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WERE COVID AND THE GREAT RECESSION WELL-BEING REDUCING?

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ABSTRACT

We show individuals' reports of subjective well being in Europe did decline in the Great Recession and during the Covid pandemic on most measures and on four bordering countries to Ukraine after the Russian invasion in 2022. However, the movements are not large and are not apparent everywhere. We also used data from the European Commission's Business and Consumer Surveys on people's expectations of life in general, their financial situation and the economic and employment situation in the country, all of which dropped markedly in the Great Recession and during Covid, but bounced back quickly, as did firms' expectations of the economy and the labor market. Neither the UN's Human Development Index (HDI) nor data used in the World Happiness Report from the Gallup World Poll shifted much in response to negative shocks. The HDI has been rising in the last decade or so reflecting overall improvements in economic and social wellbeing, captured in part by real earnings growth, although it fell slightly after 2020 as life expectancy dipped. This secular improvement is mirrored in life satisfaction which has been rising in the last decade. However, so too have negative affect in Europe and despair in the USA

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"There are serious problems in using well-being measures for tracking the performance of the economy over time. They cannot be expected to change much in response to even historically large changes in macroeconomic activity—the predicted (and actual) effects are just too small."
Angus Deaton (2011) 2011 Hicks Lecture

1. Introduction

Big economic shocks like the Great Recession of 2008 and giant health shocks like the COVID pandemic of 2020 – which was also an economic shock – are inevitably welfare-reducing. They are labelled negative shocks *because* they are meant to be welfare-reducing economically, financially, and for health and wellbeing reasons. That is not to say that they have no upside. Recessions can generate new growth through creative destruction (Legrand and Hagemann, 2017) and reduce mortality rates (Miller et al., 2009). Zombie firms die. Nevertheless, a useful property of a welfare metric is that it should move in response to shocks and move in the right direction – negatively in response to a negative shock, and vice versa. One would also expect such a metric to move more for those who are more adversely (positively) affected by the shock – not necessarily in a monotonic fashion but, still, in a way that can be picked up in the data.

In some instances, one might anticipate responses after a lag, depending on the transmission mechanisms at play. In other cases, we might anticipate short-lived effects, even if the shock is strong, as in the case of the impact of terrorist incidents on momentary wellbeing (Krueger, 2007; Bryson and MacKerron, 2018) or to disasters linked to natural hazards like Hurricane Katrina (Kimball et al., 2006). This does not mean to say that such events are not consequential in the long run. On the contrary, they often are, as indicated by the impact of school shootings. Rossin-Slater et al (2020) have shown that school shootings lead to drops in student enrollment, a decline in average test scores and an increase in student absenteeism and the likelihood of needing to repeat a grade.

Two questions arise: do we expect wellbeing metrics to respond to shocks and, if so, which ones and why? We hypothesize that subjective wellbeing (SWB) metrics capturing positive or negative affect in the short-run are likely to shift in response to a negative shock but only in the short-run. In contrast we argue that metrics requiring individuals to evaluate their lives, such as life satisfaction, and those that elicit their expectations of the future state of affairs in general – the economy, government or democracy, for example – are also liable to shift in response to the business cycle and do so quite markedly as people are asked to evaluate what will happen in the future.

Of course, there are well documented potential asymmetries in observed wellbeing in response to shocks. So the response of wellbeing to upticks and downturns may not mirror one another, and they may be of different orders of magnitude. De Neve et al. (2018) found that measures of subjective well-being are more than twice as sensitive to negative as compared to positive economic growth. Easterlin (2023) notes that there is an asymmetry in the psychological roots of income evaluations when income is rising versus falling, and this causes a corresponding asymmetry in the response of happiness to income change.

We show individuals' reports of subjective wellbeing (SWB), such as enjoyment, smiling, sadness, anger, worry and pain in the GWP, do not move as one might have expected in response to two recent major negative shocks, the Great Recession of 2008/9 and the Covid pandemic of 2020/21. Life satisfaction does shift downwards somewhat in response to shocks, but the effects are not large. However, in the case of satisfaction with the economy and democracy the effect of the negative shocks persisted for some time. This was especially apparent when we examine data from the Eurobarometer with multiple surveys each year, which picked up shorter-lived responses.

Using data on both consumers and industrial firms from the European Commission's Business and Consumer Surveys from 1985-2023 we do find evidence, though, that expectations in relation to the economy, democracy and the labor market moved down sharply in both the Great Recession and during the Covid lockdowns and were predictive of subsequent unemployment.

We show that the United Nations Human Development Index (HDI) capturing country-level economic and social development does not respond very much to the Great Recession of 2008/9 and the Covid pandemic of 2020/21. There is temporal movement in the index, but this tends to follow the pattern of a secular drift upwards. This is not particularly surprising since the sub-indices that go to make up such indices capture institutional features of countries such as their education and welfare systems that, by their nature, move – if at all – rather slowly. The secular rise in the HDI in the last decades reflects overall improvements in economic and social wellbeing.

This secular improvement in the HDI is also mirrored in secular improvements in life satisfaction. However, there have also been secular increases in negative affect in Europe and, in the United States, in despair as captured by the number of poor mental health days in the as captured in Behavioral Risk Factor Surveillance System (BRFSS).

The implication of our paper is that the HDI tracks secular change in underlying welfare over an extended period. Most SWB metrics do not shift in predictable ways in response to macro-shocks and, if they do, the shifts are usually only apparent in the short-term and are not large. In contrast, expectations data respond markedly to downturns but bounce back quite quickly. Secular change in wellbeing is also a feature of the data, but it appears contradictory, with rises in both life satisfaction and negative affect, and despair and bad mental health days in the United States.

2. Previous Literature

In this section we review the literature on temporal variance in subjective wellbeing and expectations since these are the focus of our empirical analysis. We take them in turn.

2.1: Subjective Wellbeing

The literature on temporal variance in wellbeing is long-standing. Much of the research on shocks relies on event studies tracking aspects of individuals' wellbeing before and after an event which is unambiguously positive or negative. Individuals experience substantial drops in their SWB having experienced divorce, bereavement, or disability. But, in many instances, the data indicate mean reversion, sometimes over relatively short periods of time, consistent with individuals reverting to 'set points' (Lucas, 2007). One explanation for these findings is that people respond to adversity and learn to adapt (Diener et al., 1999).

Diener et al. (2013) examined changes in life satisfaction scores over time in response to changes in marital status, assault, disability, unemployment, and childbirth. They reported that people tend to react as expected to these conditions with increases or decreases in their life satisfaction,

"*although they often slowly adapt back toward their former levels over time. For some conditions such as marriage adaptation was complete, whereas for other conditions such as unemployment and severe disability people did not fully adapt even after many years*" (2013: 505-506).

The literature on exposure to unfortunate events, such as terrorist incidents (Krueger, 2007; Bryson and MacKerron, 2018) or natural disasters (Kimball et al., 2006) is also characterized by mean reversion. Sports fans experience shifts in their short-term wellbeing when their team wins or loses, especially if the result is unexpected (Dolton and MacKerron, 2018).

A body of literature exists that tracks temporal change in wellbeing within and across days, weeks and months. There is a substantial amount of variance in SWB *within* day, as indicated by time-use studies using day reconstruction methods (Kahneman et al., 2004) and experience sampling methods which finds this variance is linked to the activities people are performing, where they are and who they are with. There is also variance in SWB across days of the week. This literature also identifies substantial variation in wellbeing across weeks and months (Bryson and MacKerron, 2017) and there is a lot of variation linked to seasonality (Blanchflower and Bryson, 2023c). All of this temporal variance would be missed in the absence of high-frequency data. However, negative affect, particularly depression, is less susceptible to temporal variance across days and weeks.

One concern that economists have expressed in the light of such findings – particularly the short-lived effects of negative shocks on SWB – is that SWB is unlikely to impact individuals' behavior. This concern is what lies behind the quote from Angus Deaton presented at the start of this article. And yet, we know that SWB and changes in SWB can impact individuals' behavior. Job dissatisfaction predicts quit rates (Freeman, 1980), for example, although job-related depression and job-related anxiety are not good predictors of quits (Green, 2010). Higher SWB is also causally linked to improved productivity at work (Oswald et al., 2015; Bellet et al., 2019). It is also consequential because it captures underlying wellbeing, as indicated by the body's ability to recover from injury and illness (Diener et al., 2017) and is correlated with biometric markers of wellbeing like pulse, heart rate and blood pressure (Blanchflower and Bryson, 2022f; Konow and Earley, 2008).[1]

In a similar vein Diener et al. (2013) note that life satisfaction scores correlate significantly with physiological variables that are thought to track positive moods. Life satisfaction judgments also converge with the number of good versus bad life events that people can recall in timed periods and with mood reports over 6 weeks. Seder and Oishi (2012) found that life satisfaction reported

[1] Konow and Earley (2008) identify a range of factors correlated with happiness levels which also include: 1. Objective characteristics such as unemployment. 2. The person's recall of positive versus negative life-events. 3. Assessments of the person's happiness by friends and family members. 4. Assessments of the person's happiness by his or her spouse. 5. Duration of authentic or so-called Duchenne smiles (a Duchenne smile occurs when both the zygomatic major and obicularus orus facial muscles fire, and human beings identify these as 'genuine' smiles). 6. Psychosomatic illnesses such as digestive disorders and headaches. 7. Skin-resistance measures of response to stress. 8. Electroencephelogram measures of prefrontal brain activity.

in the final year of college correlated significantly with genuine smiles shown on students' Facebook pages during their first year in college.

Temporal variance may even help explain the day-to-day variance in suicide attempts. Kim et al (2019) found that suicides in Korea peaked on Mondays. For the United States Beauchamp et al (2014) found that Sundays and Mondays were the most common for suicide attempts for adults, whereas it was Mondays and Tuesdays for those aged under-19 years. The Center for Disease Control (2017) found the highest number of suicides occurred on Mondays and Tuesdays and the lowest on Saturdays.[2] Helliwell and Wang (2014) found that there was no day-of week effect for life evaluations using the Cantril Ladder, but more happiness, enjoyment, and laughter, and significantly less anxiety, sadness, and anger on weekends (including public holidays) than on weekdays.

The focus in this paper is on temporal variance in SWB with the business cycle and shocks. Di Tella et al. (2001, 2003) and Bell et al. (2014) examined micro data from the Eurobarometer surveys and found that both the inflation and unemployment rates lowered life satisfaction across European countries. The extent of the loss in satisfaction was approximately five times higher from a one percentage point rise in the unemployment rate than it was for an equivalent rise in the inflation rate. The impact of the unemployment rate comes from the drop in wellbeing of the 1% who are unemployed and the impact of a rise in the unemployment rate on everyone else. Subsequently El-Jahel et al. (2022) examined the effect of the inflation and unemployment rates using the GWP and found that the unemployment rate had a six times higher impact than inflation on wellbeing measured with Cantril's Ladder-of-Life (Cantril, 1965). It was four times higher for smiling; five times higher for enjoyment, nine times for sadness and thirteen times for pain.

Using the General Social Survey for the United States O'Connor (2017) argues that the Great Recession of 2008/9 led to a sizeable reduction in life satisfaction, so that it hit a 40-year low. The drop is accounted for by income losses and unemployment. Writing at the time of the Great Recession Deaton (2008) shows how closely related life satisfaction is to GDP per capita and indeed argues that:

> *"reports of life satisfaction, at least on average, may provide a useful summary of the different components of peoples' capabilities. Some of the results in this paper support that position, more so than I had originally expected. In particular, the very strong global relationship between per capita GDP and life satisfaction suggests that on average people have a good idea of how income, or the lack of it, affects their lives",* (Deaton, 2008, p.69).

Boyce et al. (2018) used the British Household Panel in the UK to look at how life satisfaction of UK residents changed after the financial crisis. They found that on average the life satisfaction change across the sample was limited but that individuals experiencing unemployment, who lost income, and those who were sick or disabled, experienced the greatest well-being reductions.

[2] The band Boomtown Rats wrote a song entitled "I don't like Mondays" prompted by the research on variance in suicide rates across days of the week.

Others suggest that the Great Recession may have led to subtle but long-lasting effects on SWB. Zhang et al (2023) examined distress in the UK from 1991-2019 and noted that improvements in life expectancy stalled after the Great Recession. They found evidence that psychological distress, measured as the GHQ-12 score, worsened after 2015 as did Zhou and Khan (2023). In Scotland anti-depressant use rose between 2009-2015 (Cherie et al, 2021). Clark and Wenham (2022) found that 17% of English adults, or 7.3 million people) received antidepressants – medicines widely deployed against anxiety as well as depression – during 2017–18.

The COVID pandemic which began in early 2020 was both a massive health shock and an economic shock via its direct impact on workers' health and its effects both on consumer demand and the mobility of workers, consumers and producers. In the UK the UCL Covid Social Study, which ran from 2020-2022, found a big drop in life satisfaction in March 2020, which only slowly recovered (Fancourt et al., 2022).

Greyling and Rossouw (2022) investigated the impact on happiness of the unprovoked Russian invasion of Ukraine and Covid-19 and found significant decreases in happiness in both instances. They examined ten countries spanning the Northern and Southern hemispheres using a dataset derived from tweets extracted in real-time to capture underlying sentiment by applying Natural Language Processing (machine learning) methods. From these they constructed daily time-series data to measure happiness (Gross National Happiness (GNH)). They found that while the Covid shock and the invasion caused a decrease in GNH adaptation to previous happiness levels occurred within weeks in both cases.

Easterlin and O'Connor (2023) examined life satisfaction during COVID using Eurobarometer data for 25 countries.[3] They split the data into three waves.[4] Wave 1 occurred in March 2020-Summer 2020; Wave 2 in Summer 2020-Summer 2021; and Wave 3 in Summer 2021-Autumn 2022. They argued that *"in every one of the 25 Eurobarometer countries an upsurge in the pandemic has a negative association with life satisfaction in at least one and usually both of the second and third waves."* They were right.

The six sweeps of the Eurobarometer they examined were #92.3 (Nov-December 2019), #93.1 (July-August 2020), #94.3 (February-March 2021), #95.3 (June-July 2021), #96.3 (January-February 2022) and #97.5 (June-July 2022). So, #93.1 was in wave 1; #94.3 and #95.3 were in Wave 2 and #96.3 and #97.5 in Wave 3. The authors did not examine the micro data that we analyze below. Instead, they based their analysis on a series of survey reports from the EU Commission.[5] We come to the same conclusion using the micro-data.

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[3] Countries are Austria; Belgium; Bulgaria; Croatia; Czech; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Netherlands; Poland; Portugal; Romania; Slovakia; Slovenia; Spain; Sweden and UK.

[4] See also Sarracino, Greyling, O'Connor, , Peroni and Rossouw (2023).

[5] European Commission, Kantar, "Standard Eurobarometer 92 -Autumn 2019: Annex" (2019).
https://europa.eu/eurobarometer/surveys/detail/2255
European Commission, Kantar, "Standard Eurobarometer 93 -Summer 2020: Annex" (2020).
https://europa.eu/eurobarometer/surveys/detail/2262
European Commission, Kantar, "Standard Eurobarometer 94 -Winter 2020/2021: Annex" (2021).
https://europa.eu/eurobarometer/surveys/detail/2355
European Commission, Kantar, "Standard Eurobarometer 95 -Spring 2021: Annex" (2021).

In an earlier study for the United States using the monthly data from Household Pulse Surveys which started in April 2020 we found an increase in poor mental health, measured as anxiety, depression, and worry, which tracked the rise in Covid cases (Blanchflower and Bryson, 2022c). Poor mental health peaked before the spike in COVID cases at the start of 2022. This appears to be related to the fact that the death rate for Covid was declining with the availability of vaccines. In a follow-up (Blanchflower and Bryson, 2022b) with the same data series we examined the rise of long covid, which we estimated 14% of adults had experienced, including 6% who had it at the time of interview. Like Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) long COVID is often characterized by profound tiredness. However, long COVID goes away in some cases unlike ME/CFS (Dinos et al, 2009). Long COVID affected more females than males and peaks in middle-age.

Studies for the United States indicate that rising mental ill-health during COVID was a continuation of a longer trend. Building on earlier work in Blanchflower and Oswald (2019a) and Blanchflower and Feir (2022) using data from the BRFSS, Villas-Boas et al. (2023) analyzed data for 2011-2021 and found a rise in depression risk before and during the COVID-19 pandemic. They estimate a 3% increase in average depression risk in 2021.[6] Daly (2022) also documents a rise in psychological distress in the United States. Gagné, Schoon and Sacker (2021) note in a study that also used the BRFSS that mental distress doubled in men and women aged 18–34 between 1993 and 2019. Daly and Macchia (2022) examined GWP data in 113 countries and found that the prevalence of feelings of emotional distress increased from 25 to 31% between 2009 and 2021. Macchia (2022) found using the same data source that physical pain increased all around the world between 2009 and 2021. Lamba and Moffitt (2023) show the rise in pain in America occurred principally in the years 2007-2010, the time of the Great Recession.

Pain and suicide are on the rise in the United States especially for the less educated (Blanchflower and Bryson 2022e; Case and Deaton, 2022; Blanchflower and Oswald, 2019b). Na et al (2022) examined data from the National Epidemiologic Survey on Alcohol and Related Conditions, a nationally representative survey of the non-institutionalized civilian population of the US aged 18 years and older, conducted between April 2012 and June 2013. They estimate that 7.2 million adults had both a lifetime history of substance use disorder and a suicide attempt and 78.8 million had either. Nearly 500,000 people died from opioid overdoses in the US between 1999 and 2019, and in 2019, more people died from opioids than from motor vehicle accidents or breast cancer (Cutler and Glaser, 2021).

https://europa.eu/eurobarometer/surveys/detail/2532
European Commission, Kantar, "Standard Eurobarometer 96 -Winter 2021-2022: Annex" (2022).
https://europa.eu/eurobarometer/surveys/detail/2553
European Commission, Kantar, "Standard Eurobarometer 97 -Summer 2022: Annex" (2022).
https://europa.eu/eurobarometer/surveys/detail/2693

[6] In the former two papers 'distress' was measured as whether the respondent reported that all of the last thirty days were bad mental health days, whereas Villas-Boas et al used a 1,0 dummy on whether the respondent reported that the respondent was "*ever told you had a depressive disorder including depression, major depression, dysthymia, or minor depression*." The problem with this variable is it asks about depression at any point in the respondent' life. Pooling the 2020 (n=389,826) and 2021 (n=427,317) BRFSS data files, with a few observations in 2022 (n=23508) the mean of the distress variable is 6.3% versus 18.9% for depression.

2.2: Expectations

It has long been recognized that consumers and employers are able to assess the state of product and labor markets in such a way that those expectations are capable of predicting future economic trends. For a review of this literature and its implications for economic forecasting see Blanchflower and Bryson (2021). Kaiser and Oswald (2022) show that the a single feelings integer, such as my happiness is X out of 10, has more predictive power than a collection of socio-economic influences.

Blanchflower and Bryson (2022a) found consumer expectations indices from the Conference Board and University of Michigan predicted all six of the last six recessions called by the NBER Business Cycle Dating Committee 6-18 months before the date of the recession. In a similar vein Blanchflower and Bryson (2022b) showed that a 10-point shift in expectations compared to the previous 12 month low predicted the onset of the Great Recession in both the United States and Europe. Similarly, individuals' fears of national unemployment were good predictors of unemployment 12 months later in 29 European countries over the period 1985-2022 in the presence of country fixed effects and lagged unemployment (Blanchflower and Bryson, 2021). Industrial firms' expectations were similarly predictive.

The results are consistent with two, not necessarily mutually exclusive propositions. The first is that economic actors acquire knowledge about the state of the economy from their economic and social interactions with others, some of which experts do not possess. We call this '*the economics of walking about*'. The second is that these expectations inform the way these economic actors behave subsequently, such that macro-outcomes shift accordingly. The implication of the economics of walking about is that those expectations begin to shift when economic conditions begin to deteriorate since it is this change in underlying conditions that results in changing expectations.

It seems sensible, therefore, to establish the sensitivity of expectations to economic shocks, and compare this to that of wellbeing data. The literature suggests that expectations can affect wellbeing. For instance, expectations of a better future may make it easier to manage during difficult times. That said, the literature indicates that wellbeing and expectations are only moderately correlated (Pleeging et al., 2021).

3. Data and Estimation

We examine movements in wellbeing in European countries using micro-data on individuals. We also consider movements in the expectations of consumer and industrial firms regarding the economy, the labor market and financial conditions, as captured in the European Commission's data by month*year*country for the period 1985-2023. In addition, we consider movements in the United Nations Human Development Index (HDI).[7] We focus especially on movements in these wellbeing data during two recent major negative shocks, the Great Recession of 2008/9 and the Covid pandemic of 2020/21

We analyze eight sets of data including six micro-surveys at the level of the individual.

[7] https://hdr.undp.org/data-center/human-development-index#/indicies/HDI

1) The Gallup World Polls of 2005-2023 (GWP) where we examine Cantril's contemporaneous life satisfaction measure and the same measure five years ahead. Here sample sizes are 2.1 million across 167 countries. These data are used in the World Happiness Report, and we also make use of their data of chapter 2 from the 2023 World Happiness Report. We confine our attention to European countries. We present results for a global sample of countries and then later for a subset of European countries.

2) IPSOS Happiness Surveys 2018-2023 (IPSOS) on happiness across 35 countries with a sample size of just over 100,000 observations.

3) The US Behavioral Risk Factor Surveillance System (BRFSS), 1993-2022 on time series changes in negative affect. We examine respondent's reports on the number of bad mental health days in the last month. We also focus on changes in the proportion of those who say every day in the past month was a bad mental health day – which accounts for an average of one in twenty of the adult population.

4) The UK Covid Social Survey Panel, March 2020-April 2022 (CSS). A team at University College London conducted a daily panel survey in the UK regarding various aspects of Covid, including life satisfaction and depression (https://www.covidsocialstudy.org/). The main findings of the survey are summarized in a final report (Fancourt, Steptoe and Bradbury, 2022).

5) Sweeps 1-10 of the biannual European Social Survey from 2002-2020 (ESS). Sample sizes are approximately 450,000.

6) The Eurobarometer Survey series, 1991-2022 (EB). We examine a 4-step life satisfaction measure as well as personal and macroeconomic expectations and how they move over time and are predictive of macroeconomic changes. In total we have 1.8 million respondents.

Plus, the two further aggregate surveys.

7) The European Commission's monthly Business and Consumer Surveys for EU countries and candidate countries, from January 1985 to April 2023 (EC). We examine expectations a year ahead on employment, unemployment and the economic situation of the country from consumers and industrial firms. We also examine two backward looking measures. Sample sizes are approximately 10,700 month*year* country cells. This is an unbalanced panel. As countries join the EU, they join the survey sometimes a year or so before they actually accede to membership. In 2022 the UK left the survey due to Brexit.

8) Annual data from the Human Development Index for 1990-2021 (HDI) with a sample size of just over 5,500 country*year cells.

We track wellbeing and expectations movements in regression analyses where we condition on country and year fixed effects so as to identify within-country correlations between wellbeing/ expectations and these shocks, as well as examining trends in the longer run. We also condition on the age of respondents, and, in some models, we condition directly on country unemployment rates to net out the effects of the business cycle, thus allowing us to establish year-on-year change

having netted out labor market effects. With the CSS Panel we run OLS and panel estimates where the latter incorporates person fixed effects.

We start off looking at surveys of multiple countries and then to the United States and the UK and then finally to Europe. Evidence across all these surveys, as we will show, is broadly consistent.

4. Results

4.1: Human Development Index and the World Happiness Report

The HDI is a metric compiled by the United Nations Development Program and used to quantify a country's "*average achievement in three basic dimensions of human development: a long and healthy life, knowledge, and a decent standard of living*." First launched in 1990 it has been released annually ever since, with the exceptions of 2012 and 2020/21. For details see Conceição, Kovacevic and Mukhopadhyay (2021) and United Nations (2022).

The health dimension is assessed by life expectancy at birth, the education dimension is measured with two variables i) mean of years of schooling for adults aged 25 years and more and ii) expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing gross national income. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric means.

Chart 1 plots the HDI ranking for 2021 against the 2022 ranking from the World Happiness Report (WHR) for the 142 countries that are ranked in both. The two are highly correlated with an R squared of .69 between the two series. Of the top twenty ranked countries 16 are in both (Switzerland (1,4), Norway (2,8), Iceland (3,3), Denmark (6,2), Sweden (7,7) with HDI then WHD ranking in parentheses. Fifteen countries are common in the top twenty. Hong Kong is an outlier ranking 4th on HDI and 78th in WHR.

Table 1 shows the result of running regressions on HDI across 191 countries in total for which we have data. These are grouped for eight major regions. We report coefficients on year dummies from regressing the HDI measure on a set for country dummies and a full set of year dummies with 1990 excluded and set to zero.[8]

The HDI moves but slowly. There is no evidence of declines in the size of any of the year dummies in any of the eight regions between 2007 and 2008 or indeed 2009 as recession hit – at the end of 2007 in the US and around April 2008 in most other countries. This is despite the fact that the Great Recession was a major downturn and in many countries the unemployment rate jumped sharply. We know that unemployment hurts and lowers wellbeing (Bell et al., 2014).

If we turn to the COVID shock, more than 90% of the 191 countries analyzed for the 2021/22 HDI report suffered a small decline in the overall HDI in either 2020 or 2021. These declines were largely attributed to the COVID-19 pandemic and its lingering effects. Of note though is these

[8] There is some evidence that the HDI did drop during Covid-19 in some regions (such as in Latin America and the Caribbean) but not in others (such as in East Asia). It also declined quite a lot in some countries, such as those in Southern Africa and the rankings of some countries did change quite a bit.

declines had very little effect on country rankings. For example, for the period 2019-2021 in each year Switzerland, Norway and Iceland shared the top three spots. In each of the three years South Sudan was 191st, Chad was 190th and Niger was 189th.

Table 2 uses data downloaded from the World Happiness Report for all countries - not just Europe - for three measures of wellbeing – Cantril's ladder of life (Q1) a positive affect variable (Q2) variable and a negative affect variable (Q3) all obtained from the Gallup World Poll. The full questions are reproduced below (see Helliwell et al 2023 for details).

Q1. Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time? (WP16) - n=2,282,49

Q2. Positive affect is defined as the average of, previous day measures for laughter, enjoyment, and interest all of which are answered yes/not.

Q3. Negative affect is defined as the average of, previous day measures for worry, sadness, and anger all of which are answered yes/no. See chapter 2 World Happiness Report 2023.

Table 2 shows the year dummies from equations that also include 165 country fixed effects. This builds on a set of regressions reported in Helliwell et al (2023) but their analysis does not include country fixed effects or report year dummies. We see no evidence of any big change in Cantril, positive or negative affect in 2008, the reference year, which is the year the Great Recession hit. Instead, what is notable is the recent increase in wellbeing captured by Cantril since 2017, something that reversed during Covid. There has also been some growth in negative affect since around 2012 which increased further, albeit temporarily, in 2020 with the advent of Covid. Positive affect has been much flatter in the last two decades but surprisingly actually *rose* in 2020 compared to 2019.

Table 3 supplements the regression in Table 2 with the half dozen variables that Helliwell et al (2023) used as controls, together with a lagged dependent variable.[9] These additional variables perform as one might have expected. For example, increases in GDP per capita, freedom and social support are associated with increases in Cantril and positive affect and falling negative affect. Again, changes in these SWB measures around the time of the Great Recession are not statistically significant. The changes around the time of COVID are also small: there is a small decline in Cantril and a small increase in negative affect in 2020.

Diener and Tay (2015) examined data from the GWP 2005-2014 and ranked countries using a Social Wellbeing (SWB) metric that included the Cantril ladder variable plus enjoyment, anger sadness and stress. The rankings are presented in Appendix A along with rankings of other variables that also do not move much over time, including economic and material quality of life, physical health, a healthy environment, social quality of life and equality. The rankings by physical

[9] Easterlin and O'Connor (2022) using the European Values Surveys and argued that differences among countries in the overall change in happiness since the early 1980s have been due chiefly to the generosity of welfare state programs—increasing happiness going with increasing generosity and declining happiness with declining generosity.

health are especially weakly correlated to those with social wellbeing (r=.26). Denmark for example, ranks 1st on SWB and 47th on physical health. Singapore ranks top on physical health and 54th on SWB.

In terms of both the HDI and WHR, the Great Recession and the Covid epidemic along with associated lockdowns, based on these data, do not appear to have been wellbeing reducing.

4,2: IPSOS Happiness Surveys, 2018-2023

IPSOS have kindly granted us access to five of their recent individual level surveys on happiness for 2018-2021 and 2023.[10] There are thirty-five countries of which twelve are from Europe - Belgium, France, Germany, Hungary, Italy, Netherlands, Poland, Romania, Serbia, Spain, Sweden, Turkey, UK.[11] In each of the five surveys a happiness question was asked. There was no survey in 2022.

Q10. Taking all things together, would you say you are: Very happy (=4), rather happy (=3), not very Happy (=2), not happy at all (=1).

The mean of this variable dropped slightly in 2020 and especially so in the 22 non-European countries. It recovered in 2021.

	Europe	Non-Europe
2018	2.72	2.85
2019	2.76	2.79
2020	2.71	2.71
2021	2.78	2.80
2023	2.75	2.94
Total	2.75	2.82

In Table 4 we report the resulting year dummies from a 4-step happiness regression overall and separately for Europe and non-Europe. Controls also include age and its square and gender and country dummies. There is a notable drop in happiness in 2020 and especially so outside Europe. However, happiness recovers quickly such that, by 2023, it is substantially and significantly much more positive than it was in 2018.

We also ran a series of country level regressions with a set of year dummies with 2020 excluded. We tested whether the 2019 dummy was significantly higher than 2020 and found this to be the case in Australia, Canada, France, Germany, India, Mexico, South Africa, Spain, UK, USA, Chile and Peru.

[10] https://www.ipsos.com/sites/default/files/ct/news/documents/2019-08/Happiness-Study-report-August-2019.pdf https://www.ipsos.com/en-uk/ipsos-global-happiness-index-2023

[11] Sample sizes are Argentina=2,506; Australia=5,020; Belgium=3,003; Brazil=5,006; Canada=5,062; Chile=2,506; China=5,025; Colombia=1,504; France=5,006; Germany=5,034; Hungary=2,507; India=3,009; Indonesia=500; Israel=1,502; Italy=5,033; Japan=6,012; Malaysia=2,501; Mexico=3,002; Netherlands=1,502; Peru=2,502; Poland=2,511; Romania=500; Russia=2,007; Saudi Arabia=2,755; Serbia=1,050; Singapore=1,000; South Africa=2,510; South Korea=2,518; Spain=5,037; Sweden=2,506; Thailand=500; Turkey=2,504; UAE=501; UK=5,016 and USA=5,052.

4.3: Behavioral Risk Factor Surveillance System surveys, 1993-2022
Turning to the United States, the best micro-data on wellbeing over time is the bad mental health days in the past month contained in BRFSS. The question is as follows.

Q4. "*Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"*

The overall mean of this variable is 3.46: two-thirds (68%) of respondents say they suffer no bad mental health days, while a further 11.4% say they suffer between 1 and 3. Overall, 5.3% (n=492,620) say all thirty days were bad mental health days – what we term 'despair'. These variables were used previously in Blanchflower and Oswald (2019a) and Blanchflower and Feir (2022) on Native Americans. Table 5 presents within-state trends in bad mental health days relative to 2008 (column 1), the reference period, together with trends in despair (column 2). Neither metric moves very much during the Great Recession. However, both the number of bad mental health days and despair are rising from 2016, with bad mental health days becoming even more numerous with the Covid-19 outbreak. This is presented graphically in Chart 2.

4.4: Life satisfaction in the UK Covid Social Survey (CSS) Panel, March 2020-April 2022
From March 2020 a team at University College London conducted a daily panel survey in the UK regarding various aspects of Covid, including life satisfaction and depression (https://www.covidsocialstudy.org/). The main findings of the survey are summarized in a final report (Fancourt, Steptoe and Bradbury, 2022). It has the major benefit that it is a panel of individuals covering responses of around 70,000 individuals. This allows us to control for individual fixed effects. We have daily data that we translate into weeks – as successive seven-day time periods that sometimes overlap months.

One advantage of the survey is that it makes use of the same life satisfaction question used in the UK by the Office of National Statistics in its Annual Population Survey (APS) – a 10-step question.

Q11. Overall, how satisfied are you with your life nowadays?

This question has the benefit that it has been tracked in the APS over a relatively long time prior to the CSS starting, with both the APS and CSS tracking life satisfaction with the same question since March 2020. The APS life satisfaction data are published quarterly by ONS.[12] The series was started in 2011 and rose steadily from 7.35 in April-June 2011 and was 7.66 in January-March 2020. Chart 3a reports the change in life satisfaction since July-September 2019. It fell with the Covid outbreak to 7.31 in January-March 2021before rising to 7.49 at the end of 2022 seventeen life satisfaction points below its pre-pandemic peak.

The CSS started in the week of 21st-27th March 2020 and had a mean of 5.39, much lower than the estimate for the second quarter of the same year from the ONS. Chart 3b plots the time series by week. It peaked at 6.6 in September 2020 and then fell to a low of 5.7 at the start of 2021 before rising through to around 7 with another dip to 6.5 at the start of 2022.

[12]https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/datasets/quarterlypersonalwellbeingestimatesseasonallyadjusted

Given the differences in the sample means in the ONS and CSS surveys we reran the CSS estimates incorporating person fixed effects to establish changes in life satisfaction *within person* over time. We regressed the life satisfaction score on the week dummies with controls for age and its square and gender (n=1,196,311, Adjusted R2=.0419) and we extracted the week coefficients and plotted them in Chart 3c. We then repeated the exercise dropping the other control variables and including 71,571 people fixed effects (n=1,196,311, with an adjusted R^2 of .6920). We extracted those coefficients and plotted them in Chart 3c also. All three charts show a Covid drop in wellbeing and a subsequent pick-up. The results are roughly in line with the Eurobarometer time-series presented below in Section 4.7.

We now move on to examine four European data files.

4.5: Gallup World Poll data for Europe, 2005-2023

In Blanchflower and Bryson (2023b) we estimated US state and country rankings of negative and positive affect using the Gallup World Poll (GWP) and the US Daily Tracker for the period 2010 through 2017. There were no data available from the US Daily Tracker in other years, but the Gallup World Poll has data on several positive affect variables that we examined – Cantril's 11-step life satisfaction variable question Q1 above, plus three other binary variables – enjoyment, smiling and being well-rested plus four binary negative affect variables – worry, sadness, anger and pain. Smith and Wesselbaum (2023) also examined the Cantril ladder variable using the GWP data and found it changed little over time.

In the GWP there are additional data available that we did not examine on what the respondent thinks their life satisfaction is 'at this time' and 'will be in five years'. To be comparable to what has gone before we restrict our analysis to Europe. The mean of life in five years (6.8) is slightly higher than Cantril (6.3). This is not simply a sampling issue as this phenomenon is true also in most major advanced countries with the exception of Finland and Japan where they are the same.[13] The reason for this large difference remains unclear.

The overall weighted distributions are presented in the table below. In the case of Cantril's ladder, 48% scored 6 or less compared with 28% of the life in the future variable.

	Cantril	Life in 5
0	1.5	1.6
1	1.4	1.5
2	2.4	2.6
3	4.9	4.4
4	6.6	5.4
5	18.1	11.7
6	13.2	10.2

[13] The means are as follows - Cantril score first and life in five years second:- Australia=7.4, 7.7; Austria=7.3, 7.6; Belgium=7.0, 7.3; Canada=7.5, 8.0; Cyprus=6.2, 6.8; Denmark=7.7, 8.2; Finland=7.6, 7.6; France=6.7, 7.0; Germany=6.8, 7.0; Greece=5.6, 5.7; Iceland=7.5, 8.0; Ireland=7.1, 7.7; Israel=7.2, 7.8; Italy=6.4, 6.8; Japan=6.0, 6.0; Luxembourg=7.1, 7.3; Malta=6.4, 7.0; Netherlands=7.5, 7.7; New Zealand=7.4, 7.9; Norway=7.6, 7.9; Portugal=5.6, 6.1; Spain=6.6, 7.1; Sweden=7.4, 7.8; Switzerland =7.6, 7.8; United Kingdom =6.9, 7.5; United States =7.2, 7.8 and overall=6.9, 7.3.

7	20.1	15.5
8	20.4	23.0
9	6.8	13.7
10	4.6	10.4
Mean	6.3	6.8
N	590,832	551,655

The starting point for our analysis is the fact that the raw data for Europe on Cantril increased from 2007-2008 and from 2019-2020 as shown below.

2007	5.39
2008	5.41
2019	5.53
2020	5.64

Table 6 presents a selection of the year dummy coefficients and accompanying t-statistics for nine pooled country regressions for the period 2005-2023, where the reference year is 2008. The models control for country fixed effects, age, age squared and being female. It is striking that Cantril does not perform as one might have expected in response to the two shocks. It plummets between 2006 and 2007 – the years prior to the Great Recession – only to *rise* in 2008 before falling once again in 2009 and 2010. It rises again between 2019 and 2020 at the moment the Covid pandemic erupts, and is followed by an additional rise in 2021, only to fall back in 2022 close to its level in 2019. This is not what one might have expected from a SWB metric responding to two huge negative well-being shocks. [14]

Life in five drops markedly in 2009 and 2010 after the onset of the Great Recession but, as in the case of Cantril, it *rises* between 2019 and 2020 with the onset of Covid, remains high in 2021, only to drop back to its 2019 level in 2022. Again, this is not what one might have expected given the size and nature of the Covid shock.

Other SWB variables also move in a somewhat unexpected manner. Enjoyment falls in 2008 relative to 2006 and 2007, but it is higher on 2020-2022 relative to the last pre-Covid year. The smile coefficient rises in 2008 relative to 2006 and 2007 and moves very little between 2019 and 2021. Being 'well-rested' is largely unaffected by the Great Recession but rises with the onset of COVID. Sadness in fact falls in 2008 compared to the two years either side, although it does rise in 2020 relative to 2019 and is significantly higher than it was in 2008. Anger is largely unaffected by the Great Recession and diminishes a little with the onset of Covid, albeit at levels that are significantly lower than they were in 2008. Worry is lower in 2008 than it is in 2006, 2007, 2009 and 2010. It is particularly high in 2020 but returns to 2019 levels in 2021 and 2022. Finally, although pain rises in 2009 compared to 2008, it subsides again in 2010. It is considerably higher

[14] Graham and Pinto (2019) examined this variable and also found that Cantril entered significantly positively in a life in five variable and pain entered negatively that they called optimism using Gallup Healthways data for 2010-2015 for the US. Blacks, Hispanics and Asians were more optimistic than whites; the poor were more optimistic than rich households. See also Graham et al (2022) which also examines life in five optimism equations. O'Connor and Graham (2019) find optimistic people live longer.

in 2019 than it is during COVID. Taken together, the results in Table 5 are difficult to reconcile with the proposition that SWB metrics fall markedly – and perhaps remain low for a little while – after a major negative macro-shock.

Graham (2023) assumes that the Gallup life in five years variable tells us about *hope* and argues that it is associated with better future outcomes. However, this is an empirical matter. There are instances when hope was not well-founded. Icarus had high hopes he could fly to the sun. Instead, he plummeted to earth when his wings melted. The shareholders and bondholders in Silicon Valley Bank hoped the bank could survive having made bad economic decisions. But it was a bad idea to buy lots of long-dated Treasuries just as the Fed started raising rates and then to do nothing to sell them off hoping all would be well. Friday 10th March, when Silicon Valley Bank failed ended hope.[15] Prime Minister Truss hoped her mini budget would transform the British economy but it immediately crashed the markets as well as the UK pension industry within days and she was gone shortly thereafter.

4.6: European Social Surveys Sweeps 1-10, 2002-2020

We now move on to examining five wellbeing metrics from the biannual European Social Survey (ESS) sweeps 1-10. These surveys have recently been examined in Blanchflower and Bryson (2023) and Blanchflower et al. (2023). The first three relate to national and the last two to personal issues. The former ones fell more sharply in both 2008 and 2020 than di happiness or life satisfaction. The questions we use are defined as follows, with all variables scored 0-10.

Q5. How satisfied are you with the present state of the economy (economy)?
Q6. How satisfied are you with the national government (government)?
Q7. How satisfied are you with the way democracy works in the country (democracy)?
Q8. How satisfied are you with life as a whole (life satisfaction)?
Q9. How happy are you (happy)?

Table 7 reports the results from models that take the same form as the Gallup estimates: they are pooled regressions for 2002-2020, with 2008 as the reference year, and contain country fixed effects together with age, age squared and a female dummy variable. The first three columns present estimates for the three domain-specific satisfaction measures, namely satisfaction with the economy, government and democracy. They share two notable results. First, in each case, satisfaction plummets in 2008 relative to 2006 with the onset of the Great Recession and does not recover to its 2006 level until 2016. This seems to be a substantial and prolonged 'hit' from the Great Recession shock. Second, all three increased from 2014 and, in two cases (government and democracy) the coefficients are substantially bigger and more positive in 2020 after Covid than they were in 2018 before Covid. These results suggest domain specific satisfaction with society and economy in general was adversely impacted by the Great Recession, but not by Covid.

The last two columns are qualitatively different SWB measures in that they capture individuals' evaluations of their lives. Life satisfaction and, to a lesser extent, happiness, dipped temporarily in 2008 but both rose markedly subsequently including through Covid such that the coefficients

[15] Carol Graham has pointed out us that on average people with higher scores on the Cantril in 5 years using rare panel data in the Gallup surveys do better over time and so do more optimistic people in a life course sense (Graham and O'Connor, 2019).

for life satisfaction and happiness were significantly higher under COVID than they had been at any point in the preceding two decades.

4.7: Life satisfaction Eurobarometers, 1973-2023

We now turn to data on life satisfaction taken from the Eurobarometer (EB) survey series micro data files for 1973-2023.[16] We took 141 individual Eurobarometer files and merged them together and put the variables and coding in comparable form which is not a simple task given that coding varies considerably by survey, including country codes.[17] The main question we use for comparison purposes is a 4-step life satisfaction variable coded as follows to ensure a higher number implies having higher satisfaction.

Q12. On the whole, are you very satisfied (=4), fairly satisfied (=3), not very satisfied (=2) or not at all satisfied (=1) with the life you lead?

Table 8 provides the distribution by survey number and date. The entire time series is presented in Appendix B by year. Part A of Appendix C reports by country life satisfaction by the eight surveys from April-May 2007 to October-November 2009, covering the major drops in output observed in the Great recession (Blanchflower and Bryson, 2022b).[18] There is a small drop in life satisfaction across these eight surveys overall as shown below.

1) 2007 – 2.92
#67.2 - 2.93
#68.1 - 2.91
2) 2008 – 2.88
#69.2 – 2.89
#70.1 – 2.87
3) 2009 – 2.88
#71.1 - 2.85
#71.2 – 2.92
#71.3 - 2.87
#72.4 - 2.86

Although not inconsequential these changes are relatively small. Over the eight barometers listed above from 2007-2009 the series has a peak of 2.94 and a minimum of 2.85, a drop of .09 of a life satisfaction point.

[16] Kelsey O'Connor has pointed out to us that the EB sample initially excluded non-natives of all countries. It was then expanded to include nationals of other EU countries. Also, the more recent EB only covers the nationalities of EU member states – see O'Connor (2020), p. 261.

[17] Micro-data for the 239 EB surveys, half of which do not have either satisfaction or expectations data, are available here: https://www.gesis.org/en/eurobarometer-data-service/survey-series/standard-special-eb/study-overview.

[18] These Eurobarometer data on life satisfaction have been used in several of our earlier papers including Blanchflower (2021) and Blanchflower and Clark (2021) and Bell, Blanchflower, Montagnoli, and Moro, (2014).

On average the twenty surveys from 2019-2023 have a maximum of 3.07 and a minimum of 2.92 or 0.15 life satisfaction points.[19] To put this in context, as shown below the difference between the unemployed and middle management in these data is 0.52 and between the least educated and most educated, based on age left school, is 0.41 life satisfaction points.

Unemployed	2.65	≤14 years	2.76
Student	2.92	15 years	2.87
Homeworker	2.92	16 years	2.97
Retired	2.99	17 years	2.91
Skilled manual worker	2.91	18 years	2.87
Unskilled manual worker	2.82	19 years	2.96
Middle management	3.21	20 years	3.10
Professional, lawyer etc.	3.17	≥21 years	3.17

What we now do is different from Easterlin and O'Connor (2022) in that we look to see if life satisfaction in 2020 and 2021 is lower than it was *pre-pandemic*.

Table 9 reports the results overall and by region where we regress life satisfaction on a set of survey dummies and, in the 'all' regression reported in row 1, a full set of country dummies. We provide separate results for nine Western European countries that were included in the survey series at the outset. Column 2 restricts the sample to these nine. The third column is for ten Northern and Southern European countries; mostly from 1986, with a few recent years for Iceland, Norway and Switzerland. The final column is for twenty-one Ex-Soviet bloc countries from 2004. Moldova is only included in 2023.

We make September-October 1973 the excluded category in columns 1 and 2, which we use as the base case scenario, March-April 1981 in column 3 and Oct-November 2004 in the final column.

The table shows there is a small drop in life satisfaction in Western Europe with the onset of the Great Recession, and a much larger one in Southern and Northern Europe – recall that unemployment rates in Spain and Greece peaked at over 25% in this period. We also see substantial drops in satisfaction between December 2019 and February-March 2021, but life satisfaction recovers quickly in all cases.

In Table 10 we rerun the estimates in Table 9 having aggregated the data annually for all three regions and show it is much less clear that there are drops in 2007-2009, especially in Western Europe. There is a notable fall in 2020.

Table 11 restricts itself to the seven surveys from December 2019 (#92.4) through April-May 2021 by country. It is clear that there were major falls in satisfaction overall in these three surveys, October-November 2020 (#94.1), February to March 2021 (#94.3) and April-May 2021 (#95.2).

[19] #91.2 =3.04; #91.3 =3.05; #91.4 =3.06; #91.5 =2.98; #92.1=3.07; #92.2=3.06; #92.3=2.98; #92.4 (December 2019) =3.07; #93.1=2.99; #93.2=3.04; #94.1=2.95; #94.3 (Feb-Mar 2021) =2.92; #95.1 =2.96; #95.2 =3.01; #95.3 =3.02; #96.1 =3.10; #96.3 =2.98; #97.3 =3.05; #97.5 =2.99, #98.2=2.98. Part B of Appendix C reports life satisfaction by country.

Then life satisfaction rose in April-May 2020. A similar picture is found by country. The difficulty is that these short-lived changes may not be picked up in annual data.

Finally, at the end of the survey period covered by the Eurobarometers there is a third major event - the invasion of Ukraine by Russia, on Thursday, February 24, 2022.[20] This was examined, as we noted earlier, by Greyling and Rossouw (2022) who found the invasion lowered happiness. We have two surveys in our files for the subsequent period - #97.5 (June-July 2022) and #98.2 (Jan-Feb 2023). Overall, we saw no sign of a decline in life satisfaction in our sample, but we did observe declines in the four countries bordering Ukraine, likely most impacted by the war.

	Overall	Hungary	Poland	Romania	Slovakia
June-July 2022	2.99	2.94	3.09	2.70	2.92
January-Feb 2023	2.98	2.78	3.01	2.63	2.77

There are no obvious declines in other countries. Negative shocks hurt.

4.8: Backward looking data from the European Commission Surveys, 1985-2023

We now move on to another new data source from the European Commission, who also run the EB survey series, that has data available by country, year and month. We do not have the micro-data but have cell averages. There is data available from consumers on their own circumstances as well as the national economy, and both backward looking – what happened over the last twelve months – and forward looking – what is going to happen over the next year. The patterns are similar to those reported here using the EB. Expectations move around, and those relating to the broader economy - on the economic situation and national employment - moved more at the Great Recession and Covid than is the case for individual's own financial situation.

Not only do we have data available on expectations, but we also have backward-looking data relating to the prior twelve months on both financial situation and the general economic situation.[21]

Q13. How do you think the general economic situation in the country has changed over the past 12 months? It has ...
Got a lot better (PP)
Got a little better (P)
Stayed the same (E)
Got a little worse (M)
Got a lot worse (MM)

Q14.. How has the financial situation of your household changed over the last 12 months? It has
Got a lot better (PP)
Got a little better (P)
Stayed the same (E)
Got a little worse (M)
Got a lot worse (MM)

[20] We thank Kelsey O'Connor for suggesting we look at this,
[21] https://economy-finance.ec.europa.eu/system/files/2022-11/questionnaires_ie_cons_en.pdf

In Table 12 we regress these variables on year and country fixed effects and find that they both fall sharply in 2008 and remain low through 2012, with the declines in the general situation especially large. In terms of country effects, the lowest numbers for financial situation are found in Bulgaria, Greece and Hungary, with the highest in Denmark and Finland. In contrast in the second column relating to the general economic situation, Denmark and Serbia are highest and Greece lowest. They also fell sharply in 2020.

4.9: Expectations from European Commission Monthly Surveys, 1985-2023

Each month the European Commission runs a series of surveys across EU countries and candidate countries of firms and consumers.[22] Here we focus on surveys of consumers who report their views on the 'current situation' as well as for their expectations for the year ahead. We focus on three:

a) The financial situation over the next twelve months.
b) The general economic situation over the next twelve months.
c) Unemployment expectations over the next twelve months.

These variables are calculated from individual survey responses.

Q15. How do you expect the financial position of your household to change over the next 12 months? It will...
+ + get a lot better (PP)
+ get a little better (P)
= stay the same (E)
− get a little worse (M)
− − get a lot worse (MM)

Q16. How do you expect the general economic situation in this country to develop over the next 12 months? It will…
+ + get a lot better (PP)
+ get a little better (P)
= stay the same (E)
− get a little worse (M)
− − get a lot worse (MM)

Q17. How do you expect the number of people unemployed in this country to change over the next 12 months? The number will...
+ + increase sharply (PP)
+ increase slightly (P)
= remain the same (E)
− fall slightly (M)
− − fall sharply (MM)

[22] https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/business-and-consumer-surveys_en

Appendix D shows how these variables moved in 2008 along with the unemployment rate. Appendix E plots changes by country in the movements of the unemployment expectations variable by country.

Based on the distribution of responses to the question an aggregate balance based on the proportions giving different answers is calculated. Hence PP+P+E+M+MM+N=100. Balances are the difference between positive and negative responses, measured as percentage points of total answers. The score is calculated as B = (PP + 1⁄2P) − (1⁄2M + MM) which means the scores can vary between -100 and +100.[23]

Data are available separately for 33 countries as well as for the EU as a whole and the Eurozone. Chart 4 plots the three series from January 1985-through February 2023. The unemployment expectations variable is the mirror image of the other two series – as unemployment rises – and times worsen - this series rises. As the economy slows unemployment expectations rise and expectations of an individual's financial situation and the economy as a whole fall. It is apparent that financial situation expectations relating to the individual themselves, and comparable to the life in five years in the GWP is the least volatile of the three although it seems to track peaks and troughs. It is notable from below for the European Union as a whole that both the economic situation expectations and the unemployment expectations variables fell (rose) rapidly in 2007 and 2008 as the unemployment rate rose.

The unemployment rate started to rise in April 2008 and then rose by 0.2pp a month from September 2008. Both the general economic and unemployment expectations started to fall (rise) around the end of 2008, a year earlier.

Table 13 shows the year dummy coefficients and t-values when these three variables are regressed on year, month and country. 2008 is the reference year for the year coefficients. In column 4 we also add the overall consumer confidence variable the EU constructs as the sum of a) the financial situation over the last 12 months b) financial situation over the next twelve months c) major purchases over the next t12 months d) the economic situation over the next 12 months all summed and divided by four.

Of note is the much larger response around 2008 and 2020 for the two macro variables compared to the micro variable regarding the respondent's own financial situation plus the confidence aggregate. In the case of the general economic situation the coefficient for 2007 is +17 and is significantly higher than 2008, which is set to zero. Then 2009 has a coefficient of -0. Analogously the 2007 coefficient for unemployment is -17 versus +28 in 2009. Rises, for example. of unemployment expectations are notable in 2020 (+11) versus 2019 (-19).

In Table 14 we report various unemployment rate regressions, across year, month and country. Each includes a lagged dependent variable - the 12-month lag on the unemployment rate – which has a coefficient of around .8 in all specifications. In column 1 we first include the unemployment expectations term which is positive and significant. We then replace it in turn with the financial situation expectation term in column2 and the economic situation term – each has a significant and

[23] https://bpb-us-e1.wpmucdn.com/sites.dartmouth.edu/dist/5/2216/files/2023/01/dgb-Labour-Market-Expecations-and-Unemployment-in-Europe.pdf

negative coefficient – better times=lower unemployment. The highest r-squared is with the unemployment expectations variable. Column four includes all three variables and all are significant although the coefficients on the financial and economic situation decline in absolute size whereas the unemployment coefficient is essentially the same.

The final column includes a variable industry employment lagged a year that requires explanation. Each month the European Commission not only conducts consumer sentiment surveys but also conducts surveys amongst firms. Indeed, the Commission runs surveys across four sectors – industry; retail; services and construction.[24] Each respondent in these surveys is asked about employment in the future – with a small variation in the question as follows. Representatives of industrial firms report employment expectations 'for the months ahead'. In contrast services, retail and construction all ask for views on employment expectations 'over the next 3 months'. As can be seen from Chart 5 though they do move closely together and are the mirror image of consumers' \unemployment expectations – employment rising is equivalent to unemployment falling. The fact that the consumer variable moves on track with the business surveys is a helpful validation. We decided to include as a control the industry fear variable lagged 12 months. This is significantly negative in column 5. Of note is how little the other coefficients change, and all remain significant with high t-values. The unemployment expectations term, even with the industry term included, has a t-value of nearly thirty.

Table 15 repeats what was done in Table 14 but now includes the two backward looking variables which are always significantly negative. Their inclusion reduces the coefficients on the unemployment expectations variable as well as on the industry variable, but both remain highly statistically significant.

Expectations variables appear to be highly sensitive to economic shocks and appear to have predictive power. A number of other surveys contain expectations data, including several Eurobarometers that is the subject of ongoing research. These also appear to respond sharply both during, and before the Great Recession and during the Covid years of 2020 and 2021.[25]

5. Discussion and conclusions

In this paper we examined micro-data on Europe from six micro surveys – the Gallup World Poll 2005-2023, the US BRFSS, 1993-2022, Eurobarometer 1975-2022, the daily UCL Covid Social Survey of 2020-2022, the European Social Survey 2002-2020 and the IPSOS Happiness Surveys of 2018-2023. There was evidence from four of the five micro surveys (EB, ESS, CSS, IPSOS) that both life satisfaction and happiness fell, to some extent, with these negative shocks. There was also micro-evidence from the BRFSS for the United States that despair has risen over time and increased in both the Great Recession and during the COVID pandemic and subsequently.

[24] https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/business-and-consumer-surveys_en

[25] As an example, the Eurobarometer asks "*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 financial situation of your household?', c) 'The economic situation in (OUR COUNTRY)?', d). 'The employment situation in (OUR COUNTRY)?'*. The proportion answering 'worse', for example in relation to the employment situation in the respondent's country by survey sweeps were as follows: #68.1 Sep-Nov 2007=27%; #69.1 Mar-May 2008 =41%; #70.1 Oct-Nov 2008=56%; #71.1 Jan-Feb 2009=67%; #71.3 Jun-Jul 2009=49%; #88.3 Nov-Dec 2019=25%; #89.1 July-August 2020=47%; #90.3 Feb-March 2021=41%. This seems to be consistent with our findings above from the EC survey.

However, other SWB metrics captured in the GWP for Europe showed little if any evidence of a a change in wellbeing with the advent of economic shocks. Wellbeing metrics such as enjoyment, smiling, sadness, anger, worry and pain, did not move as one might have expected in response to two recent major negative shocks, the Great Recession of 2008/9 and the Covid pandemic of 2020/21. For example, the probability of a respondent reporting zero on the Cantril life satisfaction scale, from 0-10, fell from 2008-2009 for Europe from 2007-2008 but rose very slightly from 2019-2020.[26]

In part this may be because the GWP survey is collected at various points throughout the year which vary by country which means any short run, seasonal changes may be missed. For example, in 2020 it was collected in six separate months among the European sample, mostly in September, October and November.[27] In 2019 the data were collected in eight quite different months.[28] In 2019 Germany was sampled in June and in 2020 in September. Spain was sampled in May 2019 and September 2020.

Care has to also be taken as countries are not always present in the surveys every year, so it is an unbalanced panel. Appendix F shows Cantril regression equations for the twelve European countries that have data available for all six years that we pooled - 2007, 2008, 2019-2021. These are Belgium, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Netherlands, Spain, Sweden, Turkey, UK. The sample is restricted to these years and there is little evidence of down movements in life satisfaction in either 2008 or 2020.

People's expectations of life in general, their financial situation and the economic and especially the employment situation in the country, all dropped markedly in the Great Recession and during Covid, but bounced back quickly, as did firms' expectations of the economy and the labor market. The United Nations Human Development Index (HDI) did not shift much in response to negative shocks. Instead, the HDI – like life satisfaction and individuals' expectations for themselves and their country - has been rising in the last decade reflecting overall improvements in economic and social wellbeing.

One potential reason for this improvement in SWB is the growth in real earnings, apparent in many European countries, and in the OECD more generally, which dates back to around 2014. This is depicted across OECD countries in Table 16. Chart 6 for the UK shows the initial rise in the unemployment rate which then turned downwards, followed by a steady rise in the real wage which

[26] The weighted means were as follows for Europe - 2005=.013; 2006=.011; 2007=.013; 2008=.008; 2009=.011; 2010=.014; 2011=.012; 2012=.013; 2013=.016; 2014=.015; 2015=.016; 2016=.014; 2017=.012; 2018=.011; 2019=.014; 2020=.015; 2021=.012; 2022=.011.

[27] In 2020 for example for Europe the sample of 32,052 was split across 6 months – April n=4,004 (Sweden, Malta, Portugal, Slovenia); May n=2,006 (Netherlands, Finland); September n=8,010 (UK, Germany, Belgium, Spain, Italy, Austria, Cyprus, Ireland); October n=10,016 (Turkey, France, Poland, Greece, Denmark, Albania, Latvia, Serbia, Slovakia); November n=6,009 (Hungary, Czechia, Bulgaria, Croatia, Estonia, Lithuania) and December n=2,007 (North Macedonia and Montenegro).

[28] For 2019 sample size for Europe was 35,654, May – 2,050 (Spain and Italy); June n= 9,225 (UK, France, Germany, Sweden, Austria, Finland, Ireland, Luxembourg, Switzerland); July n=5,132 (Netherlands, Denmark, Malta, Portugal, Slovenia); August n=5,345 (Belgium, Albania, Estonia, North Macedonia Montenegro); September- 1080 (Hungary); October n=1,043 (Cyprus); November n=6,379 (Turkey, Romania, Croatia, Serbia, Slovakia); December n=5,040 (Poland, Greece, Bulgaria, Latvia, Lithuania).

matched the rise in wellbeing.[29] However, this is unlikely to explain the secular rise in the HDI. Furthermore, we show secular trends in negative affect in Europe and despair in the United States, both of which have trended up in the last decade, suggesting that there is no simple secular rise in citizens' wellbeing. In the UK there is evidence that alongside a rise in life satisfaction there has also been a rise in negative affect. Chart 7 plots anxiety using quarterly data from the APS survey conducted by the ONS. The series falls from 2011 to 2018 as life satisfaction rose but then started rising from 2018Q2 through 2020Q4 before falling and then rising again, from 2021Q2.[30]

What are the implications of these analyses for the value of various SWB and expectations metrics? It seems that, with the exception of life satisfaction and domain-specific satisfaction (such as satisfaction with government and the economy in general), positive and negative affect measures do not respond as one might have anticipated to external negative shocks. The satisfaction variables are useful in this regard but, even here, movements can vary across surveys and there is substantial temporal variance which appears to be 'noise', suggesting one should consider the data aggregated to the year-level, comparing annual movements within countries over time to distinguish between cyclical and secular patterns.

The expectations data are somewhat different in that they move sharply in response to negative shocks but revert to previous values after relatively short periods. In this sense they are good at picking up responses to changes in economic conditions. But they have also trended upwards over time, confirming the sense that, notwithstanding concerns about the global economy after the Great Recession and Covid, there is robust evidence of secular improvement in people's lives as indicated by their satisfaction with life, the economy, government and their expectations of the future.

We did find evidence, though, that a variety of expectations variables did move more sharply downwards in both the Great Recession and during the Covid lockdowns and were predictive. These included variables relating to the individual in both the ESS and the EB, but especially in data about the economy, in terms of the general economic situation, democracy as well as employment and unemployment. We showed that the rise in these expectations, using data on both consumers and firms from the European Commission's Surveys of Business and Consumer Surveys from 1985-2023 was predictive of changes in the unemployment rate.

Of course, the Covid shock was different to a 'normal' economic shock. In "normal recessions" there is some endogeneity between economic outcomes and people's beliefs, because through the economics of walking about, animal spirits can amplify the downturn, with a self-reinforcing loop between the deterioration of economic outcomes and wellbeing. But Covid-19 was a different

[29] Life satisfaction for the UK from the APS conducted by the ONS shows a steady rise in the 10-step life satisfaction score over the years 2011-2019. The estimates by year averaged across the four quarters are 2011=7.40; 2012=7.44; 2013=7.48; 2014=7.58; 2015=7.65; 2016=7.66; 2017=7.68; 2018=7.70; 2019=7.68; 2020=7.50; 2021=7.50; 2022==7.51. To derive estimates of life satisfaction, respondents were asked "Overall, how satisfied are you with your life nowadays? Where 0 is 'not at all satisfied' and 10 is 'completely satisfied'".
https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/datasets/quarterlypersonalwellbeingestimatesnonseasonallyadjusted

[30] To derive estimates of anxiety, respondents were asked "Overall, how anxious did you feel *yesterday*? Where 0 is 'not at all anxious' and 10 is 'completely anxious'".

kind of recession. The economy was put on halt by fiat. Expectations, confidence, animal spirits, had nothing to do with the economic downturn.[31] Wars may be different.

The evidence as to whether the Great Recession and the COVID pandemic were happiness reducing is mixed, depending on the metrics and the study used. The weakest evidence comes from the GWP where a range of positive and negative affect metrics moved very little around the Great Recession and COVID. Life satisfaction data dips somewhat in most surveys, but the movements are small. What really moves – and moves a lot – are individuals' expectations regarding the economy and government, as well as their satisfaction with those aspects of their lives. Why should this be? We think that what marks these expectations and domain satisfaction items out is that they are strongly evaluative, in the sense that individuals are required to reflect on macro issues – not simply their own lives – and provide an assessment.

The wellbeing metrics that underpin the UN's Human Development Index and those contained in the Gallup World Poll data used in the World Happiness Report are crucial for mapping wellbeing and welfare within and across countries, but they are not ideal in identifying the impact of large negative shocks on welfare. For this, one needs other metrics, notably expectations data and domain specific evaluations of macro issues. This is perhaps no surprise. As Diener et al. (1999: p. 277) noted some time ago: "*subjective well-being is a broad category of phenomena that includes people's emotional responses, domain satisfactions, and global judgments of life satisfaction. Each of the specific constructs need to be understood in their own right*".

[31] We are grateful to Pedro Conceição for pointing this out to us.

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Table 1. HDI regressions, 1990-2021

	Western Europe	Eastern Europe	Other Western	Latin America	Arab States	East Asia	Sub-Saharan Africa	South Asia
1991	.0026 (0.72)	-.0066 (0.88)	.0041 (0.68**)**	.0045 (1.12)	-.0002 (0.03)	.0063 (0.78)	.0019 (0.34)	.0061 (0.80)
1992	.0054 (1.48)	-.0220 (2.93)	.0072 (1.20**)**	.0096 (2.40)	.0052 (0.58)	.0123 (1.51)	.0019 (0.35)	.0148 (1.92)
1993	.0114 (3.11)	-.0278 (3.72)	.0111 (1.85)	.0139 (3.48)	.0132 (1.49)	.0188 (2.31)	.0027 (0.48)	.0208 (2.70)
1994	.0190 (5.19)	-.0330 (4.40)	.0161 (2.70)	.0183 (4.57)	.0222 (2.50)	.0265 (3.26)	.0049 (0.88)	.0251 (3.26)
1995	.0227 (6.28)	-.0304 (4.43)	.0200 (3.34)	.0247 (6.22)	.0261 (2.99)	.0347 (4.34)	.0057 (1.03)	.0316 (4.23)
1996	.0305 (8.43)	-.0272 (3.96)	.0256 (4.27)	.0307 (7.74)	.0346 (3.95)	.0415 (5.19)	.0077 (1.40)	.0394 (5.26)
1997	.0379 (10.50)	-.0213 (3.11)	.0313 (5.23)	.0364 (9.18)	.0405 (4.63)	.0476 (5.94)	.0092 (1.67)	.0456 (6.10)
1998	.0468 (12.95)	-.0141 (2.06)	.0350 (5.85)	.0408 (10.28)	.0454 (5.19)	.0528 (6.60)	.0126 (2.28)	.0520 (6.95)
1999	.0528 (14.62)	-.0096 (1.40)	.0390 (6.52)	.0461 (11.60)	.0526 (6.02)	.0610 (7.72)	.0136 (2.51)	.0607 (8.12)
2000	.0606 (16.89)	.0004 (0.08)	.0458 (7.94)	.0520 (13.30)	.0567 (6.57)	.0688 (9.00)	.0181 (3.46)	.0655 (8.75)
2001	.0682 (19.03)	.0083 (1.27)	.0508 (8.80)	.0564 (14.42)	.0629 (7.29)	.0775 (10.13)	.0231 (4.41)	.0702 (9.39)
2002	.0742 (20.69)	.0152 (2.32)	.0541 (9.38**)**	.0614 (15.83)	.0681 (7.89)	.0824 (10.87)	.0290 (5.56)	.0786 (10.50)
2003	.0800 (22.31)	.0247 (3.78)	.0587 (10.18**)**	.0646 (16.64)	.0738 (8.56)	.0890 (11.74)	.0345 (6.64)	.0872 (11.66)
2004	.0855 (23.85)	.0327 (5.01)	.0633 10.98**)**	.0699 (18.14)	.0807 (9.47)	.0952 (12.56)	.0420 (8.08)	.0926 (12.37)
2005	.0911 (25.40)	.0391 (6.05)	.0665 (11.54)	.0765 (19.98)	.0879 (10.43)	.1033 (13.74)	.0492 (9.51)	.1014 (13.54)
2006	.0966 (26.94)	.0488 (7.55)	.0729 (12.63)	.0827 (21.61)	.0926 (10.99)	.1090 (14.50)	.0573 (11.06)	.1104 (14.74)
2007	**.1012 (28.19)**	**.0581 (8.97)**	**.0769 (13.32)**	**.0898 (23.61)**	**.0995 (11.81)**	**.1158 (15.41)**	**.0649 (12.53)**	**.1166 (15.58)**
2008	**.1053 (29.36)**	**.0657 (10.14)**	**.0799 (13.86)**	**.0955 (25.11)**	**.1052 (12.48)**	**.1206 (16.05)**	**.0719 (13.89)**	**.1216 (16.25)**
2009	**.1061 (29.58)**	**.0681 (10.52)**	**.0808 (14.00)**	**.0977 (25.68)**	**.1096 (13.01)**	**.1246 (16.57)**	**.0795 (15.35)**	**.1266 (16.91)**
2010	.1101 (30.70)	.0748 (11.56)	.0852 (14.76)	.0988 (25.99)	.1135 (13.46)	.1312 (17.46)	.0880 (17.06)	.1357 (18.58)
2011	.1137 (31.69)	.0809 (12.49)	.0889 (15.40)	.1053 (27.67)	.1172 (13.90)	.1375 (18.43)	.0953 (18.47)	.1446 (19.79)
2012	.1161 (32.36)	.0876 (13.52)	.0934 (16.19)	.1091 (28.69)	.1207 (14.32)	.1415 (18.97)	.1023 (19.83)	.1536 (21.02)
2013	.1219 (33.98)	.0947 (14.62)	.0960 (16.64)	.1134 (29.82)	.1194 (14.16)	.1458 (19.55)	.1086 (21.05)	.1598 (21.88)
2014	.1254 (34.95)	.0992 (15.32)	.0990 (17.16)	.1168 (30.71)	.1200 (14.23)	.1505 (20.18)	.1151 (22.31)	.1676 (22.94)
2015	.1275 (35.53)	.1028 (15.87)	.1011 (17.52)	.1199 (31.52)	.1244 (14.76)	.1546 (20.73)	.1198 (23.23)	.1746 (23.90)
2016	.1312 (36.56)	.1066 (16.46)	.1036 (17.96)	.1235 (32.46)	.1275 (15.12)	.1568 (21.02)	.1247 (24.17)	.1819 (24.90)
2017	.1344 (37.46)	.1111 (17.16)	.1067 (18.49)	.1253 (32.95)	.1323 (15.70)	.1596 (21.40)	.1285 (24.91)	.1872 (25.62)
2018	.1373 (38.27)	.1151 (17.77)	.1096 (19.23)	.1285 (33.78)	.1372 (16.27)	.1632 (21.88)	.1326 (25.71)	.1918 (26.25)
2019	**.1413 (39.39)**	**.1187 (18.33)**	**.1124 (19.72)**	**.1303 (34.25)**	**.1410 (16.72)**	**.1669 (22.38)**	**.1370 (26.55)**	**.1964 (26.88)**
2020	**.1358 (37.86)**	**.1084 (16.73)**	**.1058 (18.57)**	**.1206 (31.70)**	**.1326 (15.74)**	**.1650 (22.12)**	**.1332 (25.82)**	**.1925 (26.34)**
2021	**.1373 (38.27)**	**.1116 (17.22)**	**.1087 (19.08)**	**.1176 (30.91)**	**.1324 (15.70)**	**.1619 (21.70)**	**.1303 (25.26)**	**.1926 (26.36)**
cons	.7611	.6601	.8146	.6202	.5854	.5347	.8174	.4600
Adj R^2	.9560	.9495	.9306	.9708	.9662	.9606	.9619	.9869
N	918	466	400	973	564	676	1311	263

Region definitions
1. *Arab States*=Algeria; Bahrain; Djibouti; Egypt; Iraq; Jordan; Kuwait; Lebanon; Libya; Morocco; Oman; Palestine; Qatar; Saudi Arabia; Somalia; Sudan; Syria ; Tunisia; UAE; Yemen.
2. *East Asia and the Pacific*=Brunei Darussalam; Cambodia; China; Fiji; Indonesia; Kiribati; Korea; Laos; Malaysia; Marshall Islands; Micronesia; Mongolia; Myanmar; Nauru; Palau; Papua New Guinea; Philippines; Samoa; Singapore; Solomon Islands; Thailand; Timor-Leste; Tonga; Tuvalu; Vanuatu; Viet Nam.
3. *Eastern Europe*=Albania; Armenia; Azerbaijan; Belarus; Bosnia and Herzegovina; Georgia; Kazakhstan; Kyrgyzstan; Moldova; Montenegro; North Macedonia; Serbia; Tajikistan; Turkey; Turkmenistan; Ukraine; Uzbekistan.
4. *Western Europe*=Austria; Belgium; Bulgaria; Croatia; Cyprus; Czechia; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Iceland; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovakia; Slovenia; Spain; Sweden; UK.
5. *Latin America and the Caribbean*= Antigua and Barbuda; Argentina; Bahamas; Barbados; Belize; Bolivia; Brazil; Chile; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Ecuador; El Salvador; Grenada; Guatemala; Guyana; Haiti; Honduras; Jamaica; Mexico; Nicaragua; Panama; Paraguay; Peru; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago; Uruguay; Venezuela.
6. *South Asia and Pacific*=Afghanistan; Bangladesh; Bhutan; India; Iran; Maldives; Nepal; Pakistan; Sri Lanka.
7. *Sub-Saharan Africa*=Angola; Benin; Botswana; Burkina Faso; Burundi; Cabo Verde; Cameroon; CAR; Chad; Comoros; Congo; Congo; Côte d'Ivoire; Equatorial Guinea; Eritrea; Eswatini; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mozambique; Namibia; Niger; Nigeria; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; South Africa; South Sudan; Tanzania; Togo; Uganda; Zambia; Zimbabwe.
8. *Other Western*=Andorra; Australia; Canada; Hong Kong; Israel; Japan; Korea; Liechtenstein; Monaco; New Zealand; Norway; Russian Federation; San Marino; Switzerland; United States.
All equations include country dummies – excluded 1990.

Table 2. Cantril positive and negative affect by country*year cells, 2005-2022

	Cantril	Positive affect	Negative affect
2005	.2991 (3.21)	.0214 (2.21)	.0114 (1.03)
2006	-.1797 (2.94)	.0003 (0.06)	.0177 (2.46)
2007	-.0121 (0.21)	.0079 (1.29)	.0041 (0.59)
2009	.0556 (0.97)	.0042 (0.72)	.0014 (0.21)
2010	.0227 (0.41)	.0075 (1.29)	-.0055 (0.83)
2011	.0602 (1.11)	.0002 (0.04)	.0005 (0.08)
2012	.0018 (0.03)	.0013 (0.24)	.0136 (2.13)
2013	-.0308 (0.56)	.0140 (2.48)	.0224 (3.47)
2014	-.0045 (0.08)	.0168 (3.00)	.0227 (3.55)
2015	-.0150 (0.28)	.0185 (3.31)	.0284 (4.44)
2016	-.0109 (0.20)	.0179 (3.20)	.0371 (5.79)
2017	.0708 (1.31)	.0076 (1.38)	.0423 (6.66)
2018	.1285 (2.36)	.0130 (2.33)	.0462 (7.20)
2019	**.1605 (2.96)**	**.0098 (1.76)**	**.0432 (6.75)**
2020	**.1423 (2.49)**	**.0159 (2.70)**	**.0611 (9.08)**
2021	**.1031 (1.83)**	**.0068 (1.18)**	**.0466 (7.05)**
2022	.0731 (1.28)	.0053 (0.91)	.0486 (7.21)
Country FE	165	163	164
cons	5.4385	.6429	.2457
Adjusted R^2	.8580	.8306	.6698
N	2199	2175	2183

Excluded category 2008. All equations include full set of country dummies
Source World Happiness Report, 2023 - data for Table 2.1.
https://worldhappiness.report/ed/2023/#appendices-and-data

Table 3. WHR, Cantril positive and negative affect with WHR controls by country*year cells

	Cantril	Positive affect	Negative affect
Lagged dependent variable	.4838 (20.77)	.3314 (14.94)	-.0744 (2.79)
2006	-.5346 (2.66)	-.0049 (0.22)	.0363 (1.37)
2007	**-.0168 (0.33)**	**.0048 (0.86)**	**.0065 (0.97)**
2009	**-.0081 (0.17)**	**.0038 (0.72)**	**.0087 (1.35)**
2010	-.0964 (2.04)	.0040 (0.77)	.0061 **(**0.97**)**
2011	-.0731 (1.58)	-.0052 (1.03)	.0151 (2.44)
2012	-.1106 (2.35)	-.0000 (0.02)	.0235 (3.76)
2013	-.1567 (3.33)	.0104 (1.99)	.0321 (5.12)
2014	-.1448 (3.05)	.0046 (0.87)	.0352 (5.57)
2015	-.1430 (2.98)	.0054 (1.03)	.0367 (5.76)
2016	-.1690 (3.44)	.0024 (0.46)	.0536 (8.22)
2017	-.0573 (1.15)	-.0064 (1.18)	.0587 (8.87)
2018	-.0667 (1.31)	.0008 (0.14)	.0662 (9.77)
2019	-.0742 (1.45)	-.0032 (0.56)	.0636 (9.32)
2020	-.0952 (1.78)	.0028 (0.47)	.0765 (10.76)
2021	-.1147 (2.19)	-.0094 (1.61)	.0527 (7.536
2022	-.1347 (2.48)	-.0099 (1.66)	.0558 (7.72)
Log GDP per capita*	.2710 (5.26)	.0250 (4.52)	-.0181 (2.71)
Social support*	1.8724 (11.01)	.0663 (3.49)	-.3531 (15.42)
Healthy life expectancy*	-.0163 (2.50)	-.0000 (0.06)	.0039 (14.55)
Freedom to make choices*	.6219 (4.88)	.0959 (6.80)	-.0651 (3.84)
Generosity*	.3680 (3.35)	.0991 (8.13)	.0857 (5.85)
Perceptions of corruption*	-.6551 (4.59)	.0141 (0.90)	.1140 (6.03)
Country FE	153	153	153
cons	-.3496	.0691	.4530
Adjusted R^2	.9172	.8875	.7434
N	1852	1835	1839

Variables defined in Helliwell et al (2023).

Table 4. Happiness in the IPSOS Happiness Surveys, 2018-2023

	All	Europe	Non-Europe
2019	-.0133 (1.79)	.0518 (4.56)	-.0546 (5.60)
2020	-.0888 (11.90)	-.0319 (2.86)	-.1298 (13.01)
2021	.0196 (2.40)	.0864 (6.97)	-.0243 (2.24)
2023	.1335 (11.85)	.0765 (4.27)	.1567 (10.81)
Cons	2.5948	2.9266	2.5958
Adjusted R^2	.0666	.0558	.0726
N	101,236	40,662	60,574

2018 excluded category. All equations include age and its square, gender and country dummies.

Table 5. #Bad mental Health Days and despair %, 1993-2023, BRFSS

	Bad mental health days	% every day=despair
1993	-.4183 (15.36)	-.1484 (18.47)
1994	-.4120 (15.36)	-.1049 (13.59)
1995	-.2749 (10.56)	-.0612 (8.35)
1996	-.2632 (10.44)	-.0642 (9.08)
1997	-.3132 (12.85)	-.0648 (9.46)
1998	-.1829 (7.78)	-.0412 (6.34)
1999	-.1407 (6.13)	-.0365 (5.79)
2000	-.0471 (2.15)	-.0334 (5.57)
2001	.1265 (6.07)	.0051 (0.92)
2002	-.0734 (2.65)	-.0224 (2.95)
2003	.0757 (3.90)	.0009 (0.18)
2004	.1239 (6.65)	.0133 (2.66)
2005	.0236 (1.32)	-.0034 (0.71)
2006	.0346 (1.94)	.0082 (1.71)
2007	-.0380 **(**2.24**)**	-.0061 **(**1.34**)**
2009	-.0085 **(**0.50**)**	.0001 **(**0.03**)**
2010	.0770 (4.58)	.0170 (3.75)
2011	.1496 (9.14)	.0223 (5.07)
2012	.1911 (11.52)	.0277 (6.22)
2013	.0567 (3.44)	.0047 (1.06)
2014	-.0224 (1.34)	-.0028 (0.62)
2015	.0427 (2.53)	-.0009 (0.20)
2016	.1416 (8.56)	.0194 (4.35)
2017	.3237 (19.42)	.0434 (9.70)
2018	.4224 (24.82)	.0565 (12.40)
2019	.6110 **(**35.68**)**	.0676 **(**14.81**)**
2020	.6914 **(**40.15**)**	.0565 **(**12.26**)**
2021	.8810 (51.65)	.0714 (15.68)
2022	1.0424 (19.97)	.0947 (7.03)
Constant	3.4276	-.1.5593
Adjusted R^2	.0085	.0088
N	9,222,834	9,222,834

All equations include state dummies +Guam, Puerto Rico and US Virgin Islands and gender. Column 1 estimated by OLS. Column 2 estimated by probit.

Question. "*Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"* Despair is where respondent replies "all thirty days".

Table 6. Gallup 2005-2023 for Europe

	2006	2007	2009	2010
Cantril	.3357 (14.34)	-.2687 (14.01)	-.2699 (13.87)	-.2488 (14.02)
Life in five	-.0625 (2.28)	-.0018 (0.08)	-.1590 (7.02)	-.1824 (8.82)
Enjoy	.0241 (5.33)	.0246 (5.33)	-.0036 (0.77)	.0044 (1.04)
Smile	-.0260 (4.60)	-.0248 (5.29)	-.0087 (1.82)	-.0025 (0.58)
Well rested	-.0206 (3.48)	.0087 (1.78)	-.0038 (0.76)	.0256 (5.60)
Sad	.0189 (3.70)	.0181 (4.27)	.0227 (5.27)	.0018 (0.48)
Anger	.0173 (3.71)	-.0032 (0.83)	.0022 (0.54)	-.0024 (0.66)
Worry	.0411 (6.91)	.0307 (6.21)	.0600 (11.93)	.0316 (6.88)
Pain	.0011 (0.21)	-.0046 (1.03)	.0161 (3.56)	-.0030 (0.72)

	2019	2020	2021	2022	N
Cantril	.1330 (7.50)	.3313 (18.27)	.4126 (22.80)	.1787 (10.02)	586,158
Life in five	.2786 (13.56)	.6010 (28.67)	.6338 (30.31)	.2816 (13.63)	546,819
Enjoy	.0025 (0.60)	.0195 (4.46)	.0498 (11.46)	.0166 (3.87)	559,578
Smile	.0156 (3.41)	.0192 (4.32)	.0244 (5.51)	.0030 (0.68)	555,997
Well rested	.0130 (7.28)	.0579 (12.41)	.0318 (6.83)	.0251 (5.46)	563,259
Sad	-.0042 (1.05)	.0235 (5.85)	.0056 (1.38)	.0007 (0.18)	563,803
Anger	-.0326 (9.03)	-.0224 (6.10)	-.0183 (4.98)	-.0300 (8.30)	563,086
Worry	.0327 (7.10)	.0798 (17.00)	.0346 (7.39)	.0365 (7.95)	564,317
Pain	.0268 (6.46)	-.0040 (0.95)	.0017 (0.39)	.0164 (3.93)	565,509

Controls are country, age and age square, and female plus a full set of year dummies – selected group reported above 2008 excluded.
Countries are Albania; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czechia; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Montenegro; Netherlands; N. Macedonia; Poland; Portugal; Romania; Serbia; Slovakia; Slovenia; Spain; Sweden; Turkey and UK

Table 7. Satisfaction, ESS 1-10

	Economy	Government	Democracy	Life satisfaction	Happiness
2002	.1480 (9.96)	.1612 (9.93)	.0725 (4.57)	-.0291 (2.06)	.0142 (1.12)
2004	.4520 (31.67)	.2082 (13.53)	.0977 (6.40)	.0357 (2.63)	.0421 (3.45)
2006	**.9130 (62.28)**	**.3332 (21.13)**	**.1390 (8.87)**	**.0369 (2.64)**	**.0186 (1.49)**
2010	**.0964 (7.08)**	**-.0679 (4.64)**	**-.0992 (6.81)**	**.0665 (5.12)**	**.0136 (1.17)**
2012	.1523 (11.02)	.0319 (2.15)	.2955 (19.99)	.1951 (14.76)	.1180 (9.95)
2014	.4791 (32.02)	.0622 (3.86)	-.0424 (2.66)	.1425 (9.96)	.1124 (8.76)
2016	.9506 (64.98)	.3768 (23.96)	.1791 (11.47)	.3577 (25.60)	.2974 (23.73)
2018	1.3828 (96.39)	.5375 (34.82)	.3479 (22.75)	.4203 (30.69)	.3587 (29.22)
2020	1.3518 (82.35)	.8586 (48.73)	.6933 (39.74)	.7130 (45.42)	.4299 (30.60)
Age	-.0384 (41.36)	-.0426 (42.51)	-.0405 (40.91)	-.0463 (52.86)	-.0271 (34.51)
Age^2 *100	.0358 (38.69)	.0449 (45.08)	.0003 (37.91)	.0003 (43.20)	.0153 (19.63
Female	-.2030 (31.07)	-.0511 (7.25)	-.1179 (16.93)	.0188 (3.02)	.0420 (7.51)
_cons	4.9901	4.8860	6.0323	7.9262	7.9579
Adjusted R^2	.2521	.1227	.1741	.1616	.1268
N	452,934	446,727	445,008	461,446	461,191

Satisfaction with the economy mean=4.53
Satisfaction with government mean=4.22
Satisfaction with democracy mean=5.17
Life satisfaction mean=6.88
Happiness mean==7.21
Equations include country dummies excluded is 2008

Table 8. Life satisfaction by 143 surveys, Eurobarometers, 1973-2023

#0 Sep-Oct 1973	3.11	#57.1 Mar-May 2002	3.06	#87.4 June 2017	3.04
#3 May 1975	3.11	#57.2 Apr-Jun 2002	3.00	#88.1 Sep-Oct 2017	3.07
#4 October 1975	3.05	#58.1 Oct-Nov 2002	3.02	#88.2 October 2017	3.05
#5 May-Jun 1976	3.06	#60.1 Oct-Nov 2003	3.02	#88.3 November 2017	2.96
#6 Nov-Dec 1976	3.06	#62.0 Oct-Nov 2004	2.92	#88.4 December 2017	3.05
#7 Apr-May 1977	3.07	#62.2 Nov-Dec 2004	3.05	#89.1 March 2018	2.97
#8 Oct-Nov 1977	3.12	#63.4 May-Jun 2005	2.90	#89.2 April 2018	3.02
#9 May-Jun 1978	3.11	#64.2 Oct-Nov 2005	2.91	#89.3 June-July 2018	3.05
#10.0 Oct-Nov 1978	3.13	#65.2 Mar-May 2006	2.90	#90.1 September 2018	3.01
#11.0 April 1979	3.10	#66.1 Sep-Oct 2006	2.94	#90.2 Oct-Nov 2018	2.98
#13.0 Apr-May 1980	3.11	#67.2 Apr-May 2007	2.93	#90.3 November 2018	2.96
#15.0 Mar-Apr 1981	3.04	#68.1 Sep-Nov 2007	2.91	#90.4 December 2018	3.03
#17.0 Mar-May 1982	3.10	#69.2 Mar-May 2008	2.89	#91.2 March 2019	3.04
#18.0 October 1982	3.04	#70.1 Oct-Nov 2008	2.87	#91.3 April 2019	3.05
#19.0 Mar-Apr 1983	3.03	#71.1 Jan-Feb 2009	2.85	#91.4 May 2019	3.05
#20.0 Sep-Nov 1983	3.00	#71.2 May-Jun 2009	2.92	#91.5 June-July 2019	2.98
#21.0 Mar-Apr 1984	3.04	#71.3 Jun-Jul 2009	2.87	#92.1 September 2019	3.07
#22.0 Oct-Nov 1984	3.04	#72.4 Oct-Nov 2009	2.86	#92.2 October 2019	3.06
#23.0 Mar-Apr 1985	3.07	#73.4 May 2010	2.87	#92.3 Nov-Dec 2019	2.98
#24.0 Oct-Nov 1985	2.92	#73.5 June 2010	2.94	#92.4 December 2019	3.07
#25.0 Mar-Apr 1986	3.03	#74.2 Nov-Dec 2010	2.88	#93.1 July-August 2020	2.99
#26.0 Oct-Nov 1986	2.96	#75.3 May 2011	2.87	#93.2 Aug-Sep 2020	3.04
#27.0 April 1987	3.04	#75.4 June 2011	2.98	#94.1 Oct-Nov 2020	2.95
#28.0 Oct-Nov 1987	2.95	#76.3 November 2011	2.84	#94.3 Feb-March 2021	2.92
#28.1 Oct-Nov 1987	3.08	#77.3 May 2012	2.82	#95.1 Mar-Apr 2021	2.96
#29.0 Mar-Apr1988	3.05	#77.4 June 2012	2.89	#95.2 April-May 2021	3.01
#31.0 Mar-Apr1989	3.07	#78.1 November 2012	2.80	#95.3 June-July 2021	3.02
#31.1 July 1989	3.06	#79.3 May 2013	2.81	#96.1 Sep-Oct 2021	3.10
#32.0 Oct-Nov 1989	3.08	#79.4 May-Jun 2013	2.89	#96.3 Jan-Feb 2022	2.98
#33.0 Mar-Apr 1990	3.11	#80.1 November 2013	2.82	#97.3 April-May 2022	3.05
#34.0 Oct-Nov 1990	3.02	#80.2 Nov-Dec 2013	2.97	#97.5 June-July 2022	2.99
#34.2 December 1990	3.18	#81.1 January 2014	2.90	#98.2 Jan-Feb 2023	2.98
#35.1 April 1991	3.07	#81.2 March 2014	2.88		
#36.0 Oct-Nov 1991	3.07	#81.4 May-Jun 2014	2.93		
#37.0 Mar-Apr 1992	3.06	#81.5 June 2014	2.88		
#37.1 Apr-May 1992	3.03	#82.1 September 2014	3.00	#85.1 is combined with #85.1OVR	
#37.2 Apr-May 1992	3.02	#82.2 October 2014	3.01		
#38.0 Sep-Oct 1992	3.06	#82.3 November 2014	2.90		
#38.1 November 1992	3.01	#82.4 Nov-Dec 2014	2.98		
#39.0 Mar-Apr 1993	3.02	#83.1 Feb-Mar 2015	2.98		
#40.0 Oct-Nov 1993	3.01	#83.2 March 2015	3.02		
#41.0 Mar-May 1994	3.04	#83.3 May 2015	2.90		
#42.0 Nov-Dec 1994	3.04	#83.4 May-Jun 2015	3.05		
#43.1 Apr-May 1995	3.07	#84.2 October 2015	3.04		
#44.4 Feb-Apr 1996	3.07	#84.3 November 2015	2.92		
#47.1 Mar-Apr 1997	3.03	#84.4 Nov-Dec 2015	3.04		
#49.0 Apr-May 1998	3.01	#85.1/OVR April 2016	3.04		
#52.0 Oct-Nov 1999	3.06	#85.2 May 2016	2.92		
#52.1 Nov-Dec 1999	3.20	#85.3 June 2016	3.08		
#53.0 Apr-May 2000	3.00	#86.1 Sep-Oct 2016	3.00		
#54.1 Nov-Dec 2000	3.09	#86.2 November 2016	2.92		
#54.2 Jan-Feb 2001	3.09	#86.3 Nov-Dec 2016	3.03		
#55.1 Apr-May 2001	3.07	#87.1 March 2017	3.04		
#56.1 Sep-Oct 2001	3.19	#87.2 April 2017	3.04		
#56.2 Oct-Nov 2001	3.08	#87.3 May 2017	2.96		

Table 9. Life satisfaction by 141 European surveys, Eurobarometers 1973-2023

	All	Western	Southern & Northern	Eastern
May 1975	-.0378 (4.00)	-.0378 (4.19)		
Oct 1975	-.0857 (8.95)	-.0856 (9.36)		
May-Jun 1976	-.0826 (8.52)	-.0826 (8.90)		
Nov-Dec 1976	-.0763 (8.03)	-.0763 (8.40)		
Apr-May 1977	-.0744 (7.79)	-.0743 (8.14)		
Oct-Nov 1977	-.0184 (1.92)	-.0184 (2.00)		
May-Jun 1978	-.0322 (3.39)	-.0322 (3.54)		
Oct-Nov 1978	-.0174 (1.81)	-.0174 (1.89)		
April 1979	-.0442 (4.60)	-.0442 (4.81)		
Apr-May 1980	-.0338 (3.51)	-.0337 (3.67)		
Mar-Apr 1981	-.0313 (3.37)	-.0460 (5.01)		
Mar-May 1982	.0304 (3.43)	.0048 (0.56)	.1585 (5.29)	
October 1982	-.0355 (3.79)	-.0571 (6.17)	.0529 (1.69)	
Mar-Apr 1983	-.0458 (4.91)	-.0720 (7.81)	.0855 (2.74)	
Sep-Nov 1983	-.0740 (7.90)	-.1117 (12.06)	.1524 (4.87)	
Mar-Apr 1984	-.0375 (4.02)	-.0692 (7.49)	.1385 (4.44)	
Oct-Nov 1984	-.0319 (3.44)	-.0580 (6.32)	.1005 (3.22)	
Mar-Apr 1985	.0002 (0.03)	-.0340 (3.71)	.2074 (6.64)	
Oct-Nov 1985	-.1051 (11.86)	-.1278 (13.88)	-.1472 (5.75)	
Mar-Apr 1986	.0098 (1.11)	-.0318 (3.46)	.0228 (0.89)	
Oct-Nov 1986	-.0603 (6.80)	-.1173 (12.73)	-.0020 (0.08)	
April 1987	.0197 (2.22)	-.0254 (2.74)	.0407 (1.59)	
Oct-Nov 1987	-.0723 (8.12)	-.1274 (13.71)	-.0256 (1.00)	
Oct-Nov 1987	.0554 (5.87)	.0012 (0.13)	.1035 (3.93)	
Mar-Apr 1988	.0287 (3.24)	-.0034 (0.37)	.0127 (0.50)	
Mar-Apr 1989	.0513 (5.78)	.0117 (1.27)	.0567 (2.22)	
July 1989	.0406 (4.58)	.0051 (0.56)	.0354 (1.38)	
Oct-Nov 1989	.0653 (8.59)	.0318 (4.13)	.0528 (2.21)	
Mar-Apr 1990	.0880 (9.93)	.0665 (7.23)	.0416 (1.63)	
Oct-Nov 1990	-.0023 (0.27)	-.0383 (4.31)	.0064 (0.25)	
Dec 1990	.1579 (15.71)	.1069 (10.18)	.2153 (7.80)	
April 1991	.0408 (4.74)	.0202 (2.29)	.0010 (0.04)	
Oct-Nov 1991	.0290 (3.42)	.0032 (0.36)	-.0171 (0.69)	
Mar-Apr 1992	.0134 (1.59)	-.0191 (2.16)	-.0147 (0.59)	
Apr-May 1992	.0078 (0.91)	-.0057 (0.65)	-.0558 (2.18)	
Apr-May 1992	-.0613 (5.35)	-.0158 (1.30)	-.3274 (11.02)	
Sep-Oct 1992	.0166 (1.96)	-.0130 (1.47)	-.0200 (0.81)	
November 1992	-.0194 (2.25)	-.0288 (3.26)	-.0973 (3.81)	
Mar-Apr 1993	-.0219 (2.59)	-.0307 (3.47)	-.1106 (4.46)	
Oct-Nov 1993	-.0290 (3.43)	-.0430 (4.87)	-.1045 (4.22)	
Mar-May 1994	-.0021 (0.25)	-.0108 (1.24)	-.0899 (3.63)	
Nov-Dec 1994	-.0072 (0.85)	-.0233 (2.63)	-.0780 (3.15)	
Apr-May 1995	-.0077 (0.96)	-.0131 (1.48)	-.1214 (5.12)	
Feb-Apr 1996	.0112 (1.44)	-.0584 (7.06)	.0031 (0.13)	
Mar-Apr 1997	-.0346 (4.22)	-.0737 (8.33)	-.0920 (3.85)	
Apr-May 1998	-.0554 (6.75)	-.0683 (7.72)	-.1563 (6.54)	
Oct-Nov 1999	-.0036 (0.44)	-.0329 (3.72)	-.0772 (3.23)	
Nov-Dec 1999	.1295 (15.78)	.0941 (10.64)	.0660 (2.76)	
Apr-May 2000	-.0685 (8.34)	-.1127 (12.73)	-.1167 (4.88)	
Nov-Dec 2000	.0081 (1.00)	-.0074 (0.84)	-.0907 (3.83)	
Jan-Feb 2001	.0245 (3.02)	.0202 (2.28)	-.0907 (3.83)	
Apr-May 2001	.0063 (0.77)	-.0072 (0.82)	-.0933 (3.90)	
Sep-Oct 2001	.1219 (14.83)	.0780 (8.80)	.0723 (3.02)	
Oct-Nov 2001	.0127 (1.55)	-.0035 (0.40)	-.0826 (3.45)	

Mar-May 2002	-.0012 (0.15)	-.0225 (2.55)	-.0878 (3.67)	
Apr-Jun 2002	-.0736 (8.93)	-.0869 (9.80)	-.1736 (7.24)	
Oct-Nov 2002	-.0443 (5.39)	-.0700 (7.90)	-.1235 (5.16)	
Oct-Nov 2003	-.0416 (5.07)	-.0733 (8.27)	-.1113 (4.65)	
Oct-Nov 2004	-.0001 (0.03)	.0385 (4.27)	-.0320 (1.35)	
Nov-Dec 2004	.1315 (17.69)	.2177 (24.15)	.0476 (2.01)	.1060 (10.93)
May-Jun 2005	-.0161 (2.20)	.0354 (3.94)	-.0790 (3.34)	-.0092 (1.01)
Oct-Nov 2005	-.0004 (0.07)	.0261 (2.91)	-.0810 (3.41)	.0380 (4.19)
Mar-May 2006	-.0128 (1.75)	.0224 (2.49)	-.0914 (3.86)	.0145 (1.59)
Sep-Oct 2006	.0272 (3.71)	.0393 (4.36)	-.0453 (1.91)	.0688 (7.50)
Apr-May 2007	**.0292 (4.01)**	**.0404 (4.48)**	-.0678 **(**2.86**)**	.0869 **(**9.65**)**
Sep-Nov 2007	**.0056 (0.77)**	**.0263 (2.92)**	-.0878 **(**3.71**)**	.0554 **(**6.13**)**
Mar-May 2008	**-.0144 (1.98)**	**-.0056 (0.63)**	-.0848 **(**3.58**)**	.0306 **(**3.40**)**
Oct-Nov 2008	**-.0372 (5.10)**	**-.0168 (1.87)**	-.1456 **(**6.15**)**	.0194 **(**2.15**)**
Jan-Feb 2009	**-.0575 (7.88)**	**-.0065 (0.73)**	-.1669 **(**7.05**)**	-.0218 **(**2.42**)**
May-Jun 2009	.0073 (1.01)	.0791 (8.82)	-.1103 (4.66)	.0309 (3.38)
Jun-Jul 2009	-.0325 (4.45)	.0500 (5.55)	-.1679 (7.09)	-.0041 (0.45)
Oct-Nov 2009	-.0433 (5.94)	.0358 (3.97)	-.1561 (6.60)	-.0248 (2.75)
May 2010	-.0406 (5.58)	.0391 (4.34)	-.1866 (7.91)	-.0067 (0.75)
June 2010	-.0006 (0.09)	.0624 (6.93)	-.1116 (4.71)	.0111 (1.14)
Nov-Dec 2010	-.0371 (5.09)	.0290 (3.23)	-.1881 (7.97)	.0092 (1.02)
May 2011	-.0332 (4.58)	.0720 (7.99)	-.1797 (7.62)	-.0112 (1.27)
June 2011	-.0610 (8.21)	-.0739 (8.25)	-.0911 (3.85)	-.0348 (3.57)
November 2011	-.0613 (8.44)	.0100 (1.11)	-.2389 (10.12)	-.0014 (0.16)
May 2012	-.0559 (7.67)	.0359 (3.99)	-.2600 (11.02)	.0020 (0.23)
June 2012	.2853 (38.27)	.1771 (19.63)	.1908 (8.05)	.4466 (45.63)
November 2012	-.0927 (12.84)	.0015 (0.18)	-.2971 (12.60)	-.0319 (3.65)
May 2013	-.0774 (10.71)	.0100 (1.12)	-.2735 (11.58)	-.0160 (1.82)
May-Jun 2013	-.0426 (5.77)	.0363 (4.03)	-.2259 (9.54)	.0081 (0.85)
November 2013	-.0855 (11.82)	.0047 (0.52)	-.2520 (10.69)	-.0460 (5.21)
Nov-Dec 2013	.0401 (5.43)	.0890 (9.93)	-.1127 (4.76)	.0966 (10.16)
January 2014	-.0242 (3.27)	.0441 (4.91)	-.1941 (8.20)	.0268 (2.82)
March 2014	-.0456 (6.18)	.0342 (3.81)	-.2297 (9.71)	.0048 (0.51)
May-Jun 2014	.0390 (5.41)	.0856 (9.54)	-.1219 (5.17)	.1075 (12.26)
June 2014	-.0441 (5.97)	-.0082 (0.92)	-.2084 (8.81)	.0315 (3.33)
September 2014	.0692 (9.38)	.0791 (8.80)	-.0830 (3.51)	.1589 (16.81)
October 2014	.0772 (10.45)	.0783 (8.70)	-.0802 (3.39)	.1775 (18.73)
November 2014	.0158 (2.21)	.0713 (7.93)	-.1847 (7.83)	.0996 (11.51)
Nov-Dec 2014	.0543 (7.34)	.0720 (8.01)	-.1021 (4.31)	.1400 (14.73)
Feb-Mar 2015	.0520 (7.05)	.1002 (11.17)	-.1213 (5.12)	.1224 (12.94)
March 2015	.0912 (12.36)	.0954 (10.60)	-.0376 (1.59)	.1710 (18.07)
May 2015	.0286 (3.97)	.0796 (8.85)	-.1452 (6.14)	.1025 (11.81)
May-Jun 2015	.1179 (15.93)	.1358 (15.06)	-.0340 (1.44)	.2007 (21.10)
October 2015	.1135 (15.36)	.1208 (13.46)	-.0484 (2.05)	.2119 (22.25)
November 2015	.0501 (6.94)	.1124 (12.50)	-.1546 (6.53)	.1306 (15.04)
Nov-Dec 2015	.1118 (15.10)	.1485 (16.48)	-.0424 (1.79)	.1800 (18.91)
April 2016	.1091 (15.45)	.0920 (11.15)	-.0550 (2.36)	.2289 (26.07)
May 2016	.0485 (6.73)	.1049 (11.68)	-.1345 (5.68)	.1231 (14.19)
June 2016	.1525 (20.62)	.1518 (16.86)	-.0167 (0.71)	.2624 (27.56)
Sep-Oct 2016	.0728 (9.84)	.0899 (9.98)	-.0873 (3.69)	.1617 (16.99)
November 2016	.0493 (6.84)	.1075 (11.94)	-.1369 (5.79)	.1247 (14.35)
Nov-Dec 2016	.1023 (13.84)	.1189 (13.25)	-.0479 (2.03)	.1851 (19.46)
March 2017	.1126 (15.23)	.1194 (13.27)	-.0392 (1.66)	.2047 (21.58)
April 2017	.1076 (14.61)	.1021 (11.43)	-.0457 (1.93)	.2109 (22.35)
May 2017	.0851 (11.81)	.1146 (12.80)	-.0760 (3.21)	.1660 (19.14)
June 2017	.1075 (14.55)	.1153 (12.84)	-.0311 (1.32)	.1904 (20.03)

Sep-Oct 2017	.1469 (19.87)	.1458 (16.20)	.0204 (0.86)	.2297 (24.19)
October 2017	.1233 (16.69)	.1280 (14.25)	-.0138 (0.59)	.2079 (21.89)
November 2017	.0882 (12.24)	.1007 (11.23)	-.0591 (2.50)	.1730 (19.97)
December 2017	.1180 (15.96)	.0914 (10.17)	-.0104 (0.44)	.2238 (23.54)
March 2018	.0965 (13.40)	.1027 (11.44)	-.0588 (2.49)	.1888 (21.75)
April 2018	.0984 (13.28)	.0861 (9.50)	-.0455 (1.92)	.2015 (21.18)
June-July 2018	.1258 (17.00)	.1101 (12.13)	-.0087 (0.37)	.2258 (23.78)
September 2018	.0878 (11.84)	.0784 (8.63)	-.0645 (2.73)	.1936 (20.36)
Oct-Nov 2018	.0565 (7.62)	.0473 (5.20)	-.0944 (3.99)	.1614 (16.94)
November 2018	.0901 (12.48)	.0800 (8.82)	-.0556 (2.35)	.1872 (21.55)
December 2018	.1064 (14.37)	.0870 (9.60)	-.0364 (1.54)	.2146 (22.58)
March 2019	.1157 (15.62)	.1150 (12.69)	-.0494 (2.09)	.2225 (23.42)
April 2019	.1279 (17.29)	.1260 (13.93)	-.0242 (1.02)	.2275 (23.96)
May 2019	.1297 (17.50)	.1245 (13.71)	-.0174 (0.74)	.2287 (24.06)
June-July 2019	.1132 (15.66)	.1066 (11.74)	-.0265 (1.12)	.2056 (23.65)
September 2019	.1416 (19.12)	.1216 (13.44)	.0039 (0.17)	.2470 (25.97)
October 2019	.1324 (17.88)	.1284 (14.17)	-.0210 (0.89)	.2343 (24.70)
Nov-Dec 2019	.1073 (14.86)	.0917 (10.10)	-.0397 (1.68)	.2081 (23.95)
December 2019	.1423 (19.21)	.1170 (12.89)	.0079 (0.34)	.2497 (26.30)
July-August 2020	**.1204 (16.71)**	**.0927 (10.25)**	**-.0347 (1.47)**	**.2313 (26.76)**
Aug-Sep 2020	**.1165 (15.80)**	**.0418 (4.66)**	**-.0587 (2.49)**	**.2907 (30.82)**
Oct-Nov 2020	**.0389 (5.25)**	**-.0093 (1.00)**	**-.1206 (5.10)**	**.1764 (18.70)**
Feb-March 2021	**.0161 (2.29)**	**-.0478 (5.35)**	**-.1819 (7.82)**	**.1726 (20.42)**
Mar-Apr 2021	**.0405 (5.44)**	**-.0149 (1.59)**	**-.1214 (5.13)**	**.1846 (19.50)**
April-May 2021	.1030 (14.49)	.0496 (5.48)	-.0803 (3.45)	.2472 (28.94)
June-July 2021	.1204 (16.94)	.0720 (7.92)	-.0677 (2.90)	.2618 (30.82)
Sep-Oct 2021	.1940 (26.03)	.1101 (11.93)	-.0124 (0.52)	.3678 (39.64)
Jan-Feb 2022	.0818 (11.53)	.0419 (4.64)	-.0891 (3.83)	.2111 (24.83)
April-May 2022	.1328 (17.82)	.0765 (8.14)	-.0082 (0.35)	.2642 (27.89)
June-July 2022	.0924 (13.00)	.0738 (8.13)	-.0625 (2.68)	.2018 (23.74)
Jan-Feb 2023	.0983 (13.81)	.0545 (6.00)	-.0630 (2.70)	.2242 (26.38)
Country dummies	40	8	9	20
Cons	2.8931	2.8919	2.5529	2.8527
Adjusted R^2	.1699	.1263	.1883	.0830
N	3,226,021	1,336,185	796,865	1,092,971

All equations include a female dummy. Excluded category for columns 1 & 2 is Sept-Oct 1973. For column 3 it is March-April 1981. Countries distribution by year below with sample sizes in parentheses based on life satisfaction not missing. Numbers below relate to observations where life satisfaction present.

1. Nine Western European countries (1973-2023) – n=1,336,452

Belgium (145,750); France (145,414); Denmark (143,604); Germany (221,516); Ireland (143,367); Italy (148,373); Luxembourg (66972); Netherlands (144,298) and UK (177,158).

2. Southern & Northern (1982-2023) – n=796,984

Greece 1981-2023 (130,724); Spain (124,203); Portugal (125,341); Finland (100,729); Sweden (100,822); Austria (99,842); Cyprus (42,991); Malta (42479) Norway (16,297); Switzerland (6,338); Iceland (7,580).

3. Eastern (2004-2023) – n=1,089,857

Czechia (86,543); Estonia (83,271); Hungary (85,796); Latvia (84,006); Lithuania (83,977); Malta (42,479); Poland (82,289); Slovakia (85,803); Slovenia (85,160); Bulgaria (83,863); Romania (85,863); Turkey (40,126); Croatia (79,429); Turkish Cyprus (20,913); N Macedonia (36082); Montenegro (14,489); Serbia (21,241); Albania (17,534); Bosnia/Herzegovina (6,074); Kosovo (6,344); Moldova (1,0 06).

Table 10. Life satisfaction by European region by year, 1973-2023

	Western	Southern and Northern	Eastern
1973	.0113 (1.50)		
1975	-.0265 (3.12)		
1976	-.0728 (10.34)		
1977	-.0639 (9.18)		
1978	-.0141 (2.02)		
1979	-.0061 (0.70)		
1980	-.0329 (3.81)		
1981	-.0224 (2.59)		
1982	-.0070 (1.03)	.2011 (12.40)	
1983	-.0533 (7.56)	.1842 (10.93)	
1984	-.0791 (11.20)	.2604 (15.45)	
1985	-.0347 (4.95)	.2689 (15.96)	
1986	-.0685 (9.74)	.0532 (4.90)	
1987	-.0788 (12.27)	.1194 (12.54)	
1988	.0100 (1.38)	.1684 (14.96)	
1989	.0197 (2.80)	.1612 (14.83)	
1990	.0324 (5.38)	.1536 (17.52)	
1991	.0633 (8.79)	.1964 (16.70)	
1992	.0019 (0.33)	.0673 (8.22)	
1993	-.0184 (2.72)	.0106 (1.03)	
1994	-.0154 (2.28)	.0185 (1.86)	
1995	-.0120 (1.45)	.0377 (2.99)	
1996	-.0018 (0.22)	-.0057 (0.56)	
1997	-.0471 (6.14)	.1184 (11.98)	
1998	-.0624 (7.53)	.0232 (2.16)	
1999	.0090 (1.45)	.0593 (7.52)	
2000	-.0489 (7.19)	.0127 (1.49)	
2001	.0330 (5.58)	.0651 (8.80)	
2002	-.0485 (7.79)	-.0127 (1.62)	
2003	-.0620 (7.47)	.0040 (0.37)	
2004	.1394 (20.18)	.1230 (14.73)	.0203 (3.08)
2005	.0420 (6.10)	.0350 (4.16)	-.0110 (1.72)
2006	.0421 (6.10)	.0466 (5.57)	.0159 (2.47)
2007	**.0441 (6.39)**	**.0367 (4.39)**	**.0447 (7.09)**
2009	**.0507 (8.48)**	**-.0355 (4.91)**	**-.0313 (5.72)**
2010	.0543 (8.63)	-.0467 (6.17)	-.0230 (3.92)
2011	.0129 (2.06)	-.0552 (7.29)	-.0402 (6.90)
2012	.0824 (13.09)	-.0123 (1.63)	.0780 (13.40)
2013	.0462 (7.74)	-.1013 (14.07)	-.0212 (3.86)
2014	.0684 (12.55)	-.0347 (5.28)	.0682 (13.52)
2015	.1245 (22.51)	.0319 (4.77)	.1290 (25.22)
2016	.1182 (21.15)	.0447 (6.61)	.1508 (29.17)
2017	.1259 (23.11)	.0832 (12.62)	.1716 (33.99)
2018	.0960 (17.31)	.0632 (9.45)	.1696 (33.13)
2019	**.1277 (23.35)**	**.0943 (14.29)**	**.1998 (39.56)**
2020	**.0547 (8.62)**	**.0437 (5.76)**	**.2076 (35.77)**
2021	.0444 (7.64)	.0179 (2.61)	.2204 (42.22)
2022	.0748 (11.73)	.0600 (8.15)	.1983 (35.20)
2023	.0070 (5.95)	-.0052 (5.70)	.2043 (28.83)
Constant	2.8789	2.4369	2.8691
R^2	.1244	.1831	.0782
N	1,336,185	796, 865	1,092,971

Table 11. Life satisfaction under Covid by survey, 2019-2022 - Eurobarometers #92.3-#95.2

	December 2019	July-Aug 2020	Aug-Sep 2020	Oct-Nov 2020	Feb-Mar 2021	Mar-Apr 2021	April-May 2021	N
All	.0367 (6.62)	.0129 (2.47)	.0110 (2.00)	-.0703 (12.61)	-.0818 (15.98)	-.0685 (12.25)	.0044 (0.86)	250,283
Austria	.0515 (1.63)	-.0835 (2.63)	-.0851 (2.68)	-.1182 (3.72)	-.2084 (6.57)	-.2080 (6.57)	-.1094 (3.44)	8,064
Belgium	-.0107 (0.39)	.0541 (1.96)	-.0364 (1.31)	-.1176 (4.29)	-.0751 (2.75)	-.0437 (1.59)	-.0108 (0.39)	8,151
Bulgaria	-.0495 (1.49)	-.0745 (2.27)	-.0651 (1.98)	-.0154 (0.47)	.0232 (0.70)	-.0141 (0.42)	.1243 (3.76)	8,242
Croatia	.0585 (1.93)	.0606 (2.01)		-.0471 (1.56)	-.0811 (2.68)	.0163 (0.54)	.0782 (2.58)	7,189
Cyprus*	.0438 (1.01)	.0046 (0.11)	.0621 (1.44)	-.1038 (2.40)	-.2228 (5.15)	-.1247 (2.88)	.0584 (1.35)	4,038
Czechia	.0154 (0.58)	.0242 (0.92)	-.0410 (1.56)	-.2009 (7.68)	-.0461 (1.78)	-.0510 (1.94)	.0208 (0.79)	8,278
Denmark	.0077 (0.29)	.0141 (0.54)	.0015 (0.06)	-.1413 (5.44)	-.2784 (10.60)	-.2726 (10.48)	-.1635 (6.32)	8,227
Estonia	-.0149 (0.55)	-.0117 (0.43)	-.1010 (3.84)	-.0645 (2.40)	-.1220 (4.59)	-.0807 (3.01)	-.0286 (1.07)	8,201
Finland	-.0234 (0.86)	-.1166 (4.28)	-.1653 (6.17)	-.1820 (6.69)	-.2338 (8.74)	-.2294 (8.41)	-.2104 (7.73)	8,300
France	.0789 (2.53)	.0417 (1.33)	.0420 (1.34)	-.0067 (0.21)	-.0437 (1.52)	-.0293 (0.94)	.0369 (1.18)	8,085
Germany	.0036 (0.15)	.0485 (2.13)	.0273 (1.20)	-.0660 (2.94)	.0071 (0.31)	-.0244 (1.07)	.0605 (2.65)	12,254
Greece	.1490 (4.27)	.1476 (4.224	.1904 (5.47)	.0478 (1.38)	.0460 (1.33)	.1406 (4.03)	.1870 (5.42)	8,202
Hungary	.0680 (2.37)	.1592 (5.59)	.0801 (2.81)	.0314 (1.10)	-.0554 (1.94)	-.0273 (0.06)	.0453 (1.58)	8,342
Ireland	.0238 (0.83)	-.0015 (0.05)	-.1800 (6.61)	-.1527 (5.40)	-.1740 (6.21)	-.1337 (4.70)	-.1000 (3.49)	8,446
Italy	.0420 (1.40)	.0228 (0.76)	.0195 (0.65)	-.0580 (1.93)	-.1378 (4.59)	-.1235 (4.12)	.0610 (2.03)	8,172
Latvia	-.0261 (0.88)	.1086 (3.63)	.0829 (2.79)	-.0392 (1.33)	-.1700 (5.64)	-.1827 (6.13)	-.1527 (5.11)	8,114
Lithuania	.0444 (1.43)	.1757 (5.63)	.1648 (5.28)	-.0053 (0.17)	-.0372 (1.20)	-.0292 (0.94)	.0138 (0.45)	8,152
Luxembourg*	-.0193 (0.50)	-.0879 (2.31)	-.1808 (4.86)	-.2352 (6.18)	-.3044 (8.16)	-.2338 (6.04)	-.1849 (4.79)	4,354
Malta*	.0507 (1.39)	.0029 (0.08)	.0769 (2.11)	-.0328 (0.92)	-.0090 (0.26)	.0235 (0.66)	.1376 (3.83)	4,096
Netherlands	.0377 (1.41)	.0046 (0.17)	-.0420 (1.60)	-.0817 (3.06)	-.1121 (4.19)	-.0584 (2.18)	-.0282 (1.07)	8,244
Poland	.0029 (0.11)	.0750 (2.89)	.0842 (3.27)	.0483 (1.85)	.0021 (0.08)	.0382 (1.47)	.0805 (3.08)	8,147
Portugal	.0724 (2.68)	.0574 (2.14)	.1042 (3.91)	-.0615 (2.29)	.0224 (0.85)	.0977 (3.64)	.1543 (5.71)	8,310
Romania	.0045 (0.14)	.0435 (1.40)	.1978 (6.34)	-.0164 (0.55)	.1003 (3.16)	.0085 (0.27)	.1149 (3.64)	8,524
Slovakia	.0863 (2.83)	-.0133 (0.44)	-.0304 (1.00)	-.1032 (3.41)	-.1279 (4.31)	-.0584 (1.91)	-.0130 (0.43)	8,418
Slovenia	.0514 (1.88)	.0589 (2.16)	.0567 (2.08)	-.1449 (5.37)	-.2198 (8.12)	-.0946 (3.48)	-.0281 (1.03)	8,170
Spain	.0398 (1.36)	.0613 (2.10)	-.0769 (2.65)	-.0617 (2.12)	-.1476 (5.04)	-.0855 (2.93)	-.0031 (0.11)	8,126
Sweden	.0003 (0.01)	-.0354 (1.30)	-.1759 (6.35)	-.1207 (4.40)	-.1827 (6.76)	-.2384 (8.71)	-.1484 (5.42)	8,317
UK	.0526 (1.77)	-.1300 (4.50)	-.1563 (5.31)		-.2522 (8.97)		-.1695 (5.66)	6,526

Excluded Nov-Dec 2019 = eb #92.3

All equations include a female dummy. In the case of the overall equation a full set of country dummies are also included. *=not included in the list of 25 countries examined by Easterlin and O'Connor (2023).

Table 12. Financial and economic situation *over the last twelve months*

	Financial situation	General economic situation
1986	4.0892 (3.26)	6.4041 (2.84)
1987	6.1197 (4.98)	7.0767 (3.20)
1988	8.3159 (6.87)	10.1033 (4.64)
1989	9.1819 (7.58)	11.9616 (5.49)
1990	7.8999 (6.52)	7.9526 (3.65)
1991	5.6305 (4.65)	-1.7376 (0.80)
1992	-.6501 (0.55)	-14.4588 (6.79)
1993	-4.8706 (4.15)	-22.6861 (10.74)
1994	-.3153 (0.27)	-3.7516 (1.78)
1995	1.4852 (1.29)	2.3205 (1.12)
1996	1.9444 (1.73)	-.4084 (0.20)
1997	4.1979 (3.73)	6.2896 (3.11)
1998	7.5562 (6.72)	13.0461 (6.45)
1999	8.5232 (7.63)	11.2816 (5.62)
2000	8.5546 (7.67)	16.2334 (8.10)
2001	6.9203 (6.38)	6.4719 (3.32)
2002	4.9426 (4.63)	-.4498 (0.23)
2003	2.1836 (2.05)	-7.6255 (3.99)
2004	2.7151 (2.55)	-1.4344 (0.75)
2005	4.1975 (3.96)	1.4005 (0.73)
2006	7.2381 (6.83)	8.8120 (4.63)
2007	8.3807 (7.93)	12.0631 (6.35)
2008	-.0730 (0.07)	-11.5064 (6.06)
2009	**-6.4067 (6.07)**	**-32.8869 (17.33)**
2010	**-6.3705 (6.04)**	**-17.6030 (9.28)**
2011	**-7.2900 (6.91)**	**-15.6182 (8.23)**
2012	**-8.8851 (8.46)**	**-21.4278 (11.35)**
2013	-5.9558 (5.69)	-14.6347 (7.78)
2014	.6734 (0.64)	-.6917 (0.37)
2015	5.4161 (5.18)	6.6538 (3.54)
2016	8.6194 (8.27)	9.3051 (4.96)
2017	11.6946 (1.22)	16.7047 (8.92)
2018	13.3733 (12.83)	18.8468 (10.06)
2019	14.5605 (13.97)	13.7683 (7.35)
2020	**8.7953 (8.42)**	**-12.3724 (6.59)**
2021	**6.6106 (6.30)**	**-18.5755 (9.84)**
2022	**-3.3756 (3.22)**	**-25.6989 (13.61)**
2023	**-5.3876 (4.25)**	**-27.5381 (12.09)**
Albania	-5.6711 (4.93)	12.2849 (5.95)
Austria	-2.2251 (3.18)	9.9073 (7.89)
Belgium	.4281 (0.67)	4.2035 (3.67)
Bulgaria	-20.3299 (27.13)	-6.4376 (4.78)
Croatia	-11.1649 (13.95)	-9.0916 (6.32)
Cyprus	-13.0542 (17.42)	1.5074 (1.12)

Czechia	-3.5810 (5.17)	8.2452 (6.61)
Denmark	11.7518 (18.47)	26.3069 (22.99)
Estonia	-2.8446 (4.21)	19.5030 (16.04)
Finland	9.4984 (14.62)	19.0279 (16.29)
France	-3.9316 (6.18)	-9.2310 (8.07)
Germany	5.7213 (8.99)	3.6998 (3.23)
Greece	-28.1546 (44.24)	-12.7454 (11.14)
Hungary	-21.5794 (32.03)	-1.7361 (1.43)
Ireland	-1.9485 (3.06)	5.0969 (4.45)
Italy	-7.0951 (11.14)	-7.0274 (6.14)
Latvia	-1.1856 (1.58)	10.0945 (7.49)
Lithuania	-2.7091 (3.62)	17.0865 (12.68)
Luxembourg	6.0394 (7.98)	10.5953 (7.79)
Malta	-8.8573 (11.55)	21.1587 (15.35)
Montenegro	-11.5605 (12.08)	3.6213 (2.10)
Netherlands	6.6268 (10.41)	19.8513 (17.35)
North Macedonia	-13.9688 (14.59)	2.1691 (1.26)
Poland	-1.8398 (2.46)	13.4638 (9.99)
Portugal	-6.4327 (10.01)	.8644 (0.75)
Romania	-9.7545 (12.43)	2.5081 (1.78)
Serbia	-15.1843 (15.28)	24.3819 (13.65)
Slovakia	-8.6820 (11.92)	.4730 (0.36)
Slovenia	-17.1807 (24.48)	-2.7670 (2.19)
Spain	-5.7354 (8.92)	3.8750 (3.35)
Sweden	11.9658 (17.12)	16.8786 (13.43)
Turkey	-13.3776 (16.05)	17.5950 (11.74)
Constant	-11.8933	-29.1273
Adj R^2	.6052	.5101
N	10,708	10,708
Average	-12.96	-25.19

Excluded 1985 and UK. European Commission Surveys

Table 13. Expectations *over the next 12 months*, by month and year, 2008-2023

	Financial	Economic situation	Unemployment	C. Confidence
1985	3.7931 (3.98)	14.3937 (9.99)	-1.1168 (0.66)	4.0891 (4.43)
1986	6.2966 (6.92)	17.6869 (12.86)	-4.8744 (3.03)	7.2990 (8.29)
1987	6.7696 (7.70)	14.6576 (11.03)	-1.0910 (0.70)	7.7928 (9.11)
1988	7.9126 (9.24)	15.9257 (12.30)	-5.1083 (3.37)	9.4640 (11.06)
1989	8.6042 (10.05)	18.1708 (14.03)	-13.7264 (9.05)	10.8118 (12.64)
1990	7.6834 (8.97)	15.0437 (11.62)	-6.9396 (4.57)	9.4504 (11.05)
1991	6.3640 (7.43)	10.6298 (8.21)	7.5708 (4.99)	7.1883 (8.40)
1992	1.5819 (1.92)	4.6737 (3.75)	14.1614 (9.41)	2.9305 (3.45)
1993	-1.5772 (1.94)	.5271 (0.43)	23.5491 (16.36)	-2.5115 (3.11)
1994	3.2614 (4.02)	16.5527 (13.49)	1.3091 (0.91)	4.3923 (5.45)
1995	3.6798 (4.70)	15.9933 (13.50)	-4.7397 (3.41)	4.5184 (5.86)
1996	3.8884 (5.19)	11.9408 (10.55)	.6740 (0.51)	4.2625 (5.88)
1997	6.0837 (8.15)	15.9823 (14.15)	-6.0719 (4.59)	7.0523 (9.76)
1998	8.9591 (12.00)	18.2647 (16.18)	-10.7761 (8.15)	9.7069 (13.43)
1999	8.8122 (11.96)	16.6269 (14.92)	-8.4743 (6.49)	9.2702 (13.00)
2000	9.6783 (13.19)	20.1160 (18.12)	-17.6764 (13.60)	10.4034 (14.65)
2001	8.8977 (12.85)	13.0548 (12.47)	-5.7669 (4.70)	8.1739 (12.20)
2002	9.6473 (14.44)	15.8825 (15.72)	.0704 (0.06)	8.7169 (13.48)
2003	5.8490 (8.83)	9.6573 (9.64)	6.5104 (5.55)	5.1495 (8.03)
2004	5.9620 (9.00)	13.8484 (13.82)	-.8960 (0.76)	6.2393 (9.73)
2005	6.6450 (10.10)	13.9013 (13.97)	-3.4441 (-2.96)	7.0220 (11.03)
2006	7.3950 (11.28)	16.7341 (16.87)	-11.5880 (-9.97)	8.9841 (14.15)
2007	**8.2176 (12.61)**	**17.2159 (17.47)**	**-17.1131 (14.82)**	**9.5871 (15.20)**
2009	**-1.5910 (2.45)**	**-.4181 (0.43)**	**27.7577 (24.12)**	**-4.1457 (6.59)**
2010	.3319 (0.51)	8.4445 (8.59)	7.1729 (6.23)	-1.2913 (2.05)
2011	-2.4086 (3.71)	1.7629 (1.79)	3.1275 (2.72)	-4.0853 (6.50)
2012	-4.4098 (6.86)	-2.6264 (2.70)	11.3830 (9.99)	-6.4267 (10.33)
2013	.0793 (0.12)	6.2332 (6.47)	5.7310 (5.08)	-2.1269 (3.45)
2014	5.0203 (7.90)	14.9489 (15.55)	-5.7973 (5.15)	3.7630 (6.11)
2015	8.2675 (13.01)	17.8078 (18.52)	-11.1684 (9.92)	7.2903 (11.85)
2016	9.1382 (14.44)	16.0634 (16.78)	-13.2334 (11.80)	8.3659 (13.65)
2017	10.7631 (17.04)	21.0007 (21.97)	-21.3839 (19.10)	11.3289 (18.52)
2018	11.7798 (18.64)	20.2270 (21.16)	-24.2397 (21.65)	12.0099 (19.64)
2019	**12.0796 (19.12)**	**14.3042 (14.97)**	**-18.9705 (16.95)**	**10.9895 (17.97)**
2020	**5.3078 (8.35)**	**-2.6628 (-2.77)**	**10.6960 (9.50)**	**1.9743 (3.21)**
2021	8.4879 (13.22)	9.9564 (10.25)	-5.3383 (4.69)	6.5686 (10.57)
2022	-7.3112 (11.39)	-13.9566 (14.37)	-3.7130 (3.26)	-6.8353 (11.00)
2023	-1.6742 (1.83)	-4.6293 (-3.35)	-5.8547 (3.61)	-3.8664 (4.37)
Constant	-3.6642	-24.6635	26.1081	-13.8063
Adjusted R^2	.5689	.4577	.4911	.5687
N	10,708	10,708	10,693	10598
Average	-3.75	-11.5	22.14	-11.73

Notes: COF - Confidence Indicator (Q1 + Q2 + Q4 + Q9) / 4. Q1. Financial situation over last 12 months. Q2. Financial situation over next 12 months. Q4. General economic situation over next 12 months. Q7. Unemployment expectations over next 12 months. Q9. Major purchases over next 12 months. Equations include 11 month and 32 country dummies. T-statistics in parentheses.

Table 14. Unemployment and four expectations variables using month*country cells, Europe January 1985-March 2023.

Unempt rate$_{t-12}$	.8337 (193.20)	.8006 (170.68)	.8392 (192.34)	.8438 (190.85)	.8416 (189.43)
Unemployment$_{t-12}$	.0289 (38.09)	.0319 (41.13)	.0260 (29.74)		
Financial situation $_{t-12}$		-.0503 (32.79)		-.0248 (12.27)	-.0257 (12.55)
Economic situation$_{t-12}$	-.0309 (33.86)	-.0043 (3.44)	-.0041 (3.25)		
Industry employment$_{t-12}$		-.0197 (15.64)			
_cons	.7373	1.5152	1.1518	.4008	.3376
Adjusted R^2	.9280	.9249	.9254	.9379	.9393
N	9,532	9,532	9,532	9,516	9,237

T-statistics in parentheses.

All equations include country, month and year dummies.

Table 15. Unemployment equations adding two backward looking variables, Europe January 1985-March 2023.

Unempt rate$_{t-12}$	.7917 (187.16)	.7964 (183.03)	.7959 (185.66)	.8408 (202.02)	.7941 (187.42)
Unemployment$_{t-12}$	.0130 (17.49)	.0255 (34.35)	.0133 (17.90		
Financial situation $_{t-12}$		-.0034 (32.79)			
Economic situation$_{t-12}$	-.0058 (33.86)				
Industry employment$_{t-12}$	-.0371 (31.90)	-.0203 (17.49)			
Fin sitn last 12mths	-.0379 (21.84)	-.0387 (19.26)	-.0400 (22.77)		-.0387 (22.26))
Econ sitn last 12mths	-.0179 (20.13)	-.0219 (24.99)	-.0197 (20.96)		-.0129 (13.79)
_cons	.7575	.9752	.9625	.6662	.3376
Adjusted R^2	.9437	.9423	.9421	.9347	.9455
N	9,516	9,516	9,532	9,2499,237	

T-statistics in parentheses.

All equations include country, month and year dummies.

Table 16. Real wage growth 2007-2021 https://data.oecd.org/earnwage/average-wages.htm

Location	2007	2008	2009	2010	2014	2018	2019	2020	2021
OECD - Total	100	100	100	101	102	107	108	110	112
Australia	100	101	100	103	108	107	108	111	111
Austria	100	102	103	103	103	105	106	106	108
Belgium	100	100	102	101	105	104	105	102	106
Canada	100	102	103	103	108	111	111	114	114
Czech Republic	100	101	100	103	106	125	130	129	132
Denmark	100	101	104	105	107	110	111	113	113
Estonia	100	101	98	98	105	124	132	140	145
Finland	100	101	102	103	102	104	105	105	109
France	100	100	103	105	107	111	112	107	112
Germany	100	100	100	101	108	114	116	115	116
Greece	100	98	103	98	81	77	77	77	78
Hungary	100	101	96	97	93	106	109	111	116
Iceland	100	89	75	77	82	110	109	104	110
Ireland	100	104	112	113	107	111	113	114	114
Israel	100	98	95	95	99	112	115	115	121
Italy	100	100	101	102	97	99	99	93	97
Japan	100	99	98	98	96	99	100	99	101
Korea	100	100	100	102	104	117	121	121	120
Latvia	100	103	93	90	101	124	129	135	146
Lithuania	100	102	88	89	100	124	132	140	149
Luxembourg	100	99	103	103	105	107	107	107	111
Netherlands	100	101	105	105	104	104	103	106	105
New Zealand	100	99	100	101	102	111	114	117	119
Norway	100	102	103	105	114	113	115	115	119
Poland	100	105	105	108	110	132	138	141	142
Portugal	100	100	104	104	97	98	102	103	106
Slovak Republic	100	101	104	109	110	125	129	130	132
Slovenia	100	102	102	105	102	112	116	120	121
Spain	100	104	110	109	104	103	103	99	101
Sweden	100	102	102	104	110	114	115	117	118
Switzerland	100	101	103	102	106	105	107	105	108
Türkiye	100	99	101	103	118	136	144	144	
United Kingdom	100	98	98	98	97	100	102	102	105
United States	100	100	101	102	104	109	111	117	120

Average wages are obtained by dividing the national-accounts-based total wage bill by the average number of employees in the total economy, which is then multiplied by the ratio of the average usual weekly hours per full-time employee to the average usually weekly hours for all employees. This indicator is measured in USD constant prices using 2016 base year and Purchasing Power Parities (PPPs) for private consumption of the same year. 2007=100.

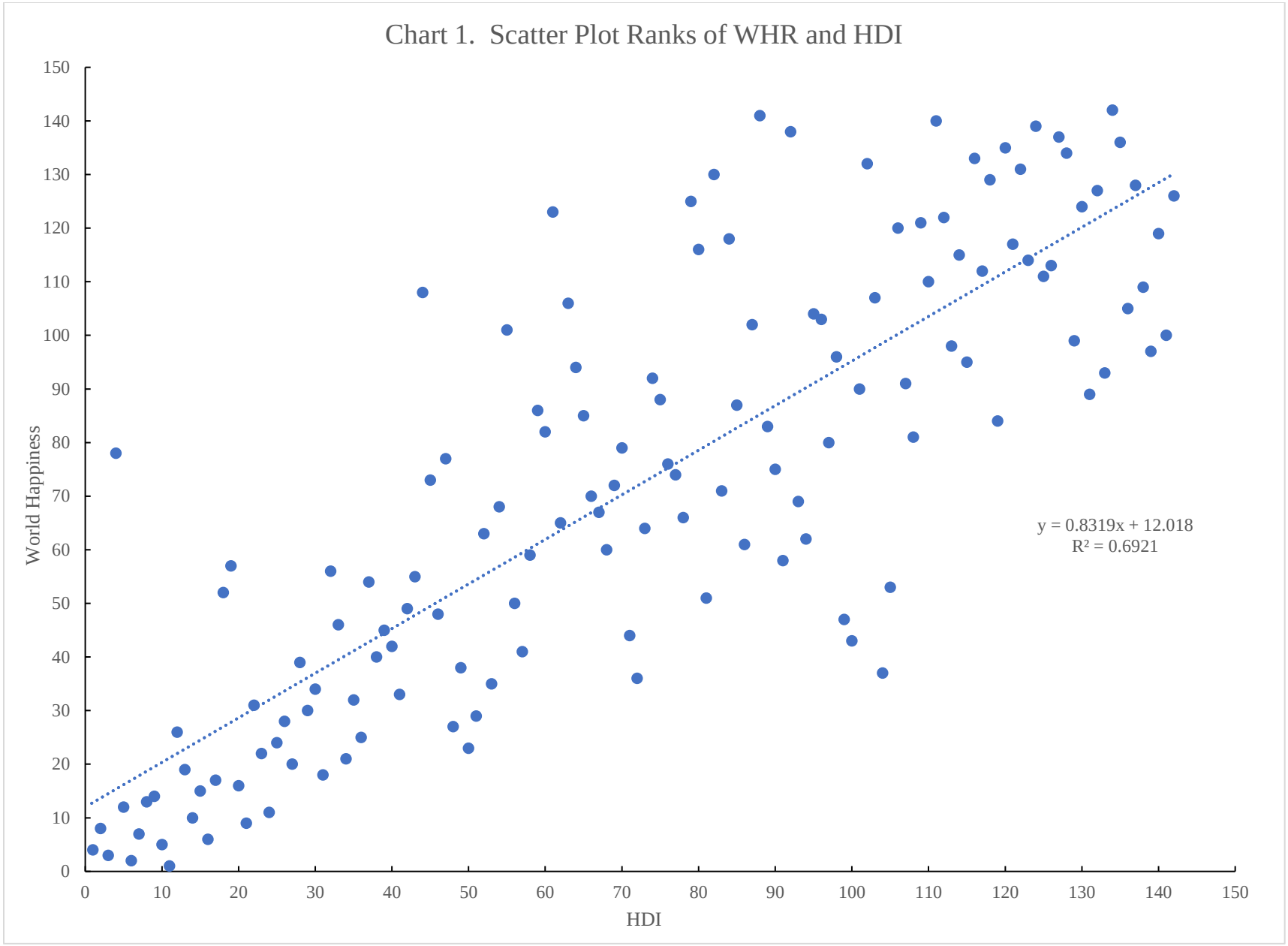


Chart 1. Scatter Plot Ranks of WHR and HDI
World Happiness
HDI
y = 0.8319x + 12.018
R² = 0.6921
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

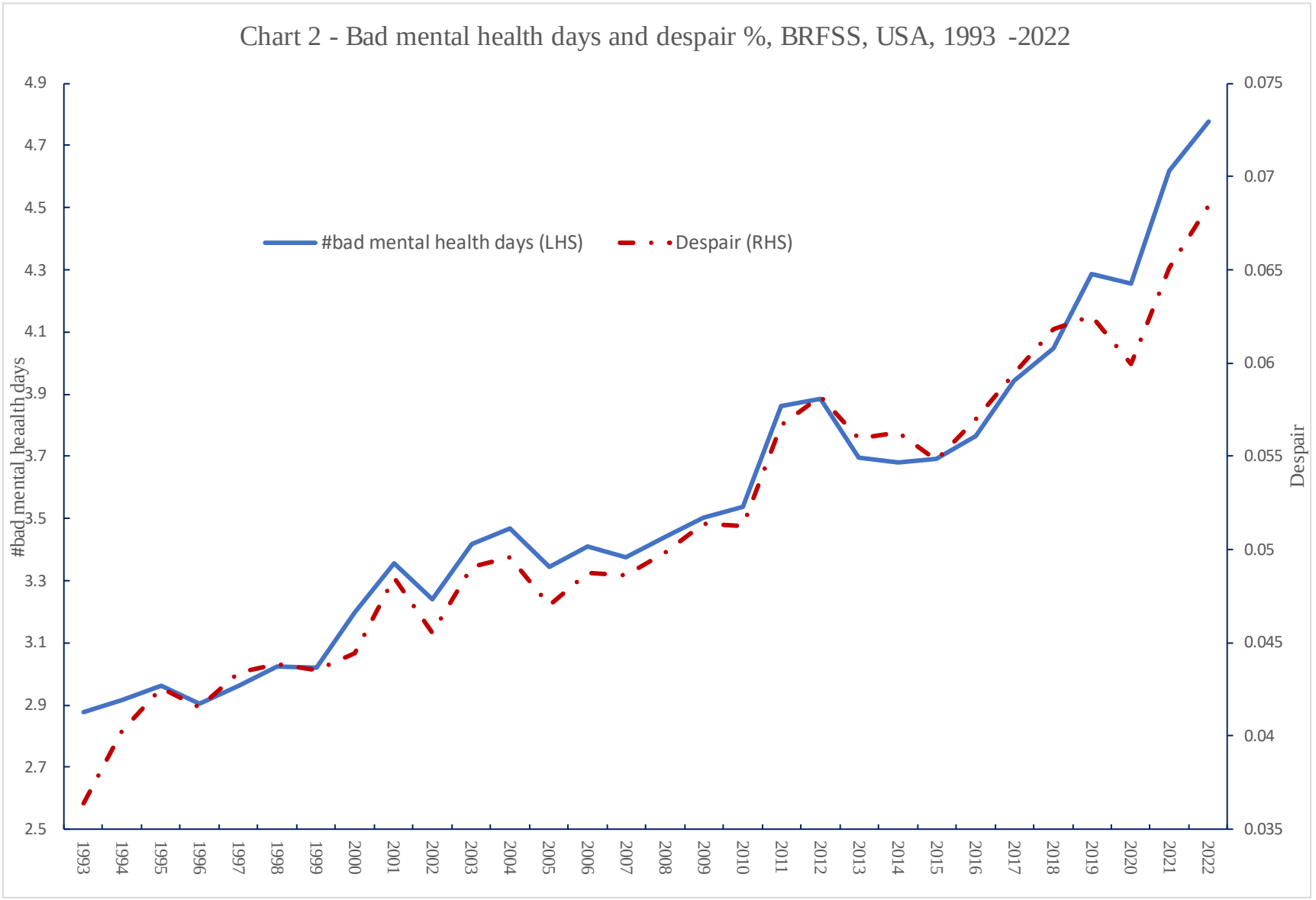


Chart 2 - Bad mental health days and despair %, BRFSS, USA, 1993 -2022
#bad mental health days (LHS)
Despair (RHS)
#bad mental heaalth days
Despair
4.9
4.7
4.5
4.3
4.1
3.9
3.7
3.5
3.3
3.1
2.9
2.7
2.5
0.075
0.07
0.065
0.06
0.055
0.05
0.045
0.04
0.035
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022

Chart 3a. ONS Life satisfaction survey 2019-2022

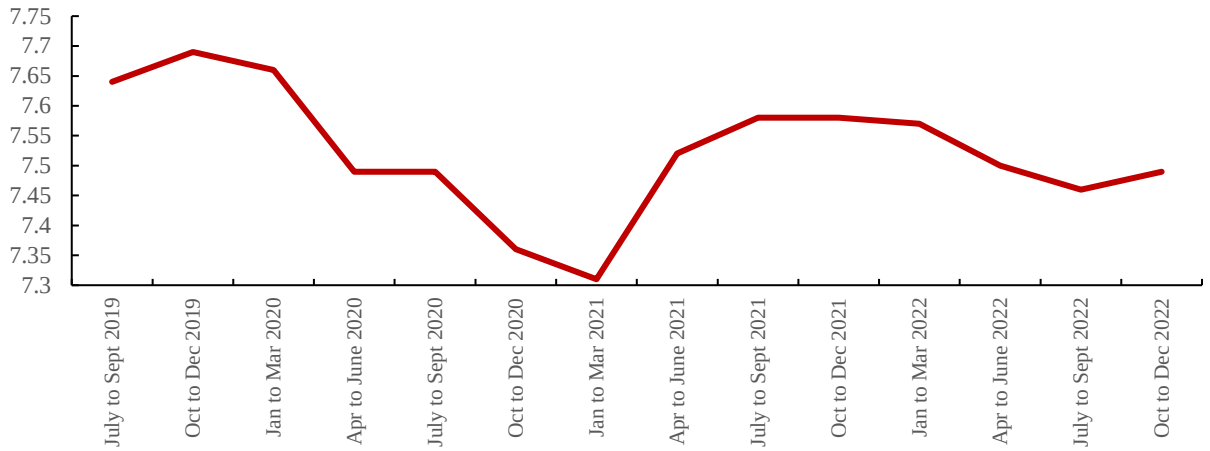


Chart 3b. Covid Social Survey life satisfaction, 2020-2021

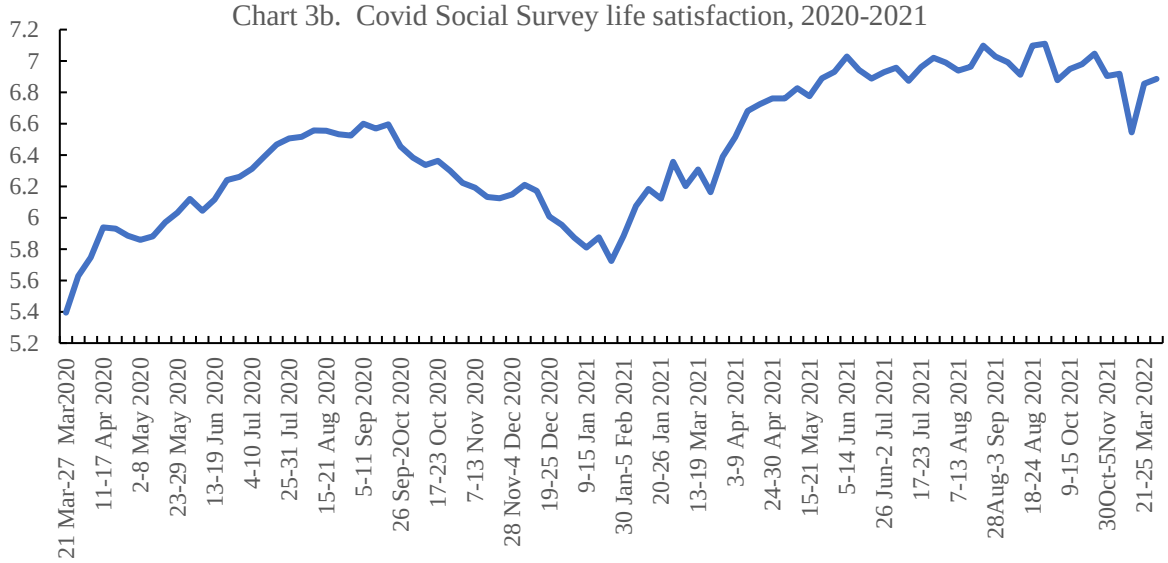


Chart 3c. Life satisfaction from CSS with people fixed effects, 2020-2021.

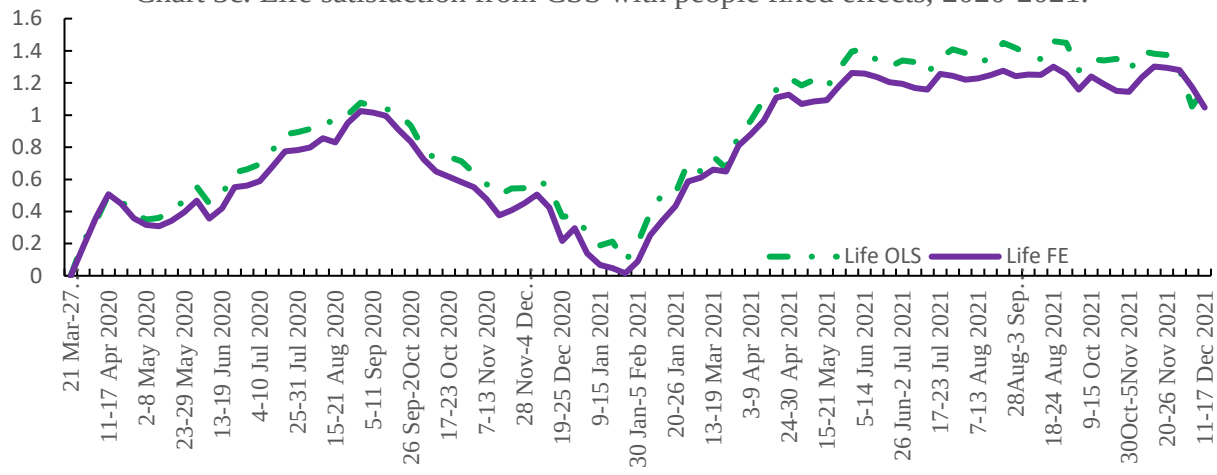


Chart 4. EU Expectations over next 12 months, 1985-2023

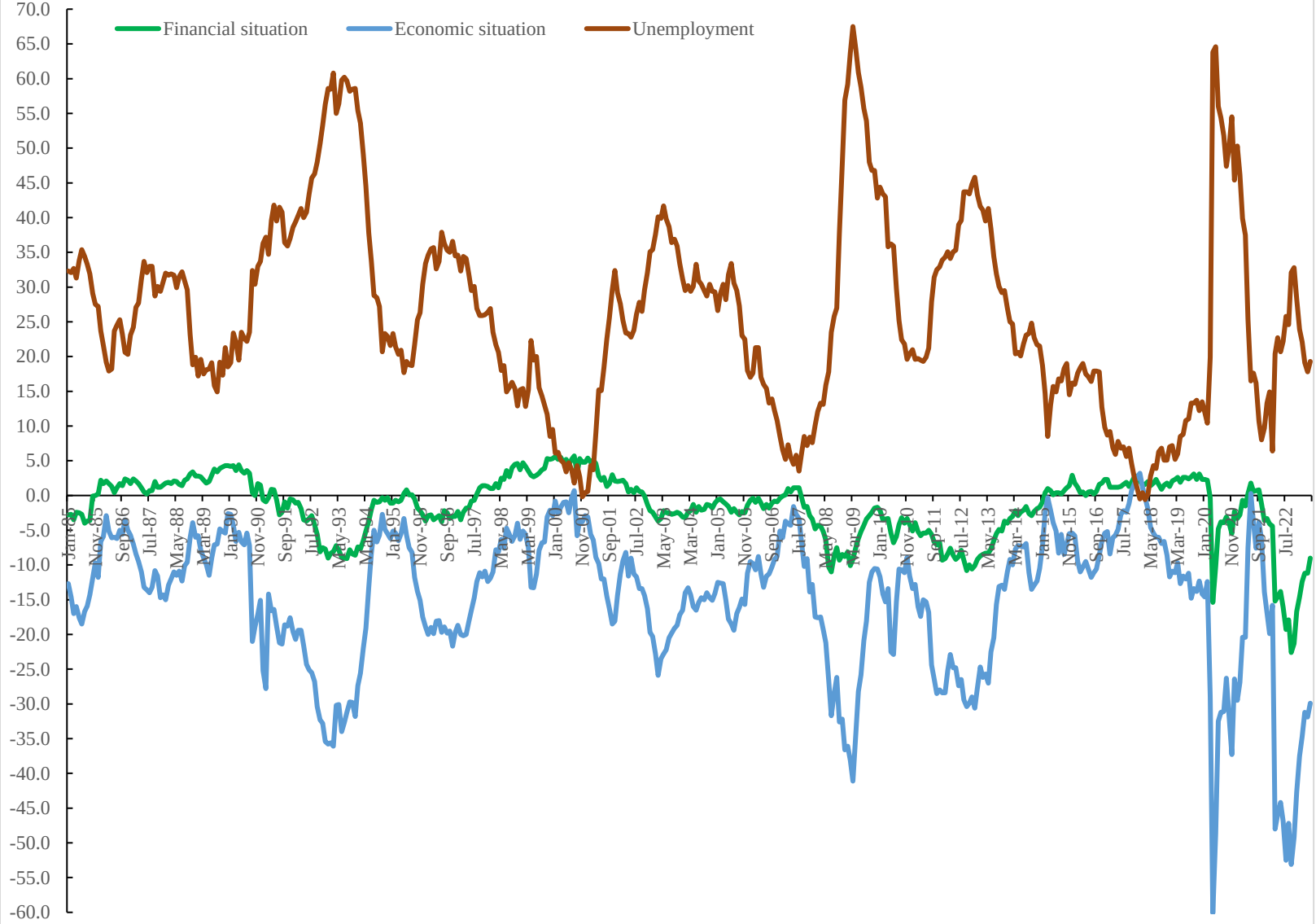


Chart 5. EU Consumer and Business Employment Expectations

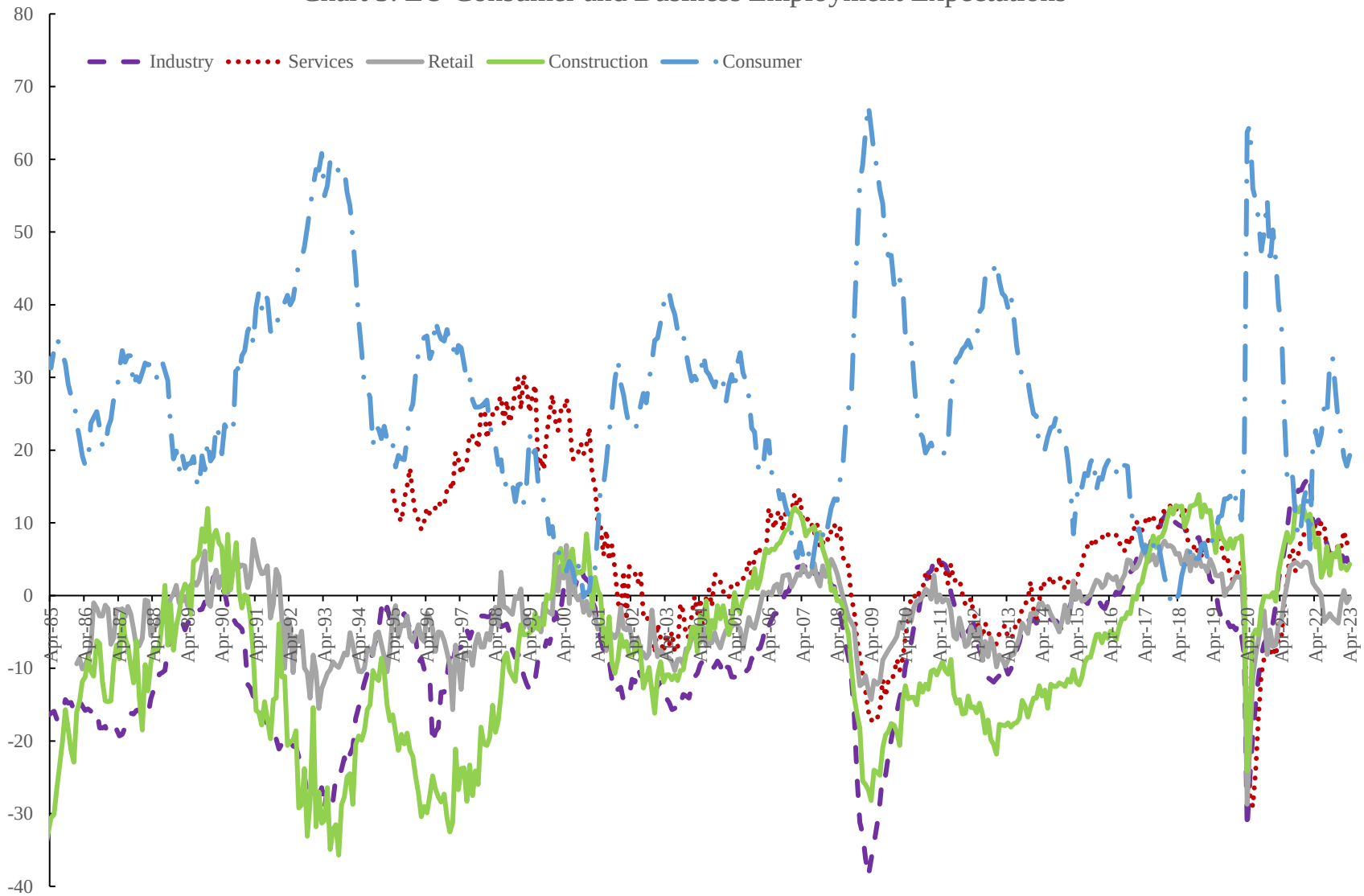


Chart 6. UK Real wages and the unemployment rate by month, 2001-2023

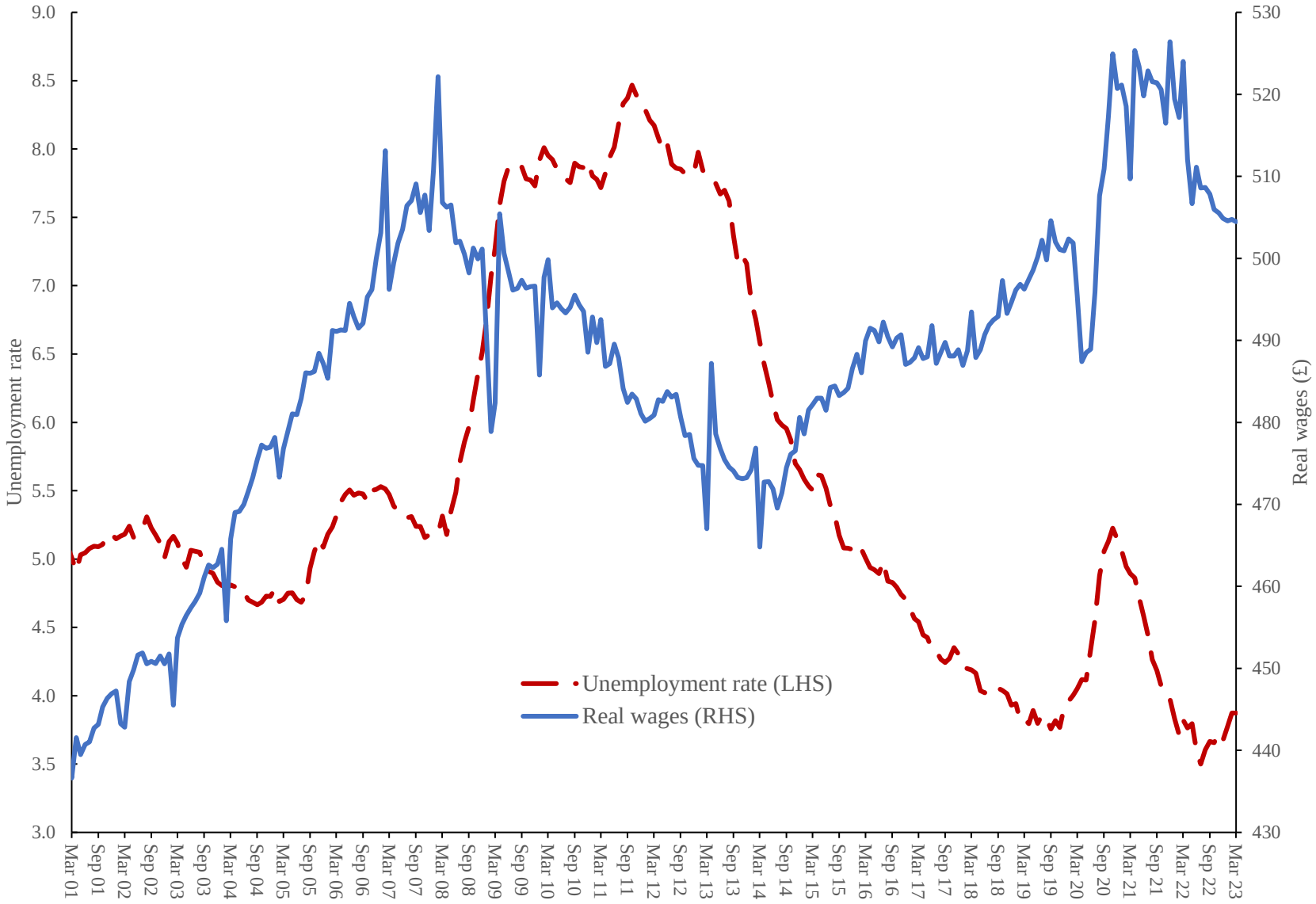
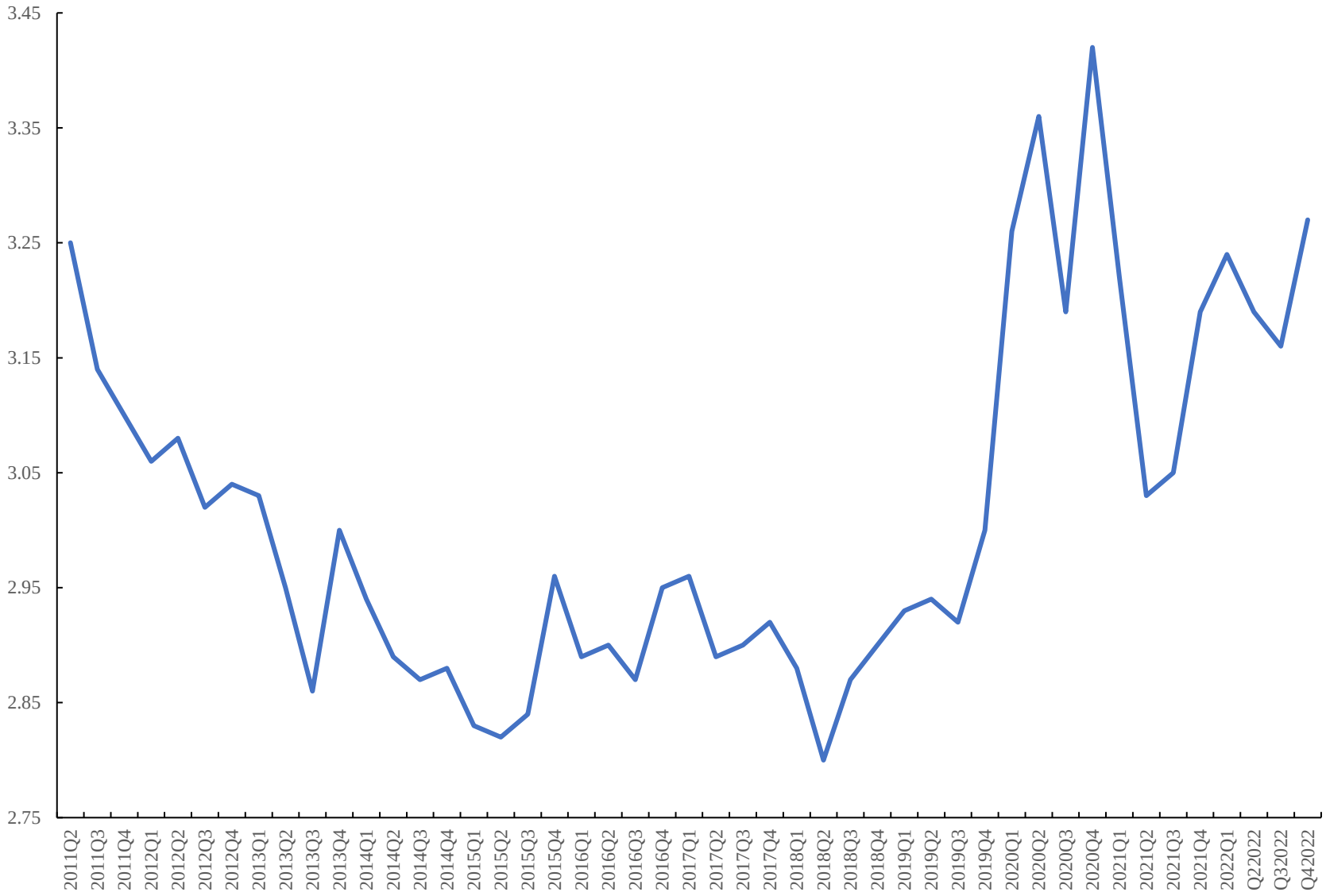


Chart 7. UK Quarterly 11-step Anxiety, 2011-2022



Appendix A. Country scores and rankings from Diener and Tay (2015), Table 6.

Nation	Material/ economics	Physical health	Healthy environment	Social	SWB	Equality	Average
Iceland	94.7	90.2	84.3	90.1	82.5	77.8	86.6
Norway	94.8	86.3	82.1	93.3	81.0	78.5	86.0
Switzerland	90.5	89.7	84.3	93.0	79.1	77.6	85.7
Denmark	92.9	84.5	84.2	91.3	84.0	77.0	85.7
Luxembourg	94.8	88.3	84.3	93.2	74.4	77.9	85.5
Sweden	93.0	87.8	82.5	88.8	81.4	78.8	85.4
Singapore	89.9	93.9	90.6	88.9	73.4	74.2	85.2
Netherlands	90.9	86.5	81.1	89.7	82.6	78.0	84.8
Australia	91.7	89.5	81.2	92.3	77.8	73.8	84.4
New Zealand	88.1	89.6	85.8	89.0	77.9	73.7	84.0
Austria	86.8	88.7	82.8	88.9	79.4	76.3	83.8
Finland	86.2	86.4	82.8	91.8	79.6	76.0	83.8
United Arab Emirates	87.4	89.3	86.7	92.5	74.1	71.7	83.6
Canada	90.5	88.8	76.6	91.5	77.3	74.2	83.1
Ireland	85.2	91.3	82.1	91.3	77.6	71.3	83.1
United Kingdom	87.8	88.8	82.9	85.5	78.0	70.4	82.2
Qatar	81.9	91.3	88.6	92.2	69.4	67.7	81.8
Belgium	83.6	85.5	74.4	90.0	76.6	76.9	81.2
Germany	86.6	85.8	83.2	79.7	76.9	73.5	80.9
United States	89.8	86.3	76.0	83.5	74.3	72.5	80.4
France	82.4	90.2	72.0	87.0	72.5	76.6	80.1
Kuwait	89.9	85.7	64.7	86.8	75.7	74.7	79.6
Japan	85.5	91.1	67.8	79.3	75.2	74.3	78.9
Czech Republic	77.6	84.3	73.0	85.8	73.9	76.1	78.5
Slovenia	82.2	84.0	75.3	84.2	71.6	71.7	78.1
Bhutan	54.2	83.5	89.3	89.3	74.7	75.4	77.7
Spain	77.8	90.1	66.1	88.0	69.4	74.3	77.6
Taiwan	85.9	90.8	58.5	78.4	78.5	73.4	77.6
Hong Kong	87.9	90.9	49.5	89.4	70.5	72.7	76.8
Malaysia	65.3	82.5	76.2	87.8	77.1	70.9	76.6
Thailand	62.3	83.2	80.9	84.3	79.9	68.6	76.5
Bahrain	75.7	85.1	74.0	90.7	60.6	72.2	76.4
Costa Rica	61.2	86.8	79.8	81.7	77.7	70.4	76.3
Malta	82.1	88.8	60.1	89.3	64.6	68.3	75.6
Saudi Arabia	74.7	84.5	64.4	80.5	72.8	75.0	75.3
Uzbekistan	52.6	74.3	81.0	92.3	80.3	71.4	75.3
Uruguay	63.8	85.1	82.0	75.6	75.9	69.1	75.2
Israel	80.4	88.9	56.7	75.4	69.3	79.9	75.1
Italy	75.0	91.5	60.6	79.9	68.9	74.5	75.1
Mauritius	62.0	79.4	85.6	82.2	69.8	70.9	75.0
Slovakia	73.7	82.2	67.7	81.1	69.8	75.0	74.9
China	63.2	86.2	75.7	86.3	75.3	61.8	74.7
Portugal	74.4	84.7	75.7	78.9	67.7	67.0	74.7
Poland	72.3	80.2	68.0	81.2	73.1	72.3	74.5
South Korea	84.1	87.4	64.0	66.7	72.5	71.1	74.3
Laos	49.8	80.5	82.0	85.4	76.1	68.5	73.7
Cyprus	75.2	87.5	63.7	77.4	67.9	70.1	73.7
Venezuela	59.0	84.8	67.0	78.7	79.2	71.6	73.4
Panama	56.4	87.2	69.0	75.2	79.6	69.7	72.9
Estonia	69.5	80.4	69.1	71.3	75.0	70.3	72.6
Vietnam	57.5	83.9	70.4	85.0	69.5	69.0	72.6
Suriname	55.3	81.4	77.9	72.2	74.1	74.1	72.5
Croatia	72.0	83.1	67.6	68.4	69.4	73.2	72.3
Indonesia	51.2	82.4	72.0	79.7	77.7	69.9	72.2
Jordan	63.3	89.3	60.3	79.0	66.1	72.2	71.7
Hungary	67.1	80.6	65.4	76.7	68.2	71.3	71.5
Belarus	61.3	75.8	63.5	81.1	72.3	75.1	71.5
Latvia	66.8	79.4	67.9	69.4	71.4	72.1	71.2
Mexico	56.7	85.9	65.6	69.1	76.7	70.0	70.6

Libya	62.2	83.3	63.8	73.5	66.4	74.4	70.6
Argentina	64.7	84.9	60.8	62.5	76.8	72.5	70.4
Sri Lanka	43.7	76.8	80.6	82.7	67.0	70.4	70.2
Trinidad & Tobago	59.4	81.0	64.8	72.5	77.5	65.9	70.2
Belize	60.5	84.9	59.1	69.7	71.2	75.2	70.1
Brazil	62.9	83.2	65.7	62.5	75.7	68.3	69.7
Myanmar	39.9	77.2	84.4	77.3	74.6	63.4	69.5
Kazakhstan	57.0	76.8	52.7	79.7	77.2	72.7	69.4
Montenegro	67.2	82.6	61.2	69.6	65.1	69.9	69.3
Chile	63.5	84.9	61.8	66.1	73.1	66.1	69.2
Lithuania	65.3	80.5	58.3	63.8	70.9	72.7	68.6
Tunisia	61.4	82.5	54.9	76.1	64.6	71.7	68.5
Paraguay	55.0	83.2	68.4	60.0	80.3	64.3	68.5
Jamaica	57.4	83.7	67.9	68.7	74.1	59.5	68.5
Algeria	63.6	83.3	59.5	69.1	66.3	69.3	68.5
Greece	69.3	89.1	54.5	61.6	64.5	72.1	68.5
Puerto Rico	64.0	82.5	51.8	72.3	75.9	62.8	68.2
Kosovo	64.8	82.1	52.6	66.4	74.1	67.0	67.8
Guyana	58.4	76.9	57.7	71.9	66.9	74.7	67.8
Colombia	56.3	84.6	66.1	61.2	72.4	65.5	67.7
Kyrgyzstan	48.7	76.2	64.5	71.3	76.0	69.1	67.7
Macedonia	65.6	83.5	57.2	67.9	63.4	67.9	67.6
Tajikistan	47.7	75.7	67.0	75.5	70.1	69.2	67.5
Djibouti	48.4	73.9	62.5	77.2	74.4	68.0	67.4
Bangladesh	43.7	76.8	79.0	66.8	70.3	67.6	67.4
Ecuador	52.8	84.0	62.0	64.3	71.9	68.5	67.3
Cambodia	32.5	72.5	83.6	86.7	65.7	62.1	67.2
Nicaragua	47.0	82.4	72.1	67.5	71.4	62.1	67.1
Morocco	57.9	81.8	64.0	67.7	67.5	61.6	66.7
Guatemala	51.2	83.3	65.1	60.7	74.1	65.8	66.7
Bulgaria	63.4	79.6	51.8	69.6	68.2	66.7	66.6
Nepal	46.6	76.2	75.3	59.9	73.5	66.9	66.4
Philippines	36.2	76.5	81.9	81.7	59.2	61.7	66.2
El Salvador	49.2	84.0	63.2	60.1	72.2	67.9	66.1
India	47.2	77.2	69.3	67.1	68.0	67.1	66.0
Bolivia	50.2	76.7	68.7	63.2	66.2	69.3	65.7
Mongolia	51.2	75.9	47.8	72.8	75.8	69.9	65.6
Ethiopia	33.5	76.5	74.5	71.4	72.2	65.2	65.5
South Africa	47.6	70.3	65.1	75.8	73.7	58.8	65.2
Azerbaijan	42.5	78.7	56.8	72.2	69.0	71.4	65.1
Dominican Republic	48.3	83.3	64.8	69.5	68.1	56.4	65.1
Botswana	39.0	64.9	70.6	85.6	71.6	57.7	64.9
Honduras	43.3	82.9	66.7	63.4	72.9	60.0	64.9
Iran	59.5	82.9	64.9	68.0	53.5	60.2	64.8
Bosnia and Herzegovina	64.9	81.1	55.9	54.7	65.2	66.7	64.7
Albania	58.2	84.2	46.2	67.9	65.6	65.5	64.6
Rwanda	28.3	74.3	80.0	81.6	71.3	51.6	64.5
Romania	59.8	79.2	55.0	61.3	65.6	65.4	64.4
Russia	62.6	74.4	39.4	61.2	75.7	71.3	64.1
Serbia	64.9	80.3	47.1	59.9	62.9	68.9	64.0
Turkey	58.3	83.2	56.9	53.3	57.1	71.5	63.4
Ghana	37.5	70.9	65.7	74.3	69.9	61.2	63.2
Senegal	41.2	75.7	51.6	68.5	73.0	69.3	63.2
Moldova	54.1	75.9	49.1	60.6	70.4	69.1	63.2
Swaziland	46.6	61.7	65.2	73.4	71.1	60.7	63.1
Peru	49.2	82.1	55.7	54.9	67.2	67.3	62.7
Mauritania	40.9	73.9	51.2	65.8	74.9	69.7	62.7
Georgia	45.5	74.7	62.7	65.5	65.9	62.0	62.7
Syria	56.1	87.2	52.4	69.7	50.9	59.8	62.7
Lebanon	67.0	87.0	38.3	56.2	59.2	68.1	62.6
Kenya	31.4	75.5	62.4	70.4	73.2	62.3	62.5
Niger	22.5	71.4	68.1	72.0	74.8	66.0	62.4

Egypt	50.6	80.5	53.1	62.2	58.7	66.4	61.9
Mali	34.8	70.0	56.4	68.9	77.7	63.3	61.9
Mozambique	40.3	69.1	64.6	64.6	69.3	62.7	61.8
Sudan	43.7	73.6	54.5	67.7	66.2	64.2	61.7
Armenia	52.0	76.6	53.0	63.1	59.3	65.3	61.5
Zimbabwe	36.2	69.6	62.5	69.4	70.8	59.2	61.3
Malawi	25.6	64.9	74.9	72.3	72.0	55.6	60.9
Pakistan	45.5	72.5	56.3	58.9	65.4	66.1	60.8
Ukraine	56.2	73.2	34.0	55.6	73.0	70.6	60.4
Ivory Coast	36.8	69.7	54.4	66.9	71.1	61.9	60.1
Zambia	31.8	68.6	60.1	67.9	72.1	59.4	60.0
Palestinian Territories	56.1	82.9	47.1	49.6	57.2	66.8	60.0
Burkina Faso	28.0	70.2	59.9	66.1	69.0	63.8	59.5
Nigeria	38.5	72.0	50.2	63.4	68.8	63.9	59.5
Cameroon	33.0	67.2	59.0	66.6	68.1	62.8	59.4
Afghanistan	34.2	70.7	62.2	54.6	66.9	66.9	59.3
Yemen	40.8	75.8	50.4	58.0	63.0	65.7	59.0
Uganda	27.6	67.7	61.5	73.4	65.3	58.0	58.9
Comoros	33.0	70.8	57.2	51.2	72.9	68.1	58.9
Gabon	38.5	70.5	53.3	65.9	65.7	58.8	58.8
Madagascar	28.1	77.0	60.9	52.3	68.0	66.2	58.8
Tanzania	29.3	72.0	52.0	66.0	69.5	62.4	58.6
Benin	25.8	71.3	58.7	61.6	68.5	62.8	58.1
Angola	35.1	69.0	49.8	57.7	65.7	67.2	57.4
Iraq	55.7	77.5	35.3	49.7	50.0	72.8	56.8
Congo Brazzaville	32.4	70.1	53.8	58.5	66.0	57.9	56.5
Lesotho	28.8	63.8	42.6	71.4	75.6	52.6	55.8
Guinea	22.0	69.4	52.5	57.1	68.9	62.7	55.4
Congo (Kinshasa)	26.1	72.0	44.7	49.2	69.8	66.5	54.7
Central African Republic	14.7	65.6	63.0	53.4	68.7	61.0	54.4
Burundi	18.7	66.1	62.7	43.6	70.6	62.3	54.0
Liberia	17.4	70.5	46.9	60.5	62.3	59.0	52.8
Sierra Leone	22.7	61.3	48.9	59.9	56.5	59.3	51.4
Togo	25.1	67.8	47.9	48.3	59.5	58.8	51.2
Chad	23.2	63.8	43.3	49.5	66.9	58.7	50.9
Haiti	31.6	71.5	40.0	37.2	61.5	62.3	50.7

Note: Category scores for each well-being component were based on indicators that were administered to more than 160 nations. All negatively worded items were reversed-scored (R). “Economics/Material”: Annual household income, Internet, Television, Shelter (R), Food (R); “Physical Health”: Health Problems (R), Life Expectancy; “Environment”: Environment preserved, Quality water, Quality air; “Social”: Support, Freedom, Children Respected, Good place for Immigrants; “SWB”: Life satisfaction, Enjoy, Anger (R), Sad (R), Stress (R); “Equality”: Income GINI, LS GINI.

Appendix B. Life satisfaction by year from Eurobarometers

	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark	Ireland	UK	Greece	Spain	Portugal
1973	2.89	3.34	3.34	2.97	2.67	2.67	3.45	3.42	3.15			
1975	2.85	3.31	3.25	2.92	2.59	2.59	3.48	3.20	3.18			
1976	2.83	3.20	3.27	2.95	2.52	2.52	3.39	3.24	3.07			
1977	2.71	3.28	3.29	3.02	2.56	2.56	3.47	3.21	3.06			
1978	2.77	3.29	3.36	3.05	2.61	2.61	3.46	3.27	3.15			
1979	2.75	3.34	3.37	3.05	2.60	2.60	3.54	3.23	3.17			
1980	2.71	3.32	3.42	3.11	2.57	2.57	3.45	3.15	3.10			
1981	2.73	3.20	3.43	3.02	2.65	2.65	3.50	3.17	3.17			
1982	2.85	3.15	3.38	2.98	2.76	2.76	3.53	3.21	3.14	2.64		
1983	2.78	3.01	3.35	2.99	2.65	2.65	3.51	3.14	3.16	2.62		
1984	2.78	2.96	3.32	2.99	2.64	2.64	3.51	3.06	3.12	2.69		
1985	2.83	3.00	3.36	3.02	2.74	2.74	3.57	3.10	3.16	2.70		
1986	2.77	2.96	3.30	2.98	2.70	2.70	3.54	3.07	3.14	2.66	2.95	2.50
1987	2.80	2.99	3.29	3.00	2.72	2.72	3.49	2.95	3.14	2.67	2.95	2.69
1988	2.93	3.12	3.40	3.09	2.82	2.82	3.58	3.02	3.18	2.72	3.02	2.71
1989	2.92	3.10	3.44	3.10	2.86	2.86	3.53	3.06	3.20	2.79	2.99	2.65
1990	2.88	3.15	3.40	3.10	2.88	2.88	3.55	3.17	3.17	2.70	2.98	2.72
1991	2.97	3.28	3.49	2.95	2.99	2.99	3.61	3.23	3.16	2.69	3.07	2.78
1992	2.83	3.15	3.41	2.90	2.88	2.88	3.59	3.20	3.16	2.51	2.89	2.76
1993	2.79	3.11	3.42	2.91	2.87	2.87	3.58	3.15	3.12	2.43	2.83	2.67
1994	2.78	3.12	3.40	2.90	2.84	2.84	3.61	3.16	3.18	2.50	2.77	2.64
1995	2.85	3.02	3.31	2.94	2.85	2.85	3.56	3.27	3.19	2.46	2.82	2.68
1996	2.79	3.11	3.41	2.93	2.88	2.88	3.62	3.21	3.13	2.44	2.83	2.56
1997	2.83	3.09	3.22	2.87	2.88	2.88	3.59	3.16	3.12	2.93	2.95	2.83
1998	2.76	2.94	3.37	2.73	2.81	2.81	3.59	3.34	3.16	2.71	2.92	2.57
1999	2.91	3.04	3.37	2.91	2.91	2.91	3.66	3.25	3.16	2.72	2.97	2.65
2000	2.91	3.01	3.31	2.82	2.81	2.81	3.56	3.24	3.14	2.61	2.99	2.60
2001	2.95	3.08	3.41	2.97	2.92	2.92	3.60	3.26	3.21	2.66	3.06	2.71
2002	2.84	2.96	3.30	2.84	2.91	2.91	3.55	3.16	3.17	2.56	2.97	2.48
2003	2.85	3.04	3.29	2.76	2.86	2.86	3.57	3.16	3.19	2.67	3.02	2.50
2004	2.95	3.25	3.33	3.16	3.00	3.00	3.57	3.36	3.32	2.78	3.14	2.64
2005	2.96	3.17	3.41	2.93	2.83	2.83	3.62	3.29	3.21	2.67	3.03	2.48
2006	2.99	3.19	3.39	2.90	2.87	2.87	3.61	3.28	3.21	2.71	3.10	2.50
2007	2.96	3.18	3.44	2.97	2.79	2.79	3.63	3.23	3.22	2.68	3.06	2.52
2008	2.90	3.12	3.47	2.94	2.62	2.62	3.61	3.22	3.19	2.57	2.99	2.41
2009	2.96	3.17	3.45	2.99	2.69	2.69	3.67	3.25	3.29	2.41	2.87	2.42
2010	2.98	3.16	3.43	3.01	2.73	2.73	3.65	3.23	3.30	2.32	2.91	2.34
2011	2.92	3.14	3.45	2.96	2.73	2.73	3.54	3.13	3.28	2.35	2.82	2.53

2012	3.07	3.19	3.39	3.20	2.72	2.72	3.60	3.15	3.31	2.39	2.95	2.38
2013	2.95	3.20	3.42	3.12	2.59	2.59	3.68	3.11	3.30	2.16	2.84	2.22
2014	2.95	3.16	3.44	3.12	2.60	2.60	3.69	3.27	3.32	2.22	2.89	2.39
2015	3.04	3.20	3.49	3.16	2.69	2.69	3.71	3.34	3.40	2.32	2.97	2.55
2016	3.01	3.17	3.49	3.14	2.68	2.68	3.70	3.38	3.42	2.23	2.99	2.65
2017	3.01	3.14	3.49	3.19	2.72	2.72	3.69	3.39	3.40	2.34	3.03	2.74
2018	2.97	3.07	3.49	3.16	2.71	2.71	3.68	3.38	3.35	2.36	3.04	2.70
2019	3.01	3.14	3.52	3.21	2.73	2.73	3.71	3.36	3.37	2.46	3.11	2.73
2020	2.99	3.09	3.47	3.21	2.70	2.70	3.64	3.19	3.19	2.55	3.06	2.74
2021	2.97	3.12	3.45	3.19	2.70	2.70	3.51	3.25	3.14	2.57	2.97	2.85
2022	2.95	3.05	3.44	3.17	2.78	2.78	3.60	3.45	3.19	2.57	3.11	2.85
2023	2.96	2.98	3.49	3.07	2.82	2.82	3.69	3.41	3.20	2.59	3.08	2.79

	Finland	Sweden	Austria	Cyprus	Czechia	Estonia	Hungary	Latvia	Lithuania	Malta	Poland	Slovakia
1996	3.14	3.36	3.24									
1997	3.15	3.26	3.26									
1998	3.17	3.39	3.06									
1999	3.16	3.34	3.20									
2000	3.11	3.31	3.06									
2001	3.12	3.34	3.16									
2002	3.15	3.31	3.13									
2003	3.15	3.29	3.08									
2004	3.33	3.42	3.14	3.20	2.89	2.74	2.50	2.57	2.59	3.19	2.92	2.66
2005	3.27	3.42	3.03	3.08	2.94	2.70	2.49	2.57	2.53	3.07	2.74	2.59
2006	3.25	3.43	3.05	3.12	2.92	2.79	2.42	2.62	2.60	3.01	2.80	2.71
2007	3.26	3.41	3.05	3.09	2.92	2.83	2.40	2.66	2.66	3.05	2.85	2.75
2008	3.27	3.45	2.98	3.12	2.90	2.80	2.33	2.62	2.64	3.10	2.80	2.71
2009	3.31	3.45	3.01	3.13	2.90	2.75	2.30	2.50	2.55	2.98	2.83	2.76
2010	3.28	3.44	3.07	3.12	2.88	2.76	2.42	2.58	2.51	2.98	2.89	2.86
2011	3.25	3.42	2.98	3.03	2.86	2.70	2.40	2.55	2.54	3.00	2.80	2.78
2012	3.25	3.52	3.08	3.16	2.93	2.79	2.50	2.82	2.84	3.04	2.96	2.83
2013	3.28	3.46	3.06	2.88	2.90	2.72	2.42	2.72	2.72	3.17	2.85	2.69
2014	3.29	3.44	3.18	3.03	2.93	2.81	2.58	2.76	2.74	3.25	2.91	2.77
2015	3.34	3.48	3.17	3.07	2.99	2.86	2.66	2.83	2.83	3.28	2.97	2.80
2016	3.34	3.46	3.19	3.11	2.99	2.90	2.67	2.84	2.78	3.26	2.97	2.88
2017	3.33	3.46	3.27	3.15	3.00	2.89	2.71	2.82	2.79	3.23	3.00	2.88
2018	3.30	3.43	3.25	3.09	3.00	2.92	2.74	2.84	2.80	3.19	3.04	2.89
2019	3.31	3.45	3.27	3.14	3.08	2.94	2.81	2.89	2.87	3.11	3.01	2.92
2020	3.15	3.33	3.14	3.15	3.06	2.88	2.87	2.94	2.91	3.10	3.04	2.82
2021	3.10	3.26	3.10	3.19	3.13	2.91	2.86	2.81	2.84	3.10	3.02	2.86

2022	3.21	3.34	3.11	3.02	3.09	2.96	2.90	2.85	2.89	3.29	3.06	2.83
2023	3.34	3.39	3.08	3.02	3.09	2.96	2.78	2.90	2.91	3.37	3.01	2.77

	Slovenia	Bulgaria	Romania	Turkey	Croatia	TCC	N Macedonia	Montenegro	Serbia	Albania
2004	3.17	2.18	2.46	2.85	2.78	3.08				
2005	3.11	2.04	2.34	2.89	2.74	3.01				
2006	3.12	2.06	2.35	2.86	2.80	3.02				
2007	3.12	2.14	2.42	2.93	2.81	2.86	2.57			
2008	3.08	2.21	2.45	2.67	2.79	2.62	2.56			
2009	3.05	2.20	2.40	2.59	2.78	2.56	2.56			
2010	3.05	2.17	2.17	2.72	2.80	2.67	2.49			
2011	2.97	2.24	2.33	2.67	2.73	2.61	2.52	2.54		
2012	3.05	2.47	2.62	2.73	2.72	2.43	2.45	2.46	2.18	2.62
2013	3.01	2.13	2.34	2.73	2.81	2.37	2.54	2.50	2.24	2.67
2014	3.05	2.26	2.51	2.78	2.82	2.42	2.62	2.70	2.45	2.56
2015	3.10	2.36	2.63	2.67	2.89	2.50	2.54	2.62	2.38	2.66
2016	3.16	2.42	2.70	2.75	2.89	2.50	2.54	2.60	2.38	2.65
2017	3.20	2.47	2.69	2.86	2.85	2.74	2.63	2.76	2.44	2.52
2018	3.17	2.45	2.60	2.85	2.82	2.74	2.60	2.82	2.47	2.36
2019	3.19	2.45	2.57	2.81	2.94	2.78	2.58	2.78	2.52	2.58
2020	3.14	2.43	2.72	2.69	2.94	2.76	2.83	2.75	2.54	2.54
2021	3.07	2.60	2.81	2.62	2.93	2.90	2.85	2.78	2.68	2.70
2022	3.12	2.52	2.66	2.52	2.98	2.80	2.58	2.68	2.67	
2023	3.17	2.58	2.63	2.55	2.99	2.97	2.60	2.82	2.63	

	Norway	Switzerland	Iceland	Bosnia/Herz	Moldova
1992	3.39				
1993	3.38				
1994	3.39				
1995	3.41				
1996	3.35				
2001	3.42				
2002	3.42				
2010			3.59		
2011			3.54		
2012			3.56		
2021	3.19	3.34	3.55	3.08	
2022	3.21	3.41	3.54	3.04	
2023	3.13	3.29	3.32	3.02	2.52

Appendix C. Life satisfaction by survey, 2019-2022 from Eurobarometers

a) Great Recession, 2007-2009

#67.2 Apr-May 2007
#68.1 Sep-Nov 2007
#69.2 Mar-May 2008
#70.1 Oct-Nov 2008
#71.1 Jan-Feb 2009
#71.2 May-Jun 2009
#71.3 Jun-Jul 2009
#72.4 Oct-Nov 2009

	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark	Ireland	UK	Greece	Spain	Portugal
#67.2	2.95	3.18	3.45	3.02	2.80	3.38	3.60	3.25	3.22	2.68	3.05	2.57
#68.1	2.97	3.18	3.44	2.93	2.79	3.39	3.65	3.21	3.22	2.68	3.07	2.47
#69.2	2.90	3.11	3.45	2.92	2.62	3.39	3.61	3.27	3.20	2.67	3.02	2.46
#70.1	2.89	3.12	3.49	2.95	2.61	3.30	3.61	3.17	3.19	2.48	2.97	2.36
#71.1	2.86	3.12	3.44	2.94	2.56	3.37	3.64	3.28	3.23	2.42	2.91	2.31
#71.2	3.01	3.24	3.44	3.04	2.74	3.36	3.71	3.30	3.32	2.39	2.93	2.53
#71.3	2.99	3.21	3.48	2.99	2.72	3.35	3.69	3.26	3.27	2.29	2.85	2.40
#72.4	2.95	3.11	3.46	3.01	2.73	3.36	3.66	3.14	3.33	2.54	2.79	2.44
	Finland	Sweden	Austria	Cyprus	Czechia	Estonia	Hungary	Latvia	Lithuania	Malta	Poland	Slovakia
#67.2	3.27	3.44	3.02	3.12	2.92	2.85	2.41	2.64	2.69	3.08	2.85	2.76
#68.1	3.25	3.38	3.07	3.05	2.91	2.80	2.38	2.68	2.63	3.02	2.85	2.74
#69.2	3.27	3.45	3.00	3.12	2.90	2.81	2.35	2.62	2.64	3.14	2.80	2.68
#70.1	3.27	3.45	2.96	3.12	2.90	2.79	2.31	2.61	2.64	3.05	2.80	2.74
#711	3.29	3.47	2.93	3.13	2.86	2.74	2.31	2.43	2.41	3.05	2.76	2.74
#71.2	3.36	3.47	3.05	3.15	2.94	2.77	2.38	2.59	2.64	3.03	2.91	2.75
#71.3	3.30	3.44	3.00	3.16	2.90	2.75	2.29	2.44	2.60	3.05	2.88	2.73
#72.4	3.30	3.42	3.06	3.07	2.90	2.74	2.24	2.54	2.54	2.80	2.79	2.82
	Slovenia	Bulgaria	Romania	Croatia	TCyprus	Turkey	N Macedonia					
#67.2	3.14	2.14	2.44	2.82	2.91	2.99	2.60					
#68.1	3.10	2.15	2.39	2.81	2.82	2.87	2.54					
#69.2	3.09	2.22	2.48	2.79	2.74	2.60	2.58					
#70.1	3.06	2.19	2.42	2.79	2.49	2.74						
#71.1	3.03	2.18	2.46	2.87	2.66	2.58	2.51					
#71.2	3.07	2.21	2.47	2.79		2.57	2.54					
#71.3	3.05	2.24	2.35	2.76	2.53	2.63	2.60					
#72.4	3.04	2.16	2.34	2.71	2.50	2.56	2.58					

b) Covid, 2019-2021

#92.3 November-December 2019
#92.4 December 2019
#93.1 July-August 2020
#93.2 August-September 2020
#94.1 October-November 2020
#94.3 February-March 2021
#95.1 March-April 2021
#95.2 April-May 2021

	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark	Ireland	UK	Greece	Spain	Portugal
#92.3	2.96	3.13	3.51	3.21	2.71	3.35	3.68	3.31	3.34	2.42	3.09	2.71
#92.4	3.04	3.11	3.55	3.21	2.75	3.32	3.69	3.33	3.39	2.57	3.13	2.78
#93.1	3.00	3.18	3.51	3.25	2.73	3.26	3.70	3.31	3.21	2.57	3.15	2.77
#93.2	3.00	3.09	3.47	3.23	2.73	3.16	3.68	3.13	3.18	2.61	3.01	2.81
#94.1	2.96	3.01	3.43	3.14	2.65	3.11	3.54	3.16		2.47	3.02	2.65
#94.3	2.91	3.05	3.40	3.21	2.57	3.04	3.40	3.14	3.09	2.47	2.94	2.73
#95.1	2.93	3.08	3.45	3.18	2.58	3.11	3.41	3.18		2.57	3.00	2.81
#95.2	3.00	3.11	3.48	3.27	2.77	3.16	3.51	3.21	3.17	2.61	3.08	2.86

	Finland	Sweden	Austria	Cyprus	Czechia	Estonia	Hungary	Latvia	Lithuania	Malta	Poland	Slovakia
#92.3	3.31	3.43	3.23	3.17	3.14	2.95	2.77	2.89	2.80	3.09	2.97	2.87
#92.4	3.28	3.43	3.28	3.21	3.15	2.93	2.84	2.86	2.85	3.14	2.98	2.95
#93.1	3.19	3.40	3.15	3.17	3.16	2.93	2.93	3.00	2.98	3.09	3.05	2.85
#93.2	3.14	3.26	3.15	3.23	3.09	2.84	2.85	2.97	2.97	3.17	3.06	2.84
#94.1	3.12	3.32	3.11	3.06	2.93	2.88	2.81	2.85	2.80	3.06	3.02	2.76
#94.3	3.07	3.25	3.02	2.94	3.09	2.82	2.72	2.72	2.77	3.08	2.98	2.74
#95.1	3.07	3.20	3.02	3.04	3.08	2.86	2.75	2.71	2.77	3.11	3.01	2.81
#95.2	3.09	3.29	3.12	3.22	3.16	2.92	2.82	2.73	2.81	3.23	3.06	2.85

	Slovenia	Bulgaria	Romania	Croatia	TCyprus	Turkey	N Macedonia	Montenegro	Serbia	Albania	Bosnia	Kosovo
#92.3	3.15	2.48	2.65	2.94	2.79	2.84	2.54	2.80	2.57	2.51		
#92.4	3.20	2.43	2.65	3.00								
#93.1	3.21	2.41	2.69	3.00	2.76	2.69	2.68	2.75	2.54	2.36		
#93.2	3.21	2.42	2.85				2.99					
#94.1	3.00	2.47	2.63	2.89								
#94.3	2.93	2.50	2.75	2.86	2.78	2.68	2.76	2.70	2.61	2.60	2.80	3.02
#95.1	3.05	2.47	2.66	2.95								
#95.2	3.12	2.61	2.76	3.01		2.67	2.84	2.85	2.70	2.55	2.84	3.12

Appendix D. EU changes in expectations and the unemployment rate 2007-2009

	Financial situation	General economic situation	Unemployment expectations	Unemployment rate
Jun-07	1.1	-2.7	5.8	7.5
Jul-07	1.1	-3.3	3.5	7.5
Aug-07	-0.3	-6.8	6.2	7.5
Sep-07	-1.7	-10.2	8.5	7.4
Oct-07	-1.6	-9.1	7.2	7.4
Nov-07	-2.9	-13.9	8.4	7.3
Dec-07	-3.4	-12.8	7.6	7.3
Jan-08	-4.8	-17.5	10.1	7.2
Feb-08	-4.3	-17.6	12.1	7.1
Mar-08	-4.5	-17.6	13.3	7.1
Apr-08	-5.1	-19.3	13.1	7.1
May-08	-6.4	-21.2	15.9	7.2
Jun-08	-10.3	-26.6	17.8	7.3
Jul-08	-11.0	-31.7	23.5	7.2
Aug-08	-8.7	-28.4	25.8	7.3
Sep-08	-7.5	-26.2	27.0	7.3
Oct-08	-9.3	-32.6	37.7	7.5
Nov-08	-8.5	-32.2	47.5	7.7
Dec-08	-8.8	-36.6	56.8	7.9
Jan-09	-8.1	-36.1	59.2	8.4
Feb-09	-10.2	-38.1	63.6	8.7
Mar-09	-9.2	-41.1	67.4	8.9
Apr-09	-7.5	-34.4	64.4	9.1
May-09	-6.2	-28.1	61.0	9.2

Appendix E. Unemployment expectations in 28 countries 2007-2009 and 2017-2023

a) Western Europe

	Austria	Belgium	Cyprus	Denmark	Finland	France
2007	-3	10	-27	-8	-2	5
2008	17	22	12	20	18	27
2009	52	65	73	31	43	61
2019	8	10	-7	1	6	9
2020	27	51	47	15	29	45
2021	4	20	34	-6	4	27
2022	17	18	27	14	11	9
2023	13	19	16	23	12	15
	Germany	Greece	Ireland	Italy	Luxembourg	Malta
2007	-1	35	33	19	5	-14
2008	17	50	54	27	5	-6
2009	70	63	63	43	31	38
2019	16	7	7	14	10	-23
2020	44	52	26	41	49	14
2021	25	45	-3	29	26	-11
2022	28	36	12	29	17	-1
2023	20	18	17	14	22	5
	Netherlands	Portugal	Spain	Sweden	UK	
2007	-16	43	12	-18	28	
2008	11	51	46	29	45	
2009	61	64	42	39	55	
2017	-23	5	-3	16	16	
2018	-26	-11	-1	3	19	
2019	-7	-1	13	2	24	
2020	52	53	48	19	43	
2021	10	30	18	-2	n/a	
2022	-3	26	19	18	n/a	
2023	0	32	18	41	n/a	

b) Eastern Europe

	Romania	Bulgaria	Croatia	Czechia	Estonia	Hungary
2007	16	10	41	3	-7	53
2008	21	17	37	14	34	53
2009	69	55	56	45	47	71
2019	16	15	-1	10	6	-2
2020	28	38	32	42	34	32
2021	n/a	30	24	26	20	23
2022	n/a	29	16	29	36	40
2023	n/a	23	3	31	48	41
	Latvia	Lithuania	Poland	Slovenia	Slovakia	Turkey
2007	-4	21	31	11	-12	19
2008	32	29	16	19	1	37
2009	66	62	21	54	53	33
2019	6	3	-2	7	2	42
2020	29	29	39	45	47	40
2021	24	20	28	29	36	33
2022	26	26	31	24	26	31
2023	23	19	28	22	26	23

	Albania	Serbia	N Macedonia	Montenegro
2019	4	-25	-5	10
2020	19	-14	17	25
2021	12	-10	20	18
2022	11	-7	18	20
2023	6	-7	0	6

Source: EU Commission

Appendix F. Cantril by country 2007, 2008, 2019, 2020 and 2021. 2007 excluded.

-> wp5 = Turkey

```
    Source |       SS           df       MS      Number of obs   =     5,994
-------------+----------------------------------   F(4, 5989)      =     24.12
     Model |  522.936402         4  130.734101   Prob > F        =    0.0000
  Residual |  32462.0199     5,989  5.42027382   R-squared       =    0.0159
-------------+----------------------------------   Adj R-squared   =    0.0152
     Total |  32984.9563     5,993  5.50391395   Root MSE        =    2.3281

------------------------------------------------------------------------------
   cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
      year |
     2008  |  -.4673211   .1045372    -4.47   0.000    -.6722516   -.2623906
     2019  |  -.7738415   .0902722    -8.57   0.000    -.9508075   -.5968756
     2020  |  -.3979798   .1046425    -3.80   0.000    -.6031167   -.1928429
     2021  |   -.854872   .1045634    -8.18   0.000    -1.059854     -.64989
           |
     _cons |   5.629293   .0739934    76.08   0.000     5.484239    5.774347
------------------------------------------------------------------------------
```

-> wp5 = UK

```
    Source |       SS           df       MS      Number of obs   =     5,212
-------------+----------------------------------   F(4, 5207)      =     14.03
     Model |  172.035279         4  43.0088199   Prob > F        =    0.0000
  Residual |  15959.5603     5,207  3.06502022   R-squared       =    0.0107
-------------+----------------------------------   Adj R-squared   =    0.0099
     Total |  16131.5955     5,211  3.09568136   Root MSE        =    1.7507

------------------------------------------------------------------------------
   cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
      year |
     2008  |   .2830627   .0751959     3.76   0.000     .1356471    .4304783
     2019  |    .548013   .0745093     7.35   0.000     .4019435    .6940824
     2020  |   .2301536   .0749898     3.07   0.002     .0831421     .377165
     2021  |   .1771536   .0749898     2.36   0.018     .0301421     .324165
           |
     _cons |   6.707846   .0505811   132.62   0.000     6.608686    6.807007
------------------------------------------------------------------------------
```

-> wp5 = Germany

```
    Source |       SS           df       MS      Number of obs   =     7,239
-------------+----------------------------------   F(4, 7234)      =     62.53
     Model |  767.518653         4  191.879663   Prob > F        =    0.0000
  Residual |  22198.8908     7,234  3.06868825   R-squared       =    0.0334
-------------+----------------------------------   Adj R-squared   =    0.0329
     Total |  22966.4094     7,238  3.17303253   Root MSE        =    1.7518

------------------------------------------------------------------------------
   cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
      year |
     2008  |   .1707196   .0596142     2.86   0.004     .0538584    .2875808
     2019  |   .7336143   .0744482     9.85   0.000     .5876741    .8795544
     2020  |   .9600652   .0748512    12.83   0.000     .8133351    1.106795
     2021  |    .377832   .0748717     5.05   0.000     .2310616    .5246024
           |
     _cons |   6.388935    .050339   126.92   0.000     6.290256    6.487614
------------------------------------------------------------------------------
```

-> wp5 = Netherlands

```
    Source |       SS           df       MS      Number of obs   =     5,026
-------------+----------------------------------   F(4, 5021)      =      1.97
     Model |  11.5244123         4  2.88110307   Prob > F        =    0.0955
  Residual |   7325.7999     5,021  1.45903205   R-squared       =    0.0016
```

```
-------------+----------------------------------   Adj R-squared   =    0.0008
       Total |  7337.32431     5,025  1.46016404   Root MSE        =    1.2079

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        year |
        2008 |   .1043129   .0541003     1.93   0.054    -.0017473    .2103732
        2019 |    .037164   .0536909     0.69   0.489    -.0680936    .1424217
        2020 |    .074551   .0539926     1.38   0.167     -.031298       .1804
        2021 |  -.0280471   .0540732    -0.52   0.604    -.1340543     .07796
             |
       _cons |   7.509529   .0382547   196.30   0.000     7.434533    7.584525
------------------------------------------------------------------------------

-------------------------------------------------------------------------------
-> wp5 = Belgium

      Source |       SS           df       MS      Number of obs   =     4,514
-------------+----------------------------------   F(4, 4509)      =      8.75
       Model |  81.5258764         4  20.3814691   Prob > F        =    0.0000
    Residual |  10497.8751     4,509  2.32820472   R-squared       =    0.0077
-------------+----------------------------------   Adj R-squared   =    0.0068
       Total |   10579.401     4,513  2.34420584   Root MSE        =    1.5258

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        year |
        2008 |  -.0331854    .068513    -0.48   0.628    -.1675045    .1011338
        2019 |  -.2959967   .0678894    -4.36   0.000    -.4290932   -.1629001
        2020 |  -.2804776   .0682893    -4.11   0.000    -.4143581    -.146597
        2021 |  -.0305747   .0834087    -0.37   0.714    -.1940966    .1329472
             |
       _cons |   7.151606   .0483483   147.92   0.000      7.05682    7.246393
------------------------------------------------------------------------------

-------------------------------------------------------------------------------
-> wp5 = Spain

      Source |       SS           df       MS      Number of obs   =     5,011
-------------+----------------------------------   F(4, 5006)      =     25.42
       Model |   310.15017         4  77.5375426   Prob > F        =    0.0000
    Residual |  15266.7654     5,006  3.04969345   R-squared       =    0.0199
-------------+----------------------------------   Adj R-squared   =    0.0191
       Total |  15576.9156     5,010  3.10916479   Root MSE        =    1.7463

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        year |
        2008 |   .3284931   .0783734     4.19   0.000     .1748469    .4821393
        2019 |  -.2672297   .0777394    -3.44   0.001     -.419633   -.1148265
        2020 |  -.2715956   .0782163    -3.47   0.001    -.4249339   -.1182573
        2021 |  -.3465956   .0782163    -4.43   0.000    -.4999339   -.1932573
             |
       _cons |   6.932596   .0553905   125.16   0.000     6.824006    7.041185
------------------------------------------------------------------------------

-------------------------------------------------------------------------------
-> wp5 = Italy

      Source |       SS           df       MS      Number of obs   =     5,016
-------------+----------------------------------   F(4, 5011)      =      5.00
       Model |  58.4718056         4  14.6179514   Prob > F        =    0.0005
    Residual |  14642.0537     5,011  2.92198238   R-squared       =    0.0040
-------------+----------------------------------   Adj R-squared   =    0.0032
       Total |  14700.5255     5,015  2.93131117   Root MSE        =    1.7094

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
```

```
-------------+----------------------------------------------------------------
        year |
        2008 |   .2842187   .0766189     3.71   0.000     .1340122    .4344252
        2019 |   .0705828   .0759975     0.93   0.353    -.0784056    .2195712
        2020 |   .2104364    .076465     2.75   0.006     .0605317    .3603412
        2021 |   .0384364    .076465     0.50   0.615    -.1114683    .1883412
             |
       _cons |   6.563564   .0540824   121.36   0.000     6.457538    6.669589

------------------------------------------------------------------------------
-> wp5 = Sweden

      Source |       SS           df       MS      Number of obs   =     5,016
-------------+----------------------------------   F(4, 5011)      =      5.41
       Model |  55.7114407         4  13.9278602   Prob > F        =    0.0002
    Residual |   12900.448     5,011  2.57442587   R-squared       =    0.0043
-------------+----------------------------------   Adj R-squared   =    0.0035
       Total |  12956.1595     5,015  2.58348145   Root MSE        =    1.6045

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        year |
        2008 |   .2518723   .0719901     3.50   0.000     .1107402    .3930043
        2019 |   .2323896   .0715147     3.25   0.001     .0921896    .3725897
        2020 |   .1514707   .0719901     2.10   0.035     .0103386    .2926027
        2021 |   .3026596   .0717408     4.22   0.000     .1620162    .4433029
             |
       _cons |   7.227043   .0509687   141.79   0.000     7.127122    7.326964
------------------------------------------------------------------------------
-> wp5 = Denmark

      Source |       SS           df       MS      Number of obs   =     5,039
-------------+----------------------------------   F(4, 5034)      =      5.55
       Model |  53.9832152         4  13.4958038   Prob > F        =    0.0002
    Residual |  12231.5639     5,034  2.42979021   R-squared       =    0.0044
-------------+----------------------------------   Adj R-squared   =    0.0036
       Total |  12285.5471     5,038  2.43857625   Root MSE        =    1.5588

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        year |
        2008 |   .1147056    .069572     1.65   0.099    -.0216858     .251097
        2019 |  -.0260326   .0691791    -0.38   0.707    -.1616537    .1095885
        2020 |   -.209188   .0696244    -3.00   0.003    -.3456822   -.0726938
        2021 |  -.0382624   .0694335    -0.55   0.582    -.1743824    .0978576
             |
       _cons |   7.803376   .0491213   158.86   0.000     7.707077    7.899675
------------------------------------------------------------------------------
-> wp5 = Estonia

      Source |       SS           df       MS      Number of obs   =     4,671
-------------+----------------------------------   F(4, 4666)      =    132.05
       Model |  1584.87251         4  396.218128   Prob > F        =    0.0000
    Residual |  14000.1131     4,666  3.00045288   R-squared       =    0.1017
-------------+----------------------------------   Adj R-squared   =    0.1009
       Total |  15584.9857     4,670  3.33725603   Root MSE        =    1.7322

------------------------------------------------------------------------------
     cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        year |
        2008 |   .0795245   .0898445     0.89   0.376    -.0966131    .2556621
        2019 |   .6094345    .076402     7.98   0.000     .4596505    .7592185
        2020 |   1.273935   .0778373    16.37   0.000     1.121337    1.426533
        2021 |     1.4288    .077418    18.46   0.000     1.277025    1.580576
             |
       _cons |    5.28731   .0551919    95.80   0.000     5.179107    5.395512
------------------------------------------------------------------------------
-> wp5 = Latvia
```

```
    Source |       SS           df       MS      Number of obs   =     4,593
-------------+----------------------------------   F(4, 4588)      =    226.32
     Model |   2557.0132         4  639.253299   Prob > F        =    0.0000
  Residual |  12958.7861     4,588  2.82449565   R-squared       =    0.1648
-------------+----------------------------------   Adj R-squared   =    0.1641
     Total |  15515.7993     4,592  3.37887615   Root MSE        =    1.6806

------------------------------------------------------------------------------
   cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
      year |
     2008  |   .4783441   .0912797     5.24   0.000     .2993919    .6572963
     2019  |   1.245435    .073813    16.87   0.000     1.100726    1.390144
     2020  |   1.743382   .0750878    23.22   0.000     1.596174     1.89059
     2021  |    1.93822   .0746761    25.96   0.000     1.791819    2.084622
           |
     _cons |   4.676558   .0528561    88.48   0.000     4.572935    4.780181
------------------------------------------------------------------------------
-> wp5 = Lithuania

    Source |       SS           df       MS      Number of obs   =     4,420
-------------+----------------------------------   F(4, 4415)      =     91.28
     Model |  1340.71217         4  335.178041   Prob > F        =    0.0000
  Residual |  16212.3781     4,415  3.67211282   R-squared       =    0.0764
-------------+----------------------------------   Adj R-squared   =    0.0755
     Total |  17553.0903     4,419  3.97218608   Root MSE        =    1.9163

------------------------------------------------------------------------------
   cantril | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
      year |
     2008  |  -.3225507   .1053698    -3.06   0.002    -.5291282   -.1159731
     2019  |   .1380679   .0871531     1.58   0.113    -.0327959    .3089318
     2020  |     .81883   .0865251     9.46   0.000     .6491975    .9884626
     2021  |   1.235407   .0861801    14.34   0.000     1.066451    1.404364
           |
     _cons |   5.806551   .0613071    94.71   0.000     5.686358    5.926743
------------------------------------------------------------------------------
```