portugal have significant downward trends (results not reported). Note that happiness levels are generally high in Denmark and low in Italy and France. In addition,

Frey and Stutzer (2002b) have shown that the time trend in life satisfaction in Japan was flat between 1958 and 1991 over the period when GDP per capita rose by a factor of six.

There is evidence however of *upward* trends in Eastern European countries, Turkey and South American countries over the recent past. Table 1 reports the distribution of life satisfaction scores for countries from Western and Eastern Europe and from Latin America over the recent past. Among the seventeen Western European countries since the turn of the century, five have seen satisfaction broadly flat (Denmark; Greece; Ireland; Spain and the UK); five have seen increases (Belgium; Finland; France; Luxembourg and Sweden) while seven have seen declines (Austria; Germany; Italy; Japan; Netherlands; Portugal and the USA). In contrast, with the exception of Hungary, all of the Eastern European countries plus Turkey have all seen increases as is the case for all the Latin American countries from 1997.<sup>1</sup> There is some consistent evidence also that the wellbeing of the young (<30) has risen over time in both the USA and Europe (Blanchflower and Oswald, 2000). The rise is mostly among the unmarried. We found that this upward trend is not explained by changing education or work, falling discrimination or rise of youth-oriented consumer goods.

There is some evidence of convergence over time in the happiness of men and women in the US as women have become less happy (Blanchflower and Oswald, 2004a). Stevenson and Wolfers (2007) find that the relative decline in women's well-being holds for both working and stay-at-home moms, for those married and divorced, for the old and the young, and across the education distribution. The relative decline in well-being holds across various datasets, and for whether one asks about happiness or life satisfaction. Stevenson and Wolfers find that the

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<sup>1</sup> Easterlin and Zimmermann (2008) suggest that the observed increases in happiness in East Germany have arisen following a noticeable drop in life satisfaction at the time of unification (Blanchflower, 2001), so the rise is largely a recovery to pre-transition levels. In private communication Dick Easterlin has further suggested, based on his recent work, that the collapse and recovery of life satisfaction is *typically* the case for the European transition countries.

exception is that this African-American women have become happier over this period as have African-American men and there has been little consistent change in the gender happiness gap among African Americans over this period. As with U.S. women, Stevenson and Wolfers find that the well-being of European women has declined relative to men. However, while U.S. women also experienced an absolute decline in well-being, the subjective well-being of European men and women has risen over time.

There is also intriguing new evidence that *high frequency* happiness data yields information about preferences. Kimball et al (2006), for example, showed that happiness dipped significantly the first week of September 2005, after the seriousness of the damage done by Hurricane Katrina started to become apparent. The dip in happiness lasted two or three weeks and was especially apparent in the South Central region, closest to the devastated area.

## **2. The U-index**

The first column of Table 2 is taken from K2S3 and reports their U-index, which should be thought of as the inverse of a subjective wellbeing or happiness index. The higher the U-index the more unhappy the person is. There is little difference by gender; blacks are especially unhappy; the poor are unhappy as are the least educated. Unhappiness declines with age and is particularly low for the married and high for the widowed. How do these findings compare with those found using happiness and life satisfaction data? Column two presents the proportion of people in the USA from the *General Social Surveys* of 2000-2006 who say they are very happy (from a 1-3 scale) while in column 3 the proportion of Europeans from the 2000-2006 *Eurobarometers* saying they were very satisfied and in the final column for the 2005/2006 *Latinobarometers* who say they are very satisfied, both on a 1-4 scale, are reported.<sup>2</sup> Here a

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<sup>2</sup> The countries covered in these *Eurobarometers* are Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg;

larger proportion means happier and is the inverse of the U-index. Interestingly the results are very similar in all four columns. Happiness is higher for the more educated, for married people, for those with higher income and for whites.

Happiness does rise with age in the USA but once controls are included happiness is U-shaped in age (Blanchflower and Oswald, 2007b). It is U-shaped in age in both the European and Latin American countries even in the raw data and when controls are included (Blanchflower and Oswald, 2007b).<sup>3</sup> This result is confirmed by K2S3 in their Table 7.4 where unhappiness seems to follow an inverted U-shape.<sup>4</sup> We explore this U-shape in age in more detail below. The patterns across individuals are essentially the same then from SWB and NTA in the USA, Latin America and Europe. It turns out that the happiness derived from sex in both SWB studies and in U-index studies is especially high. (Blanchflower and Oswald, 2004b) found that sexual activity enters strongly positively in happiness equations.<sup>5</sup> Indeed, in Kahneman and Krueger,

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Malta; Netherlands; Norway; Poland; Portugal; Romania; Slovakia; Slovenia; Spain; Sweden; Turkey and the UK. The *Latinobarometer* covers Argentina; Bolivia; Brazil; Colombia; Costa Rica; Chile; Dominican Republic; Ecuador; El Salvador; Guatemala; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Uruguay and Venezuela.

<sup>3</sup> As Clark (2007) notes, this finding is repeated in happiness equations in Blanchflower and Oswald (2004); Clark (2005); Clark and Oswald (1994); Clark *et al.* (1996); Di Tella *et al.* (2001); Frey and Stutzer (2002a); Frijters *et al.* (2004); Gerdtham and Johannesson (2001); Graham (2005); Helliwell (2003); Kingdon and Knight (2007); Lelkes (2006); Oswald (1997); Powdthavee (2005); Propper *et al.* (2005); Sanfey and Teksoz (2007); Senik (2004); Shields and Wheatley Price (2005); Theodossiou (1998); Uppal (2006); Van Praag and Ferrer-i-Carbonell (2004) and Winkelmann and Winkelmann (1998).

<sup>4</sup> Blanchflower and Oswald (2007b) find that a robust U-shape in age in happiness/life satisfaction is found in seventy-two countries - Albania; Argentina; Australia; Azerbaijan; Belarus; Belgium; Bosnia; Brazil; Brunei; Bulgaria; Cambodia; Canada; Chile; China; Colombia; Costa Rica; Croatia; Czech Republic; Denmark; Dominican Republic; Ecuador; El Salvador; Estonia; Finland; France; Germany; Greece; Honduras; Hungary; Iceland; Iraq; Ireland; Israel; Italy; Japan; Kyrgyzstan; Laos; Latvia; Lithuania; Luxembourg; Macedonia; Malta; Mexico; Myanmar; Netherlands; Nicaragua; Nigeria; Norway; Paraguay; Peru; Philippines; Poland; Portugal; Puerto Rico; Romania; Russia; Serbia; Singapore; Slovakia; South Africa; South Korea; Spain; Sweden; Switzerland; Tanzania; Turkey; United Kingdom; Ukraine; Uruguay; USA; Uzbekistan and Zimbabwe.

<sup>5</sup> Blanchflower and Oswald (2004b) found that higher income does not buy more sex or more sexual partners. Married people have more sex than those who are single, divorced, widowed or separated. The happiness-maximizing number of sexual partners in the previous year is calculated to be 1. Highly educated females tend to have fewer sexual partners. Homosexuality has no statistically significant effect on happiness.

(2006) and Kahneman et al (2004b), 'intimate relations' has the lowest rating (i.e. gives the most happiness) while commuting has the highest. Somewhat surprisingly, though in K2S3 'walking' gave more happiness than 'making love' among US women, although the reverse was the case among French women (Table 8.3)!

In section 8 of their paper K2S3 do some international comparisons of SWB in two “representative” cities, one in France and the other in the United States, and ask whether the standard measure of life satisfaction and the NTA yield the same conclusion concerning relative well-being. Specifically, they designed a survey to compare overall life satisfaction, time use, and recalled affective experience during episodes of the day for random samples of women in Rennes in France and Columbus, Ohio in the United States. These cities were selected because they argued that they represented “middle America” and “middle France”. K2S3 also presented results using time allocation derived from national samples in the United States and France to extend their analysis beyond these two cities. The city sample consisted of 810 women in Columbus, Ohio and 820 women in Rennes, France. Respondents were invited to participate based on random-digit dialing in the Spring of 2005 and were paid approximately \$75 for their participation in both countries. The age range spanned 18 to 68, and all participants spoke the country’s dominant language at home. The Columbus sample was older (median age of 44 versus 39), more likely to be employed (75 percent versus 67 percent) and better educated (average of 15.2 years of schooling years versus 14.0) than the Rennes sample. In addition, the Rennes sample was more likely to be currently enrolled in school (16 percent versus 10 percent). The life satisfaction question was taken from the World Values Survey.

The distribution of reported life satisfaction in Columbus, OH and Rennes, France for women found by K2S3 is presented in the first two columns of part A of Table 3a using the 4-

step life satisfaction scale. Life satisfaction is based on the question, "Taking all things together, how satisfied are you with your life as a whole these days - not at all satisfied, not very, fairly and very satisfied?" K2S3 found that American women reported higher levels of life satisfaction than the French did, whether the proportion who said they were very satisfied or the overall score is used. Yet they also found that, on average, the French spent their days in a more positive mood. Moreover, the national time-use data they used also indicated that the French spend relatively more of their time engaged in activities that tend to yield more pleasure than do Americans. Their results, they argue, "suggest that considerable caution is required in comparing standard life satisfaction data across populations with different cultures". In particular, the Americans seem to be more emphatic when reporting their well-being. The U-index K2S3 suggests, "apparently overcomes this inclination".

Kahneman et al (2004 p. 430) have argued that differences in the SWB ratings of Denmark and France, for example, in the Eurobarometers are implausibly large, and they "raise additional doubts about the validity of global reports of subjective well-being, which may be susceptible to cultural differences in the norms that govern self descriptions". For example, in the Eurobarometers 2000-2006, the average distributions for life satisfaction for these two countries are as follows.

	not at all satisfied	not very satisfied	fairly satisfied	very satisfied	N
France	4%	15%	65%	16%	13,554
Denmark	1%	3%	33%	63%	13,718

Such differences are consistently repeated in multiple data sets, whether happiness or life satisfaction is used. It is clearly problematic to compare one country's happiness answers to those of another country. Nations have different languages and cultures, and in principle that may cause biases, perhaps large ones, in happiness surveys. At this point in research on



subjective well-being, the size of any bias is not known, and there is no accepted way to correct the data, although the literature has made some progress in exploring this issue (for instance, by looking inside a nation like Switzerland at sub-groups with different languages). In the long run, research into ways to difference out country fixed-effects will no doubt be done and the work of K2S3 in this regard is obviously important. The strong well-being performance in some happiness surveys of countries such as Mexico and Brazil in the 2002 ISSP, for example, (Blanchflower and Oswald, 2005), may or may not ultimately be viewed as completely accurate. In Blanchflower and Oswald (2005), one check was done by comparing happiness in the English speaking nations of Great Britain, Ireland, New Zealand, Northern Ireland and the United States. The main attraction is that this automatically avoids translation problems. Moreover, this smaller group of nations has the advantage that they are likely to be more similar in culture and philosophical outlook, and that in turn may reduce other forms of bias in people's answers. However, it does appear that there is considerable stability in cross-country rankings of life satisfaction in English speaking countries (Blanchflower and Oswald, (2005, 2006); Leigh and Wolfers, (2006)).

### **3. Econometric evidence on life satisfaction and happiness**

As I will show in more detail below there is also a great deal of stability in the rankings of European countries across a number of surveys including the *Eurobarometers* (1973-2006), *European Quality of Life Survey* (2003) and the *European Social Survey* (2002). Further, it seems that there is evidence from the *World Values Survey* and the *International Social Survey Programme* (2002) supporting a happiness ranking where the US is ranked above France as implied in K2S3's life satisfaction data rather than below it as implied by their U-index. In fact I am unable to find *any* data file where the ranking reverses as occurs with the U-index. The

evidence is essentially the same whether we look at happiness, life satisfaction or health, family life or conversely, a variety of measures of unhappiness including measures of high blood pressure, stress, lack of sleep, pain and being 'down and depressed'.

Where feasible I present data comparing the US and France but there are only a few data files that include both countries so we make use of data from a number of European data files that allow a direct comparison with Denmark that will be included in K2S3's analysis shortly plus the UK, which is of particular interest to this author! In almost all of what follows the UK ranks above France: Denmark is mostly top of the happiness rankings in Europe, especially when life satisfaction is used. If we refer to Figures 2a and 2b which are based on *Eurobarometer* data, Denmark ranks above the UK which itself ranks above France, in every year of data we have available. Indeed, based simply on life satisfaction averages France usually ranks below the large majority of the EU15. For example, in the raw data from the latest Eurobarometer available, #65.2 for March-May 2006, France ranked fourteenth out of thirty countries.<sup>6</sup> Controlling for a variety of characteristics over a long run of thirty years, France ranked seventeenth out of thirty.<sup>7</sup>

Columns 3-5 of part A of Table 3a report results using the most recent subset of the data from the *Eurobarometers* for 2000-2006 which shows that France ranks third behind Denmark

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<sup>6</sup> Average life satisfaction scores were Denmark (3.61); Sweden (3.39); Luxembourg (3.39); Netherlands (3.36); Ireland (3.28); Finland (3.23); UK (3.19); Belgium (3.19); Cyprus (3.12); Slovenia (3.10); Spain (3.08); Austria (3.08); Turkish Cyprus (3.02); France (3.00); Malta (2.98); West Germany (2.95); Czech Republic (2.89); Italy (2.86); Turkey (2.85); Poland (2.79); Croatia (2.78); Estonia (2.72); East Germany (2.72); Greece (2.67); Slovakia (2.66); Lithuania (2.58); Latvia (2.56); Hungary (2.47); Portugal (2.44); Romania (2.31) and Bulgaria (1.97).

<sup>7</sup> When an ordered logit is run using these Eurobarometer data from 1973-2006 pooled across all member countries plus Candidate Countries Croatia, Norway and Turkey with a standard set of controls as in Table 8 column 5, the rankings are as follows with rank in parentheses Denmark (1); Netherlands (2); Norway (3); Sweden (4); Luxembourg (5); Ireland (6); UK (7); Finland (8); Belgium (9); Austria (10); Cyprus (11); Slovenia (12); Malta (13); Spain (14); Germany (15); Turkey (16); France (17); Czech Republic (18); Italy (19); Croatia (20); Poland (21); Portugal (22); Estonia (23); Greece (24); Slovakia (25); Latvia (26); Lithuania (27); Hungary (28); Romania (29); Bulgaria (30);

and the UK. Part B of Table 3a presents data on women using the World Values Survey on a 10 point life satisfaction scale and replicates that ranking. Part C of the table uses data for men and women combined from the World Database of Happiness and which includes all four countries. Once again France ranks bottom, with Denmark second and the UK third with the USA at the top.

In the final part of Table 3a I present some macro-economic data on GDP per capita, the Gini coefficient and the most recent unemployment rate (Source; Labour Market Statistics First Release, ONS, November, 2007). In comparison with France the USA has a) a lower unemployment rate, b) higher GDP per capita c) higher Gini coefficient. France has especially high rates of long-term unemployment and youth unemployment. Denmark has an especially low unemployment rate and low Gini coefficient. Despite the well known difficulty of making suicide rates comparable across countries, it appears that the rates in France for both men and women are well above those for the USA. This is illustrated in Table 3b. This ranking is more consistent with SWB data rankings than it is with rankings based on NTA.

Happiness from a further source, the *International Social Survey Programme* (ISSP), which also contains data from the two countries, is also supportive of the fact that happiness in the USA is *higher* than it is in France. Data on the two countries are available in the 1998, 2001 and 2002 sweeps. In the first two sweeps happiness data is available on a four point scale in response to the question 'how happy are you with your life in general – not at all happy; not very happy, fairly happy and very happy'. Responses are as follows

	not at all	not very	fairly	very	score	N
2001 USA	1%	7%	51%	41%	3.3%	1129
1998 USA	2%	9%	52%	37%	3.2%	1272
2001 France	1%	9%	62%	27%	3.2%	1330
1998 France	3%	20%	64%	13%	2.9%	1082

The overall score for the French increased between 1998 and 2001. In the 2002 ISSP responses were provided on a seven point scale and the US score is once again considerably higher than for the French for both men and women. As can be seen below the average score across respondents in the USA was higher for both men and women, however, the proportion very unhappy – completely, very or fairly – was higher. For men in the USA 4.3% in this category compared with 3.1% in France while for women the numbers were 4.2% and 3.6% respectively.

### USA

	<i>Female</i>	<i>Male</i>	<i>All</i>
Completely unhappy	0.2	0.0	0.1
Very unhappy	1.5	1.2	1.4
Fairly unhappy	2.5	3.1	2.8
Neither	5.4	6.8	6.0
Fairly happy	31.9	36.3	33.7
Very happy	45.7	41.6	44.0
Completely happy	13.0	11.1	12.2
Score	5.56	5.47	5.52
N	672	488	1,160

### France

	<i>Female</i>	<i>Male</i>	<i>All</i>
Completely unhappy	0.1	0.2	0.1
Very unhappy	0.3	0.5	0.3
Fairly unhappy	3.2	2.4	3.0
Neither	13.4	10.9	12.6
Fairly happy	48.8	49.1	48.9
Very happy	23.6	25.0	24.1
Completely happy	10.7	12.0	11.1
Score	5.24	5.31	5.26
N	1,216	617	1,833

We now turn to the econometric evidence where we are able to hold constant a number of factors including labor market and marital status, age, gender and schooling. The rankings remain essentially unchanged.

*Econometric evidence on the micro-determinants of happiness*

Rank orderings of the United States and France are consistent whether we examine happiness, life satisfaction or other variables relating to the family, no matter what the data file or year we examine. Table 4a and 4b explores differences in happiness between the United States and France using the ISSP 1998, 2001 and 2002 data described above.<sup>8</sup> In all three years of data the USA ranks above France, although there is some variation in the rankings across other countries. For example, the UK is above the USA in 1998 and 2001 but below it in 2002 and above Denmark in all three years while Denmark is below France in 2001. In most other data files we examine below Denmark ranks top in Europe, especially on life satisfaction. Columns 3 and 4 provide estimates of ordered logits estimating how satisfied the individual is with their family life. The idea here is to ensure the rankings are not driven by different interpretations of the word 'happy', although still potentially impacted by the reticence of the French to be emphatic when reporting their well-being. Rankings are similar to those based on happiness, with Americans more satisfied than the French. It does seem, however, that people in the USA value time with their families very highly. Interestingly, when individuals in the ISSP are asked whether they wished they could spend more time with their families, more than half of respondents reported they would like to spend 'much more time', compared with a third in France and the UK and a fifth in Denmark (Table 5).

It is appropriate to explore further the ranking by country using the SWB measures from other data files to see if the rankings are consistent and this is what is done in Tables 6-8 and it turns out they are. Table 6 uses data from eighty two countries from the four sweeps of the *World Values Surveys* of 1981-2004 on both life satisfaction and happiness. Ordered logits are

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<sup>8</sup> The exact question asked is Q.17. 'If you were to consider your life in general, how happy or unhappy would you say you are, on the whole?' – 1=completely happy, 2=very happy, 3=fairly happy, 4=neither happy nor unhappy, 5=fairly unhappy, 6=very unhappy and 7=completely unhappy.

estimated in columns 1 and 2 with the dependent variable life satisfaction with responses scored on a scale of 1-10 where 1 is least satisfied and 10 most satisfied. The sample size is just over a quarter of a million observations - only three country dummies are included with the remaining country dummies all excluded for simplicity. The first column only includes 19 year dummies and country dummies for France, Denmark, the UK and the USA with all other countries set as the omitted category for simplicity. Column 2 adds controls for age, gender, marital status and labor market status. Happiness is higher among the married (Zimmermann and Easterlin, 2006), the educated and especially low among unemployed (Blanchflower and Oswald, 2004a, b). In both columns the country ranking remains as follows - France, UK, USA and Denmark. In columns 3 and 4 the dependent variable is a 4-step happiness variable and the rankings are a little different - France, USA, UK and again Denmark at the top. These results are consistent with the findings of Veenhoven (2000) who examined the first three waves of the WVS and found that among the three possible ways of ranking countries based on responses of individuals on how happy they are, how satisfied they are and how they would rate their lives on a scale from the worst to the best possible life, the ranking stays roughly the same.

Table 7 uses data from another source, the *European Quality of Life Study* of 2003 (n=26,000), which obviously excludes the US, and follows a similar form but this time separate results are reported on a 10-step scale for life satisfaction and happiness. Data are also available on the individual's assessment of their overall health – on a five point scale: poor, fair, good, very good and excellent. Four separate controls for health status are included in column 2 for life satisfaction and column 5 for happiness along with a standard set of controls. Household income in Euros is also available in the data file which is the added, in natural logarithms, in columns 3 and 6. This is the first time in a cross-country data file on happiness that income has

been available in one currency (Euros). In all cases the rankings for the three main countries of interest are France, then the UK and finally Denmark highest ranked. East European countries have low levels of happiness (Blanchflower (2001), Sanfey and Teksoz (2007)); life satisfaction and happiness is U-shaped in age, minimizing in the mid-40s for life satisfaction and in the 50s for happiness. Adding controls for income lowers the age minimum. Happiness rises with education and income whether health is controlled for or not. Married people and those living together as well as those in good health are particularly happy. The unemployed are especially unhappy (Blanchflower and Oswald, 2004; Carroll, 2007 for Australia and Hinks and Gruen, 2007 and Powdthavee, 2007 for South Africa).

Money buys happiness. Interestingly, and perhaps surprisingly from an economist's point of view, the coefficients on the other variables in Table 7's well-being equations hardly alter when income is controlled for. The amount of happiness bought by extra income is not as large as some would expect. To put this differently, the non-economic variables in happiness equations enter with large coefficients, relative to that on income. Following Blanchflower and Oswald (2004), Table 7, or its ordinary least squares equivalent (see Appendix Table A), can be used to do a form of happiness calculus. The relative size of any two coefficients provides information about how one variable would have to change to maintain constant well-being in the face of an alteration in the other variable. To 'compensate' for a major life event such as being widowed or a marital separation, it would be necessary to provide an individual with additional income. Viewing widowhood as an exogenous event, and so a kind of natural experiment, this number may be thought of as the 'value' of marriage. A different interpretation of this type of correlation is that happy people are more likely to stay married. It is clear that this hypothesis cannot easily be dismissed if only cross-section data are available. However, panel data on well-

being suggest that similarly large effects are found when looking longitudinally at changes (thus differencing out person specific fixed effects). If high income goes with more happiness, and characteristics such as unemployment and being black go with less happiness, it is reasonable to wonder whether a monetary value could be put on some of the other things that are associated with disutility. Further calculation using the life satisfaction data in Appendix Table A suggests that to 'compensate' for unemployment compared with being a manual worker would take a rise in net income of approximately €3,900 per month, which is very large given the mean in the data of €1,392 and to 'compensate' for being married or living together would take €1,770 Euros compared to being single.<sup>9</sup> Blanchflower and Oswald (2004) also found large effects for the US using the GSS data. These effects seem large and inconsistent with the claims of Kahneman et al (2004) that the size of the effects of circumstances on well-being are, 'surprisingly small'.

Table 8 examines data from the *2002 European Social Survey* (ESS) across 20 EU countries plus Israel and Switzerland. Data are provided in columns 1-3 on happiness and life satisfaction. The rankings are very similar to those reported in Table 7 – France then the UK then Denmark at the top. The patterns in the data are similar to those identified above - happiness and life satisfaction is higher for the most educated, for married people, the employed and the healthy. Happiness and life satisfaction are U-shaped in age. Table 9 uses data from a single *Eurobarometer #57.2* on life-satisfaction (5-step) also with and without health status dummies. There is a U-shape in age in every case. Once again in all six cases the rankings are France then the UK and Denmark highest.

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<sup>9</sup> This is done simply by dividing the coefficient on unemployment by the coefficient on household income i.e.  $.6847/.0001715=3903$  Euros. The size of these effects is even higher using the happiness data i.e. 6420 Euros for unemployment .



Identical rankings to this are found in Table 10 which uses over three quarters of a million observations from a long time series of *Eurobarometers* on life satisfaction (4-step). The rank ordering is France, UK and Denmark for the period 1975-2006 as well as for *all* sub-periods. The rankings were also the same as this when thirty separate equations were run with the same controls in every year individually (results not reported). It is also apparent from Appendix Table B that the structure of (OLS) life satisfaction equations is similar across the main European countries. Interestingly, the patterns of the life satisfaction appear to be very similar to those in the happiness data in the United States.

Blanchflower and Oswald (2008b) found that psychological well-being is U-shaped through life. A difficulty with research on this issue is that there are likely to be omitted cohort effects (earlier generations may have been born in, say, particularly good or bad times). First, using data on 500,000 randomly sampled Americans and West Europeans, the paper designs a test that can control for cohort effects. Holding other factors constant, we showed that a typical individual's happiness reaches its minimum -- on both sides of the Atlantic and for both males and females -- in middle age. Second, evidence was provided for the existence of a similar U-shape through the life-course in East European, Latin American and Asian nations. Third, a U-shape in age is found in separate well-being regression equations in 72 developed and developing nations. Fourth, using measures that are closer to psychiatric scores, Blanchflower and Oswald (2008b) document a comparable well-being curve across the life cycle in two other data sets: (i) in GHQ-N6 mental health levels among a sample of 16,000 Europeans, and (ii) in reported

depression and anxiety levels among 1 million U.K. citizens.<sup>10</sup> Evidence of a U-shape in age is found in *all* life satisfaction and happiness equations reported in this paper.<sup>11</sup>

Easterlin (2006) argues that happiness in the US, as well as family satisfaction and job satisfaction in the US follow an *inverse* U-shape in age.<sup>12 13</sup> His evidence was based on data from the General Social Surveys from 1973-1994. It is true in the raw data, or in specifications that do not include income or marital status as controls, that there is an *inverse* U-shape in the data in these three variables but only in the USA.<sup>14</sup> However, once marital status alone is included the U-shape flips and the sign of the time trend reverses, as can be seen below in the two ordered logits with t-statistics in parentheses estimated on the GSS data from 1972-2006.<sup>15</sup>

Age	+.0152 (5.18)	-.0276 (8.92)
Age <sup>2</sup>	-.00011 (3.76)	.00031 (10.21)
Time (1972=0)	-.0032 (3.52)	.0044 (4.79)
Married		.9872 (49.23)
cut1	-1.6061	-1.9501
cut2	1.1330	.9123
N	46,153	46,149
Pseudo R <sup>2</sup>	.0011	.0299

Easterlin (2007) only includes controls for gender, education and year of birth and its square, and I replicate his results with these variables using the longer time run of data from 1973-2006. I include controls for gender, schooling, race, region, birth decade, plus marital status and labor

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<sup>10</sup> Clark (2007) finds a similar result in the UK using data from the BHPS even after controlling for cohort effects.

<sup>11</sup> See Tables 5-10 and 12.

<sup>12</sup> However, Easterlin (2006) did find a U-shape in health and satisfaction with their financial situation .

<sup>13</sup> Analogously Mroczek and Spiro (2005) found that subjective well-being follows an inverted U-shape peaking at around retirement age.

<sup>14</sup> If an ordered logit is run with each of these five variables along with only age and its square there is an inverse U-shape for happiness, family satisfaction and job satisfaction (workers only). There is a U-shape for the family's financial situation while for the health variable only the age square term is significant and negative.

<sup>15</sup> Note in the data that the proportion married falls from 71.9% in 1972 to 48.1% in 2006.

market status in Table 11.<sup>16</sup> In each case there is a U-shape in age after the inclusion of controls.<sup>17</sup>

I estimated fourteen separate OLS equations for the largest European countries using the 1972-2006 Eurobarometers; in each case the dependent variable was life satisfaction scored from 1-4 with only age and its square as controls. Below we report signs of the variables if significant at 1% on a two tailed test. If insignificant a zero is entered. In every country except Austria there is a significant U-shape in age. The coefficients, all of which were highly significant, were as follows

	Age	Age <sup>2</sup>	Minimum	N
Austria	-.0035	0	n/a	19,309
Belgium	-.00692	.000055	63	61,840
Denmark	-.00331	.000028	60	61,023
Finland	-.01312	.000117	56	19,646
France	-.01943	.000208	47	63,253
Germany	-.00512	.000056	46	92,815
Greece	-.01741	.000127	68	49,863
Ireland	-.00766	.000105	36	59,983
Italy	-.00745	.000054	69	63,587
Netherlands	-.00918	.000084	55	61,699
Portugal	-.01572	.000096	82	41,286
Spain	-.01510	.000140	54	41,201
Sweden	-.00768	.000073	53	19,602
UK	-.00619	.000077	40	81,992

When controls are included – for education, gender, marital status, labor market status and time – in Appendix Table 1 all of these countries had significant U-shapes in age. Table 12a uses 5-step happiness data for thirteen Asian countries for 2003 and 2004 drawn from the

<sup>16</sup> I use a slightly different health variable than the one used by Easterlin (2007). I used *health* whereas Easterlin used *Sathealth*, which was only available for a subset of years.

<sup>17</sup> Health satisfaction declines with age in the raw data which is consistent with the findings of Deaton (2007) who also found that health satisfaction declined with age.

*Asianbarometers*.<sup>18</sup> The variables work in the same way as for other countries; and there are U-shapes in age with minima of 46 from column 3 for the two years pooled. However, there is no U-shape in the raw data as was found in the USA. Analogously, simply adding marital status variables generates a significant U-shape. Well-being is U-shaped in age whether measured by life satisfaction, happiness or the U-index once controls are included and in many countries even in the raw data. Cambodians and South Koreans are the least satisfied while those from Brunei and Singapore the most satisfied.

Table 12b uses data on 5-step life satisfaction for nine Asian and 9 European countries from the *Asia/Europe Survey (ASES)* of 2001. Happiness is U-shaped in age and rises with education. The unemployed are especially unhappy in Europe but are also unhappy in Asia. In both Asia and Europe native English speakers are especially happy – those with no understanding of English at all are less happy. Swedes are especially happy and Portugueses unhappy. There is a similar pattern to the Asian country dummies to those reported in Table 12a: Koreans are especially unhappy and Malaysians and Singaporeans notably happy.

#### **4. Econometric evidence on hypertension, unhappiness and pain**

The question then is whether the pattern of results we have seen using happiness and life satisfaction are repeated when we make use of self-reported data on unhappiness including high blood pressure, being under strain, being unable to sleep, being tired, under stress and in pain. It turns out that the results mostly go through. A modern literature has claimed that countries like Denmark, Ireland and the Netherlands are particularly happy while nations such as Germany, Italy and Portugal are less happy. Yet it is arguably implausible that words such as ‘happiness’ or

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<sup>18</sup> The 5-step happiness scale is very unhappy; not too unhappy; neither; pretty happy and very happy. The raw means by country were; Brunei 4.45; Cambodia 3.34; China 3.73; Indonesia 3.71; Japan 3.70; Korea 3.37; Laos 3.66; Malaysia 3.93; Myanmar 3.71; Philippines 3.82; Singapore 3.99; Thailand 3.88 and Vietnam 3.87.

‘satisfaction’ can be communicated unambiguously and in exactly the same way across countries, so it is not easy to know whether such cross-national well-being patterns are believable. Evidence on blood pressure across nations suggests that such happiness findings are credible. This is illustrated in Table 13 which uses data from two individual Eurobarometers - #56.1 for 2001 in columns 1-5 and a more recent one, #64.4 for December 2005-January 2006. Column 1 of Table 13 reports an ordered logit estimating whether an individual has high blood pressure from Blanchflower and Oswald (2008a) who showed that self-reported *high blood pressure* across individuals and countries is negatively correlated with self-reported happiness. Denmark ranks lowest on blood pressure and France highest. More recently Mojon-Azzi and Sousa-Poza (2007) show that even with more objective measures of hypertension a negative relationship between high blood pressure problems and life satisfaction can be observed. They examined life satisfaction (scored in the normal way from 1-4, and self-reported blood pressure, including whether the respondent took blood pressure medication, for a sample aged 50+ from the Survey on Health, Ageing and Retirement in Europe. Their main results were as follows; note that the correlation with life satisfaction was higher with taking medication (correlation=-.79) than with self-reported high blood pressure (correlation =-.66).

	Satisfaction score	% high blood pressure	% taking blood pressure medication
Austria	3.25	30.9	31.3
Belgium	3.33	30.5	26.1
Denmark	3.65	28.6	26.4
France	3.02	27.9	30.8
Germany	3.19	35.4	34.9
Greece	3.23	33.0	32.6
Israel	3.04	41.4	41.8
Italy	3.00	36.1	35.9
Netherlands	3.56	24.8	24.2
Spain	3.30	34.3	32.4
Sweden	3.33	28.8	27.9
Switzerland	3.43	25.6	27.9

Happy countries seem to have fewer blood-pressure problems. This has two implications. First, it suggests that there may be a case to take seriously the subjective ‘happiness’ measurements made across the world: they follow a pattern like the (inverse of) high-blood-pressure estimates. Second, in constructing new kinds of economic and social policies in the future, where well-being rather than real income is likely to be a prime concern, there are grounds for economists to study people’s blood pressure. The results on blood pressure validate the differences in happiness across nations in part because people can report high blood-pressure in a more objective way than they report levels of happiness;

The second column of Table 13, which is taken from Blanchflower and Oswald (2008a, column 4, Table 5), estimates an OLS where the dependent variable is a measure of psychological distress constructed (in the spirit of the well-known General Health Questionnaire score) by amalgamating answers to the questions:

*Have you recently:*

1. *Lost much sleep over worry?*
2. *Felt constantly under strain?*
3. *Felt you could not overcome your difficulties?*
4. *Been feeling unhappy and depressed?*
5. *Been losing confidence in yourself?*
6. *Been thinking of yourself as a worthless person?*

To the answers to each of these six, we assigned the integers 0, 1, 2, 3 -- depending whether each was answered *not at all*, *no more than usual*, *rather more than usual*, *much more than usual*.

The numerical answers were summed, and we term the result a ‘GHQ-N6’ measure, where N stands for ‘negative’. The mental distress score denoted GHQ-N6, must for a person therefore lie between 0 and 18. Across Europe, the mean of the variable is 3.6 (standard deviation 3.7). These six are the 6 negative questions from the fuller General Health Questionnaire GHQ-12 measure of psychological distress. The data set does not provide data on the other six ‘positive’

questions. Thus our focus is upon negative affect. The rank ordering is the same once again - France the most depressed, then the UK, and then Denmark the least depressed. Column 3 then estimates an ordered logit with the dependent variable whether an individual reports whether they feel 'unhappy or depressed'; column 4 models whether they 'had been feeling constantly under strain' and column 5 refers to whether they had 'lost much sleep over worry'. The rankings were once again in all cases France the most depressed and Denmark least depressed. Column 6 of Table 13 uses a different question from another *Eurobarometer #64.4* for 2005/6 - the respondent was asked whether during the preceding four weeks they had felt 'downhearted and depressed'. Rankings were the same - France then the UK and then Denmark.

Atlas and Skinner (2007) examined the prevalence of pain in the US population using the 2004 Health and Retirement Study (HRS) for approximately 18,000 people aged 50+. Among 50-59 year olds, rates of pain ranged from 19 percent for male college graduates to 55 percent among female respondents who did not finish high school. A variety of covariates in the HRS such as occupation, industry, and marital status attenuated but did not erase these gradients. Atlas and Skinner found differences across educational groups, with rates of people aged 50-59 troubled by pain ranging from 20 percent for men with a college education to 55 percent of women who did not finish high school. Data from *Eurobarometer #64.4 for 2006* allows us to examine this issue across 31 European countries (n=28,000). Respondents were asked: '*During the past four weeks how much if at all, has pain interfered with your activities? Extremely, quite a lot, moderately, a little and not at all?*'. The weighted percentage for the EU29 average reporting 'quite a bit' or 'extremely' was as follows, by gender

	Men	Women
ALS<=15 years	17	24
ALS 16-19 years	9	12
ALS >=20 years	7	9

The data here are consistent with those reported by Atlas and Skinner for the US - pain declines with education. I find that pain *rises* with age in Europe for all levels of education, whereas Skinner and Atlas found some evidence of that for the more educated but the reverse, surprisingly, that pain fell with age from age 50 up for the least educated. Column 7 of Table 13 estimates an ordered logit and confirms that, *ceteris paribus*, pain declines with level of education and rises with age and is lower for men. Countries with the highest amount of pain were all from Eastern Europe (Poland; Slovakia; Latvia; Romania; Czech Republic; Lithuania; Slovenia; Croatia; Bulgaria and Estonia).who all have low rankings on happiness and life satisfaction equations (Tables 7 and 10).<sup>19</sup> Countries with the least pain, in order, are Ireland and the UK. The French report higher levels of pain than either the British or the Danes. Alongside the evidence on hypertension the evidence from the incidence of pain does seem a further validation of the findings from the SWB data rather than the U-index. It is difficult to believe that data on pain and blood pressure are as susceptible to the K2S3 criticisms that the French are less emphatic when reporting their well-being.<sup>20</sup>

There seems very clear evidence then that the patterns in both happiness and unhappiness equations are remarkably stable across datasets, countries and however the question is asked. They also appear to be broadly consistent in other attitudinal questions relating to the state of the economy, government and even law and order. The evidence does seem to suggest dramatic stability in the cross country rankings. Table 14 examines happiness and life satisfaction data as

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<sup>19</sup> I ran a happiness equation (how much of the time have you felt happy over the past four weeks - never, rarely, sometimes, most of the time, all the time?) with the same dataset and the rankings of these countries out of 31 was Poland (17); Slovakia (20); Latvia (30); Romania (24); Czech Republic (14); Lithuania (27); Slovenia (13); Croatia (23); Bulgaria (31) and Estonia (29). The overall correlation between the country coefficients from the pain and happiness equations was -.61.

<sup>20</sup> In ongoing work Andrew Oswald and I have also found that pulse rates are also highly correlated with (un)happiness scores. Indeed, the structure of a pulse equation is very similar to that of a GHQ score in terms of its determinants. This work is being conducted using data from the English National Health Surveys of 1998-2007.



well as data on unhappiness from a recently available sweep of the European Social Survey of 2006/7. The broad structure of both the happiness and life satisfaction equations are as before – U-shaped in age, higher for women, the more educated, the married, the healthy and the employed. We also estimate an equation relating to the respondent's standard of living. The structure of the unhappiness equations – here relating to depression, loneliness and anxiety – have the inverse structure. The country rankings were as below – in all cases Denmark highest (lowest) and France lowest (highest) for happiness and unhappiness respectively.

	Denmark	France	Great Britain
1) Life satisfaction	1	14	9
2) Happiness	1	10	7
3) Standard of living	1	11	7
4) Depressed	18	11	12
5) Lonely	19	6	12
6) Anxious	17	8	12

I explored responses to a number of other attitudinal variables relating to the respondent's well-being over the preceding week whereas the other questions, as Krueger and Schkade (2007) suggest, "elicit a global evaluation of one's life".<sup>21</sup> Ordered logits were again estimated with the same controls as in Table 14: once again they had a similar structure as above. For example, in all cases happiness was U-shaped in age and unhappiness followed an inverted U-shape. In four of the five 'happiness' questions, Denmark ranked higher than France while in four of the six 'unhappiness' questions Denmark also ranked lower than France. Countries below are ranked by coefficient size positive to negative.

	Denmark	France	Great Britain
<i>Happiness ranks</i>			
You were happy?	10	4	5
You enjoyed life?	4	2	5
You had a lot of energy?	11	7	17

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<sup>21</sup> The question asked was as follows. *Using this card, please tell me how much of the time during the past week. A) None or almost none of the time. B) Some of the time. C) Most of the time. D) All or almost all of the time?*

You felt calm and peaceful?	1	16	18
You felt really rested when you woke up in the morning?	12	15	19
<i>Unhappiness ranks</i>			
You felt that everything you did was an effort?	7	13	10
Your sleep was restless?	9	7	2
You felt sad?	17	13	12
You could not get going?	11	19	6
You felt tired?	8	6	3
You felt bored?	17	13	5

The rankings of countries when the questions relate to relatively short time periods such as a week are somewhat different from those obtained when questions covering the respondent's life more globally are examined. This seems more consistent with findings with the U-index that relate to even shorter time periods.

## 5. The Macro-economics of Well-being

I have increasingly become interested in the well-being data in the role as a macro policy maker. In the raw data happiness (and life satisfaction) is negatively correlated with unemployment (Figure 3) and inflation (Figure 4). It also appears that happiness is positively correlated with GDP growth (Figure 5 – taken from Leigh and Wolfers (2006)). When a nation is poor it appears that extra riches raise happiness. However, income growth in richer countries is not correlated with growth in happiness. This is the Easterlin hypothesis (Easterlin, 1974) and is illustrated in Figure 6, which uses data from the 1995/2000 *World Values Survey*; the slope of the function for western countries is approximately horizontal.

There is a small body of literature which uses SWB data across countries and through time to estimate a 'misery index'. Di Tella, McCulloch and Oswald (2001, 2003) and Di Tella, and MacCulloch (2007) use life satisfaction data to show that people are happier when both inflation and unemployment are low. They all find that unemployment depresses well-being more than does inflation. Di Tella and MacCulloch (2007) suggest that left-wing individuals care more

about unemployment relative to inflation than right-wingers. Wolfers (2003) has also shown that greater macro volatility undermines wellbeing.

Table 15 uses aggregate life satisfaction data by country\*year cell from the World Database of Happiness, with the dependent variable the score on a 4-step scale. Results are reported without a lagged dependent variable in columns 1 and 3 and with one added in columns 2 and 4, but this has little effect on the results. In columns 3 and 4, GDP per capita is added in US dollars but is always insignificant once controls for unemployment and inflation are included. The rank ordering of countries, once again is France, the UK, the USA with Denmark highest. Both unemployment and inflation lower happiness. A one percentage point increase in unemployment has a larger impact than a one percentage point increase in inflation in all four columns. If GDP per capita is included without controls for inflation or unemployment but with country and year dummies it enters positively and significantly. If an additional term is included where GDP is interacted with a poor country dummy the results were as follows with T-statistics in parentheses.<sup>22</sup>

	Without a lagged dependent variable	With a lagged dependent variable
GDP <sub>t</sub>	.000016 (11.84)	.00000247 (2.12)
GDP poor country <sub>t</sub>	.0000287 (6.46)	.00000746 (2.14)

Both terms are significant and positive but the slope for the richer countries is less steep than found for the poorer countries – there is diminishing marginal utility of income. This is the Easterlin effect. This does suggest that rising GDP per capita raises happiness less for the developed than for the developing countries which is consistent with the findings of Deaton (2008) who argues that "it is *not true* that there is some critical level of GDP per capita above

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<sup>22</sup> 'Poor' is defined here as having 2004 GDP per capita of <\$20,000 which includes the Czech Republic (\$6,263); Hungary (\$5,626); Italy (\$19,506); Mexico (\$6,006); Poland (\$5,032); Portugal (\$11090); Slovakia (\$4,483) and Spain (\$15,403) with GDP per capita in \$US in parentheses.

which income has no further effect on happiness" (2007, pp. 16-17). It is also consistent with the findings of Helliwell (2003, p. 345) who uses data from the first three sweeps of the WVS and finds that in a life satisfaction equation across countries "national average income also has diminishing returns, since the logarithm of average per capita income takes a positive coefficient, while the square takes a negative coefficient". This result is different from the findings of Easterlin (1974, 1995) that happiness does not increase for long time spans despite large increases in income. Consistent with this result is the fact that happiness levels for a number of EU countries have increased over time. Indeed, in the pooled Eurobarometers 1973-2006 micro-data files if we simply regress life satisfaction in an OLS on a time trend only there is a significant upward trend in life satisfaction for ten countries - Denmark, the UK, France, Finland, Ireland, Luxembourg, the Netherlands, Spain, Sweden and Italy. There is a negative trend for Portugal, Germany and Belgium and no significant trend for Austria and Greece.<sup>23</sup>

Table 16 uses micro data on over 700,000 individuals from fifteen countries for which I have long time series of inflation data back to the 1950s (Austria; Belgium; Denmark; Finland; France; Germany; Greece; Ireland; Italy; Netherlands; Norway; Portugal; Spain; Sweden and the UK) drawn from the Eurobarometers from 1973-2006 and reported in Blanchflower (2007). As in Table 15 which uses macro data, controls are included for the unemployment rates and the inflation rate, but here standard errors are clustered at the country\*year cell. Once again both macro variables enter negatively and the ranking is Denmark, UK and finally France the lowest. Column 2 adds the variable reflecting the *average* annual inflation experience of each individual in our sample given their age, country, and year the life satisfaction survey was conducted; this

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<sup>23</sup> Data are available from 1973-2006 for Belgium, France, Denmark, Germany, Ireland, Italy, Luxembourg, Netherlands and the UK. For 1981-2006 for Greece, 1985-2006 for Portugal and Spain and from 1995-2006 for Austria, Finland and Sweden.

term is insignificant. Column 3 substitutes the average annual experience term, for the *highest* annual inflation rate experienced by each individual over their adult life. This term is negatively signed and significant, and its inclusion has essentially no effect on either the coefficients on inflation or unemployment. An individual who has experienced high inflation in the past has lower happiness today, even holding constant today's inflation and unemployment rates. Unemployment appears to be more costly than inflation in terms of its impact on wellbeing. In Blanchflower (2007) I used these data to estimate a misery-index which measures the relative effect of a one percentage point increase in unemployment compared with a one percentage point increase in inflation. The estimates imply individuals weight the loss from unemployment 1.6 times more than the loss in well-being from inflation.<sup>24</sup> Columns 4 and 5 of the table provide separate estimates for those under forty and those ages 40 and older. Interestingly, for the younger group the misery index is close to 1.4, whereas for the older group it is approximately 2.1, while the size of the loss of happiness for the unemployed is similar.<sup>25</sup> Interestingly, the highest inflation term, which is negative and significant in both cases, is much larger in size in the former case although its mean is much lower (20.2 and 116.2 respectively).

In Table 17 I explore the impact of the macro-economy on individual happiness and life satisfaction using self-reported views on unemployment, inflation and inequality using data from three recent Eurobarometers from 2006 and 2007. The results are very similar to those based on

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<sup>24</sup> The misery-index is calculated in Blanchflower (2007) as the coefficient on the unemployment rate plus the loss for the unemployed themselves, divided by the coefficient on the inflation rate. The loss to the individual from being unemployed can be calculated from the coefficient on being 'unemployed' in a life-satisfaction micro regression, like the one reported in column 1 of Table 11, estimated with OLS to keep the units consistent – we get -.3657. The entire well-being cost of a 1 percentage-point increase in the unemployment rate is therefore given by the sum of two components. Combining the two, we have  $.0114 + .0036 = .0147$  as society's overall wellbeing cost of a one percentage point rise in the unemployment rate divided by  $.0094$ . The implication is that the wellbeing cost of a 1 percentage point increase in the unemployment rate equals the loss brought about by an extra **1.56** percentage points of inflation.

<sup>25</sup> Calculated as  $(.0102 + .0036) / .0109 = 1.27$  and  $(.0128 + .0039) / .0081 = 2.06$  respectively.

using the macro data; we also have evidence that inequality lowers happiness. In the first column the results from estimating a series of ordered logits are reported with four-step happiness as the dependent variable. In addition to the standard controls of labor market and marital status, schooling, gender, age and country dummies plus a number of additional controls not available in other data files. First, if the respondent is a member of a minority group as well as if they are not part of the majority but do not associate themselves with a particular group: both enter significantly and negative with the effect three times larger for minorities. Second, controls are included to distinguish whether they owned their house outright or with a mortgage, which both enter significantly positive. Third, I include a control identifying whether the respondent belonged to a religious organization which also is significant and positive. Fourth, following Di Tella and MacCulloch (2005) and Alesina et al (2004) I include controls for an individual's political views on a scale from 1 (Left) to 10 (Right) and show that right wingers are happiest. Finally, I include three variables based on an individual's response to a question asking what topics "worry you the most"? I include responses relating to unemployment, inequality and the cost of living (inflation); multiple responses are possible. Unemployment and inflation lowers happiness as does inequality following Alesina et al (2004) and Blanchflower and Oswald (2004). Column 2 uses data from Eurobarometer #66.1 which uses a four-step life satisfaction dependent variable confirms that both unemployment and inflation lowers pay – information on inequality is available in that survey.<sup>26</sup>

Column 3 also uses a four-step data on life satisfaction from a 2007 Eurobarometer #67.2 with slightly different attitudinal questions. Once again the unemployed have lower life satisfaction,); happiest is U-shaped in age, higher for the married and for those who own their

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<sup>26</sup> Similar results are also found using Eurobarometer #64.1 but which does not contain details of home ownership.

own house and especially high in Denmark and low in Bulgaria. The main difference in column 3 is that now the macro controls relate to whether the respondent believes that inflation is lower than, equal to or higher than it was a year earlier. Once again happiness is lower when the respondent reports that inflation or unemployment is higher. Unemployment, inflation and inequality all appear to lower happiness and life satisfaction.

## 6. Predictions and expectations

I recall John Abowd saying to me at a very early seminar given at the NBER, that the crucial test for the happiness data is whether or not it has any predictive power. Little work has so far been done on this question, but in some recent work I found that life satisfaction levels in Eastern European countries is a good *predictor* of migration flows to the UK. On May 1<sup>st</sup> 2004 to the so called A8 accession countries (the Czech Republic; Estonia; Hungary; Latvia; Lithuania; Poland; Slovakia; and Slovenia) joined the European Union.<sup>27</sup> Citizens from the A8 nations obtained free movement and the right to work in the UK, Ireland and Sweden from May 1<sup>st</sup> 2004.<sup>28</sup> Gilpin et al (2006) examined data for the UK drawn from the Worker Registration Scheme, which registers the A8 workers, and computed the number of WRS registrations as a percentage of the home country population and show it is correlated with GDP and unemployment. Gilpin et al. found that countries with the lowest GDP per head, such as Lithuania (2,500 Euros) are more likely to be registered on the UK WRS than those from countries with higher GDP, such as Slovenia (11,400 Euros).<sup>29</sup> The propensity to migrate is even

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<sup>27</sup> In addition Malta and (South) Cyprus also joined the EU at that date. Bulgaria and Romania joined the EU on January 1<sup>st</sup> 2007.

<sup>28</sup> Finland, Greece, Portugal and Spain opened their labour markets to these workers on May 1<sup>st</sup> 2006, while Italy followed in late July 2006. Five other countries (Belgium, Denmark, France, the Netherlands and Luxembourg) alleviated restrictions in 2006 (Zaiceva, 2006).

<sup>29</sup> Expressed as Euros per inhabitant at 1995 exchange rates and prices.

more highly correlated with life satisfaction than it is with GDP per capita (Blanchflower and Shadforth, 2007).

Of interest is whether life satisfaction or happiness is correlated with people's expectations of the economic situation. It turns out that they are. Respondents in thirteen separate *Eurobarometers* for the period 1995-2006 were asked the following questions.

*"What are your expectations for the next twelve months: will the next twelve months be better; worse or the same when it comes to a) your life in general b) the economic situation in (our country) c) the financial situation of your household d) the employment situation in (our country) d) your personal job situation?"*.

Data are available on 15 countries for all twelve years (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK). Data for the fifteen Accession and Candidate countries (Republic of Cyprus; Czech Republic; Estonia; Hungary; Latvia; Lithuania; Malta; Poland; Slovakia; Slovenia; Bulgaria; Romania; Turkey; Croatia and Cyprus (Turkish Cypriot Community) are present for only 2004-2006. In eight separate surveys respondents were also asked about their expectations for themselves ten years hence - *"In the course of the next five years, do you expect your personal situation to improve, to stay about the same or get worse?"*. Life satisfaction is further reported in a subset of these surveys. We examine three of these responses here.

Table 18 reports results of estimating ordered logits for parts b), d) and a) as well as for life five years ahead. The dependent variable is coded as one if the response was 'worse', 2 if 'the same' and 3 if 'better', so positive coefficients should be interpreted once again as suggesting the variable raises the probability of life improving. Column 1 and 2 of Table 18 relates to the individual's views on the economic situation, columns 3 and 4 to the employment situation and columns 5 and 6 to their life over the following twelve months and columns 7 and eight for life



over the following five years. In each case separate results are provided with and without three life satisfaction controls derived from the standard 4 category life satisfaction variable. Happiness enters significantly and positively in each of these equations. This is similar to findings by Guven (2007) who found using data from the Netherlands and Germany that happiness increases savings, decreases expenditures, and the marginal propensity to consume is lower for the happy people. Happy people, Guven also found, are a) more risk averse in financial decisions b) expect to live longer c) are more concerned about the future than the present d) expect lower prices in the future e) are less likely to smoke and f) do not desire to move within a country.<sup>30</sup>

There is a common pattern in the control variables across all eight specifications. Optimism 1) rises with educational attainment 2) is U-shaped in age 3) is lower for married and widowed, the unemployed and is higher the greater the level of current happiness. The country ranking in relation to people's views on the economic and employment situations is once again France, UK and then Denmark. The British, though are especially optimistic that their life will improve and the Danes now less optimistic than the French. Happier people, it turns out, are less pessimistic about the state of the economy as well, unsurprisingly, about how their life will proceed. These country rankings are consistent with the evidence from the ESS 2002 reported in Table 8 above respectively, where the respondents report on their current views on the economy, government and democracy.

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<sup>30</sup> Guven (2007) examined data on prices only for the Netherlands using data from the Dutch National Bank (DNB) Household Survey which is a panel of about 4500 individuals from 1993 to 2006. Data on price expectations are of particular interest to macro-policy makers. Guven found that happier people expect lower prices than unhappy people for the next year and also in five years time. Questions asked were 1) "Do you expect prices in general to rise, to remain the same, or to go down, in the next 12 months? 1=go down 2= remain the same 3= rise" 2) "By what percentage do you expect prices in total to have risen after 5 years?"

Interestingly, respondents seem more optimistic about their own lives than they are about the economy or the employment situation in their country. For example, in the UK respondents are twice as likely to report that they think their own situation will improve, than think that either the economic situation or the employment situation of the country will improve. Moreover, the trend in the former is up, while the trend in the latter is down. The proportion of UK respondents saying that the situation in 12 months will be 'better' for the economic and employment situations and their life in general over the next twelve months is set out in Table 19. Annual percentage point (pp) changes in the unemployment and inflation rates are also shown. There is some evidence that respondents' expectations about the wider economic and employment situation in the Eurobarometers are well correlated with actual (t+1) macro outturns as can be seen below.

Correlation matrix: Annual pp changes  
at time t+1 in

	Unemployment rate	Inflation
Economic situation	-0.70	-0.48
Employment situation	-0.65	-0.45

Figure 7a plots the proportion of respondents in the Eurobarometers who say they expect the economic situation in the next twelve months in the UK to 'improve' (inverted) against changes in both the unemployment rate and the inflation rate. The responses to how the economic situation is expected to develop is also highly correlated with other surveys of economic confidence, such as the GfK and MORI measures of general economic confidence for the coming twelve months which use the same questions. The correlations are .73 and .85 respectively as shown in Figure 7b. Macro-economic variables appear to impact individual's expectations about their own lives and what they expect to happen to the economy as a whole, as does their current levels of happiness.

**7. Conclusions**

There are broadly consistent patterns in the SWB micro-data no matter what data file is used, no matter which country - perhaps excluding the poorest countries with low life expectancy. Results using data on well-being seem very similar to the results obtained from NTA - and potentially more stable as sample sizes are often large. *Happiness* appears to be a) U-shaped in age, b) higher for the most educated c) the higher paid, d) non-minorities e) the employed and f) for married people. Analogous results are found using self-reported unhappiness data. However, when such questions are asked in relation to the week prior to interview the country rankings are quite different and seem more consistent with findings with the U-index that relate to fifteen minute intervals.

Responses on blood pressure and pain appear to validate the happiness and life satisfaction data as they are likely less subject to any cultural and language differences which might arise, for example, if the French are less emphatic when reporting their well-being. Happy people and happy countries seem to have fewer blood-pressure and pain problems.

There are long consistent time runs of data available for macro-economic analysis dating back to the early 1970s. Well-being across *nations* is correlated with the unemployment rate, the current inflation rate and the highest inflation rate in a person's adult life as well as GDP growth rates especially in poorer countries. Happiness and life satisfaction data help to forecast including migration flows. Happy people are particularly optimistic about the prospects for the economy.

There are a number of SWB measures that can and already are being used in one form or another as an NHI. These seem to correlate strongly with other macro measures including the unemployment rate, the inflation rate, and even the suicide rate. The simplest and most widely available SWB measure is apparently the 4-step life satisfaction index which is already available

in similar form in ongoing annual surveys for all EU countries collected by the EU Commission as well as in most Latin American countries. The fact that so much harmonized cross-country data are already available of this type is the singular attraction for this one measure. The one country where suitable data are unavailable is the United States, although 3-step happiness data have been available for many years in the General Social Surveys, which is quite small in size and now only collected bi-annually.<sup>31</sup> I recommend that a 4-step life satisfaction plus a 3-step happiness question as soon as possible are included at regular intervals in one or more large national surveys in the US such as the Current Population Survey. The CPS is an obvious place to include it as it could be asked on more than one occasion to the same individual perhaps in the first and last rotation groups which would permit panel data analysis to be done over time for the same individuals. Such work has been possible in the UK using the BHPS and in Germany using the GSOEP but not to my knowledge in the USA. This needs to change.

Work on NTA appears to be an important complement to this work, but the 4-step life satisfaction NHI in my view should be its starting point. Obviously nations have different languages and cultures, and in principle this may cause biases in happiness surveys. K2S3 have identified that there appears to be a bias when comparing results from France with those from the US. They found that, on average, the French spent their days in a more positive mood and more of their time engaged in activities that tend to yield more pleasure than do Americans. The Americans seem to be more emphatic when reporting their well-being. Despite this, there are considerable similarities between the findings from the U-index and those from happiness and life satisfaction data. We are all trying to get utility proxy data for the  $u$  in the conventional utility function  $u(y)$ , and in principle this is complementary to normal economics, not a rival to

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<sup>31</sup> The World Database of Happiness does report data on 4-step life satisfaction (see Table 1) for the USA drawn from a number of small Gallup polls for the years 1991, 1997 and 2002-2004.

it. 'Happiness data' no doubt have weaknesses but it seems unlikely they contain no useful information. A standard equation structure has now been replicated hundreds of times in a large number of nations, so we need to get to the bottom of it. Plus income comes in positive and concave; inflation and unemployment hurt; etc; and all this seems to make sense to economists. There are thus interesting regularities in wellbeing data. Whatever they mean, and whatever criticisms one might have of such data, it seems worth economists and others attempting to understand why these patterns exist. It is good scientifically if rather different subjective wellbeing measures give similar equation structures. They seem to.

A big question going forward is how to incorporate the findings from national time use with those from the subjective well-being literature. Of interest will be whether there are differences, for example, between countries who speak the same language such as the UK, Australia, Canada and New Zealand. Are there significant differences between the results obtained from NTA and SWB in other countries besides the US and France? If happiness is U-shaped in age, to what extent is the time use of the young different from that of the old? What is it that makes people unhappy in middle-age? Nations have different languages and cultures, and in principle that may cause biases, perhaps large ones, in happiness surveys. At this point in research on subjective well-being, the size of any bias is not known, and there is no accepted way to correct the data, but progress is being made. NTA and SWB appear to be complements rather than substitutes. There is still much work to be done.

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Table 1. Four-step Life satisfaction in Europe, USA, Japan and Latin America

	2001	2002	2003	2004	2005	2006
<b>1) Western countries</b>						
Austria	3.18	3.13	3.08	3.05	3.04	3.08
Belgium	3.06	2.96	3.04	3.18	3.16	3.19
Denmark	3.60	3.61	3.57	3.59	3.62	3.61
Finland	3.11	3.14	3.15	3.29	3.26	3.23
France	2.94	2.88	2.85	2.95	2.96	3.00
Germany	2.94	2.86	2.75	2.96	2.93	2.87
Greece	2.66	2.66	2.66	2.73	2.66	2.67
Ireland	3.26	3.18	3.15	3.32	3.29	3.28
Italy	2.93	2.95	2.86	2.86	2.83	2.85
Japan	2.71	2.61	2.59	2.74	2.58	n/a
Luxembourg	3.31	3.30	3.25	3.44	3.42	3.39
Netherlands	3.42	3.31	3.28	3.33	3.41	3.36
Portugal	2.71	2.63	2.49	2.49	2.48	2.44
Spain	3.07	3.02	3.01	3.13	3.03	3.08
Sweden	3.35	3.32	3.28	3.40	3.42	3.39
UK	3.21	3.18	3.17	3.23	3.20	3.19
USA	3.35	3.33	3.37	3.42	n/a	n/a
<b>2) East Europe + Turkey</b>						
Bulgaria	2.08	2.04	2.05	2.06	2.04	1.99
Czech Republic	2.84	2.84	2.73	2.82	2.93	2.92
Estonia	2.44	2.52	2.48	2.74	2.72	2.74
Hungary	2.54	2.63	2.53	2.44	2.53	2.50
Latvia	2.54	2.47	2.54	2.52	2.62	2.62
Lithuania	2.29	2.46	2.52	2.55	2.56	2.62
Poland	2.65	2.71	2.67	2.81	2.77	2.80
Romania	2.12	2.20	2.10	2.32	2.35	2.33
Slovakia	2.48	2.54	2.47	2.59	2.64	2.70
Slovenia	3.04	3.03	3.04	3.17	3.10	3.09
Turkey	2.26	2.43	2.71	2.87	2.90	2.84
<b>3) Latin America</b>						
	<b>1997</b>	<b>2000</b>	<b>2001</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Argentina	2.14	2.21	2.82	2.91	2.92	2.94
Bolivia	1.97	1.89	2.54	2.77	2.42	2.57
Brazil	2.34	2.61	2.71	2.71	2.67	2.73
Colombia	2.50	2.40	3.06	3.16	3.14	3.17
Costa Rica	2.82	2.65	3.34	3.46	3.29	3.34
Chile	2.32	2.84	2.82	2.92	2.80	2.85
Ecuador	2.06	1.86	2.74	3.03	2.48	2.68
El Salvador	2.49	2.34	2.90	3.34	2.88	2.90
Guatemala	2.40	2.64	3.01	3.15	3.03	3.13
Honduras	2.41	2.62	3.28	3.21	3.17	2.98
Mexico	2.61	2.71	2.95	3.13	2.96	3.06
Nicaragua	2.67	2.16	2.96	3.18	2.77	2.94
Panama	2.38	2.78	2.64	3.17	3.13	3.21
Paraguay	2.16	2.14	2.93	3.26	2.84	2.95
Peru	1.70	1.72	2.48	2.74	2.49	2.50
Uruguay	2.40	2.36	2.91	2.88	2.73	2.90
Venezuela	2.45	2.82	3.26	3.36	3.26	3.45

Source: Blanchflower and Shadforth (2007) plus *Eurobarometers* and *Latinobarometers* and *World Database of Happiness*.

**Table 2. U-Index, happiness and life satisfaction for various demographic groups**

	<b>U-index</b>	<b>GSS</b>	<b>EB</b>	<b>LB</b>
<b>Sex</b>				
Men	17.6%	30.9	27.0	30.5
Women	19.6	31.3	26.8	30.1
<b>Race/Ethnicity</b>				
White	17.5	32.7		
Black	23.8	26.6		
Hispanic	21.9	24.8		
<b>Household Income</b>				
<\$30,000	22.5	31.8		
\$30,000-\$50,000	18.6	23.6		
\$50,000-\$100,000 (\$110k)	18.6	38.2		
>\$100,000	15.7	46.8		
<b>Education</b>				
<High School/<16 years	20.5	28.9	19.3	28.0
High School/16-19 years	21.3	31.2	25.1	31.6
Some College/20+ years	19.6	31.7	34.8	32.4
College/still studying	15.6	37.2	32.5	
Masters	16.6	36.6		
Doctorate	11.3	36.4		
<b>Men</b>				
15-24	18.8	23.4	28.0	34.1
25-44	17.1	29.2	25.7	30.8
45-64	18.7	33.0	25.9	27.6
65+	15.6	39.8	30.5	28.0
Married	17.4	39.0	29.3	33.6
Divorced/Separated	24.3	17.5	18.6	27.1
Widowed	20.2	22.1	21.6	
Never Married	16.9	20.3	23.3	29.1
<b>Women</b>				
15-24	18.9	29.5	28.9	33.7
25-44	20.5	32.0	28.1	30.5
45-64	20.9	33.5	25.4	26.6
65+	16.1	33.6	24.6	28.7
Married	17.4	41.6	29.4	32.9
Divorced/Separated	24.5	20.3	18.7	29.0
Widowed	22.3	25.0	20.7	
Never Married	23.2	24.1	24.9	29.8

Notes: U-index is proportion of time that rating of sad, stressed or pain exceeds happy.

Source: GSS pooled 2000, 2002, 2004, 2006 - % very happy. Eurobarometers for EU15, 2000-2006 % very satisfied (Austria; Belgium; Denmark; Finland; France; Germany; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; Sweden and UK). PATS Krueger et al (2007) Table 5.1 using Princeton Affect and Time Survey data. Latinobarometer 2005 % very satisfied (Argentina; Bolivia; Brazil; Colombia; Costa Rica; Chile; Dominican Republic; Ecuador; El Salvador; Guatemala; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Uruguay and Venezuela. Education categories for the LB are <9 years schooling; 10-12 years and >12 years.

**Table 3a. Life satisfaction and country characteristics, France, Denmark, UK and USA**

A) 4 step life satisfaction

	K2S3 2006		Eurobarometer 2000-2006		
	Women		Women	Women	Women
	<u>U.S.</u>	<u>France</u>	<u>France</u>	Denmark	UK
Not at all satisfied	1.6	1.1	4.5	0.6	2.2
Not very satisfied	21.4	16.1	15.1	2.7	8.4
Satisfied	51.0	70.0	64.5	31.7	56.6
Very Satisfied	26.1	12.9	15.9	65.0	32.9
Score	3.00	2.94	2.92	3.62	3.21
N	810	816	7,074	6,700	9,457

B) 10 step life satisfaction for women (WVS)

	France	Denmark	UK	USA
1981-1984	6.75	8.27	7.55	7.73
1989-1993	6.82	8.07	7.65	7.65
1999-2004	6.97	8.23	7.68	7.65

C) World Database of Happiness - men and women combined

	France	Denmark	UK	USA
4 step life satisfaction				
2001	2.90	3.59	3.17	3.35
2002	2.89	3.59	3.14	3.33
2003	2.86	3.56	3.16	3.41
2004	2.96	3.60	3.22	3.42

D) Macro data

	France	Denmark	UK	USA
GDP/capita (PPPUS\$2004)	\$29,300	\$31,914	\$30,821	\$39,676
Gini coefficient	32.7	24.7	36.0	40.8
Unemployment rate	8.6%	3.3%	5.4%	4.7%
Long-term unemployment	44.8%	20.7%	27.5%	10.7%
Youth unemployment	23.9%	7.6%	13.9%	10.5%

Notes: score is obtained by calculating a weighted average of responses where 1=not at all satisfied, 2=not very satisfied, 3=satisfied and 4=very satisfied. Youth and long-term unemployment are both for males. Youth unemployment is for ages 15-24.

Data source: <http://hdrstats.undp.org/indicators/#L>

**Table 3b. Suicide Rates (per 100,000)**

## United States

	<i>1950</i>	<i>1955</i>	<i>1960</i>	<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2002</i>
Total	7.6	10.2	10.6	11.1	11.5	12.7	11.8	12.3	12.4	11.9	10.4	11.0
Male	17.7	15.9	16.4	16.7	16.7	18.9	18.6	19.9	20.4	19.8	17.1	17.9
Female	2.5	4.5	4.9	6.1	6.5	6.8	5.4	5.1	4.8	4.4	4.0	4.2

## France

	<i>1950</i>	<i>1955</i>	<i>1960</i>	<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2003</i>
Total	15.2	15.9	15.8	15.0	15.4	15.8	19.4	22.5	20.0	20.6	18.4	18.0
Male	23.7	24.6	23.9	23.0	22.8	22.9	28.0	33.1	29.6	30.4	27.9	27.5
Female	7.2	7.8	8.2	7.5	8.4	9.0	11.1	12.7	11.1	10.8	9.5	9.1

## Denmark

	<i>1950</i>	<i>1955</i>	<i>1960</i>	<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2001</i>
Total	23.3	23.3	20.3	19.3	21.5	24.1	31.6	27.9	23.9	17.7	13.6	13.6
Male	31.7	32.0	27.2	24.0	27.4	29.9	41.1	35.1	32.2	24.2	20.2	19.2
Female	15.0	14.8	13.6	14.7	15.7	18.4	22.3	20.6	16.3	11.2	7.2	8.1

## UK

	<i>1950</i>	<i>1955</i>	<i>1960</i>	<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1995</i>	<i>1999</i>	<i>2004</i>
Total	9.5	10.7	10.7	10.4	7.9	7.5	8.8	9.0	8.1	7.4	7.5	7.0
Male	12.7	13.6	13.3	12.2	9.4	9.0	11.0	12.4	12.6	11.7	11.8	10.8
Female	6.5	8.0	8.2	8.7	6.5	6.0	6.7	5.8	3.8	3.2	3.3	3.3

Source: [http://www.who.int/mental\\_health/prevention/suicide/country\\_reports/en/index.html](http://www.who.int/mental_health/prevention/suicide/country_reports/en/index.html)

**Table 4a; Happiness equations, ISSP 1998 and 2001**

	1998		2001	
	(1)	(2)	(3)	(4)
Denmark	.6415 (7.32)	.6554 (7.39)	.2451 (2.86)	.2664 (3.05)
France	-.2635 (3.00)	-.3977 (4.49)	.2699 (3.22)	.3043 (3.59)
UK	.8500 (10.55)	.8920 (10.97)	.5855 (7.64)	.7097 (9.16)
Australia	.6791 (8.06)	.6196 (7.17)	.2599 (3.12)	.2942 (3.41)
Austria	.3595 (4.02)	.3139 (3.48)	.3252 (3.63)	.4093 (4.52)
Brazil			1.2895 (16.34)	1.4270 (17.10)
Bulgaria	-1.4468 (16.31)	-1.4724 (16.39)		
Canada	.2404 (2.63)	.0987 (1.06)	.5587 (6.42)	.5751 (6.45)
Chile	-.5378 (6.32)	-.6176 (7.20)	.4707 (5.64)	.5407 (6.39)
Cyprus	-.2714 (2.95)	-.4533 (4.88)	-.9342 (10.26)	-1.0880 (11.83)
Czech Republic	-.3740 (4.41)	-.4048 (4.73)	-.5579 (6.47)	-.5132 (5.87)
East Germany	-.6886 (7.70)	-.5614 (6.25)	-.3648 (3.18)	-.2484 (2.16)
Finland			-.3058 (3.65)	-.3262 (3.79)
Hungary	-1.5248 (17.34)	-1.4973 (16.84)	-.7982 (9.71)	-.6713 (8.06)
Ireland	1.2023 (13.53)	1.2171 (13.51)		.0850 (1.02)
Israel	-.1655 (1.88)	-.3189 (3.59)	-.3637 (4.10)	-.4534 (5.06)
Italy	-.3475 (3.88)	-.4527 (5.03)	-.6034 (6.64)	-.8020 (8.56)
Japan	.0343 (0.41)	-.1062 (1.26)	.1487 (1.76)	.0985 (1.15)
Latvia	-1.4895 (17.63)	-1.5736 (18.41)	-1.4145 (15.85)	-1.3995 (15.50)
Netherlands	.7338 (9.48)	.7252 (9.30)		
New Zealand	.7760 (8.70)	.7544 (8.31)	.7155 (8.27)	.7782 (8.80)
Norway	.2935 (3.58)	.2269 (2.73)	.0872 (1.06)	.0850 (1.02)
Philippines	.2444 (2.79)	-.0038 (0.04)	.1119 (1.28)	.0772 (0.87)
Poland	-.0188 (0.21)	-.0332 (0.38)	-.5691 (6.61)	-.5061 (5.83)
Portugal	-.9207 (10.49)	-1.0417 (11.82)		
Russia	-1.3633 (16.72)	-1.4252 (17.16)	-2.5134 (32.28)	-2.5377 (32.23)
Slovenia	-.7625 (8.47)	-.9077 (9.99)	-.5625 (6.31)	-.6460 (7.17)
Slovenia	-.9608 (11.40)	-1.1135 (13.04)	-.5625 (6.31)	-.6459 (7.17)
South Africa			-.1925 (2.46)	-.0077 (0.10)
Spain	.1531 (2.03)	.0883 (1.17)	-.2714 (3.20)	-.2837 (3.31)
Sweden	.2767 (3.18)	.1541 (1.75)		
Switzerland	.5572 (6.49)	.5453 (6.28)	.7205 (8.12)	.7698 (8.52)
USA	.8065 (9.49)	.8325 (9.72)	.7800 (8.98)	.9193 (10.45)
Age	-.0738 (17.72)			-.0630 (15.17)
Age <sup>2</sup>	.0006 (14.76)			.0006 (13.29)
Male	-.0960 (4.23)			-.0180 (0.80)
Personal controls	No	Yes	No	Yes
cut1	-3.6133	-5.4182	-3.5164	-4.9288
cut2	-1.5153	-3.2445	-1.7275	-3.0885
cut3	1.4123	-.2039	1.1509	-.1180
N	37,875	37,521	35,950	35,219
Pseudo R <sup>2</sup>	.0607	.0857	.0765	.0964

Source: 1998 and 2001 ISSP. Notes; personal controls are marital status and labor market status dummies. Excluded country West Germany. *'If you were to consider your life in general how happy would you say you are, on the whole – not at all happy; not very happy; fairly happy, very happy'.*

**Table 4b. Happiness and role of the family from the ISSP 2002**

	<i>Happiness</i>		<i>Family</i>	
	(1)	(2)	(3)	(4)
Denmark		-.1159 (1.53)		.3825 (4.95)
France		-.3039 (4.40)		-.4605 (6.41)
UK		.3613 (5.65)		.3082 (4.65)
USA	.6701 (8.30)	.4169 (5.45)	.7448 (9.36)	.3612 (4.56)
Age	-.1084 (7.26)	-.0705 (19.55)	-.1032 (7.06)	-.0675 (18.53)
Age <sup>2</sup>	.0011 (7.29)	.0006 (17.50)	.0010 (6.91)	.0006 (17.03)
Male	-.0261 (0.35)	.0507 (2.68)	-.0758 (1.02)	.1118 (5.87)
No formal education	.5095 (1.36)	.0208 (0.49)	-.1011 (0.28)	.0432 (1.05)
Above lowest formal	.2813 (2.02)	.1833 (4.32)	-.0020 (0.01)	.1848 (4.43)
Higher secondary	.5644 (3.97)	.2459 (5.81)	.0738 (0.21)	.2191 (5.28)
Above secondary	.5243 (3.75)	.2957 (6.52)	.0035 (0.01)	.2207 (4.93)
University degree	.8726 (6.44)	.4026 (8.92)	.1145 (0.33)	.2392 (5.37)
Married	.9005 (9.00)	.7009 (26.23)	1.1943 (11.93)	.8491 (31.05)
Widowed	.0561 (0.30)	-.2500 (5.54)	.4089 (2.24)	-.1107 (2.41)
Divorced	-.0866 (0.63)	-.2372 (5.46)	.0597 (0.44)	-.3134 (6.96)
Separated	-.4838 (2.16)	-.3636 (5.53)	-.3306 (1.53)	-.5151 (7.85)
Public sector	.0291 (0.29)	.0392 (1.41)	-.0114 (0.12)	.0050 (0.18)
Self-employed	.0980 (0.65)	.1061 (3.11)	.1601 (1.08)	.0911 (2.69)
Unpaid family worker	-.7075 (0.91)	.0398 (0.33)	.2213 (0.25)	-.0415 (0.35)
Unemployed	-.2388 (1.24)	-.5482 (12.92)	-.2223 (1.17)	-.3923 (9.24)
Student	.0559 (0.28)	.1459 (3.13)	.0872 (0.42)	.1028 (2.16)
Retired	-.0991 (0.67)	-.0496 (1.34)	-.0267 (0.18)	-.0625 (1.68)
Housewife	-.0016 (0.01)	.0363 (1.01)	-.0246 (0.18)	.0038 (0.11)
Disabled	-.5181 (1.04)	-.4661 (6.60)	-.5115 (1.11)	-.3052 (4.29)
Other labor mkt.	-.3538 (1.35)	-.2712 (4.43)	-.5177 (1.94)	-.2909 (4.77)
Austria		.4277 (6.34)		.5102 (7.24)
Brazil		.4371 (6.13)		-.3380 (4.64)
Bulgaria		-1.6116 (20.47)		-1.3513 (16.66)
Chile		.4715 (6.41)		.5708 (7.70)
Cyprus		-.0927 (1.16)		-.1089 (1.38)
Czech Republic		-.7562 (10.08)		-.8577 (11.23)
East Germany		-.6619 (6.41)		-.1039 (0.98)
Estonia		-.2654 (4.06)		-.2251 (3.37)
Finland		-.3428 (4.44)		-.3863 (4.86)
Flanders		-.3712 (4.98)		-.2767 (3.62)
Hungary		-.5945 (7.41)		-.2962 (3.59)
Ireland		-.0298 (0.41)		.4107 (5.34)
Israel		-.2329 (3.00)		.1679 (2.13)
Japan		.2953 (3.70)		-.2731 (3.40)
Latvia		-1.1807 (14.87)		-1.1642 (14.13)
Mexico		.5591 (7.34)		.8134 (10.61)
Netherlands		-.2270 (3.06)		-.1761 (2.30)
New Zealand		.2682 (3.30)		.1114 (1.34)



Norway		-0.1811 (2.48)		-0.0272 (0.37)
Philip		.1092 (1.37)		.0601 (0.74)
Poland		-.7878 (10.48)		-.3929 (5.11)
Portugal		-.3820 (4.82)		-.2205 (2.75)
Russia		-1.0997 (15.45)		-1.0436 (14.00)
Slovakia		-.9487 (12.21)		-.8533 (10.61)
Slovenia		-.4791 (6.15)		-.1456 (1.81)
Sweden		-.2411 (3.06)		.0495 (0.60)
Switzerland		.3338 (4.28)		.2935 (3.68)
Taiwan		-.3847 (5.59)		-.4845 (6.95)
West Germany		-.4315 (5.36)		-.0499 (0.60)
Cut1	-8.1600	-7.5073	-6.3764	-6.4968
Cut2	-6.0305	-5.9530	-5.2860	-5.4063
Cut3	-4.5138	-4.5258	-3.9864	-4.1993
Cut4	-3.0443	-2.9599	-3.0898	-3.0322
Cut5	-.7444	-.8420	-1.3159	-1.1549
Cut6	1.1677	1.1391	.2919	.7428
Pseudo R <sup>2</sup>	.0460	.0456	.0444	.0442
N	2,885	44,468	2,859	43,657

Notes: excluded categories: lowest formal qualification and private sector employee and Australia. T-statistics in parentheses. Columns 1 and 3 are USA and France only. Columns 1 are 2 are responses to the question '*If you were to consider your life in general, how happy or unhappy would you say you are, on the whole?*' (Respondents answered on a 7-point scale). Column 2 refers to the following question. '*All things considered, how satisfied are you with your family life?*' (Respondents answered on a 7-point scale). Scale is from completely unhappy; very unhappy; fairly unhappy; neither; fairly happy; very happy and completely happy.

**Table 5. Wanting to spend time with the family - ranked by % in 2005 (%)**

	<i>1997</i>	<i>2005</i>
United States	41.9	55.3
Dominican Republic		55.3
Mexico		43.5
Philippines	50.8	38.7
Canada	23.3	37.8
South Africa		36.7
France	34.3	33.7
Israel	35.6	33.5
New Zealand	23.9	28.6
Australia		28.5
Ireland		28.1
United Kingdom	31.6	27.7
East Germany	29.8	25.7
Sweden	27.9	25.7
Norway	25.5	24.8
Slovenia	26.3	23.3
West Germany	24.5	21.4
Denmark	21.0	21.2
Portugal	34.1	19.8
Russia	23.9	19.3
Hungary	19.1	18.7
Switzerland	22.8	17.1
Bulgaria	14.7	16.7
Czech Republic	25.2	15.1
Spain	7.8	15.0
Finland		14.4
South Korea		13.1
Japan	7.5	9.1
Taiwan		8.9
Cyprus	25.2	7.2
Bangladesh	5.1	
Italy	15.7	
Latvia	15.6	
Netherlands	14.6	
Poland	23.4	

Notes: Question asked is 'Suppose you could change the way you spend your time, spending more time on some things and less time on others. Which of the things on the following list would you like to spend more time on, which would you like to spend less time on and which would you like to spend the same amount of time on as now? Time with your family?' (1= Much more time; 2= A bit more time; 3= Same time as now; 4= A bit less time; 5= Much less time). tabulated are the proportions saying 'much more time with their family'.

Source: International Social Survey Programme 1997 (n=32,783) and 2005 (n=43,440).

**Table 6. Life satisfaction and happiness – World Values Survey, 1981-2004 (ordered logits)**

	<i>Life satisfaction</i>		<i>Happiness</i>	
Denmark	.9958 (31.91)	1.0033 (31.47)	.8450 (24.83)	.8625 (24.78)
France	-.1073 (3.88)	-.1470 (5.11)	.4227 (13.64)	.4426 (13.74)
UK	.5004 (22.79)	.2823 (11.91)	.8036 (30.05)	.6773 (23.67)
USA	.5197 (23.77)	.3480 (14.59)	.6959 (28.04)	.5800 (21.41)
Age		-.0377 (22.09)		-.0491 (26.11)
Age <sup>2</sup>		.00046 (24.75)		.00050 (24.63)
Male		-.0765 (8.45)		-.0848 (8.38)
Married		.1907 (14.98)		.4063 (28.44)
Living together		.2133 (10.00)		.3131 (13.04)
Divorced		-.3442 (14.18)		-.3737 (13.82)
Separated		-.4235 (12.29)		-.4364 (11.36)
Widowed		-.4123 (18.33)		-.4927 (19.98)
Part-time employee		-.0252 (1.56)		-.0064 (0.36)
Self-employed		.0361 (2.32)		.0612 (3.50)
Retired		-.2202 (12.43)		-.2276 (11.73)
Home worker		.0607 (4.21)		.1494 (9.35)
Student		-.0158 (0.84)		.0824 (3.87)
Unemployed		-.6850 (40.79)		-.4884 (26.36)
Other		-.2326 (6.80)		-.0245 (0.64)
cut1	-3.4057	-4.0057	-3.6190	-4.3648
cut2	-2.8445	-3.4499	-1.4905	-2.2030
cut3	-2.2542	-2.8627	1.0105	.4280
cut4	-1.8110	-2.4062		
cut5	-1.0434	-1.6032		
cut6	-.5878	-1.1143		
cut7	-.0103	-.4836		
cut8	.8544	.4453		
cut9	1.5985	1.2323		
Year dummies	19	19	19	19
Schooling dummies	0	10	0	10
N	263,097	188,529	257,881	185,629
Pseudo R <sup>2</sup>	0.0112	.0191	.0131	.0336

Notes: excluded categories – full-time employees. Excluded countries are Albania ; Algeria; Argentina; Armenia; Australia; Austria; Azerbaijan; Bangladesh; Belarus; Belgium; Bosnia and Herzegovina; Brazil; Bulgaria; Canada; Chile; China; Colombia; Croatia; Czech Republic; Dominican Republic; Egypt; El Salvador; Estonia; Finland; Georgia; Germany; Greece; Hungary; Iceland; India; Indonesia; Iran; Iraq; Ireland; Israel; Italy; Japan; Jordan; Korea; Kyrgyzstan; Latvia; Lithuania; Luxembourg; Macedonia ; Malta; Mexico; Moldova; Morocco; Netherlands; New Zealand; Nigeria; Norway; Pakistan; Peru; Philippines; Poland; Portugal; Puerto Rico; Romania; Russia; Saudi Arabia; Serbia and Montenegro; Singapore; Slovakia; Slovenia; South Africa; Spain; Sweden; Switzerland; Taiwan; Tanzania; Turkey; Uganda; Ukraine; Uruguay; Venezuela; Vietnam and Zimbabwe.

**Table 7. Happiness – European Quality of Life Survey, 2003, (ordered logits)**

	<i>Life satisfaction</i>			<i>Happiness</i>		
Austria	.4090 (5.10)	.4271 (5.27)	.4289 (4.49)	.1428 (1.79)	.1567 (1.93)	.2364 (2.47)
Belgium	.0382 (0.49)	.0601 (0.76)	.1178 (1.21)	-.1505 (1.94)	-.1305 (1.64)	.0248 (0.26)
Bulgaria	-2.5368 (31.15)	-2.4404 (29.46)	-1.5446 (14.49)	-1.9696 (23.99)	-1.7896 (21.30)	-1.0179 (9.45)
Cyprus	-.0981 (1.04)	-.5691 (5.95)	-.3993 (3.47)	-.0203 (0.22)	-.5992 (6.26)	-.5023 (4.35)
Czech Republic	-.8607 (10.67)	-.8486 (10.29)	-.4109 (3.99)	-.6880 (8.65)	-.5519 (6.77)	-.0797 (0.78)
Denmark	1.1301 (14.11)	.9682 (11.68)	.9946 (10.42)	.4876 (6.17)	.3591 (4.35)	.4889 (5.15)
Estonia	-1.4143 (15.42)	-1.1176 (11.94)	-.5002 (4.52)	-1.0424 (11.19)	-.5971 (6.27)	-.0060 (0.05)
Finland	.7337 (9.31)	.8776 (10.95)	.9307 (10.07)	.2892 (3.73)	.5505 (6.87)	.6638 (7.17)
France	-.5155 (6.67)	-.5407 (6.87)	-.5271 (5.60)	-.5903 (7.70)	-.6114 (7.77)	-.5381 (5.72)
Germany	-.0595 (0.75)	.0175 (0.22)	.1688 (1.77)	-.1787 (2.28)	-.0340 (0.43)	.1886 (1.98)
Greece	-.5031 (6.23)	-.7647 (9.29)	-.4913 (4.61)	-.2915 (3.64)	-.5331 (6.53)	-.1970 (1.86)
Hungary	-1.3205 (16.37)	-1.1253 (13.75)	-.6237 (6.28)	-.7612 (9.36)	-.4981 (6.02)	-.0120 (0.12)
Ireland	.3055 (3.83)	.1194 (1.48)	-.0726 (0.66)	.3099 (3.82)	.0534 (0.65)	-.0187 (0.17)
Italy	-.2241 (2.89)	-.3280 (4.15)	-.2784 (2.82)	-.3707 (4.79)	-.5112 (6.42)	-.3979 (3.99)
Latvia	-1.6794 (21.04)	-1.2665 (15.48)	-.5631 (5.52)	-1.4945 (18.57)	-.9902 (11.95)	-.3624 (3.52)
Lithuania	-1.8015 (22.55)	-1.4053 (17.23)	-.6031 (5.91)	-1.4176 (17.51)	-.9009 (10.83)	-.1988 (1.92)
Luxembourg	.3766 (4.04)	.3448 (3.61)	.2902 (2.38)	.1996 (2.19)	.1745 (1.84)	.2715 (2.24)
Malta	-.0742 (0.80)	-.1755 (1.84)	.0016 (0.01)	.0692 (0.75)	.0152 (0.16)	.1816 (1.49)
Netherlands	.0326 (0.43)	.1135 (1.46)	.1602 (1.70)	-.2649 (3.46)	-.2190 (2.76)	-.1452 (1.52)
Poland	-1.1107 (13.66)	-.7742 (9.34)	-.2635 (2.61)	-.9345 (11.47)	-.5367 (6.40)	-.0732 (0.72)
Portugal	-1.3621 (17.13)	-.9364 (11.45)	-.5650 (5.66)	-1.1363 (14.13)	-.6304 (7.62)	-.2909 (2.88)
Romania	-1.0805 (13.45)	-.8107 (9.93)	.1680 (1.59)	-.6932 (8.76)	-.3469 (4.29)	.4908 (4.66)
Slovakia	-1.5512 (19.34)	-1.5434 (18.76)	-1.1304 (11.09)	-1.3157 (16.74)	-1.2635 (15.61)	-.8267 (8.23)
Slovenia	-.3313 (3.61)	-.2557 (2.75)	.0524 (0.48)	-.4307 (4.72)	-.3449 (3.70)	-.0521 (0.48)
Spain	.0092 (0.12)	.0423 (0.52)	.2027 (2.02)	-.0578 (0.72)	-.0038 (0.05)	.1765 (1.74)
Sweden	.4545 (5.70)	.3178 (3.90)	.3886 (4.14)	.1275 (1.61)	.0330 (0.41)	.1446 (1.54)
Turkey	-1.5390 (18.43)	-1.4167 (16.39)	-.7061 (6.83)	-1.2119 (14.74)	-1.1451 (13.31)	-.5424 (5.24)
Age		-.0372 (8.56)	-.0435 (8.79)		-.0301 (6.89)	-.0352 (7.09)
Age <sup>2</sup>		.0004 (11.16)	.0005 (11.11)		.0003 (7.70)	.00038 (7.72)
Male		-.1795 (7.43)	-.1942 (7.11)		-.1817 (7.44)	-.1801 (6.55)
16-19 yrs schooling		.1903 (5.72)	.1360 (3.60)		.1829 (5.44)	.1370 (3.59)

20+ years schooling		.3223 (8.75)	.1855 (4.41)		.2517 (6.75)	.1473 (3.47)
Still studying		.2112 (2.21)	.0567 (0.52)		.3352 (3.51)	.1643 (1.50)
No schooling		-.2564 (2.88)	-.2819 (2.80)		-.2349 (2.62)	-.2533 (2.51)
Self-employed		.1516 (1.43)	.1700 (1.39)		.0218 (0.20)	-.0419 (0.33)
Manager		.3012 (2.91)	.3177 (2.69)		.1377 (1.29)	.0787 (0.65)
Other white collar		.0928 (0.91)	.1125 (0.96)		-.0582 (0.55)	-.1233 (1.03)
Manual		-.0248 (0.25)	.0583 (0.52)		-.1044 (1.02)	-.1115 (0.95)
Home worker		.0303 (0.29)	.1658 (1.39)		-.0013 (0.01)	.0685 (0.56)
Unemployed		-.7898 (7.40)	-.5403 (4.46)		-.6951 (6.35)	-.5801 (4.66)
Retired		.1176 (1.15)	.2819 (2.43)		.0995 (0.95)	.1657 (1.39)
Student		.3706 (2.80)	.4919 (3.22)		.1355 (1.01)	.1877 (1.22)
Married/living together		.4165 (11.5)	.3121 (7.56)		.6819 (18.57)	.6410 (15.36)
Separated/Divorced		-.2513 (5.05)	-.1561 (2.79)		-.2846 (5.66)	-.1613 (2.86)
Widowed		-.1051 (2.00)	-.0621 (1.06)		-.1905 (3.59)	-.1374 (2.32)
Excellent health		2.3432 (41.06)	2.2364 (34.51)		2.8968 (49.23)	2.7734 (41.60)
Very good health		1.9204 (38.47)	1.8470 (33.09)		2.2610 (44.35)	2.1651 (38.07)
Good health		1.4378 (32.19)	1.3678 (27.81)		1.6980 (37.22)	1.6213 (32.31)
Fair health		.8783 (20.27)	.8278 (17.52)		1.0135 (22.98)	.9574 (19.93)
Log hshld income (euros)			.3854 (19.33)			.2980 (14.93)
cut1	-4.2796	-3.2989	-.6592	-4.9381	-3.7997	-1.7221
cut2	-3.7286	-2.7170	-.0796	-4.3122	-3.1498	-1.0977
cut3	-3.1262	-2.0694	.5638	-3.6354	-2.4316	-.3606
cut4	-2.6458	-1.5519	1.0899	-3.0620	-1.8134	.2562
cut5	-1.5797	-.3838	2.2845	-2.0282	-.6567	1.4275
cut6	-1.0325	.2225	2.8925	-1.4683	-.0142	2.0587
cut7	-.2024	1.1352	3.8177	-.6348	.9508	3.0205
cut8	1.0723	2.5166	5.2106	.6150	2.3753	4.4443
cut9	1.9941	3.4833	6.1853	1.5450	3.3891	5.4696
N	25,991	25,603	20,047	25,654	25,283	19,818
Pseudo R <sup>2</sup>	.0535	.0885	.0973	.0297	.0825	.0867
<b>Age minimum</b>		<b>47</b>	<b>39</b>		<b>50</b>	<b>46</b>

Notes: excluded categories; single; other labour market activity; ≤15 years of schooling, poor health & the UK.

**Table 8. Happiness, Life Satisfaction: European Social Survey, 2002 (ordered logits)**

	<i>Happiness</i>	<i>Happiness</i>	<i>Life satisfaction</i>	<i>Life satisfaction</i>
France	-.0016 (0.03)	.0588 (1.24)	-.5082 (10.71)	-.4803 (10.03)
Denmark	.8828 (19.15)	.7462 (16.01)	1.1833 (25.38)	1.0605 (22.55)
UK	.2033 (5.01)	.1386 (3.39)	-.0617 (1.55)	-.1435 (3.57)
Married	.5126 (19.35)	.4891 (18.42)	.2702 (10.25)	.2339 (8.86)
Separated	-.4287 (5.73)	-.4585 (6.10)	-.4754 (6.39)	-.5149 (6.86)
Divorced	-.1309 (3.10)	-.1249 (2.96)	-.2130 (5.06)	-.2062 (4.89)
Widowed	-.4401 (10.00)	-.4067 (9.26)	-.4055 (9.26)	-.3704 (8.48)
Age	-.0789 (24.00)	-.0634 (19.24)	-.0725 (22.14)	-.0564 (17.17)
Age <sup>2</sup>	.0007 (23.77)	.0007 (21.98)	.0007 (23.77)	.0007 (21.95)
Male	-.1421 (7.85)	-.1807 (9.95)	-.1550 (8.59)	-.1967 (10.86)
Schooling	.0403 (17.03)	.0224 (9.41)	.0486 (20.62)	.0302 (12.68)
Self-employed	-.0461 (1.45)	-.0811 (2.54)	-.0575 (1.81)	-.0879 (2.76)
Not employed	-.2922 (13.25)	-.1454 (6.53)	-.3163 (14.36)	-.1678 (7.55)
Good health		-.5999 (26.65)		-.5906 (26.25)
Fair health		-1.2547 (45.77)		-1.2830 (46.88)
Bad health		-2.1052 (47.99)		-2.1141 (48.80)
Very bad health		-2.9244 (34.24)		-3.0003 (36.15)
cut1	-6.3055	-6.8664	-5.0623	-5.6024
cut2	-5.6224	-6.1758	-4.5712	-5.0994
cut3	-4.9425	-5.4806	-4.0161	-4.5278
cut4	-4.2389	-4.7518	-3.3945	-3.8793
cut5	-3.7357	-4.2258	-2.9508	-3.4121
cut6	-2.7478	-3.1797	-2.1598	-2.5686
cut7	-2.2507	-2.6484	-1.7411	-2.1194
cut8	-1.4475	-1.7908	-1.0251	-1.3520
cut9	-.2258	-.5009	.1222	-.1381
cut10	.9345	.6989	1.1579	.9339
N	40,903	40,879	40,852	40,825
Pseudo R <sup>2</sup>	.0149	.0382	.0138	.0369
<b>Age minimum</b>	<b>56</b>	<b>45</b>	<b>52</b>	<b>40</b>

Notes; Excluded categories; very good health; single and employee plus Austria, Belgium, Czech Republic, Finland, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden and Switzerland.

**Table 9. Life satisfaction, Europe, Eurobarometer 2002 (ordered logits).**

Age	-.0686 (10.97)	-.0524 (8.26)
Age <sup>2</sup>	.0006 (10.56)	.0005 (9.03)
Male	-.0956 (2.79)	-.1366 (3.94)
ALS 16-19	.2396 (5.51)	.1616 (3.67)
ALS ≥20	.3558 (6.95)	.2533 (4.89)
Still studying	.4607 (4.83)	.1785 (1.84)
Married	.3649 (6.24)	.3094 (5.23)
Remarried	.1566 (1.12)	.1712 (1.22)
Living as married	.0441 (0.65)	.0519 (0.76)
Lived together	-.4266 (5.12)	-.4029 (4.80)
Divorced	-.3551 (4.18)	-.3256 (3.80)
Separated	-.3424 (2.73)	-.2905 (2.30)
Widowed	-.2354 (2.75)	-.2528 (2.93)
Home worker	-.0752 (1.12)	-.2046 (3.03)
Unemployed	-.6153 (6.94)	-.7256 (8.15)
Austria	.3848(4.33)	.3325 (3.70)
Denmark	1.3696 (15.04)	1.3512 (14.55)
East Germany	-.8624 (9.94)	-.7610 (8.70)
Finland	.4217 (4.79)	.5945 (6.67)
France	-.7296 (8.29)	-.6743 (7.60)
Greece	-1.6273 (18.30)	-1.6692 (18.48)
Ireland	.4194 (4.68)	.3555 (3.92)
Italy	-.3468 (3.93)	-.2360 (2.64)
Luxembourg	.8863 (8.56)	1.0032 (9.57)
Netherlands	.7914 (8.97)	.9653 (10.79)
Portugal	-1.6154 (18.32)	-1.2698 (14.17)
Spain	-.2256 (2.52)	-.1340 (1.48)
Sweden	.8549 (9.65)	.9918 (11.03)
UK	.4863 (5.85)	.5822 (6.93)
West Germany	-.2427 (2.75)	-.1162 (1.31)
Good health		-.6605 (16.25)
Fair health		-1.2178 (24.90)
Bad health		-1.8047 (25.42)
Very bad health		-2.4710 (19.85)
cut1	-5.7366	-6.2917
cut2	-3.9623	-4.4689
cut3	-2.7567	-3.2146
cut4	.1500	-.1654
N	16,032	15,992
Pseudo R <sup>2</sup>	.0911	.1197
Age minimum	<b>57</b>	<b>52</b>

Source: Eurobarometer #57.2; Health Issues, Cross-Border Purchases, and National Identities, April-June 2002. Notes: excluded categories; ALS<16; retired, Belgium, excellent health and single. Equations also include 13 occupation dummies.

**Table 10. Life satisfaction in Europe, Eurobarometers: 1975-2006 (ordered logits).**

	<i>1975-1989</i>	<i>1990-1999</i>	<i>2000-2006</i>	<i>1975-2006</i>	<i>1975-2006</i>
France	-1.5161 (88.25)	-1.4750 (68.29)	-1.3120 (52.90)	-1.4516 (23.07)	-1.4453 (123.72)
Denmark	.5820 (33.06)	.6031 (26.85)	.7707 (30.27)	.6346 (52.57)	.6311 (52.64)
UK	-.4656 (28.88)	-.5582 (27.77)	-.3871 (16.72)	-.4738 (42.96)	-.4685 (42.73)
Age	-.0389 (24.25)	-.0389 (20.22)	-.0365 (17.97)	-.0379 (36.35)	-.0439 (51.02)
Age <sup>2</sup>	.00047 (27.08)	.00043 (21.14)	.00043 (19.86)	.00044 (39.84)	.00047 (51.96)
Male	-.1754 (18.19)	-.0995 (9.31)	-.0843 (7.04)	-.1275 (20.83)	-.0942 (18.76)
Married	.3341 (25.83)	.3063 (20.17)	.5527 (31.33)	.3630 (42.50)	.3511 (49.32)
Living together	.0490 (1.93)	.1442 (6.18)	.2338 (10.27)	.1268 (9.42)	.1562 (14.23)
Divorced	-.6085 (21.31)	-.4494 (16.53)	-.3219 (11.68)	-.4759 (30.20)	-.4055 (31.47)
Separated	-.7687 (18.55)	-.5679 (12.91)	-.4587 (10.78)	-.6017 (24.65)	-.5303 (25.42)
Widowed	-.3319 (16.10)	-.2200 (8.97)	-.1292 (4.59)	-.2566 (18.71)	-.2314 (20.58)
ALS 16-19	.2485 (24.71)	.1778 (13.86)	.1819 (11.16)	.2137 (30.26)	.2234 (37.68)
ALS ≥20	.4407 (33.33)	.3836 (25.62)	.4729 (25.82)	.4385 (51.61)	.4622 (66.14)
Still studying	.4254 (20.90)	.4591 (18.34)	.6357 (21.44)	.4998 (36.08)	.4997 (44.35)
Self-employed	.0801 (5.40)	.0167 (0.88)	.0628 (2.81)	.0514 (4.97)	.0358 (4.33)
Home worker	-.0332 (2.52)	-.0594 (3.50)	-.1582 (7.87)	-.0510 (5.60)	-.0412 (5.34)
Retired	-.0235 (1.37)	-.0950 (5.01)	-.1389 (6.75)	-.0863 (8.02)	-.1115 (12.76)
Unemployed	-1.0206 (54.66)	-1.0112 (49.64)	-1.1590 (46.81)	-1.0593 (88.25)	-.9557 (95.69)
Belgium	-.5811 (34.07)	-.7433 (34.84)	-.8530 (34.71)	-.6852 (58.64)	-.6809 (58.52)
Germany	-.8913 (52.16)	-1.2599 (66.97)	-1.3673 (62.25)	-1.1622 (07.17)	-1.1457 (106.75)
Ireland	-.4684 (26.80)	-.3616 (16.67)	-.3109 (12.60)	-.3968 (33.38)	-.3974 (33.62)
Italy	-1.7333 (99.51)	-1.3532 (62.52)	-1.4872 (58.95)	-1.5650 (31.22)	-1.5468 (131.58)
Luxembourg	-.2219 (8.95)	-.1188 (4.43)	-.1432 (5.02)	-.1594 (10.48)	-.1523 (10.04)
Austria					-.7195 (41.96)
Bulgaria					-3.4622 (108.59)
Croatia					-1.6853 (49.75)
Cyprus					-.7811 (22.28)
Czech Republic					-1.4738 (46.91)
Estonia					-1.9726 (61.17)
Finland					-.6119 (36.28)
Greece					-1.9742 (156.20)



Hungary					-2.3950 (74.57)
Latvia					-2.2816 (71.80)
Lithuania					-2.3225 (71.07)
Malta					-.8704 (18.67)
Norway					-.0103 (0.40)
Poland					-1.7470 (52.54)
Portugal					-1.8885 (142.58)
Romania					-2.8584 (87.56)
Slovakia					-2.2004 (70.75)
Slovenia					-.8661 (26.28)
Spain					-1.0737 (81.08)
Sweden					-.0893 (5.27)
Turkey					-1.2908 (34.25)

Year dummies	14	7	6	29	29
cut1	-4.6814	-4.8268	-5.0042	-4.7075	-4.8679
cut2	-3.0561	-2.9365	-3.1052	-2.9500	-3.0738
cut3	-.2110	-.2103	.0150	-.0900	-.2416
N	234,939	164,693	130,077	529,709	768,993
Pseudo R <sup>2</sup>	.0731	.0656	.0908	.0749	.0845
Age minimum	<b>41</b>	<b>45</b>	<b>42</b>	<b>43</b>	<b>47</b>

Source: Eurobarometers, 1975-2006. Excluded categories; single, employee; ALS<16 and Netherlands. No data for 1996.

**Table 11. Happiness in the US (ordered logits).**

	<i>Happiness</i>	<i>Financial</i>	<i>Family</i>	<i>Health</i>
	<i>1973-2006</i>	<i>Situation</i>	<i>Situation</i>	<i>1972-2006</i>
	<i>1973-2006</i>	<i>1973-2006</i>	<i>1973-1994</i>	<i>1972-2006</i>
Age	-.0168 (4.11)	-.0209 (5.32)	-.0171 (2.55)	-.0615 (14.51)
Age <sup>2</sup>	.0002 (5.31)	.0004 (9.82)	.0002 (2.45)	.0004 (9.86)
Married	.7629 (26.65)	.1593 (5.87)	1.4303 (35.82)	.2514 (8.88)
Widowed	-.3187 (7.05)	-.2519 (5.87)	.4710 (7.89)	-.0094 (0.96)
Divorced	-.2303 (6.08)	-.5496 (15.13)	.1492 (2.78)	-.0629 (1.64)
Separated	-.4843 (8.56)	-.6057 (11.27)	-.1039 (1.42)	-.2047 (3.57)
Male	-.1769 (8.42)	.0107 (0.54)	-.3776 (13.06)	-.0520 (2.39)
Years schooling	.0570 (17.33)	.0787 (24.99)	.0271 (6.33)	.1420 (40.53)
Black	-.4233 (14.74)	-.5367 (19.62)	-.1456 (3.97)	-.3020 (10.45)
Other race	-.1588 (3.23)	-.1035 (2.24)	.0174 (0.20)	.3007 (6.11)
Part-time	-.1178 (3.61)	-.2360 (7.52)	-.1053 (2.39)	-.1988 (5.82)
Temp work	-.2791 (4.28)	-.1396 (2.22)	-.0703 (0.82)	-.4426 (6.44)
Unemployed	-.7613(13.37)	-1.2248 (21.38)	-.0498 (0.71)	-.4486 (7.73)
Retired	-.0222 (0.55)	-.1763 (4.60)	-.0705 (1.33)	-.6291 (14.85)
Student	.1004 (1.75)	-.0141 (0.26)	.0233 (0.31)	-.2497 (4.19)
Home worker	-.1206 (3.99)	-.1416 (4.90)	-.1765 (4.60)	-.5754 (18.03)
Other	-.6738 (9.12)	-.8077 (11.36)	-.2245 (2.15)	-1.9501 (24.90)
Self-employed	.1363 (3.89)	.1390 (4.10)	.0257 (0.54)	.2398 (6.46)
cut1	-1.4343	-1.456	-3.5776	-3.5952
cut2	1.4994	1.9331	-2.7383	-1.6977
cut3			-2.1230	.5157
cut4			-1.2882	
cut5			-.5270	
cut6			1.0421	
N	46,034	46,168	23,911	38,256
Pseudo R <sup>2</sup>	.0451	.0507	.0403	.752
Age minimum	<b>42</b>	<b>26</b>	<b>43</b>	<b>77</b>

Source: GSS 2006. All equations also include 9 birth cohort decadal dummies and 8 region dummies.

*HAPPY*: Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy? (Coded 3, 2, 1, respectively).

*SATFIN*: We are interested in how people are getting along financially these days. So far as you and your family are concerned, would you say that you are pretty well satisfied with your present financial situation, more or less satisfied, or not satisfied at all? (Coded 3, 2, 1 respectively).

*SATFAM*: For each area of life I am going to name, tell me the number that shows how much satisfaction you get from that area. Your family life 1. A very great deal 2. A great deal 3. Quite a bit 4. A fair amount 5. Some 6. A little 7. None (Reverse coded here)

*HEALTH*: would you say in general your health is excellent, good, fair or poor

**Table 12a. Happiness equations, Asia: 2003-2004.**

	(1) 2003	(2) 2004	(3) 2003-2004
Age	-.0609 (3.64)	-.0530 (3.51)	-.0545 (4.89)
Age <sup>2</sup>	.0006 (2.94)	.0006 (3.38)	.0005 (4.25)
Male	.1131(2.34)	.0055 (0.12)	.0556 (1.96)
2004			.0974 (2.06)
Married	.5337 (8.21)	.3379 (5.56)	.4297 (9.72)
Divorced/separated	-.7679 (5.31)	-.4338 (3.11)	-.5873 (5.88)
Widowed	-.3372 (2.13)	-.3545 (2.46)	-.3298 (3.13)
Elementary school	-.2265 (1.53)	.1359 (1.14)	-.0271 (0.29)
High school	-.1977 (1.35)	.2888 (2.35)	.0487 (0.52)
Vocational school	.1407 (0.89)	.2014 (1.25)	.2784 (2.56)
Professional school	-.0057 (0.04)	.4041 (2.92)	.1959 (1.92)
University	-.0763 (0.50)	.4324 (3.22)	.1735 (1.74)
Business owner mining	-.2329 (1.03)	.0195 (0.08)	-.0839 (0.57)
Business owner retail	-.0436 (0.22)	.1060 (0.76)	.0880 (0.84)
Vendor/street trader	-.3903 (2.14)	-.0467 (0.38)	-.2284 (2.51)
Business owner >30 wkrs	.0765 (0.27)	.1698 (0.52)	.2185 (1.08)
Self-employed profsnl	-.1191 (0.52)	-.0972 (0.47)	-.0453 (0.32)
Senior manager	.1003 (0.42)	.3179 (1.38)	.2387 (1.56)
Employed professional	-.3691 (1.90)	.1311 (1.03)	-.0526 (0.52)
Clerical	-.1217 (0.68)	.0468 (0.44)	-.0016 (0.02)
Sales	-.1244 (0.66)	-.0897 (0.82)	-.0678 (0.75)
Manual	-.4373 (2.54)	-.1523 (1.62)	-.2525 (3.18)
Driver	-.3220 (1.52)	-.1068 (0.73)	-.2073 (1.81)
Other worker	-.2107 (1.10)	.0259 (0.26)	-.0708 (0.81)
Homemaker	-.1748 (0.99)	.0829 (0.86)	.0332 (0.42)
Student	-.0042 (0.02)	-.0244 (0.18)	.0371 (0.36)
Retired	-.3681 (1.73)	.3568 (1.83)	-.0487 (0.38)
Unemployed	-.3312 (1.77)	-.3040 (2.53)	-.2613 (2.77)
Brunei	2.0931 (20.87)		1.8634 (22.63)
Cambodia	-1.1444 (11.56)		-1.2613 (16.21)
China		.1355 (1.75)	.1703 (2.27)
Indonesia	.7814 (7.88)		.4968 (6.32)
Korea	-.4566 (6.02)	-.5237 (5.49)	-.5538 (9.67)
Laos	.1558 (1.58)		-.0544 (0.69)
Malaysia	.4374 (5.53)	1.1094 (11.45)	.7029 (11.90)
Myanmar	.2563 (3.18)	.0389 (0.38)	.1005 (1.65)
Philippines	.8101 (8.06)		.6123 (7.39)
Singapore	.9663 (9.88)		.7894 (9.86)
Thailand	.1916 (2.35)	.8087 (8.00)	.4205 (6.89)
Vietnam	.3507 (4.34)	.8255 (8.04)	.5075 (8.22)
cut1	-5.2402	-4.9904	-5.0458
cut2	-3.2705	-2.7417	-2.9530
cut3	-1.7456	-.9109	-1.2860
cut4	.4602	1.4327	.9750
N	8,063	9,656	17,719
Pseudo R <sup>2</sup>	.0187	.0754	.0459

Source: Asianbarometers, 2003/4. Notes: excluded categories, Japan; single; self-employed in agriculture; no formal education.

Table 12b. Five-step life satisfaction in Asia and Europe, ordered logits

	All	Asia	Europe
Age	-.0389 (6.05)	-.0202 (2.19)	-.0582 (6.45)
Age <sup>2</sup>	.0004 (6.59)	.0003 (2.97)	.0006 (6.39)
Male	.0050 (0.14)	-.0602 (1.35)	.0446 (1.04)
Years of Education	.0144 (3.96)	.0107 (1.71)	.0173 (3.90)
Part-time 15-34 hrs	-.1321 (2.54)	-.0856 (1.20)	-.1748 (2.28)
Part-time <15 hrs	-.3989 (4.23)	-.3739 (3.07)	-.4217 (2.82)
Unemployed	-.8698 (12.25)	-.6509 (6.23)	-1.0340 (10.60)
Retired	.0185 (0.31)	.1725 (1.85)	-.0375 (0.45)
Student	.0665 (1.03)	.0246 (0.26)	.1135 (1.28)
Disabled	-.8076 (6.27)	-.2873 (1.17)	-.9950 (6.50)
Home worker	.0225 (0.47)	.1144 (1.80)	-.1279 (1.75)
China	-.6128 (5.80)	.0222 (0.24)	
Indonesia	-.9945 (9.50)	-.3335 (3.77)	
Japan	-1.0882 (10.58)	-.4530 (4.98)	
Malaysia	.5612 (5.60)	1.2387 (13.80)	
Philippines	-.6495 (6.09)		
Singapore	.4854 (5.32)	1.1575 (12.46)	
South Korea	-1.1532 (11.14)	-.4814 (5.43)	
Taiwan	-.8515 (8.25)	-.2023 (2.29)	
Thailand	.0830 (0.79)	.7481 (8.35)	
France	-.1068 (1.02)		-.0552 (0.46)
Germany	.2187 (2.13)		.2779 (2.33)
Greece	-.6369 (6.27)		-.5683 (4.90)
Ireland	-.0280 (0.34)		-.0226 (0.27)
Italy	-.1751 (1.67)		-.0999 (0.82)
Portugal	-.8867 (8.76)		-.8485 (7.24)
Spain	.1017 (0.97)		.1885 (1.56)
Sweden	.7458 (7.53)		.7707 (6.96)
Living with spouse	.2354 (6.00)	.0429 (0.78)	.4417 (7.72)
Living with children	.0440 (1.28)	.0685 (1.36)	.0325 (0.67)
Living alone	-.2406 (4.38)	-.1437 (1.44)	-.1417 (2.02)
No English	-.2741 (4.38)	-.2748 (5.18)	-.3007 (5.54)
English native speaker	.1855 (2.79)	.1615 (1.66)	.2377 (2.59)
/cut1	-4.0738	-3.1443	-4.3091
/cut2	-2.5235	-1.5143	-2.8690
/cut3	-.7316	.1917	-.9634
/cut4	1.2928	2.3497	.9668
N	18,148	9,126	9,022
Pseudo R <sup>2</sup>	.0470	.0501	.0402

Source: *Asia/Europe Survey (ASES): A multinational comparative study in eighteen countries*, 2001. ICPSR #22324.

Notes: excluded categories: United Kingdom in columns 1 and 3 and Philippines in column 2; and full-time worker. T-statistics in parentheses

**Table 13. Unhappiness equations, 2001-2006 (ordered logits).**

	(1) <i>Blood pressure</i>	(2) <i>GHQ-N6</i>	(3) <i>Unhappy</i>	(4) <i>Strain</i>	(5) <i>Lost sleep</i>	(6) <i>Down and depressed</i>	(7) <i>Pain</i>
	<i>OLOGIT</i>	<i>OLS</i>	<i>OLOGIT</i>	<i>OLOGIT</i>	<i>OLOGIT</i>	<i>OLOGIT</i>	<i>OLOGIT</i>
France	-.1628 (1.60)	.6379 (4.12)	.2477 (2.85)	.2797 (3.19)	.2477 (2.85)	-.1010 (1.17)	-.0942 (0.99)
Denmark	-.5664 (5.18)	-.6924 (4.38)	-.3992 (4.43)	-.2454 (2.69)	-.3992 (4.43)	-.2508 (2.87)	-.2196 (2.37)
UK	-.5073 (5.13)	-.0158 (0.11)	.1519 (1.86)	-.0539 (0.64)	.1519 (1.86)	-.2050 (2.51)	-.2730 (3.10)
Austria	.1772 (1.80)	-.0985 (0.63)	.0516 (0.60)	-.0816 (0.92)	.0516 (0.60)	-.2598 (2.99)	.2702 (3.04)
East Germany	.6290 (6.70)	.8156 (5.21)	.2159 (2.52)	.5190 (5.99)	.2159 (2.52)	-.2564 (2.99)	.1323 (1.47)
Finland	.1967 (1.99)	.5969 (3.81)	.2817 (3.22)	.3776 (4.27)	.2817 (3.22)	.0235 (0.28)	.3676 (4.17)
Greece	-.1284 (1.26)	.6818 (4.33)	.7509 (8.61)	.6417 (7.21)	.7509 (8.61)	.6611 (7.88)	-.0768 (0.82)
Ireland	-.2044 (1.96)	-.0254 (0.16)	.0787 (0.90)	-.0859 (0.96)	.0787 (0.90)	-.0239 (0.28)	-.4457 (4.59)
Italy	.1764 (1.76)	2.2381 (14.26)	1.1709 (13.58)	1.0001 (11.35)	1.1709 (13.58)	.9197 (11.08)	.2801 (3.12)
Luxembourg	-.2635 (2.14)	-.1069 (0.57)	-.0350 (0.33)	-.1633 (1.53)	-.0350 (0.33)	-.2997 (2.74)	-.1870 (1.61)
Netherlands	-.4413 (4.19)	-.2764 (1.77)	.1471 (1.70)	-.1331 (1.49)	.1471 (1.70)	-.3231 (3.81)	-.1954 (2.16)
Portugal	.6478 (6.60)	.4654 (2.87)	.3101 (3.50)	.1795 (1.98)	.3101 (3.50)	.3919 (4.47)	.2049 (2.21)
Spain	-.0715 (0.70)	.0852 (0.55)	.4111 (4.77)	-.1156 (1.29)	.4111 (4.77)	.1460 (1.68)	-.2219 (2.33)
Sweden	-.7688 (6.98)	-.1259 (0.81)	-.0285 (0.32)	.1365 (1.54)	-.0285 (0.32)	-.2545 (2.92)	.4133 (4.53)
West Germany	.3636 (3.77)	.0516 (0.33)	-.3562 (4.00)	.1174 (1.34)	-.3562 (4.00)	-.3861 (3.63)	.1269 (1.17)
Bulgaria						.1444 (1.68)	.3881 (4.27)
Croatia						.5969 (7.09)	.4603 (5.06)
Cyprus Republic						.3463 (3.33)	.0174 (0.15)
Czech Republic						-.0178 (0.21)	.5497 (6.40)
Estonia						.0173 (0.20)	.3809 (4.30)
Hungary						-.2502 (2.85)	.3138 (3.54)
Latvia						.6850 (8.29)	.5832 (6.68)
Lithuania						1.0796 (12.96)	.5414 (6.11)
Malta						.5618 (5.47)	.1774 (1.64)
Poland						.7116 (8.42)	.8483 (9.64)
Romania						.4892 (5.69)	.5797 (6.46)
Slovakia						.2033 (2.43)	.8426 (9.76)
Slovenia						.2586 (3.11)	.5024 (5.67)
Turkey						1.2514 (14.21)	.2272 (2.31)
Turkish Cyprus						.9654 (9.13)	.2866 (2.50)
Age	.0675 (9.18)	.0958 (8.73)	.0580 (9.42)	.0551 (8.66)	.0580 (9.42)	.0426 (9.62)	.0432 (9.22)

Age <sup>2</sup>	-0.0035 (4.89)	-.0010 (9.22)	-.0006 (9.17)	-.0006 (9.75)	-.0005 (9.17)	-.00037 (8.28)	-.00014 (2.96)
Male	.0222 (0.55)	-.4727 (7.73)	-.3122 (9.20)	-.1338 (3.91)	-.3122 (9.20)	-.3316 (13.33)	-.3302 (12.44)
Age left schooling	-.0173 (3.53)	-.0211 (2.77)	-.0022 (0.53)	-.0044 (1.03)	-.0022 (0.53)	-.0241 (7.82)	-.0388 (11.88)
Constant/cut 1	2.6653	1.4913	.6249	.8070	.6249	.1346	1.0880
cut 2	4.2449	2.5083	2.6542	2.5083	1.0063	1.5043	2.1977
cut 3	5.8586	4.1751	4.4382	4.1751	2.6996	3.1742	3.1486
cut 4	4.4722					4.9244	4.63040
Pseudo/Adjusted R <sup>2</sup>	.0847	.1349	.0487	.0449	.0487	.0439	.0826
N	15,396	15,379	15,658	15,633	15,658	28,185	28,151
Age maximum	<b>96</b>	<b>48</b>	<b>48</b>	<b>46</b>	<b>58</b>	<b>58</b>	<b>160</b>

Notes: The dependent variable in column 1 is a measure of reported problems of high blood-pressure. The question that forms the dependent variable is, “Would you say that you have not at all, no more than usual, rather more than usual, much more than usual...had problems of high blood pressure?” where 1=not at all; 2=no more than usual; 3=rather more than usual; 4=much more than usual. The dependent variable in column 2 is a psychological distress score measured on a scale from 0 to 18. A GHQ-N6 score amalgamates answers to six questions: Have you recently: Lost much sleep over worry? Felt constantly under strain? Felt you could not overcome your difficulties? Been feeling unhappy and depressed? Been losing confidence in yourself? Been thinking of yourself as a worthless person? Its mean in the sample is 3.6 (s.d. =3.7). The dependent variable in columns 3-5 are in order a) column 3 = 'Would you say that you have not at all, no more than usual, rather more than usual, much more than usual...been feeling unhappy and depressed?' b) column 4 = 'Would you say that you have not at all, no more than usual, rather more than usual, much more than usual... been feeling constantly under strain?' c) column 5 = 'Would you say that you have not at all, no more than usual, rather more than usual, much more than usual.. 'Would you say that you have not at all, no more than usual, rather more than usual, much more than usual... 'lost much sleep over worry?'

Personal controls are also included in columns 1-5 are 10 dummy variables relating to the individual's experiences before the age of 18; 16 labour-force status dummies; and 8 marital-status dummies. Belgium is the excluded nation.

The dependent variable in Column 6 models the following question 'These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling...How much of the time during the past 4 weeks have you felt downhearted and depressed? All the time, most of the time, sometimes, rarely, never. In column 7 the question is 'During the past four weeks how much if at all, has pain interfered with your activities? Extremely, quite a lot, moderately, a little and not at all? In empirical estimation we reversed the ordering.

Personal controls included in columns 6 and 7 are 16 labour-force status dummies; and 8 marital-status dummies. Belgium is the excluded nation. T-statistics are in parentheses.

Source: columns 1-5: *Eurobarometer #56.1: Social Exclusion and Modernization of Pension Systems, September–October 2001*, ICPSR #3475 and Blanchflower and Oswald (2008a); Column 6 *Eurobarometer 64.4: Mental Well-Being, Telecommunications, Harmful Internet Content, and Farm Animal Welfare, December 2005-January 2006*, ICPSR #4667

**Table 14. Happiness and Unhappiness Equations, European Social Survey 2006/7 (ordered logits).**

	(1)	(2)	(3)	(4)	(5)	(6)
	Life satisfaction	Happiness	Standard of living	Depressed	Lonely	Anxious
Age	-.0653 (17.43)	-.0757 (19.98)	-.0681 (18.05)	.0144 (3.33)	.0127 (2.88)	.0168 (3.93)
Age <sup>2</sup>	.0006 (17.77)	.0007 (18.86)	.0007 (19.79)	-.0001 (4.40)	-.0001 (2.91)	-.0002 (5.98)
Male	-.0900 (4.51)	-.1396 (6.94)	.0133 (0.67)	-.3881 (16.32)	-.1367 (5.49)	-.3476 (14.87)
Bulgaria	-1.8246 (26.25)	-1.8829 (26.66)	-2.7447 (38.91)	.2715 (3.39)	.5862 (7.00)	.1460 (1.95)
Denmark	1.2081 (18.03)	.8112 (12.22)	.9930 (14.62)	-.8543 (9.84)	-.7340 (7.68)	-2.1782 (25.00)
Estonia	-.5613 (8.41)	-.5132 (7.66)	-1.2267 (18.23)	.1649 (2.16)	.1317 (1.59)	-.3774 (5.18)
Finland	.7498 (12.06)	.5886 (9.46)	.1653 (2.63)	-1.1273 (13.82)	-.5382 (6.34)	-1.4849 (20.38)
France	-.6308 (10.07)	-.2637 (4.28)	-.6065 (9.78)	-.1376 (1.88)	.2460 (3.16)	-.3743 (5.48)
Germany	-.3417 (5.80)	-.3654 (6.22)	-.4580 (7.70)	-.0690 (1.00)	-.1783 (2.35)	-2.3118 (31.74)
Great Britain	-.0972 (1.61)	.0187 (0.31)	-.0795 (1.30)	-.2742 (3.78)	-.0736 (0.95)	-.8920 (13.19)
Hungary	-1.1962 (17.76)	-.7658 (11.09)	-1.2413 (18.31)	1.1965 (15.90)	.3155 (3.84)	-.0889 (1.21)
Norway	.3543 (5.57)	.3362 (5.27)	.2900 (4.52)	-.7612 (9.36)	-.4393 (5.08)	-2.2072 (26.72)
Poland	-.3125 (4.72)	-.4102 (6.22)	-1.0352 (15.76)	.3509 (4.68)	.0381 (0.46)	-.8912 (12.15)
Portugal	-1.1116 (17.94)	-.7288 (11.76)	-.9754 (15.79)	.1535 (2.15)	.5163 (6.79)	-.3686 (5.38)
Romania	-.4946 (7.40)	-.6367 (9.52)	-.9658 (14.52)	-.7713 (9.95)	.2046 (2.56)	-.3411 (4.74)
Russia	-1.3802 (22.47)	-1.2003 (19.42)	-2.3763 (37.78)	.3083 (4.36)	.7754 (10.44)	.1851 (2.77)
Slovakia	-.9316 (14.15)	-.9521 (14.41)	-1.0570 (15.98)	.3217 (4.23)	.7914 (9.94)	-.5862 (8.05)
Slovenia	-.0498 (0.74)	-.0513 (0.76)	-.5968 (8.86)	-.4390 (5.51)	.0248 (0.30)	-1.3731 (17.94)
Spain	.3175 (5.02)	.2956 (4.65)	-.1610 (2.54)	-.2762 (3.69)	-.1086 (1.34)	-1.6832 (22.57)
Sweden	.5252 (8.35)	.3757 (5.99)	.3889 (6.10)	-.6693 (8.52)	-.2806 (3.39)	-1.1832 (16.49)
Switzerland	.6907 (10.77)	.5006 (7.87)	.4709 (7.28)	-.0641 (0.85)	-.3779 (4.42)	-.2113 (3.01)
Primary	.2376 (3.89)	.3142 (5.06)	.2698 (4.39)	-.2885 (4.27)	-.2050 (2.99)	-.1396 (2.03)
Lower secondary	.3300 (5.37)	.3879 (6.21)	.4361 (7.06)	-.4830 (7.04)	-.4047 (5.81)	-.2502 (3.60)
Upper secondary	.4452 (7.20)	.4967 (7.91)	.5728 (9.21)	-.6224 (8.97)	-.5085 (7.21)	-.3773 (5.38)
Non-tertiary	.5597 (8.16)	.5880 (8.47)	.6731 (9.77)	-.6502 (8.38)	-.4655 (5.88)	-.3994 (5.13)
1 <sup>st</sup> stage tertiary	.5781 (9.13)	.5610 (8.73)	.8667 (13.59)	-.6736 (9.42)	-.5457 (7.46)	-.3842 (5.33)
2 <sup>nd</sup> stage tertiary	.7583 (8.33)	.8046 (8.73)	1.1244 (12.36)	-.8300 (7.67)	-.8173 (7.02)	-.3794 (3.64)
Married	.4380 (14.44)	.6749 (22.00)	.4855 (15.92)	-.2097 (5.79)	-.9238 (24.54)	-.0283 (0.79)
Civil partner	.1576 (2.32)	.2969 (4.34)	.1816 (2.68)	-.1814 (2.22)	-.4824 (5.70)	.0722 (0.92)
Separated	-.4863 (5.42)	-.3335 (3.75)	-.5256 (5.96)	.4741 (4.88)	.5793 (6.02)	.5072 (5.23)

Separated civil	-.4096 (1.75)	-.5080 (2.04)	-.5818 (2.46)	.0237 (0.09)	.0299 (0.11)	-.3953 (1.37)
Divorced	-.0341 (0.78)	.0680 (1.54)	-.1768 (4.01)	.0591 (1.15)	.1415 (2.78)	.1090 (2.14)
Widowed	-.1442 (3.09)	-.2350 (4.98)	-.1357 (2.90)	.2502 (4.68)	.6951 (12.91)	.3614 (6.78)
Dissolved civil	-.3086 (2.31)	-.2289 (1.66)	-.6762 (4.90)	.4097 (2.60)	.4304 (2.86)	.6273 (4.02)
Student	.1985 (4.45)	.1130 (2.53)	.2913 (6.40)	-.0716 (1.33)	-.1473 (2.72)	.0039 (0.08)
Unemployed	-.9607 (16.42)	-.6475 (11.10)	1.0584 (18.32)	.5804 (9.17)	.4485 (6.96)	.4314 (6.70)
Unemployed ntlk	-.7776 (9.97)	-.5443 (6.88)	-.8716 (11.03)	.4712 (5.41)	.5392 (6.19)	.4546 (5.20)
Disabled	-.5285 (8.08)	-.4053 (5.96)	-.5751 (8.56)	.8379 (11.64)	.5534 (7.53)	.6312 (8.67)
Retired	.0896 (2.44)	.0587 (1.59)	-.1088 (2.97)	.0927 (2.19)	.0915 (2.05)	.1516 (3.60)
Military service	-.2866 (0.96)	-.5011 (1.53)	-.6952 (2.16)	.5182 (1.39)	.1838 (0.45)	.8609 (2.29)
Home worker	-.0085 (0.22)	.0031 (0.08)	-.0797 (2.09)	.1112 (2.57)	.2229 (4.80)	.0792 (1.83)
Other lf	-.0747 (0.76)	.0461 (0.47)	-.0302 (0.31)	.4364 (4.07)	.3025 (2.76)	.2826 (2.63)
Health bad	.4034 (5.36)	.4580 (5.92)	.3564 (4.74)	-.5158 (6.54)	-.2409 (3.09)	-.2997 (3.75)
Health fair	.8716 (12.01)	.9745 (13.05)	.8008 (11.06)	-1.0676 (14.02)	-.6548 (8.72)	-.7573 (9.85)
Health good	1.4213 (19.28)	1.5147 (20.00)	1.2440 (16.95)	-1.6578 (21.35)	-.9363 (12.25)	-1.2391 (15.85)
Health very good	1.9183 (24.98)	2.0326 (25.82)	1.6860 (22.05)	-2.1002 (25.47)	-1.2024 (14.76)	-1.5664 (19.04)
cut1	-4.2391	-5.2394	-4.4362	-1.7911	-.6224	-2.1631
cut2	-3.6320	-4.5336	-3.8224	.5269	1.2865	.2997
cut3	-3.0043	-3.7943	-3.1211	2.0986	2.5759	1.9788
cut4	-2.3563	-3.0901	-2.4627			
cut5	-1.8710	-2.5543	-1.9433			
cut6	-.9569	-1.4430	-1.0441			
cut7	-.4357	-.8456	-.4025			
cut8	.4154	.1110	-.5434			
cut9	1.7241	1.4642	1.9403			
cut10	2.8699	2.6767	3.1896			
Pseudo R <sup>2</sup>	.0767	.0711	.0885	.0961	.0941	.1160
N	34,786	34,638	34,780	34,592	34,674	34,643
Age min/max	<b>49</b>	<b>53</b>	<b>46</b>	<b>39</b>	<b>50</b>	<b>33</b>

Source: European Social Survey, 2006/7. Notes: Excluded categories: Belgium; single; health very bad; paid work and no formal education. A) All things considered, how satisfied are you with your life as a whole nowadays? B) And how satisfied are you with your present standard of living? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied. Taking all things together, how happy would you say you are? Extremely unhappy =0 to Extremely happy=10. Using this card, please tell me how much of the time during the past week 1) you felt depressed? 2) you felt lonely? 3) you felt anxious? A) None or almost none of the time. B) Some of the time. D) Most of the time. D) All or almost all of the time.



**Table 15. Macro Life satisfaction, 1973-2006 (ordered logits).**

	(1)	(2)	(3)	(4)
Life satisfaction <sub>t-1</sub>		.5713 (13.83)		.5689 (13.64)
Inflation <sub>t</sub>	-.0056 (3.87)	-.0029 (2.32)	-.0061 (4.11)	-.0031 (2.37)
Unemployment <sub>t</sub>	-.0126 (6.26)	-.0046 (2.77)	-.0119 (5.69)	-.0046 (2.63)
GDP <sub>t</sub>			.000002 (1.46)	.00001 (0.51)
Austria	-.0819 (3.20)	-.0458 (2.24)	-.0783 (3.04)	-.0452 (2.19)
Belgium	-.0266 (1.46)	-.0181 (1.26)	-.0250 (1.36)	-.0178 (1.22)
Czech Republic	-.3133 (9.38)	-.1284 (4.18)	-.2737 (5.59)	-.1175 (2.81)
Denmark	.3816 (20.73)	.1710 (7.94)	.3707 (18.67)	.1688 (7.64)
Finland	.0484 (1.86)	.0248 (1.21)	.0493 (1.90)	.0252 (1.22)
France	-.2940 (16.01)	-.1253 (6.64)	-.2920 (15.85)	-.1253 (6.61)
Germany	-.1334 (7.17)	-.0563 (3.65)	-.1333 (7.16)	-.0566 (3.66)
Greece	-.4725 (21.48)	-.1937 (7.31)	-.4474 (16.05)	-.1876 (6.41)
Hungary	-.6310 (18.77)	-.2768 (7.30)	-.5785 (11.73)	-.2640 (5.73)
Ireland	.0764 (3.88)	.0329 (2.10)	.0847 (4.11)	.0360 (2.17)
Italy	-.3445 (18.72)	-.1375 (6.77)	-.3346 (17.06)	-.1354 (6.50)
Japan	-.5266 (23.77)	-.2317 (8.27)	-.5519 (19.79)	-.2403 (7.45)
Luxembourg	.0779 (3.55)	.0475 (2.71)	.0497 (1.71)	.0395 (1.71)
Mexico	-.2705 (6.53)	-.2517 (4.32)	-.2167 (3.89)	-.2371 (3.63)
Netherlands	.1835 (9.50)	.0792 (4.68)	.1844 (9.53)	.0799 (4.60)
Poland	-.2952 (6.80)	-.1135 (2.97)	-.2511 (4.76)	-.1014 (2.27)
Portugal	-.5259 (24.67)	-.2211 (8.11)	-.4917 (15.47)	-.2130 (6.64)
Slovakia	-.4588 (10.64)	-.1769 (4.34)	-.4112 (7.63)	-.1641 (3.45)
Spain	-.1276 (5.30)	-.0528 (2.69)	-.1075 (3.89)	-.0472 (2.10)
Sweden	.1590 (6.03)	.0736 (3.36)	.1544 (5.81)	.0726 (3.29)
USA	.1674 (5.64)	.1137 (4.02)	.1465 (4.46)	.1081 (3.56)
Constant	3.1310	1.4209	3.2277	1.4230
Adjusted R <sup>2</sup>	.9375	.9631	.9376	.9630
N	457	423	455	421

Notes: UK is excluded category. T-statistics in parentheses. Equations also include 31 year dummies. GDP is per capita in \$US. Data on GDP unavailable in 2006 for Czech Republic and Ireland.

Source: World Database of Happiness and OECD, 1973-2006.

**Table 16: Micro life satisfaction: Europe, 1973-2006 (ordered logits).**

	(1)	(2)	(3)	(4) Age<40	(5) Age≥40
Inflation <sub>t</sub>	-.0094 (5.16)	-.0095 (5.18)	-.0096 (5.25)	-.0102 (4.83)	-.0128 (5.89)
Unemployment rate <sub>t</sub>	-.0114 (5.82)	-.0115 (5.88)	-.0119 (6.05)	-.0109 (5.71)	-.0081 (4.20)
Average inflation experience			-.0010 (1.02)		
Highest inflation experience			-.0001 (3.44)	-.0002 (2.62)	-.00003 (2.85)
Age	-.0133 (16.42)	-.0133 (16.38)	-.0134 (16.74)	-.0067 (1.87)	-.0048 (3.83)
Age <sup>2</sup>	.0001 (18.68)	.0001 (18.58)	.0001 (19.11)	-.0000 (0.01)	.00007 (7.41)
Male	-.0327 (10.48)	-.0328 (10.43)	-.0329 (10.51)	-.0424 (11.94)	-.0230 (5.69)
16-19 yrs schooling	.0873 (17.72)	.0873 (17.73)	.0871 (17.80)	.0723 (10.70)	.0931 (18.85)
20+ yrs schooling	.1664 (26.12)	.1665 (26.13)	.1664 (26.23)	.1530 (21.10)	.1666 (21.92)
Still studying	.1178 (7.88)	.1174 (7.84)	.1174 (7.82)	.1127 (9.02)	-.0080 (0.11)
Married	.1186 (19.86)	.1185 (19.84)	.1189 (19.92)	.1325 (20.30)	.1275 (17.81)
Living as married	.0481 (7.38)	.0483 (7.38)	.0496 (7.61)	.0569 (8.20)	.0406 (3.65)
Divorced	-.1621 (20.04)	-.1623 (20.05)	-.1622 (20.05)	-.1693 (15.76)	-.1415 (14.86)
Separated	-.2065 (19.13)	-.2065 (19.12)	-.2061 (19.12)	-.2085 (13.83)	-.1839 (12.83)
Widowed	-.0866 (13.17)	-.0864 (13.09)	-.0852 (12.95)	-.0938 (3.35)	-.0723 (9.77)
Self-employed	.0057 (1.22)	.0057 (1.20)	.0056 (1.19)	.0295 (4.69)	-.0097 (1.71)
Home	-.0243 (4.80)	-.0244 (4.80)	-.0244 (4.81)	-.0293 (4.50)	-.0205 (3.43)
Student	.0710 (4.90)	.0713 (4.92)	.0715 (4.93)	.0589 (4.94)	.0487 (0.73)
Retired	-.0395 (6.88)	-.0394 (6.84)	-.0395 (6.89)	-.1463 (6.23)	-.0348 (5.96)
Unemployed	-.3657 (29.77)	-.3658 (29.74)	-.3660 (29.71)	-.3574 (30.25)	-.3909 (24.68)
Austria	-.0956 (4.17)	-.0969 (3.45)	-.0904 (3.96)	-.0720 (2.65)	-.1142 (4.90)
Belgium	-.0807 (0.23)	-.0955 (4.17)	-.0807 (4.39)	-.0432 (2.11)	-.1164 (5.99)
Denmark	.3220 (21.96)	.3212 (21.82)	.3206 (21.78)	.3515 (21.58)	.2969 (19.72)
Finland	-.0001 (0.00)	.0014 (0.07)	.0032 (0.16)	.0397 (1.60)	-.0283 (1.49)
France	-.3271 (23.35)	-.3254 (23.29)	-.3254 (22.99)	-.3044 (17.94)	-.3440 (25.36)
Germany	-.2286 (19.35)	-.2297 (19.18)	-.2229 (18.85)	-.2255 (17.82)	-.2289 (17.34)
Greece	-.4596 (20.71)	-.4512 (18.89)	-.4485 (20.32)	-.3443 (15.86)	-.5500 (20.14)

Ireland	.0524 (3.50)	.0540 (3.61)	.0549 (3.68)	.0471 (2.83)	.0651 (4.01)
Italy	-.3434 (17.47)	-.3374 (15.85)	-.3306 (16.34)	-.2789 (12.53)	-.3850 (20.09)
Netherlands	.1199 (10.55)	.1179 (10.12)	.1181 (10.33)	.1549 (11.70)	.0869 (7.23)
Norway	.1072 (3.47)	.1064 (3.44)	.1057 (3.42)	.1423 (4.65)	.0757 (2.30)
Portugal	-.4979 (21.41)	-.4939 (21.13)	-.4973 (21.47)	-.3746 (15.68)	-.6047 (25.23)
Spain	-.1240 (7.41)	-.1206 (7.10)	-.1200 (7.14)	-.0794 (3.98)	-.1632 (9.79)
Sweden	.1057 (8.12)	.1054 (8.07)	.1054 (8.04)	.1386 (7.04)	.0821 (6.27)
Constant	3.5198	3.5262	3.5264	3.4315	3.2963
N	703,172	703,172	703,172	332,202	370,970
R <sup>2</sup>	.1549	.1549	.1550	.1481	.1639

Notes: excluded categories UK, employee, no children: left school before age 15; single. All equations include 20 year dummies. Standard errors are clustered by country and year. Average inflation experience refers to the *average annual* inflation rate experienced by an individual over their life to the survey date. Highest inflation experienced refers to the *highest* annual inflation rate experienced by an individual over their life to the survey date.

Source: Eurobarometers, 1973-2006 and Blanchflower (2007)

**Table 17. Happiness, life satisfaction and views on the macro economy ordered logits, 2006-2007**

	Happiness	Life satisfaction	Life satisfaction
Inequality - current	-.1976 (5.77)		
Unemployment - current	-.0787 (2.71)	-.0745 (2.79)	
Inflation - current	-.2313 (8.40)	-.1468 (4.83)	
Inflation equal			-.0409 (0.97)
Inflation higher			-.0671 (1.83)
Unemployment equal			-.1895 (4.80)
Unemployment higher			-.2402 (6.56)
Age	-.0973 (19.20)	-.0785 (16.84)	-.0871 (14.48)
Age <sup>2</sup>	.0008 (16.43)	.0007 (15.99)	.0008 (13.65)
Male	-.1655 (6.00)	-.1187 (4.60)	-.0566 (1.83)
ALS <16	-.0958 (0.66)	.3097 (2.84)	-.3417 (0.82)
ALS 16-19	.1883 (1.30)	.6316 (5.72)	-.2154 (0.52)
ALS ≥20	.3747 (2.55)	.8830 (7.87)	.0368 (0.09)
Unemployed	-.7356 (10.43)	-.6970 (11.01)	-.8683 (10.77)
Retired	-.1756 (3.11)	.0142 (0.27)	-.1487 (2.19)
Married	.8203 (16.61)	.3283 (7.18)	.3544 (6.48)
Remarried	.6441 (6.42)	.2989 (3.16)	.3703 (3.28)
Living as married	.4075 (6.88)	.1736 (3.10)	.1033 (1.55)
Previous lived together	-.2089 (2.69)	-.2262 (3.21)	-.4206 (5.10)
Divorce	-.1563 (2.35)	-.2834 (4.50)	-.4249 (5.64)
Separated	-.5704 (5.15)	-.3983 (3.71)	-.4337 (3.49)
Widowed	-.4460 (6.80)	-.2379 (3.89)	-.3670 (4.85)
Austria	-.9599 (10.46)	.0404 (0.55)	-.0304 (0.35)
Bulgaria	-3.1762 (33.98)	-2.2106 (30.93)	-2.2350 (23.42)
Cyprus	-1.0438 (9.06)	.3658 (3.74)	.3694 (2.77)
Czech Republic	-1.2175 (13.65)	-.3675 (5.08)	-.3712 (4.40)
Denmark	.4515 (4.90)	1.9123 (23.45)	1.7403 (18.61)
East Germany	-1.2621 (11.05)	-.5185 (5.31)	-.4315 (3.97)

Estonia	-1.6008 (17.00)	-.6161 (8.28)	-.7205 (7.96)
Finland	-.4786 (5.31)	.7295 (9.88)	.4965 (5.88)
France	-.2727 (3.00)	-.0309 (0.42)	-.2405 (2.65)
Greece	-1.2132 (12.85)	-.6965 (9.42)	-1.0286 (12.59)
Hungary	-1.6718 (17.61)	-1.5970 (22.32)	-1.5296 (17.90)
Ireland	.2515 (2.73)	.8377 (11.11)	.7815 (8.75)
Italy	-1.1559 (12.49)	-.3288 (4.48)	-.6513 (7.02)
Latvia	-1.7255 (18.56)	-.9410 (12.72)	-1.1391 (13.10)
Lithuania	-1.8129 (19.28)	-1.0639 (14.30)	-1.0678 (11.90)
Luxembourg	-.0565 (0.51)	1.1205 (11.56)	1.2979 (10.77)
Malta	-.5982 (5.19)	.2136 (2.13)	.3762 (2.96)
Netherlands	.0978 (1.07)	1.2924 (16.78)	1.1640 (13.24)
Poland	-1.0093 (10.85)	-.5752 (7.84)	-.5261 (5.64)
Portugal	-.9639 (10.32)	-1.0027 (13.87)	-1.0446 (10.94)
Romania	-2.4141 (25.56)	-1.7300 (24.31)	-1.5874 (15.49)
Slovakia	-1.8201 (19.67)	-.8210 (11.21)	-.8749 (10.59)
Slovenia	-.6665 (7.25)	.2936 (4.04)	.1955 (2.26)
Spain	-.6784 (7.34)	.4474 (6.07)	.0516 (0.51)
Sweden	-.1260 (1.38)	1.2562 (16.46)	1.1273 (12.91)
UK	.1592 (1.84)	.7696 (11.20)	.8118 (9.32)
West Germany	-.8584 (9.22)	.2374 (3.21)	.3455 (3.99)
Member religious orgn.	.2927 (5.20)	.0455 (1.17)	
Minority group	-.2695 (5.78)		
No group	-.1113 (3.52)		
Own house - outright	.2112 (6.11)	.3899 (12.65)	.2414 (6.23)
Own house - mortgage	.1099 (2.85)	.3356 (9.33)	.3188 (7.36)
Left wing (1-2)	.0478 (0.75)	.0123 (0.21)	.1210 (1.67)
Left (3-4)	.0028 (0.05)	.1584 (3.17)	.2116 (3.36)
Centre (5-6)	.0843 (1.74)	.2392 (5.35)	.2259 (3.88)
Right (7-8)	.1413 (2.60)	.3746 (7.49)	.3792 (5.98)

Right wing (9-10)	.3454 (5.20)	.4856 (8.31)	.5561 (7.58)
cut1	-7.1023	-4.1532	-5.6338
cut2	-4.8577	-2.2430	-3.6509
cut3	-1.4631	.8395	-.4712
N	26,526	29,017	20,472
Pseudo R <sup>2</sup>	.1319	.1294	.1297

Source: columns 1=Eurobarometer #66.3 *European Social Reality* November-December 2006, (ICPSR #4528). Column 2= Eurobarometer #66.1 *European values and societal issues, mobile phone use and farm animal welfare*, Sept-Oct 2006 (ICPSR #21281). Column 3 =Eurobarometer #67.2 *European Union enlargement, personal data privacy, national economy and scientific research*, April-May 2007 (ICPSR# 21160).

Notes: excluded categories; Belgium; responsible for ordinary shopping and housework; unmarried having previously lived with a partner; no formal education; refused to answer left/right scale and majority group. All equations also include 15 occupation dummies. T-statistics in parentheses.

Q1. On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?

Q2. Do you think that, in (OUR COUNTRY), the inflation rate in 2006 was higher, lower or equal to the one in 2005?

Q3. Do you think that, in (OUR COUNTRY), the unemployment rate in 2006 was higher, lower or equal to the one in 2005?

Q4. Taking all things together would you say you are very happy, quite happy, not very happy and not at all happy?

Q5. Which topics worry you the most? - a) unemployment; b) the cost of living (inflation); c) the gap between the rich and the poor (inequality)?

Q6. In political matters people talk of "the left" and "the right". How would you place your views on this scale? 1 (Left) – 10 (Right)

**Table 18. Economic, Employment and Life Expectations in Europe: Eurobarometers, 1995-2006 (ordered logits).**

	<i>Economic situation</i>		<i>Employment situation</i>		<i>Life 1 year ahead</i>		<i>Life 5 years ahead</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
France	-.1992 (8.00)	-.1645 (5.65)	.2112 (8.41)	.2532 (8.65)	.5166 (20.17)	.6714 (22.18)	.2419 (7.76)	.3045 (8.99)
Denmark	.2793 (11.31)	.1640 (5.68)	.6710 (26.70)	.4432 (15.09)	.4741 (18.48)	.2439 (8.01)	.5509 (17.42)	.3427 (9.88)
UK	.1664 (7.23)	.0751 (2.80)	.5437 (23.41)	.4223 (15.64)	.8461 (35.52)	.7944 (28.28)	.8284 (28.01)	.7599 (23.68)
Not very satisfied		.5787 (22.91)		.5318 (21.01)		.9013 (34.32)		.8380 (28.38)
Fairly satisfied		1.0971 (44.84)		.9678 (39.53)		1.8423 (72.14)		1.7548 (61.65)
Very satisfied		1.3750 (52.90)		1.2523 (48.21)		2.3265 (85.19)		2.1457 (69.87)
Age	-.0247 (16.31)	-.0177 (10.33)	-.0260 (17.03)	-.0187 (10.89)	-.0454 (29.01)	-.0338 (18.99)	-.0717 (36.07)	-.0623 (29.09)
Age <sup>2</sup>	.0002 (12.98)	.0001 (7.84)	.0002 (13.53)	.0001 (8.30)	.0002 (14.87)	.0001 (6.75)	.0004 (19.36)	.0002 (13.11)
Male	.1379 (15.73)	.1347 (13.62)	.0694 (7.86)	.0791 (7.96)	-.0424 (4.68)	-.0443 (4.30)	-.0015 (0.14)	.0119 (1.01)
ALS 16-19	.1058 (9.35)	.0659 (5.13)	.1005 (8.78)	.0713 (5.50)	.2280 (19.58)	.1650 (12.42)	.1279 (9.13)	.0714 (4.77)
ALS 20+	.2684 (20.75)	.1946 (13.26)	.2560 (19.61)	.1970 (13.31)	.4439 (33.20)	.3216 (21.07)	.3521 (21.82)	.2552 (14.80)
Still studying	-.1670 (2.25)	-.1396 (1.85)	-.0469 (0.63)	-.0399 (0.53)	.0261 (0.34)	.0510 (0.66)	-.1002 (1.20)	-.0596 (0.71)
Homemaker	-.0354 (1.93)	.0066 (0.32)	-.0279 (1.51)	.0150 (0.72)	-.1102 (5.83)	-.0677 (3.14)	-.1406 (6.12)	-.1088 (4.44)
Student	.4141 (5.51)	.3224 (4.20)	.2681 (3.53)	.2118 (2.75)	.2025 (2.62)	.0340 (0.43)	.2356 (2.75)	.0247 (0.29)
Unemployed	-.1722 (8.46)	-.0428 (1.85)	-.1666 (8.14)	-.0600 (2.58)	-.0674 (3.15)	.1738 (7.08)	-.3499 (13.55)	-.1498 (5.39)
Retired	-.0892 (5.14)	-.0679 (3.47)	-.0604 (3.43)	-.0479 (2.43)	-.2201 (12.24)	-.2062 (10.16)	-.2226 (10.02)	-.1828 (7.69)
Farmer	-.2591 (7.36)	-.2083 (5.22)	-.1874 (5.37)	-.1856 (4.68)	-.4208 (11.53)	-.3427 (8.32)	-.4239 (9.59)	-.3726 (7.98)
Fisherman	-.0987 (0.50)	-.1320 (0.60)	.2000 (1.02)	.1952 (0.90)	-.0221 (0.11)	-.0260 (0.11)	-.5545 (2.20)	-.5713 (2.13)
Professional	.1447 (4.13)	.1020 (2.58)	.0805 (2.30)	.0583 (1.47)	.3413 (9.34)	.2896 (6.94)	.2365 (5.29)	.2137 (4.50)
Shopkeeper	-.0329 (1.32)	-.0171 (0.60)	-.0257 (1.04)	-.0108 (0.38)	.0779 (3.02)	.0862 (2.90)	.0178 (0.56)	-.0094 (0.28)
Business proprietor	.0375 (1.13)	.0121 (0.32)	.0143 (0.43)	-.0043 (0.12)	.3133 (9.04)	.2671 (6.78)	.2642 (6.18)	.2180 (4.77)
Empd. professional	.1083 (3.66)	.0569 (1.75)	.1120 (3.78)	.0803 (2.47)	.2223 (7.12)	.1355 (3.92)	.2264 (5.85)	.1480 (3.64)
General mgmt	.1640 (4.31)	.1272 (2.92)	.1348 (3.51)	.0950 (2.17)	.2302 (5.85)	.1340 (2.95)	.3875 (7.83)	.3203 (6.07)
Desk employee	.0631 (3.40)	.0663 (3.15)	.0472 (2.54)	.0503 (2.39)	.0721 (3.74)	.0536 (2.44)	.0458 (1.94)	.0284 (1.13)
Traveling worker	.0258 (0.96)	.0252 (0.83)	-.0047 (0.18)	-.0063 (0.21)	.1356 (4.84)	.1436 (4.50)	.0370 (1.07)	.0235 (0.64)
Service workers	-.0422 (2.18)	-.0454 (2.07)	-.0335 (1.72)	-.0383 (1.74)	.0488 (2.42)	.0534 (2.32)	.0243 (0.98)	.0095 (0.36)
Supervisor	-.1080 (2.59)	-.0957 (1.98)	-.0244 (0.59)	.0026 (0.06)	-.0648 (1.50)	-.0641 (1.28)	.0066 (0.13)	-.0130 (0.23)
Skilled manual	-.0704 (3.86)	-.0574 (2.78)	-.0369 (2.02)	-.0160 (0.78)	-.0719 (3.79)	-.0351 (1.63)	-.1154 (4.98)	-.0992 (4.01)
Married	-.0438 (3.42)	-.1087 (7.41)	-.0465 (3.62)	-.1111 (7.57)	-.2285 (17.11)	-.3427 (22.26)	.0059 (0.36)	-.0794 (4.41)
Living as married	-.0218 (1.30)	-.0485 (2.56)	.0154 (0.92)	-.0127 (0.67)	.0913 (5.17)	.0524 (2.61)	.2435 (10.99)	.2207 (9.25)
Divorced	-.1214 (5.98)	-.0807 (3.53)	-.0892 (4.37)	-.0520 (2.27)	-.0604 (2.86)	.0105 (0.44)	-.0211 (0.82)	.0410 (1.48)
Separated	-.0785 (2.26)	-.0024 (0.06)	-.0433 (1.24)	.0001 (0.00)	.0380 (1.04)	.1202 (2.91)	.0253 (0.57)	.0852 (1.80)
Widowed	-.0348 (1.77)	-.0266 (1.20)	-.0451 (2.26)	-.0462 (2.06)	-.2552 (12.59)	-.2605 (11.35)	-.0426 (1.74)	-.0044 (0.17)
Belgium	-.3270 (13.12)	-.3317 (11.44)	-.1187 (4.68)	-.1595 (5.43)	.2593 (10.15)	.2989 (9.93)	.1800 (5.80)	.1593 (4.74)
Bulgaria	.2122 (5.88)	.6864 (17.75)	.6647 (18.04)	1.0273 (26.01)	-.3157 (8.37)	.5173 (12.75)	-.4646 (10.36)	.4203 (8.82)

Croatia	-.1509 (4.19)	-.0566 (1.49)	.1982 (5.45)	.2246 (5.88)	.0765 (2.02)	.3013 (7.54)	.1426 (3.22)	.4676 (10.13)
Cyprus	-.8493 (16.54)	-.9129 (17.29)	-.3879 (7.66)	-.5087 (9.77)	.2896 (5.70)	.2481 (4.72)	1.0663 (16.89)	1.3438 (20.56)
Czech	.1033 (3.02)	.1450 (4.03)	.3946 (11.57)	.3714 (10.34)	-.0144 (0.40)	.0914 (2.41)	.1454 (3.49)	.0384 (0.89)
East Germany	-.5925 (22.24)	-.5337 (16.83)	-.6807 (24.45)	-.6763 (20.46)	-.2950 (11.00)	-.1412 (4.39)	-.4160 (12.80)	-.2058 (5.79)
Estonia	1.1382 (31.82)	1.2831 (34.11)	1.2997 (35.81)	1.3702 (35.92)	.6421 (17.21)	.9339 (23.53)	.8317 (18.25)	1.2139 (25.58)
Finland	.4106 (16.93)	.2582 (9.17)	.6297 (25.52)	.4264 (14.87)	.6797 (26.72)	.5604 (18.76)	.4954 (15.92)	.4136 (12.26)
Greece	-.5529 (21.75)	-.5137 (17.23)	-.3399 (13.19)	-.3586 (11.89)	.0693 (2.64)	.3453 (11.20)	.0956 (2.97)	.2697 (7.71)
Hungary	.1444 (4.07)	.3748 (10.02)	.3728 (10.49)	.5062 (13.51)	.0314 (0.84)	.4611 (11.65)	.1077 (2.49)	.6243 (13.78)
Ireland	.6633 (26.36)	.5098 (17.30)	.9641 (38.02)	.7708 (26.02)	.8581 (33.18)	.7793 (25.53)	1.0534 (32.12)	.9904 (27.92)
Italy	-.0966 (3.85)	-.0024 (0.09)	.2124 (8.36)	.2693 (9.13)	.7019 (27.05)	.7908 (25.84)	.4969 (15.59)	.6210 (17.96)
Latvia	.3341 (9.48)	.5381 (14.48)	.9425 (26.76)	1.0672 (28.71)	.4124 (11.13)	.8205 (20.80)	.4771 (10.86)	.9836 (21.31)
Lithuania	.7039 (19.56)	.9195 (24.23)	1.4142 (38.46)	1.5498 (39.97)	.3486 (9.22)	.7629 (18.98)	.3308 (7.40)	.8426 (17.98)
Luxembourg	-.0392 (1.33)	-.1869 (5.36)	-.1065 (3.50)	-.2719 (7.57)	.3717 (12.26)	.2367 (6.50)	.4776 (13.07)	.3217 (8.07)
Malta	-.2176 (4.20)	-.2520 (4.74)	.1570 (3.04)	.0601 (1.14)	.3609 (6.87)	.3433 (6.35)	.5864 (9.66)	.6571 (10.61)
Netherlands	-.1666 (6.71)	-.3647 (12.52)	.2334 (9.30)	-.0006 (0.02)	.2141 (8.43)	.0308 (1.03)	.3388 (10.93)	.2403 (7.13)
Poland	.2184 (6.00)	.3241 (8.47)	.5216 (14.56)	.5540 (14.68)	.2721 (7.16)	.5026 (12.47)	-.1493 (3.37)	.1291 (2.80)
Portugal	-.4662 (18.09)	-.4349 (14.29)	-.3092 (11.79)	-.2527 (8.23)	-.2748 (10.36)	-.0419 (1.34)	.5516 (17.01)	.8370 (23.60)
Romania	.5398 (14.11)	.8658 (21.55)	.4709 (12.23)	.6939 (17.12)	.4295 (10.78)	1.0253 (24.31)	.6149 (13.07)	1.2583 (25.48)
Slovakia	-.1874 (5.36)	-.0076 (0.21)	.4146 (11.92)	.5137 (13.99)	-.1950 (5.36)	.1520 (3.95)	.0773 (1.32)	.1372 (2.29)
Slovenia	.0386 (1.08)	-.0115 (0.31)	.0443 (1.23)	-.0643 (1.71)	.1894 (5.15)	.1585 (4.08)	-.2430 (5.85)	.1741 (4.01)
Spain	.4554 (18.19)	.3578 (12.21)	.6354 (25.07)	.4992 (16.82)	.7092 (27.37)	.7410 (24.22)	.1905 (4.46)	.2488 (5.63)
Sweden	.3511 (14.17)	.2350 (8.14)	.5797 (23.18)	.4554 (15.64)	.9136 (35.52)	.7816 (25.80)	.8418 (26.37)	.8604 (24.84)
Turkey	.8676 (21.72)	.9566 (23.01)	.8859 (22.43)	.9024 (21.91)	.6698 (15.84)	.8543 (19.30)	.7608 (23.91)	.6430 (18.59)
Turkish Cyprus	1.2484 (24.82)	1.3015 (25.14)	1.3926 (27.75)	1.3765 (26.64)	1.0391 (19.32)	1.1983 (21.32)	.2221 (4.66)	.5001 (10.12)
West Germany	-.2751 (11.14)	-.2565 (8.93)	-.1166 (4.62)	-.1199 (4.09)	-.1441 (5.72)	-.0879 (2.97)	-.3021 (9.94)	-.2264 (6.88)
cut1	-.4833	.5491	-.1550	.7494	-2.3905	-.6778	-3.7664	-2.0448
cut2	1.3971	2.4703	1.5584	2.4985	.4734	2.3522	-1.4665	.35400
N	225,315	179,205	224,578	178,295	232,551	184,890	155,518	139,559
Pseudo R <sup>2</sup>	.0535	.0489	.0440	.0537	.0711	.1059	.0958	.1225

Notes: excluded categories: middle manager; single and ALS<16. T-statistics in parentheses. Ordered logits. Equations also include year dummies. Source for columns 1-6: Eurobarometers #65.2 (2006); #64.2 (2005); #63.4 (2005); #62.0 (2004); #61.0 (2004)\*; #60.1 (2003); #58.1 (2002); #56.2 (2001); #54.1 (2000); #52.0 (1999); #50.0 (1998)\*; #48.0 (1997); #46.0 (1996)\* and #44.1 (1995)\*. For columns 7 & 8 Eurobarometers #65.2 (2006); #63.4 (2005); #62.0 (2004); #61.0 (2004)\*; #57.1 (2002); #55.1 (2001); #53.0 (2000); and #47.1 (1997). \*= does not include life satisfaction data in the survey.

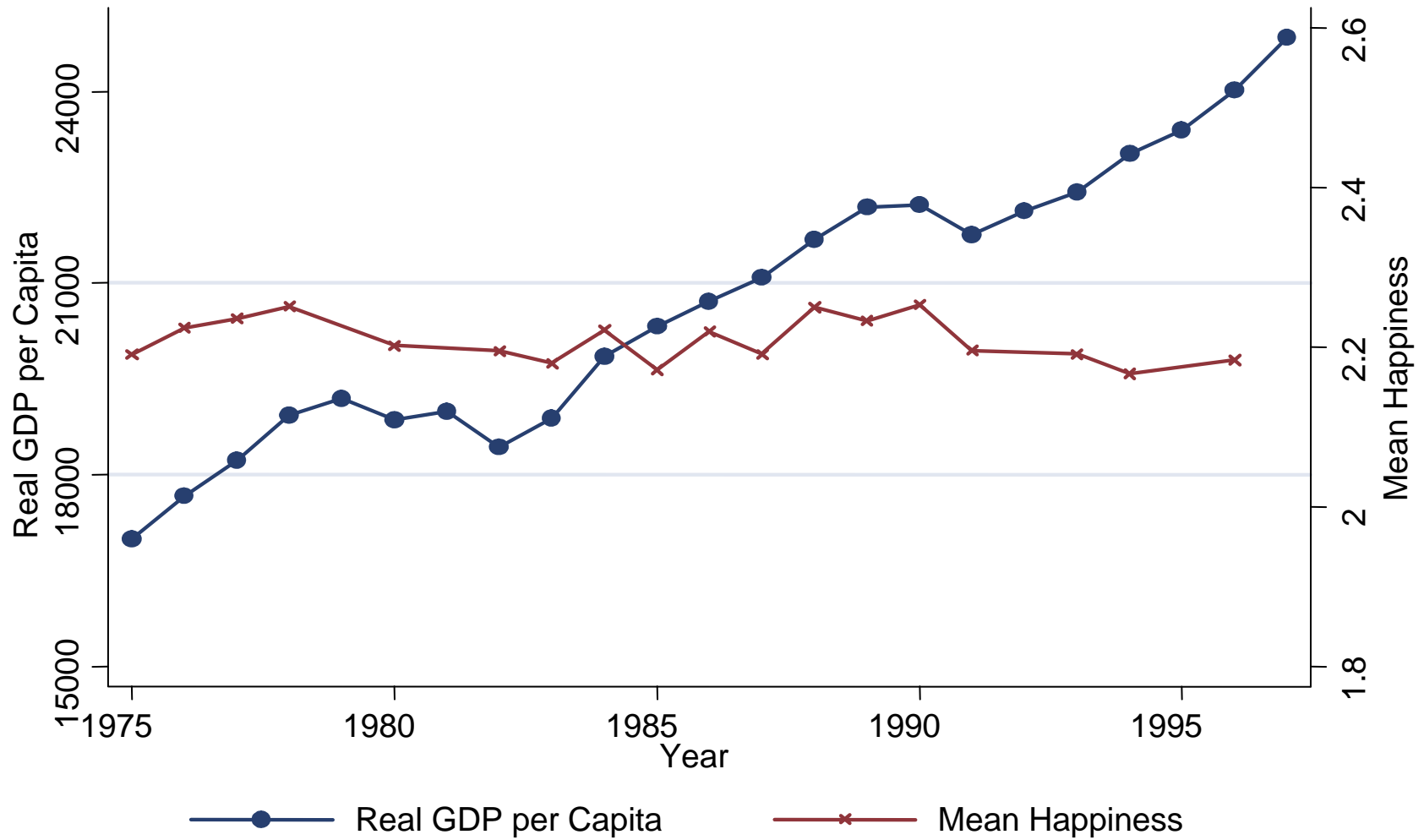


**Table 19. Expectations twelve months ahead - UK**

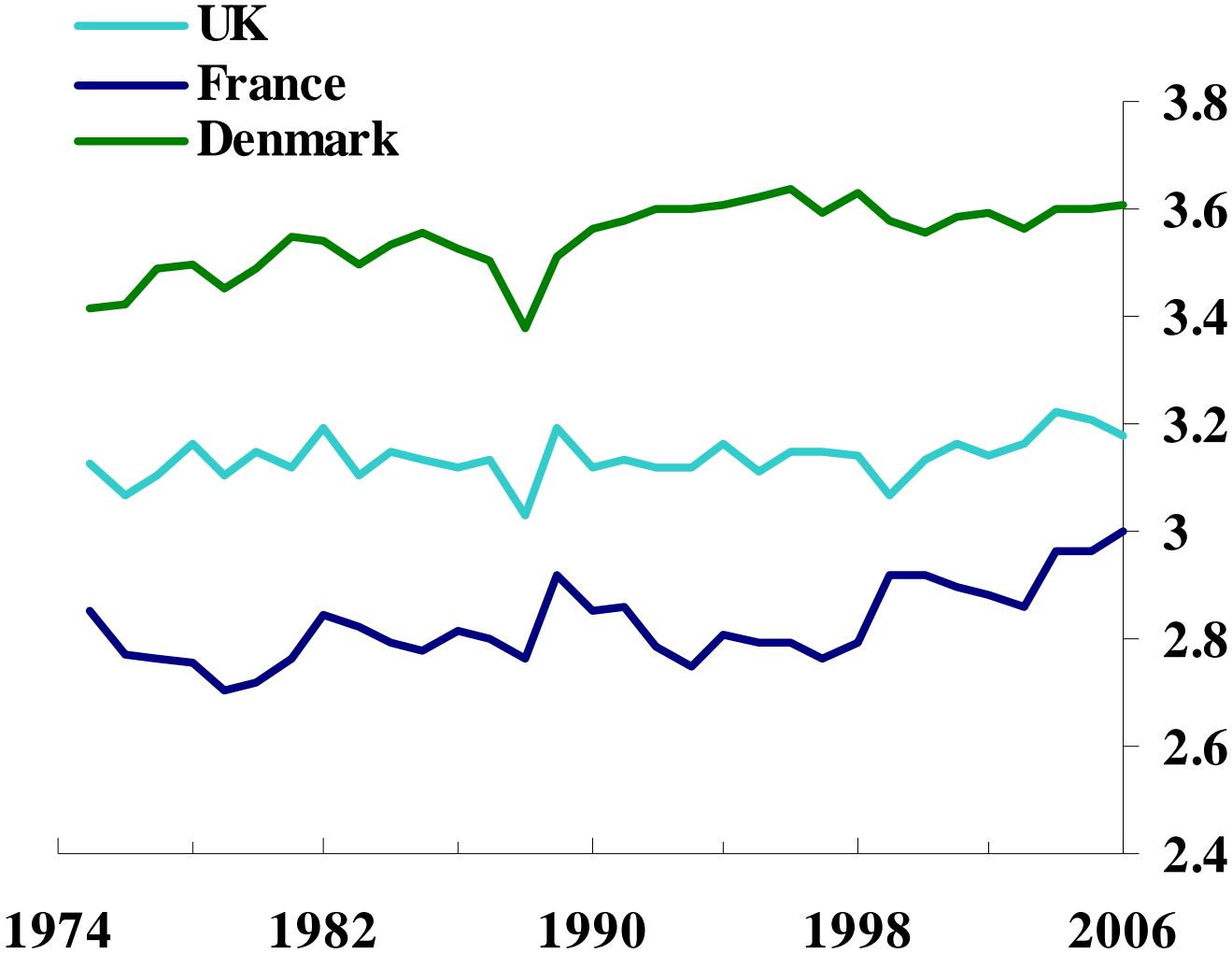
	Your life in general	Economic situation	Employment situation	<u>Annual pp changes in</u>		<u>Economic situation</u>	
				Unemployment	Inflation	GfK	MORI
1995	38	25	21	-1.0	0.6	-6.9	-17.5
1996	42	25	27	-0.5	-0.1	-3.6	-6.9
1997	39	29	33	-1.1	-0.7	8.3	7.3
1998	39	21	23	-0.9	-0.2	-6.9	-17.0
1999	36	25	31	-0.2	-0.3	-4.4	-5.3
2000	41	24	28	-0.5	-0.5	-10.8	-9.2
2001	46	21	23	-0.7	0.4	-14.8	-22.2
2002	46	16	19	0.3	0.1	-8.1	-22.8
2003	49	17	20	-0.2	0.1	-18.4	-28.3
2004	44	18	20	-0.2	-0.1	-12.9	-21.8
2005	44	18	20	-0.1	0.8	-11.8	-20.6
2006	43	21	21	0.7	0.2	-17.9	-28.3

Source: columns 1-3 as in Table 18. Columns 4 and 5 ONS. Columns 6 and 7, MORI General Economic Optimism Index ([www.IPSOS-MORI.com](http://www.IPSOS-MORI.com) – economic optimism over the next 12 months), GfK NOP Consumer Confidence Survey (Q4. How do you think the general economic situation in this country will develop over the next 12 months?)

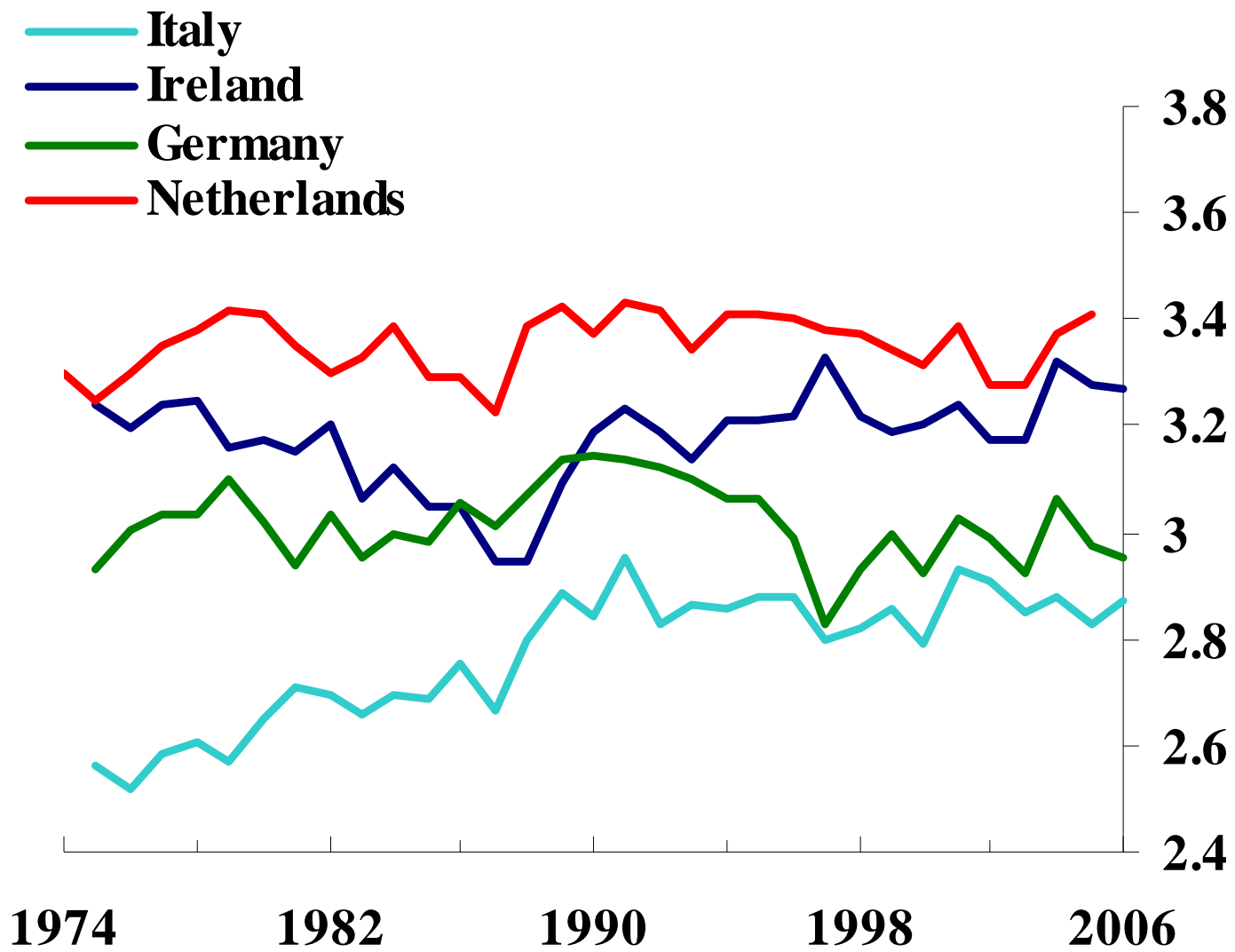
**Figure 1. Average Happiness and Real GDP per Capita for repeated cross-sections of Americans.**



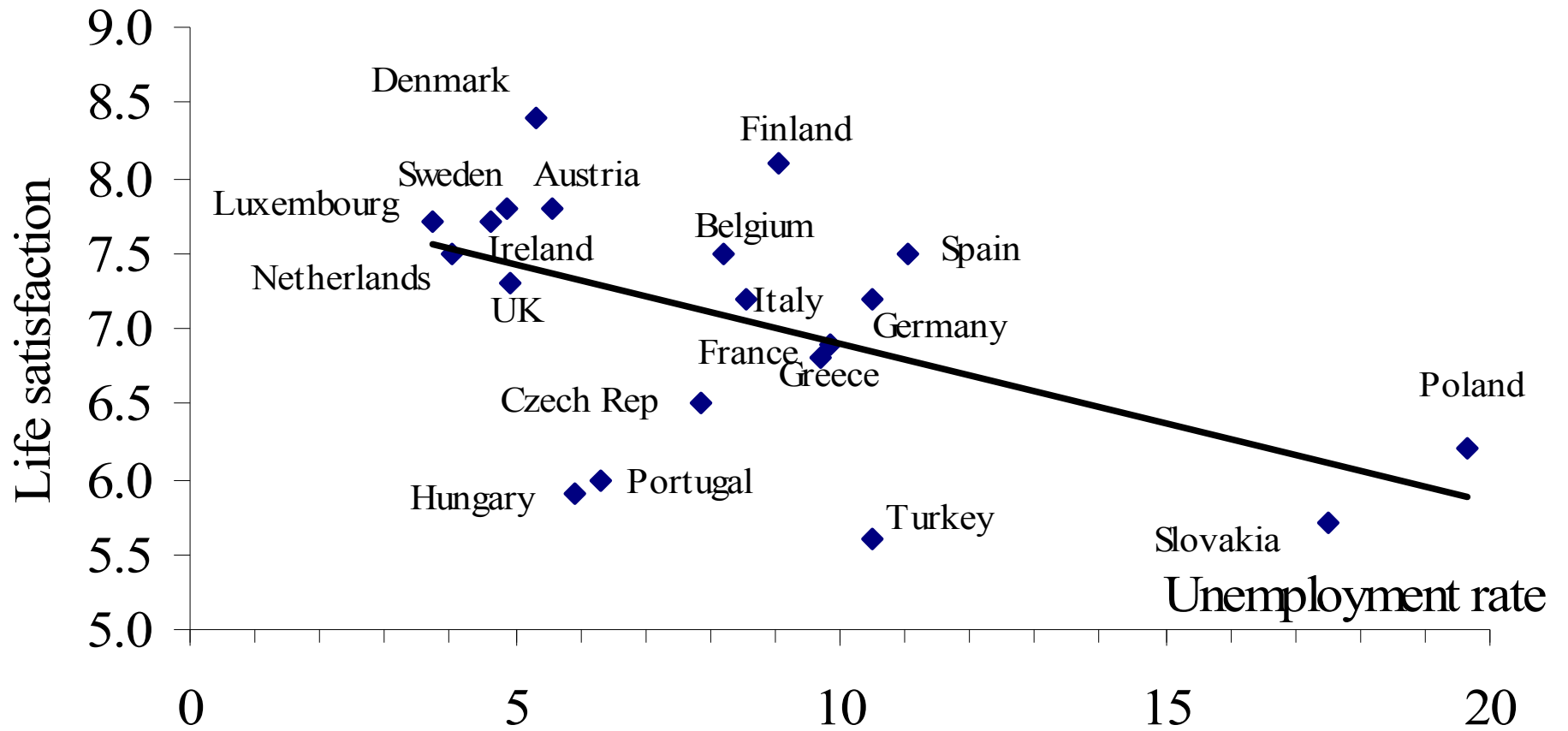
**Figure 2a. Mean Life Satisfaction scores, 1973-2006**



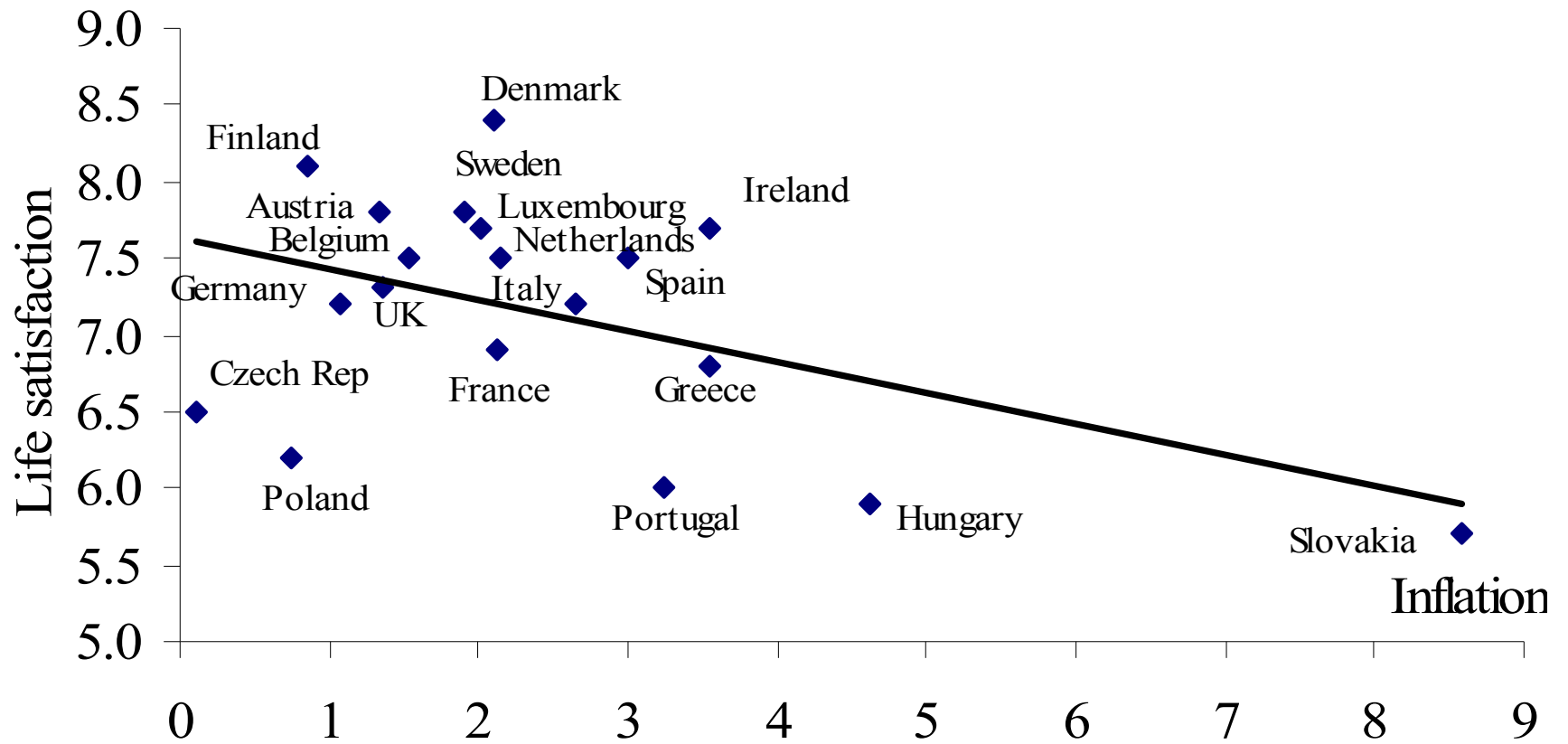
**Figure 2b. Mean Life Satisfaction scores, 1973-2006**



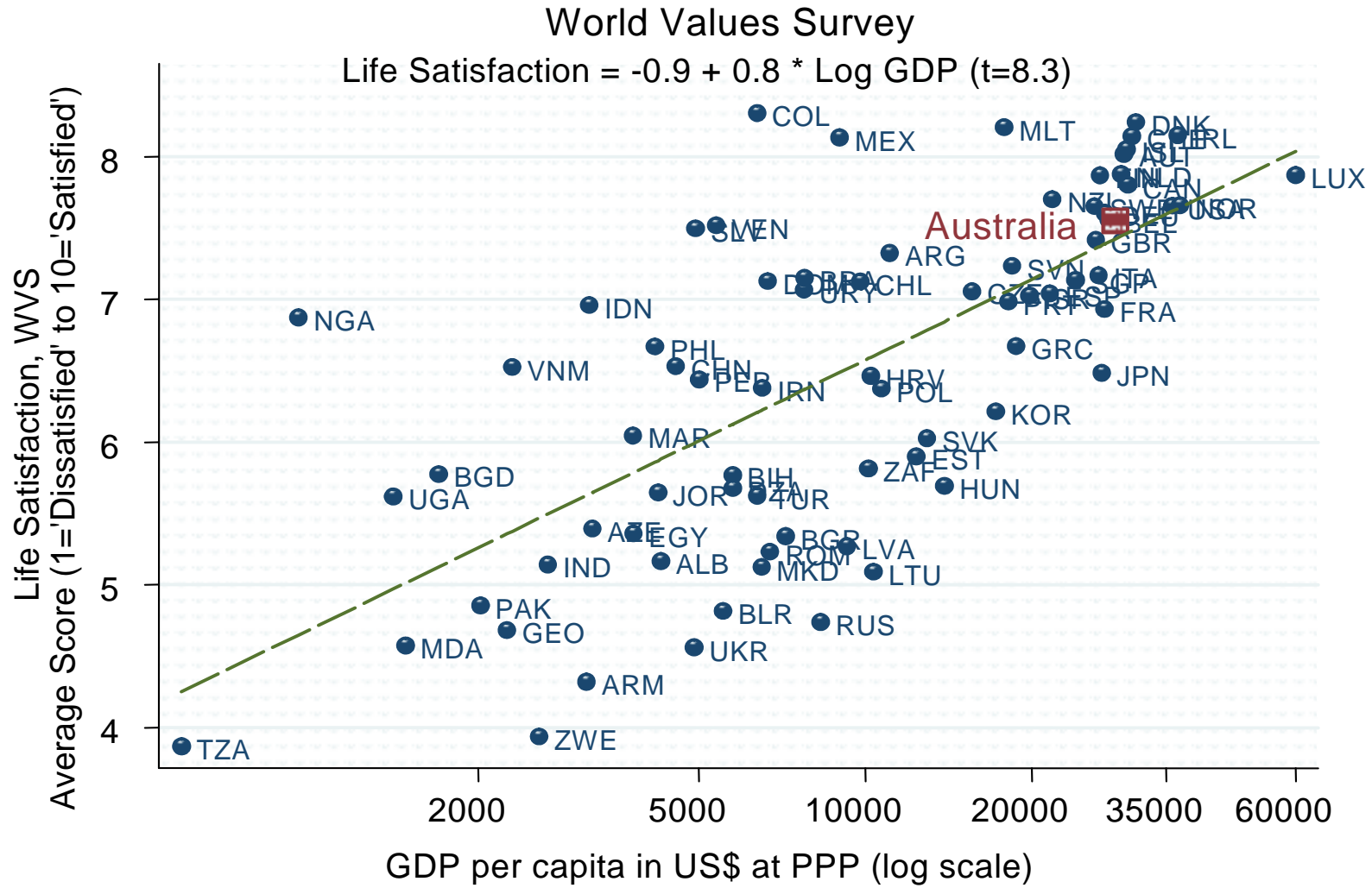
**Figure 3: Life satisfaction and the unemployment rate (2003)**



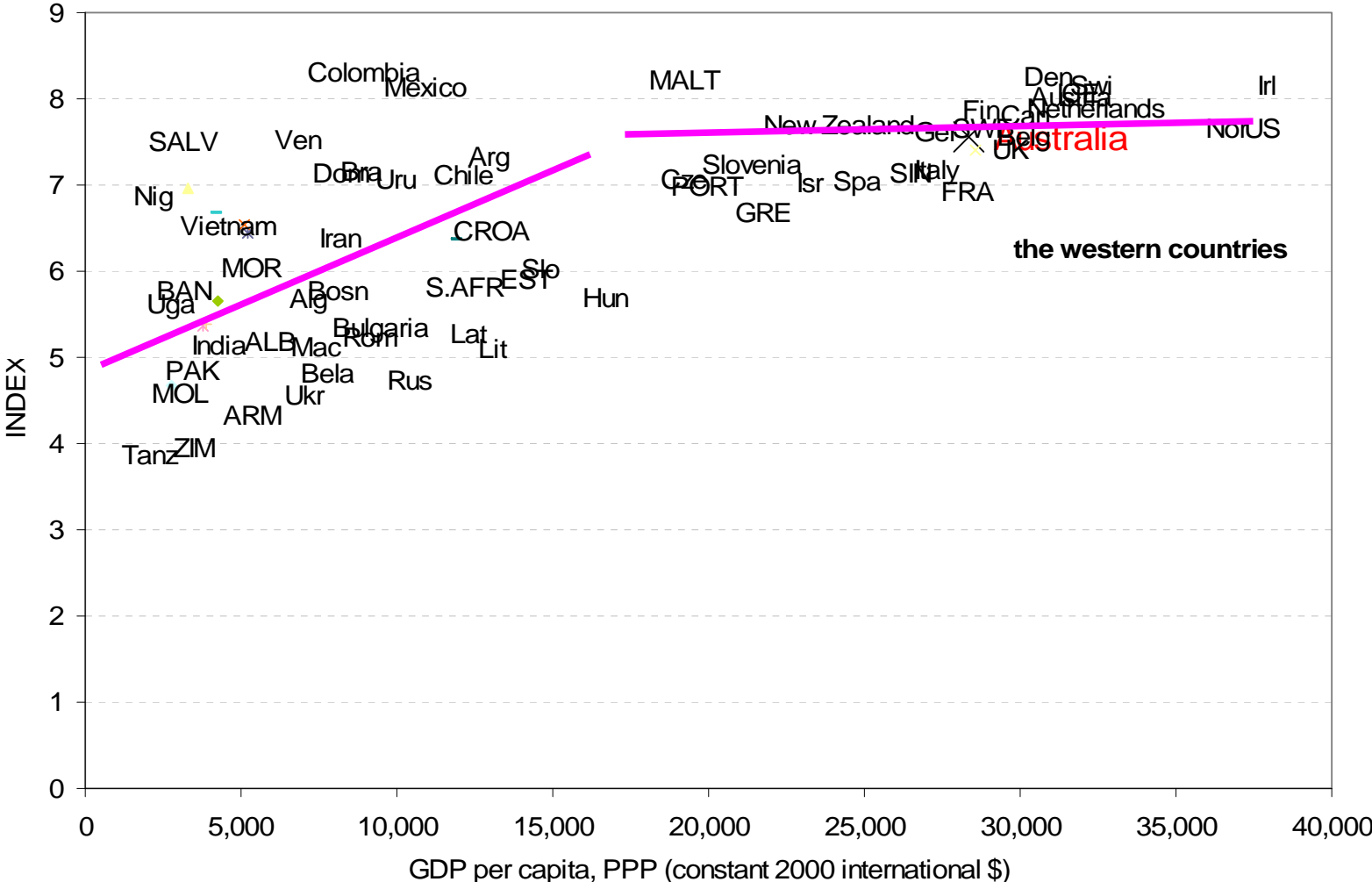
**Figure 4: Life satisfaction and inflation (HICP, 2003)**



**Figure 5: Life Satisfaction and GDP per capita**

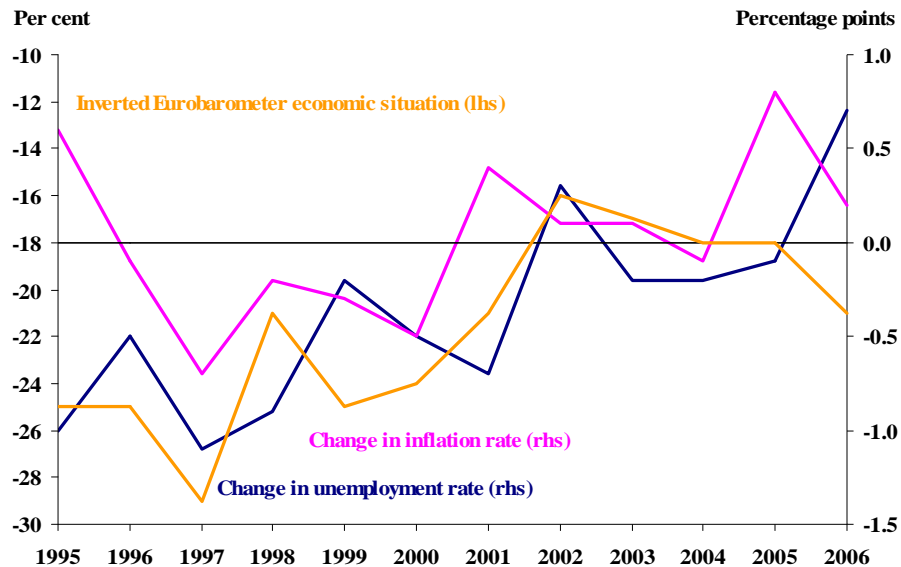


**Figure 6: 1995/2000 World Values Survey result**

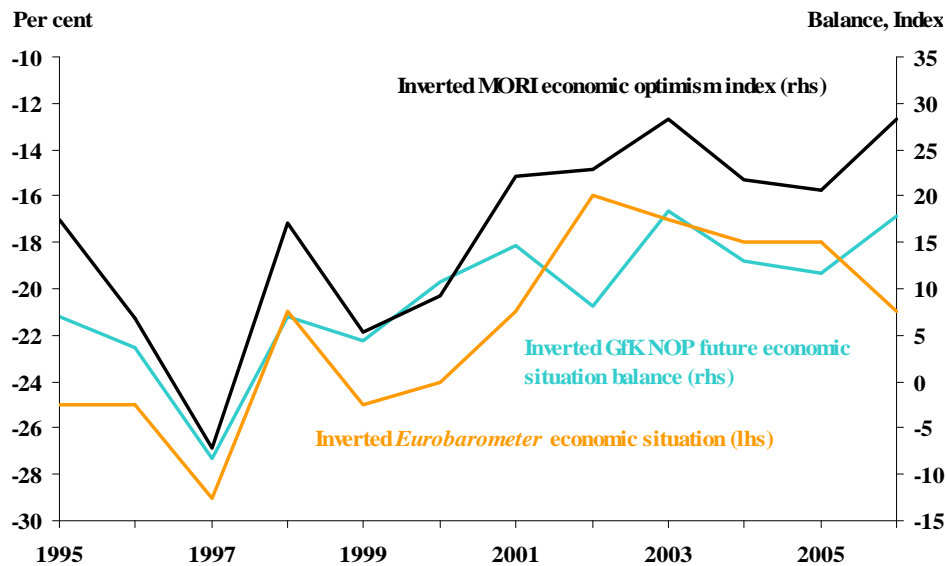




**Figure 7a: Proportion of UK Eurobarometer respondents saying the economic situation in 12 months will improve (inverted) and the change in unemployment and inflation rates.**



**Figure 7b: Proportion of UK Eurobarometer respondents saying the economic situation in 12 months will improve (inverted) compared with other measures of economic confidence**



Source: Eurobarometers 1995-2006, MORI General Economic Optimism Index ([www.IPSOS-MORI.com](http://www.IPSOS-MORI.com) – economic optimism over the next 12 months), GfK NOP Consumer Confidence Survey (Q4. How do you think the general economic situation in this country will develop over the next 12 months?)

Appendix Table A. OLS happiness equations from the EQLS 2003

	Life satisfaction	Happiness
Household income (euros)	.0001754 (11.72)	.0000915 (6.60)
Age	-.0475 (9.31)	-.0346 (7.33)
Age <sup>2</sup>	.0005 (11.50)	.0003 (8.08)
Male	-.1844 (6.41)	-.1525 (5.72)
16-19 yrs schooling	.1797 (4.61)	.1972 (5.46)
20+ years schooling	.2712 (6.21)	.2491 (6.15)
Still studying	.1016 (0.89)	.2236 (2.13)
No schooling	.2341 (1.31)	.0604 (0.36)
Self-employed	.2506 (1.98)	.0820 (0.70)
Manager	.4361 (3.55)	.2269 (2.00)
Other white collar	.2251 (1.86)	.0405 (0.36)
Manual	.1189 (1.01)	.0050 (0.05)
Home worker	.1785 (1.45)	.1114 (0.98)
Unemployed	-.6847 (5.49)	-.5874 (5.08)
Retired	.2864 (2.39)	.1786 (1.61)
Student	.5249 (3.33)	.2678 (1.84)
Very good health	-.3109 (6.05)	-.4164 (8.74)
Good health	-.7433 (14.94)	-.8651 (18.76)
Fair health	-1.3280 (24.70)	-1.5188 (30.50)
Poor health	-2.2910 (35.29)	-2.5683 (42.67)
Married/living together	.3389 (7.78)	.6240 (15.46)
Separated/Divorced	-.2355 (3.99)	-.2292 (4.19)
Widowed	-.1400 (2.27)	-.1989 (3.48)
Constant	8.0087 (41.49)	8.7142 (48.12)

Notes: equations also include 27 country dummies. T-statistics in parentheses

Appendix Table B. OLS coefficients by country from life satisfaction and happiness equations

	Male	Age min	ALS 16-19	ALS ≥20	Time	Married	Widowed	Self- employed	Student	Retired	Unempd	N
Belgium	-.03	48	.03	.12	-.004	.15	-.12	-.05	.14	-.05	-.31	57,637
Denmark	-.06	44	.03	.10	.003	.14	-.04	-.03	.05	-.13	-.27	56,882
France	-.02	46	.10	.24	.005	.12	-.08	*	.33	.13	-.24	58,335
Germany	*	42	.02	.10	-.004	.11	-.04	.05	.12	-.05	-.52	85,631
Greece	-.01	56	.16	.28	*	.12	-.12	*	.29	*	-.21	47,801
Ireland	-.09	37	.14	.27	*	.12	-.07	.04	.22	-.04	-.55	55,839
Italy	*	56	.09	.12	.011	.15	-.07	.03	.13	*	-.39	59,032
Luxembourg	-.04	41	.06	.11	.003	.15	-.08	*	.12	*	-.41	23,297
Netherlands	-.08	46	.07	.12	.001	.16	-.16	*	.10	-.04	-.37	56,710
Portugal	.04	62	.08	.15	-.003	.05	-.12	.08	.16	-.04	-.29	38,354
Spain	-.02	51	.04	.11	.006	.11	-.11	.03	.11	*	-.27	38,969
Sweden	-.02	49	.06	.08	.019	.17	*	.01	*	-.09	-.25	18,427
UK	-.06	38	.10	.19	.002	.14	-.08	*	.18	-.07	-.40	76,346
Europe	-.03	46	.08	.16	.001	.11	-.10	.01	.17	-.05	-.37	768,993
USA	-.04	41	.09	.19	*	.28	*	.05	.17	*	-.23	46,035

Source: Eurobarometers and GSS 2006. OLS, dependent variable is 4-step *life satisfaction* and 3 step *happiness* in the USA. Excluded categories single, ALS ≤15 years. Also includes dummies for home worker, divorced. \* means t-statistic<2

Data for the US are from 1972-2006 (excl. 1979, 1981, 1992, 1995, 1997, 1999, 2001, 2003 and 2005) and from the Eurobarometers from 1973-2006 (excl. 1974 and 1996). Data for Greece was 1981-2006; for Spain and Portugal was 1985-2006 and for Sweden and Finland, 1995-2006 (all excl. 1996). Age minimum calculated from the always highly significant, age and age squared coefficients. Europe also includes Austria (1995-2006), Czech Republic, Hungary, Poland, Slovakia, Slovenia, Bulgaria, Romania, Croatia, Turkey and Estonia (all 2004-2006) plus Norway (1990-1995) and includes country dummies for each.