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NOW UNIONS INCREASE JOB SATISFACTION AND WELL-BEING

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ABSTRACT

Using data from the United States and Europe on nearly two million respondents we show the partial correlation between union membership and employee job satisfaction is positive and statistically significant. This runs counter to findings in the seminal work of Freeman (1978) and Borjas (1979) in the 1970s and most empirical studies since. With data for the United States we show the association between union membership and job satisfaction switched from negative to positive in the 2000s. Cohorts with positive union effects over time come to dominate those with negative effects. The negative association between membership and job satisfaction is apparent in cohorts born in the 1940s and 1950s but turns positive for those born between the 1960s and 1990s. Analyses for Europe since the 2000s confirm this positive association is apparent elsewhere. We also find evidence in the United Kingdom from panel estimation of a positive relation between union membership and job satisfaction. We find positive union effects among samples of workers on other wellbeing variables including life satisfaction, happiness, strain, as well as several macro variables and various measures of trust. The findings have important implications for our understanding of trade unionism.

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“One of the most robust empirical findings in the collective bargaining literature is that union workers express greater dissatisfaction with their jobs than otherwise comparable nonunion workers.” Hersch and Stone (1990)

“One of the great empirical regularities of industrial relations research is that union members tend to be less satisfied with their jobs than their non-union counterparts.” Bessa, Charlwood and Valizade (2020).

1. Introduction

Ever since the seminal work of Freeman (1978) and Borjas (1979) economists have known that trade union membership is negatively correlated with job satisfaction. This is no longer true: today the partial correlation is positive. This partly reflects birth cohort effects with the negative association being confined to those born in the 1940s and 1950s, while among later birth cohorts the union partial correlation with membership is positive. It also reflects differences over time in the fear union non-members have about losing their job relative to members.

Empirical investigations since Freeman and Borjas, both for the United States and elsewhere, testified to the fact (Laroche, 2016; Hammer and Agvar, 2005). Freeman and Medoff (1984) devoted a whole chapter to the issue in their classic text *What Do Unions Do?* providing some theory that might account for the correlation. Applying Albert O. Hirschman’s (1970) consumer behavior model of exit voice and loyalty to employment relations, they suggested that unions, by helping to solve employees’ problems at work, made them less likely to quit the workplace than similarly dissatisfied non-union workers so that unions appeared to increase the ‘stock’ of dissatisfied workers. So, the correlation might be causal. Freeman (1980) examined this further and reported empirical evidence showing significantly lower exit for unionized workers in several large data files. Freeman argued that the grievance system plays a major role in lowering quit rates and that the reduction lowers costs and raises productivity.

Unions also had an interest in fomenting dissatisfaction to help strengthen their bargaining hand vis-à-vis the employer (what Freeman and Medoff termed “*voice-induced complaining*”), which might show up as dissatisfaction in social surveys. And they also increased the information flow to workers, so that employees often found out about poor management or poor conditions which, in the absence of the union, they may have been unaware of.

It was also possible that the correlation might have been a result of selection processes – in particular the selection of less satisfied workers into unionization, and unions’ ability to organize workplaces with poor working conditions. Failure to account for these selection processes could generate the negative correlation that Freeman, Borjas and Freeman and Medoff had found.

For decades after these seminal contributions, analysts puzzled as to whether the union negative correlation with job satisfaction was causal or not. There were many papers,

particularly for the United States and the United Kingdom, which seemed to indicate that the correlation reflected, at least in part, poor working conditions (Bender and Sloane, 1998; Pfeffer and Davis-Blake, 1990; Bessa et al., 2020) or differences between those who became union members and those who did not (Bryson et al., 2004 using instrumental variables; Heywood et al., 2002 using worker fixed effects). In some instances, panel analyses accounting for person fixed effects and the pathway by which workers became unionized even found the correlation switched to a positive and significant coefficient, at least in the case of pay satisfaction.¹ But this is not always the case. For instance, Bryson and Davies (2019) find the negative association between union membership and job satisfaction over the period 1991-2008 persists with the introduction of person fixed effects. These mixed results are reflected in Laroche (2016)'s meta-analysis of 59 studies and 235 estimates. He concluded that most of the studies he examined found a negative association between unionization and job satisfaction but that the evidence "*is far from being conclusive*", restating doubts expressed decades earlier by Kochan and Helfman (1981) who had concluded that the evidence was "*mixed*", and Gordon and Denisi (1995) who found that union members in the United States did not have lower levels of job satisfaction.

The negative partial correlation between unionization and job satisfaction extends beyond the United States and the United Kingdom: Meng (1990) found a negative for Canada, García-Serrano (2009) for Spain and Miller (1990) for Australia. Blanchflower and Oswald (1999) found a similar negative correlation in a 1989 International Social Survey Programme (ISSP) survey covering ten countries, namely the United Kingdom, the United States, Austria, Germany, Hungary, the Netherlands, Italy; Ireland, Norway and Israel.

Throughout this period few suggested that unionization may improve worker wellbeing, even though unions' *raison d'être* was the improvement in workers' terms and conditions. There were a few exceptions. Kaufman (2004) argued that those workers who keep their union jobs in the face of shrinking labor demand should be more satisfied with their jobs than non-union workers. Using data from the 1977 Quality of Employment Survey for the United States Pfeffer and Davis-Blake (1990) confirmed this was the case. Renaud (2002) replicated these findings for Canada.

However, in the second decade of the new century a trickle of papers emerged suggesting a positive partial correlation between union membership and job satisfaction. One (Davis, 2012) was for the United States. Davis (2012) found that public sector unionization can increase member's job satisfaction by "favorably altering the work environment":

¹ Many of these studies find a role for selection effects investigate endogenous selection into union *coverage*, or into a combination of coverage or membership (Powdthavee, 2011; Bryson and White, 2016a; Bryson and White, 2016b; Green and Heywood, 2015; Bryson et al., 2010). In this paper we focus exclusively on union membership, as opposed to coverage, to maintain comparability with the classic seminal papers, but we also examine the sensitivity of some of our results to a wider definition of unionization in which a worker is considered 'unionized' if they are either a union member or work in a union covered workplace.

“This research is consistent with arguments that unions can increase members’ satisfaction by enabling them to achieve preferred values, and it supports the assertion that favorably altering perceptions of the work environment serves as a mechanism by which unions indirectly increase job satisfaction (Davis, 2012, p.80).”

But the others were for Europe. Using waves 3 (2006) and 5 (2010) of the European Social Survey Donegani and McKay (2012) found a positive partial correlation between union membership and job satisfaction pooling data across twenty countries and in various model specifications controlling for demographics, as well as occupation, working hours, and firm size. They find the same positive partial correlation for other satisfaction variables including satisfaction with income, the government and the economy.

van der Meer (2019) uses European Social Survey sweep 5 (2010) data and finds a positive partial correlation between union membership and job satisfaction in the United Kingdom and Ireland sample as well as for Continental Europe. Sironi (2019) also finds a positive partial correlation between union membership and job satisfaction, as well as other well-being measures, using sweep 6 (2012) of the ESS. However, a word of caution is sounded in Laroche’s (2017) study for France: using linked employer-employee data collected in 2011 he finds a negative partial correlation between unionization and job satisfaction that disappears when accounting for endogenous selection into a union setting, reflecting the earlier studies for the UK using similar linked employer-employee data (Bryson et al., 2010).

In this paper we revisit the issue using large-scale survey data for the United States and Europe to examine whether the partial correlation between union membership and worker wellbeing has shifted since the early seminal studies of Freeman, Borjas and Freeman and Medoff. We do so using social surveys with large samples to ensure we capture robust correlations. For the United States we use the General Social Survey to track any change in the relationship over time, and the Gallup Daily Tracker which, whilst only available since 2009, contains over half a million observations on workers.

For Europe we rely primarily on the European Social Survey which covers around 30 European countries and began in 2002, though we also present some results from the British Household Panel Survey and Understanding Society. Furthermore, we extend the investigation to a range of wellbeing metrics, going beyond job and life satisfaction to consider happiness, enjoyment, Cantril’s Ladder, and metrics of ill-being such as feelings of stress, pain and anxiety. We also consider partial correlations with other attitudes which might impact individuals’ wellbeing such as trust and views on the macro economy and democracy.

Our results are startling. We find *positive* correlations between union membership and worker wellbeing across a range of metrics, both in the United States and Europe since the turn of the Century. For the United States using the General Social Survey we confirm the early findings of a negative partial correlation between job satisfaction and unionization in the 20th Century, but this shifts to statistical non-significance in the early part of the 21st

Century before switching to a positive significant correlation in the second decade of the 21st Century.

The positive correlation post the Great Recession is replicated in the US Gallup Daily Tracker Poll (USGDTP) and is apparent for a range of wellbeing metrics. The raw correlation continues to be statistically significant, though a little smaller, when we condition on workers' demographic traits, state fixed effects and, in our most extensive regressions, occupation, health, BMI, smoker status, etc. In Europe the positive correlation between unionization and a range of wellbeing metrics has been apparent since the early part of the new Century; it is robust to controls for demographic traits and country fixed effects; and it is apparent in most large European countries, despite substantial differences in the way unions bargain. That union workers have higher levels of happiness and lower levels of stress than non-union workers, and that this is true around the world in the years since the Great Recession, runs contrary to what was previously found.

In addition to this literature on the links between unionization and worker wellbeing we also contribute to the literature that has found that job satisfaction is U-shaped in age (for the United Kingdom see Clark, Oswald and Warr, 1996; Clark, 1996; and Clark and Oswald, 1996. See Blanchflower and Oswald, 1999 for the United States (General Social Survey, 1973-1996), Europe (15 countries in Eurobarometer surveys for 1995-96); and for the world in the International Social Survey Program (ISSP) 1989). There has been much less evidence for a U-shape in job satisfaction than there has been for happiness (Blanchflower and Oswald, 2008; Blanchflower, 2020a; Blanchflower and Graham, 2020) or unhappiness (Blanchflower, 2020b). We produce new evidence below.

Of note also is that Blanchflower and Bryson (2020) have found that union membership peaks in midlife. Over time there have been changes in that the level of the peak has fallen as union density rates have fallen. In addition the average age at the peak has risen, being pulled to the right by higher density rates among workers over the age of 65.

2. Empirical Evidence

2.1 United States

Table 1 reports the partial correlation between union membership and job satisfaction using the General Social Surveys (GSS) from 1972-2018 for workers only where the question asked was as follows and with the following pre-codes:²

Q1: On the whole how satisfied are you with the work you do – would you say you are very satisfied=4, moderately satisfied=3, a little dissatisfied=2, or very dissatisfied=1?

The same question and GSS data was used by Blanchflower and Oswald (1999) for the years 1972-1996. They estimated an ordered logit for workers and found that a union

² Job satisfaction data are available in the GSS for the following years: 1972-1978; 1980; 1982-1991; 1993; 1994; 1996 and then every two years through 2018.

variable entered significantly negative in a job satisfaction equation in their Table 2. Their results are replicated in column 1 for the same years with controls for union, age and its square, highest level of education, self-employed, region and year. To be comparable we estimate the job satisfaction equations using ordered logits. The union coefficient in column 1 is negative and highly statistically significant with a t-statistic of nearly four.

Column 2 performs the same exercise for the years 1998-2008 but now the union coefficient switches sign and becomes insignificantly different from zero. Finally, the third column suggests something fundamental has changed since the Great Recession, focusing on the five survey years from 2010-2018. The union coefficient has now turned significantly *positive* with a t-statistic of 2.17. Union members in the years since the Great Recession have significantly *higher* levels of job satisfaction than non-members.

Table 2 for workers only replicates the finding of a *positive* union coefficient in probit job satisfaction equations for over half a million observations using data from Gallup's US Daily Tracker Poll (GUSDTP) from 2009-2013.

The exact question, which is only asked of workers, is: *Q2. Are you satisfied or dissatisfied with your job or the work you do?*³ The dependent variable is set to one if satisfied, zero otherwise and all equations include year and month of interview and state controls. In column 1 with the addition of gender and age union membership is positive and statistically significant. The model is extended in column 2 to include controls for race, education, diet and exercise.⁴ The union coefficient drops a little but remains positive and highly statistically significant.

The model in column 3 is extended still further to incorporate potentially endogenous controls including occupation, income, whether the respondent has health insurance and whether they are part time or underemployed.⁵ The inclusion of these controls *increases* the size of the positive union coefficient. Consistent with the findings of Bell and Blanchflower (2020) the underemployed (PT wants FT) have lower levels of job satisfaction. Plus, in all three columns there is a U-shape in age, consistent with the findings of Clark (1996).

2.2 Europe

In Table 3 we examine the association between union membership and job satisfaction using data on over 70,000 observations from three sweeps from 2006, 2010 and 2012 of the European Social Surveys across 38 countries.⁶ The question asked was:

³ See 'U.S. job satisfaction struggles to recover to 2008 levels', Gallup, May 31st, 2011.

<https://news.gallup.com/poll/147833/Job-Satisfaction-Struggles-Recover-2008-Levels.aspx>

⁴ The consumption of fruit and vegetables and exercise are known to raise satisfaction and wellbeing (Blanchflower, Oswald and Stewart-Brown, 2013).

⁵ Using GSS and ESS data Pischke (2011) also examines life and job satisfaction and shows that the association between income and well-being is causal.

⁶ Albania; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czechia; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Iceland; Ireland; Israel; Italy; Kosovo; Latvia; Lithuania; Luxembourg;

Q3. How satisfied are you in your main job? Completely dissatisfied=1; very dissatisfied=2; fairly dissatisfied=3; neither satisfied nor dissatisfied=4; fairly satisfied=5; very satisfied=6; completely satisfied=7?

For simplicity, now that the dependent variable is scored 1-7, we estimate OLS models and the sample is restricted to workers only using the employment status variable indicating that paid work is the respondent's main activity (*mnactic*=1). In the first column the union variable is entered alone: the raw correlation is significant and positive with a T-statistic of nearly 20.⁷ The union coefficient remains positive in column 2 as age, gender and native variables are added and in column 3 also with the addition of country and wave dummies, years of education and self-employment or owning a business. The final three columns show the result remains in each of the three sweeps individually. As in the United States in recent years union members in Europe have significantly *higher* job satisfaction than their non-member counterparts.

2.3 United Kingdom

In the discussion above, that has mostly found negative union effects on job satisfaction, it is apparent that much of the empirical literature is for the United Kingdom, and that most of the studies use the leading household panel survey in Britain, the British Household Panel Survey (BHPS) and its successor Understanding Society (USoc). It is also apparent from the literature review above that the literature has tended to focus on two dimensions of unionization, namely coverage and membership.

In Table 4 we revisit the issue focusing on the association between union membership and overall job satisfaction. We combine BHPS and USoc running estimates for the period 1996-2014. The question used is

Q4. On a scale of 1 to 7 where 1 means 'Completely dissatisfied' and 7 means 'Completely satisfied', how dissatisfied or satisfied are you with your present job overall?

In column 1 we include the union variable alongside year dummies: it is negative and significant. When we add gender, marital status, education, and region controls in column 2 the negative coefficient increases in size and remains statistically significant. However, when we exploit the panel nature of the data by running person fixed effects models the coefficient switches sign, becoming positive and statistically significant both without (column 3) and with (column 4) time-varying covariates. These results are robust to the use of an alternative unionization variable which scores 1 if the respondent is a union member or works in a union covered workplace (these are available on request).

Montenegro; Netherlands; Norway; Poland; Portugal; Romania; Russia; Serbia; Slovakia; Slovenia; Spain; Sweden; Switzerland; Turkey; Ukraine and UK;

⁷ The positive union correlation is robust to estimation using ordered logits.

This result stands in contrast to most of the existing literature for the United Kingdom, but there have been inklings of a positive effect in some of the literature. Bryson and White (2016b), for example, did find that with people fixed effects in these BHPS data 1991-2007 union attitudes are broadly *positive* both with regard to pay and with regard to hours of work. Bessa, Charlwood and Valizade (2020) who also used the BHPS concluded that "*our overall judgement is that union membership does not have a causal impact on job satisfaction*" but went on to argue that "*studies designed to explicitly test for positive effects of unions on job satisfaction would therefore be desirable in future.*"

2.4 The U-shape in job satisfaction across the life-course

In the previous literature a U-shape in age in job satisfaction among workers tends to be found in samples that have a relatively large number of observations that also include non-workers. It seems to be harder to find than for other measures that have bigger samples.

There is evidence of a U-shape in job satisfaction in all of the tables above except Table 1 for the United States, which has relatively few observations. It is present in Table 2 using the GUSDTP, minimizing at age 34 in column 3. It is also present in Table 3 for Europe in column 3 with a minimum at age 31 and for Table 4 for the UK, with a minimum also around age thirty-six falling to twenty-nine with person fixed effects.⁸ These minima are somewhat lower than those for other well-being measures that we look at next. They are consistent with the early findings by Clark, Oswald and Warr (1996) of a U-shape with a minimum in the UK using the 1991 BHPS, at age 31.

2.5 Union Membership, happiness, life satisfaction and stress

We now turn to examine other measures of wellbeing and their association with union membership. There are relatively few examples in the literature of the impact of unions on well-being variables other than job satisfaction. Using the first six waves of the World Values Survey conducted in the United States (1982, 1990, 1995, 1999, 2006, and 2011) Flavin and Shufeld (2016) find that union members are more satisfied with their lives than those who are not members. Flavin, Pacek, and Radcliff, (2010) examined life satisfaction in fourteen industrialized democracies: Australia, Canada, Finland, France, Germany, Great Britain, Italy, Japan Netherlands, Norway, Spain, Sweden, Switzerland, and the United States using the fifth wave of the World Values Survey (WVS). They found an individual union variable entered positively as did a country level union density variable, in a number of life satisfaction equations.

Keane, Pacek and Radcliff (2012) also used the WVS, sweeps 2-4, and included the individual union member variable and union density at the country level and found positive

⁸ The Eurobarometer survey series occasionally contain questions on job satisfaction, but do not include union variables. One example is Eurobarometer #72.1, which contains a 10-step job satisfaction question. – "Could you please tell me on a scale of 1 to 10 how satisfied you are with each of the following items, where '1' means you are "very dissatisfied" and '10' means you are "very satisfied" you are with your job? When it is regressed on a quadratic in age, gender, education and country dummies on a sample of all 28 EU countries there is a U-shape which minimizes at age 40. The results are $-.0265 \text{ age} (t=2.71) - .00033 \text{ Age}^2 (t=2.89)$, with $n=12,318$.

and significant effects for the individual variable but not for the aggregate one. For a subset of OECD countries both were significant and positive. Radcliff (2005) uses life satisfaction data aggregated from the Eurobarometers from 1975 to 1992 and mapped in union density by country that he shows enters positively and significantly.

We begin with a few measures of *positive* affect – life satisfaction, happiness, enjoyment and feeling calm and peaceful, where we also find positive union effects. We then examine several measures of *negative* affect or unhappiness – stress, feeling depressed, finding everything an effort, feeling lonely and feeling sad – where we find the union coefficients are significantly negative. We then move on to look at measures of trust in Europe – in relation to the police; politicians; political parties and the European Parliament – and again find positive union effects. Finally, we look at respondents’ views on national government; democracy, education and health services, where the union effects are mixed. In every case we restrict the samples to *workers only* to be as comparable as possible to the job satisfaction measures.

Table 5 reports the results of OLS estimation of Cantril’s 11-step life satisfaction ladder question in the GUSDTP of 2009-2017, used previously by a number of authors including Blanchflower and Graham (2020) and Blanchflower (2020a). The survey question is:

Q5. "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top 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?"

The union variable is significant and positive in column 1 with age, gender and race controls indicating union members have higher life satisfaction than non-member. The same applies in column 2 which adds controls for education, the number of days consuming five or more portions of fruit and vegetables, and the number of days in the past week taking exercise of at least 30 minutes. The final column adds occupation and income controls and other personal controls including marital status and health. The underemployed are especially unhappy again. But the partial correlation between union membership and life satisfaction remains in-tact and highly statistically significant.

Table 6 does the same for happiness across sweeps 1-9 of the ESS from 2002-2018, for workers. Union membership is positive and statistically significant in an estimation sample of around 200,000 observations. Table 7 uses life satisfaction and the results are essentially the same. There is a positive statistically significant partial correlation between union membership and happiness which persists with the introduction of basic controls in column 2 and a wide range of controls in column 3. In both cases there are U-shapes in age with minima in mid-life.⁹ The questions used are.

⁹ Blanchflower (2020a) uses these ESS life satisfaction and happiness data by country and finds U-shapes in age also with controls for marital and labor force status and education.

Q6. “Taking all things together, how happy would you say you are? Please answer using this card, where 0 means extremely happy and 10 means extremely happy.”

Q7. “All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied.”

It turns out that unions lower stress and worry, including worry about money. In Table 8 we switch back to the United States to use the GUSDTP data to examine the association between union membership and negative affect. Column 1 focuses on stress, as previously examined by Blanchflower (2020b) and Graham and Puzuello (2019) using the Gallup World poll. The survey question is: *Q8. “Did you experience stress yesterday – yes or no?”* In addition, we consider worry in column 2. These unhappiness variables look like the mirror image of the life satisfaction results in Table 5 above (for instance there is an inverted U-shape in age). Union membership enters negatively and significantly in both cases. Turning to worry about money, union members are less likely to worry about it than non-members, whether one conditions on income or not (columns 3 and 4).

In Table 9 we use the GUSDTP for the United States to examine the association between workers’ union membership and pain, a fairly unambiguous marker of suffering, and anger. The questions asked are

Q8. “Did you experience physical pain/anger yesterday?” Yes/No

In contrast to the other ill-being metrics we have presented, union membership is positively and significantly correlated with pain and anger (columns 1 and 2 respectively). The former may reflect pain induced by the occupations where union members are often concentrated in the United States, at least traditionally – namely blue-collar manual jobs.

The fact that union members feel more pain and anger than non-members is likely to affect the way they respond to life and job satisfaction questions, since we would assume that pain and anger are negatively correlated with well-being. This proves to be the case as we show in columns 3 and 4 of Table 9: pain and anger are both negatively correlated with life and job satisfaction. Their introduction to the models substantially increases the positive coefficient for union membership in the life and job satisfaction equations compared to earlier estimates in Table 5 for Cantril's ladder and Table 2 for job satisfaction. It would appear that, in the absence of pain and anger variables the union association with well-being is under-estimated. Since pain and anger are variables that are not common in most social surveys, we might infer that union estimates on wellbeing based on such surveys are downwardly biased.

2.6 Union Membership and Other Well-being Variables

We now turn in Table 10 to sixteen other measures of well-being in various sweeps of the ESS. We run OLS equations in every case with the same controls as in column 3 of Table 6, that is age and its square, gender, native, years of education, self-employment, plus wave

and country dummies. The questions are provided below the table (Q9-Q14) and we simply report the union coefficient, the T-value and the sample size. The results are split into four groups and in every case, there are positive and significant union coefficients.

2.6.1 Panel A: Positive Affect

First, we have 11-step data on nearly 70,000 respondents from sweeps 3, 5 and 6 for workers on how satisfied they are with their work-life balance. Second, there is a different 11-step life satisfaction question from sweep 3 that differs from the measure referred to from Q2 above: the latter refers to “nowadays” whereas the one in row 2 of Table 10 refers to how well life has turned out “so far”. There are only 22,000 observations here. The outcome variable in row 3 is a 4-step measure referring to enjoyment of life from sweeps 3, 6 and 7 with a sample of 58,000 and the final outcome variable in row 4 – also a 4-step variable - refers to whether life was calm and peaceful. In all four cases the union partial correlation is positive and statistically significant.

2.6.2 Panel B: Negative Affect

Data on negative affect is taken from sweeps 3, 6 and 7 of the ESS and has sample sizes of 58,000. These data files were also examined by Blanchflower (2020b). Here we find negative and significant union coefficients on a series of variables scored 1 through 4, for depression, everything being an effort, feeling lonely and feeling sad.

2.6.3 Panel C: Trust

Beginning in the late 1960s Americans began to ‘join less, trust less, give less, vote less and schmooze less’ (Putnam and Feldstein, 2003, p.4). This decline in trust has been associated with a decline in unionism. This is illustrated below where we plot the US unionization rate from www.unionstats.com alongside the trust variable from the General Social Survey which asks “can people be trusted?” with pre-coded response options “can trust” or “can’t be too careful” and “depends”. We simply plot the proportion in the United States who reply ‘can trust’. The proportion saying ‘can trust’ has fallen from 46% in 1973 to 32% in 2018 while union density has more than halved.

	% can trust	% membership
1973	46.0	24.0
1980	45.5	23.0
1990	38.1	16.1
2000	35.2	13.5
2008	33.0	12.4
2014	30.8	11.1
2016	32.0	10.7
2018	31.6	10.5

It is possible that unions themselves may be victims of a decline in trust in society, but what is the correlation between being trusting and union membership? In Table 10 we have data on trust from all nine of the sweeps of the ESS, with sample sizes of around 175,000. Compared with non-members union members have higher levels of trust in other people as

well as in institutions like the police, politicians, political parties and even the European Parliament.

2.6.4 Macro variables

It turns out that union members in Europe as reported in Table 10 are also more optimistic than non-members on the state of the economy in their country as well as in democracy and the overall state of education.

3. Discussion

The negative partial correlation between union membership and job satisfaction has been one of the chief empirical regularities to come out of labour economics and industrial relations. It dates back to seminal studies from the late 1970s and early 1980s. In this paper we present new empirical evidence challenging that regularity. With data for the United States we show the association between union membership and job satisfaction switched from negative to positive in the 2000s. Analyses for Europe since the 2000s confirm this positive association is apparent elsewhere. Furthermore, we find union membership is positively and significantly associated with a range of other well-being metrics including life satisfaction, happiness, depression, sadness, trust as well satisfaction of democracy, education and the overall economy.

The question we are left with is: why?

Union membership offers two benefits: bargaining to secure better terms and conditions, and insurance against job loss and arbitrary employer unfair behavior. It seems reasonable to ask whether unions did these ‘jobs’ differently in recent years in a way that may have affected the wellbeing differential between union and non-union workers, or whether – if they were doing essentially the same job over time – that job was valued differently by union members such that their wellbeing benefited relative to non-union workers.

First, we checked to see whether the union wage premium had changed over time. Perhaps higher satisfaction and wellbeing reflected an improvement in the wages of union members relative to their non-union counterparts? This proves not to be the case. It is true that union members receive a substantial wage premium, but this has not changed over time.

We examined this by extending work reported in Blanchflower and Bryson (2004) and estimated, by year, log hourly wage equations to calculate union wage differentials using earnings data from the 2002-2018 MORG files of the CPS. They had previously used data for the period 1983-2001. We use the same controls as they did – age gender, race, education, industry and state along with a union status dummy - and excluded individuals using variable I25d, which identifies those for whom wages were imputed, because of the rise in the proportion who do not report earnings.

As Blanchflower and Bryson (2004) note this matters as union status was not used in the imputation equation so not excluding them lowers the wage differential. We found no evidence of a shift up in wage differentials – obtained by taking antilogarithms and

deducting one - and there was constancy over time in the estimates. So we do not think that the change in the union coefficient in a job satisfaction equation was due directly to rising union wage differentials. We estimate the union wage premium 1973-2018 in the United States as follows, in per cent.

Below we report estimates taken from 1973-2001 from Blanchflower and Bryson (2003), using the May CPS from 1973-1981 and then the MORG CPS files from 1983. There was no CPS survey with wages and union status in 1982. Our new estimates are from 2002 and show a slight fall over the entire forty-five year period with perhaps a sign of a further drop in the most recent years. From 1973-2001 the series averaged a differential of 17.9% versus 14.3% from 2002-2018.

Year	Year	Year	Year	Year					
1973	17.9	1983	19.5	1993	18.5	2003	14.8	2013	14.9
1974	18.4	1984	20.4	1994	18.5	2004	14.3	2014	14.8
1975	19.0	1985	19.2	1995	17.4	2005	14.9	2015	13.1
1976	19.4	1986	18.8	1996	17.4	2006	15.1	2016	13.4
1977	23.0	1987	18.5	1997	17.4	2007	14.8	2017	14.3
1978	22.8	1988	18.4	1998	15.8	2008	14.1	2018	12.7
1979	16.6	1989	17.8	1999	16.0	2009	14.0		
1980	17.7	1990	17.1	2000	13.4	2010	14.5		
1981	16.1	1991	16.1	2001	14.1	2011	14.8		
		1992	17.9	2002	14.6	2012	14.7		

Second, we turn to survey evidence on job insecurity. In the economics literature this has two components: the probability of job loss and, conditional on that, the probability of getting a ‘like’ job (the latter effectively proxying for the cost of job loss) (Nickell et al., 2002). Fortunately, the GSS contains proxies for both. We find that prior to the Great Recession union members were more likely than their non-member counterparts to say they were likely to lose their job in future.

This seems to run counter to the proposition that unions offer insurance against job loss, but it is possible that the response reflects the well-known fact that employment growth is lower in the union sector (Blanchflower et al., 2001; Bryson, 2004) which, in turn, partly reflects union bargaining over wages and the fact that unions often inhabit sectors that are in secular decline. However, what is interesting and directly relevant to this paper, is that this effect disappeared with the Great Recession: the differential between union members and non-members vanished. This is apparent in Table 11 which reports on expected job loss in the GSS using the variable *joblose*. The question asked is as follows:

Q15. Thinking about the next 12 months, how likely do you think it is that you will lose your job or be laid off--very likely (=4), fairly likely (=3), not too likely (=2), or not at all likely (=1)? Our coding is in parentheses.

This extends work reported by Blanchflower and Oswald (1999) using the same variable and data, for 1978-1996, and controls along with state unemployment rates that were mapped in.¹⁰ They found that union membership entered positively in an expected job loss equation. Column 1 finds the same for the longer time run of years from 1978-2018. The second column includes an interaction between the union membership variable and a dummy representing 1 if the sample was from 2000-2018, zero otherwise. The union variable is significantly positive and the interaction term is significantly negative, showing no impact of unions from 2000 onwards. This is confirmed in columns 3 and 4, which separates the sample and shows a significant positive effect in the first period and no union effect in the second. This likely helps to explain the positive coefficient in the job satisfaction equations: union workers are less fearful of job loss than previously, yet they continue to receive the substantial wage premium they have always received.

The above result is particularly striking since in the United States we see evidence from the General Social Surveys in the years since 2010 that there has been a big decline in the recorded responses on the ability to find an equally good job: it would appear that the costliness of job loss, as perceived by workers, has been rising, such that they may value insurance against job loss more over time.

In the second part of Table 11 we now look at how easy it would be for a worker to find a comparable job, again extending results in Blanchflower and Oswald, 1999 for 1977-1996 using the GSS. The question asked was as follows

Q16. Jobfind - How easily could you find an equally good job? Not easy (=1), somewhat easy (=2) or not easy (=3).

The table shows that union workers find it less easy to replace their jobs than non-union workers. The ease of finding a comparable job declines with age and rises with years of education. Column 2 shows a positive coefficient on the interaction term. Of note also is that the union variable is significantly negative in both the early and later periods in the last two columns. The lack of a significant time trend in the first period contrasts with a negative and significant one in the second.

Chart 1 provides further intriguing evidence for the United Kingdom indicating that fear of unemployment is a lead indicator predicting rising unemployment. Workers' fears of unemployment are subsequently realized, at least in the aggregate. The fear factor was rising from 1988 through 1993 and from 1997 through 2009 and especially from 2014 even as the unemployment rate fell from 7.2% at the start of 2014 to below 4% from December 2019 through May 2020. In all three upticks the fear of unemployment started rising before the unemployment rate rose. For more on the fear of unemployment and its consequences see Blanchflower (1991) and Blanchflower and Shadforth (2009).

¹⁰ We do not have access to state of residence information so instead include controls for 9 regions.

In the last twenty years we have seen a once in a generation financial market shock followed by a major downturn and then a global pandemic. In the United States even though the unemployment rate had fallen to record lows by the start of 2020, the employment rate was well below its level at the start of recession in January 2008 (62.9) and even further below its level at the start of the 21st Century (January 2000=64.6). It remained below these levels in January 2020 (61.2) before falling to 55.1 in July 2020. In both the United States and the United Kingdom and other advanced countries around the world wage growth was benign, and much lower than it had been historically at these low levels of unemployment (Blanchflower, 2019). Underemployment, where workers had too few hours remained above pre-recession levels around the world (Bell and Blanchflower, 2020). The unemployment rate gave a poor steer on the state of labor markets at the onset of the COVID-19 pandemic in the spring of 2020. Workers fear unemployment.

One possibility is that there are cohort effects: those who experience a negative economic shock – such as those living through the 1970s oil shocks – adjust their preferences and attitudes as a result of the shock.¹¹ Such shocks could result in a reappraisal of the value of the union good. To examine this possibility we reran the equation in Table 2 column 1 estimating the partial correlation between union membership and job satisfaction in the Gallup Daily US Tracker, but we did so for eight separate decennial cohorts, the earliest being those born in 1980 and the latest being born in the 1990s and later.

The results are presented in the table below. We see that the introduction of birth cohorts does not affect our main result: union membership remains positive and statistically significant (last row). The overall result extends the column 1 of Table 2 finding, but adds 7 cohort dummies, with little effect. However, the partial correlation between union membership and job satisfaction differs by birth cohort even though all of the cohorts had recently lived through the Great Recession. The 1940 and 1950 birth cohorts who would have made up most of the sample in Freeman and Borjas’s studies in the 1970s exhibit a negative union partial correlation with job satisfaction, but subsequent birth cohorts exhibit a positive partial correlation. Early birth cohorts who became union members continued to express greater job dissatisfaction than their non-member counterparts even in the Gallup data for the period 2009-2013, despite experiencing a couple of deep recessions, while the union members among more recent birth cohorts had greater job satisfaction than their non-member counterparts, despite going through the Great Recession. Cohort effects matter, but they do not relate to the experience of recession, at least in a direct sense.

Cohort	Union coefficient and t-stat	Sample N
<1930	-.1645 (1.14)	4393
1930-1939	.0325 (0.47)	22,494
1940-1949	-.0808 (3.70)	82,888
1950-1959	-.0242 (2.08)	156,594
1960-1969	.0439 (3.41)	137,935
1970-1979	.0759 (4.80)	100,936

¹¹ We thank Doug Staiger for suggesting this to us.

1980-1989	.1293 (6.42)	81,946
1990-1999	.0317 (0.78)	30,990
All	.0243 (3.67)	618,176

Cohorts with positive union effects over time come to dominate those with negative effects.

4. Conclusions

The implication of the findings presented here is that, even in the presence of possible job or sectoral composition differences, that might predispose union members to lose their jobs, union members no longer perceived such a differential after the Great Recession. Put differently, union members benefited in relative terms from the downturn in the economy. This is, in essence, a facet of the counter-cyclical benefits of unionization that we have pointed to before in terms of wages (Blanchflower and Bryson, 2004) only this time it relates to job security. What makes this finding particularly important is that uncertainty and concern about job security was rising over this period, and has remained high today, not only in the United States but in Europe too. Job security has become a scarce commodity post-Great Recession (Blanchflower, 2019). In these circumstances the insurance component of the union good becomes more attractive, especially if one also continues to receive a union wage premium. This seems likely to continue to be the case in the light of COVID-19 induced impending recession and mass job loss.

It has usually been assumed that unions do best for their members during a slump and worse in a boom. Defined benefit plans maintain their values in a slump while defined contribution funds lose their values. When stock markets are booming defined contribution plans may well do better. The counter to all of this around the world is the seemingly inexorable decline in union jobs. But eventually the strongest are left. This is what David Metcalf (1989) called "*batting average effects*" where the team average rises as the worst batters are dropped. He argued it occurred where there was an improvement in productivity from shedding less productive resources.

What do we think may have happened to explain the switch in the partial correlation between union membership and job satisfaction from negative in the 20th Century to positive at the beginning of the 21st Century? We make inferences based on our analysis of the data for the United States since this is the longest series we have available to us. What we know from that evidence presented here is as follows.

- (a) Union members continue to benefit from a very substantial wage premium relative to their non-member counterparts. It may have fallen a little in recent years but is broadly flat.
- (b) The ease of finding a comparable job if you lose your current job has been falling since 2000; union members are more likely to say that they would find it hard to find a comparable job if they lost their current job.

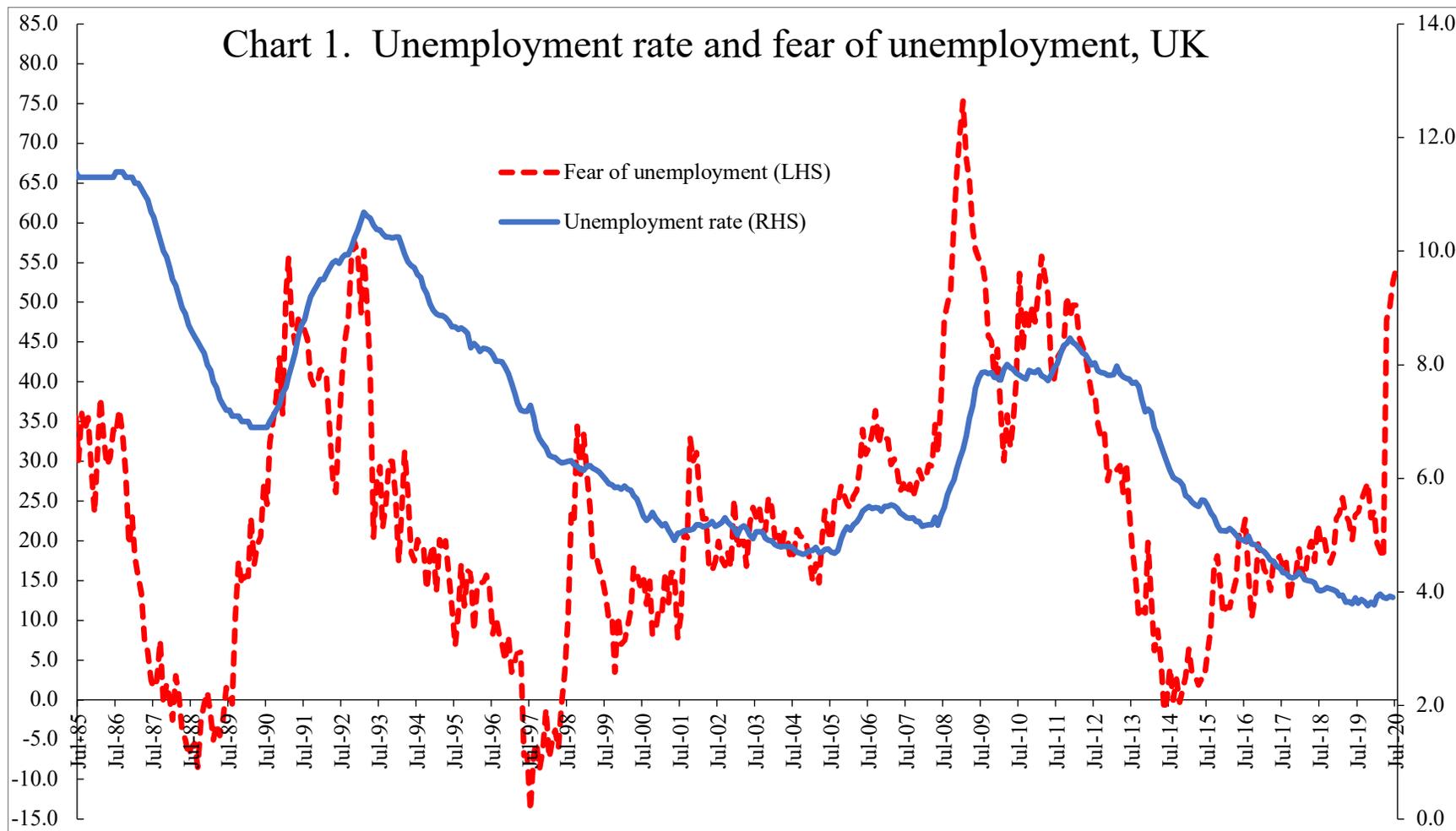
(c) In the past union members were more likely than non-members to say they expected to lose their job in the future, but this differential disappeared in the 2000s – from that point on there was no difference between members and non-members in their perception of likely job loss.

(d) Among early birth cohorts – those appearing in the data of Freeman and Borjas, union members expressed greater job dissatisfaction than non-members – back in the 1970s and again today post- Great Recession, whereas today among birth cohorts born more recently job satisfaction is *higher* among members than it is among non-members.

Taken together these four facts may help explain why it is that, *ceteris paribus*, union members are now more likely than non-members to express job satisfaction. Perhaps this also spills over into other parts of their lives – expressed in their greater life satisfaction, happiness, and other facets of wellbeing whilst, at the same time, making them less prone to anxiety and worry, including worry over money.

On many dimensions, relating to work, wellbeing, time trust and macro issues union members are more satisfied than non-members. We didn't know this before. We especially didn't know that union status now enters *positively* in a job satisfaction equation. We had always believed and had taught our students for decades that, following Freeman (1979) union members had *lower* job satisfaction. The findings pose a challenge to our previous conception of trade unionism and industrial relations. There is nothing new under the sun. Actually, there is.

Chart 1. Unemployment rate and fear of unemployment, UK



The chart reports the answers to the following question. *Q9. 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; fall slightly (M); fall sharply (MM) or don't know.* A score is constructed from the responses as follows: $B = (PP + 1/2P) - (1/2M + MM)$. So, the higher the score the higher unemployment is expected to be. As can be seen from above the unemployment in the United Kingdom fell sharply from 2010. https://ec.europa.eu/info/files/user-guide-joint-harmonised-eu-programme-business-and-consumer-surveys_en

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Table 1. US Ordered logit job satisfaction equations, General Social Surveys, 1972-2018, workers only

	<i>1972-1996</i>	<i>1998-2008</i>	<i>2010-2018</i>
Union	-.1629 (3.67)	.0116 (0.15)	+.2070 (2.17)
Male	-.0659 (2.41)	-.0612 (1.47)	-.1122 (2.33)
Age	.0192 (3.00)	-.0085 (0.89)	.0023 (0.21)
Age ² *100	.0094 (1.26)	.0262 (2.41)	.0200 (1.67)
African American	-.4050 (9.82)	-.4008 (6.52)	-.3449 (5.11)
Other races	-.1761 (2.19)	-.1399 (1.91)	.0095 (0.07)
Self-employed	-.5131 (12.03)	-.5237 (16.17)	-.4869 (6.32)
Cut1	-3.7439	-3.1755	-4.0308
Cut2	-2.3172	-1.7618	-2.5407
Cut3	-.3084	.3188	-.4571
Pseudo R ²	.0276	.0204	.0278
N	20,964	8,886	6,726

All equations include year, region (8) and highest level of education (19) controls. T-statistics in parentheses.

Table 2. Probit job satisfaction from Gallup US Daily Tracker, 2009-2013 – workers only.

Union	.0355 (5.28)	.0302 (4.14)	.0394 (5.36)
Male	.0001 (0.02)	.0162 (3.37)	.0208 (4.29)
Age	-.0169 (19.57)	-.0200 (20.57)	-.0178 (17.62)
Age ² *100	.0298 (31.54)	.0328 (30.94)	.0002 (23.85)
African American		-.1919 (16.79)	-.1802 (15.63)
Asian		.0610 (2.61)	.0139 (0.59)
American Indian/Alaska Native		.1484 (2.93)	-.1628 (3.23)
Native Hawaiian/ Pacific Islander		-.0815 (0.98)	-.1008 (1.22)
Hispanic		-.0169 (1.96)	-.0504 (5.86)
High school degree or diploma		.0196 (1.38)	.0775 (5.48)
Technical/Vocational school		-.0074 (0.48)	.0527 (3.39)
Some college		-.0585 (4.23)	.0229 (1.67)
College graduate		-.0064 (0.46)	.0924 (6.66)
Post graduate work or degree		.0433 (3.03)	.1515 (10.65)
#Fruit & veg days		.0174 (18.42)	.0200 (21.12)
#Exercise days		.0086 (8.38)	.0163 (15.83)
FT self-employed			.1769 (18.98)
PT			.3506 (37.58)
PT wants FT			-.4142 (55.43)
BMI			-.0045 (10.22)
Smoker			-.2161 (35.60)
Constant	1.4944	.9326	1.5756
Pseudo R ²	.0162	.0419	.0424
N	618,176	550,454	546,385
Age minimum	30	30	34

All equations include year and month of interview and state controls. T-statistics in parentheses.

Table 3. European Social Survey, job satisfaction, OLS, waves 3 (2006), wave 5 (2010) & 6 (2012)
(mnactic==1)

				Sweep 3 (2006)	Sweep 5 (2010)	Sweep 6 (2012)
Member	.3382 (19.57)	.3121 (17.92)	.1536 (7.85)	.1480 (4.26)	.2065 (6.26)	.1047 (3.08)
Age		-.0195 (4.74)	-.0195 (4.83)	-.0321 (4.32)	-.0085 (1.24)	-.0170 (2.51)
Age ² *100		.0349 (7.36)	.0315 (6.75)	.0443 (5.07)	.0184 (2.31)	.0306 (3.96)
Male		.0591 (3.813)	-.0090 (0.59)	.0259 (0.92)	-.0215 (0.85)	-.0295 (1.14)
Native		.0940 (1.69)	.2169 (8.07)	.2123 (4.13)	.2685 (6.20)	.1754 (3.85)
Years of education			.0360 (16.64)	.0375 (9.64)	.0355 (9.87)	.0365 (9.64)
Self-employed			.5301 (22.66)	.6281 (13.99)	.4422 (11.66)	.5406 (13.80)
Family business			.5070 (7.79)	.6287 (4.92)	.4689 (4.09)	.4656 (4.66)
Country/ wave dummies	No	No	Yes	Yes	Yes	Yes
Constant	7.1763	7.2292	6.3969	6.0468	5.8056	6.6794
Adjusted R ²	.0054	.0100	.0683	.0771	.0650	.0558
N	71,050	70,756	70,147	22,402	23,446	24,229
Age minimum		28	31	36	n/a	28

T-statistics in parentheses.

Table 4. Job satisfaction in the UK, 1996-2014 – workers only BHPS and Understanding Society, 1996-2014.

Union		-0.0587 (7.57)	-0.0847 (10.75)	+0.1438 (7.71)	+0.1283 (6.94)
Male			-0.1481 (22.83)		
Age			-0.0262 (13.95)		.0659 (2.83)
Age ² *100			.0363 (15.93)		.0352 (3.81)
Married			.1447 (19.93)		.6188 (17.33)
Degree			-0.0452 (5.26)		1.245 (12.87)
A-level			-0.0545 (7.09)		.0977 (12.45)
Region dummies	No		Yes	No	Yes
Person fixed effects	No		No	Yes	Yes
Constant		5.0265	5.5011	4.4660	2.1992
Adjusted R ²		.014	.024	.4043	.4094
F		146.14	129.26		
N		182,933	182,933	182,933	182,933
Age minimum			36		29

All equations include year dummies. T-statistics in parentheses.

Table 5. Cantril life satisfaction from Gallup US Daily Tracker, OLS 2009-2017 – workers only.

Union	.0825 (15.27)	.0582 (11.23)	.0451 (7.95)
Male	-.1649 (47.44)	-.1416 (40.50)	-.1602 (40.40)
Age	-.0266 (41.77)	-.0477 (69.66)	-.0487 (64.21)
Age ² *100	.0348 (52.49)	.0546 (77.70)	.0529 (66.91)
African American	-.1350 (17.26)	.0503 (6.50)	.0924 (11.12)
Asian	.0428 (3.00)	-.0051 (0.37)	-.0074 (0.49)
American Indian/Alaska Native	-.2493 (9.89)	-.0186 (0.77)	.0407 (1.71)
Native Hawaiian/ Pacific Islander	-.0987 (2.30)	.0761 (1.86)	.0952 (2.37)
Hispanic	-.0101 (1.61)	.2368 (36.24)	.3519 (50.86)
High school degree or diploma		-.0173 (1.67)	-.1472 (13.24)
Technical/Vocational school		-.1013 (8.63)	-.2625 (20.72)
Some college		-.0349 (3.42)	-.2464 (22.25)
College graduate		.1550 (15.01)	-.1568 (13.84)
Post graduate work or degree		.3341 (31.77)	-.0510 (4.36)
#Fruit & veg days		.0268 (39.27)	.0255 (35.09)
#Exercise days		.0208 (28.49)	.0229 (29.26)
Health insurance			.2936 (46.12)
FT			-.0165 (2.44)
PT			.2610 (44.43)
PT wants FT			-.3546 (51.88)
Occupation & income controls	No	No	Yes
Personal controls	No	No	Yes
Constant	7.7966	6.3256	6.0834
Adjusted R ²	.0104	.1306	.1598
N	1,014,627	963,326	820,970

All equations include year and month of interview and state.

Personal controls include marital status; religion; political party; health status; cancer; diabetes; heart attack; cholesterol and high blood pressure; BMI and smoker. T-statistics in parentheses.

Table 6. European Social Survey, happiness, OLS 2002-2019 - workers only (mnactic==1)

Union	.4075 (46.10)	.0660 (6.91)	.0682 (6.88)
Age		-.0280 (14.36)	-.0611 (27.93)
Age ² *100		.0217 (9.71)	.0541 (22.13)
Male		-.0540 (17.51)	-.0617 (7.76)
Native		.1066 (8.21)	.1523 (11.08)
Years of education			.0321 (28.99)
Self-employed			.0903 (7.77)
Working for family business			.1269 (3.82)
Separated			-.8838 (26.40)
Divorced			-.5564 (40.87)
Widowed			-.5783 (36.53)
Never married			-.4760 (42.85)
Religious scale 0-10			.0378 (26.40)
Left-right scale 0=10			.0475 (25.58)
Country/ wave dummies	No	Yes	Yes
Constant	7.2929	7.3009	7.1872
N	208,268	207,383	175,904
Adjusted R ²	.0101	.1156	.1446
T-statistics in parentheses.			

Table 7. European Social Survey, Life satisfaction, OLS 2002-2018 (mnaetic==1)

Union	.5447 (53.16)	.0466 (4.32)	.0666 (5.94)
Age		-.0423 (19.24)	-.0681 (27.52)
Age ² *100		.0394 (15.67)	.0657 (23.76)
Male		-.0235 (2.77)	-.0357 (3.97)
Native		.2414 (16.46)	.2686 (17.27)
Years of education			.0444 (35.52)
Self-employed			.1125 (8.56)
Working for family business			.1304 (3.47)
Separated			-.8124 (21.46)
Divorced			-.5209 (33.85)
Widowed			-.4587 (25.62)
Never married			-.3822 (30.42)
Religious scale 0-10			.0353 (21.86)
Left-right scale 0=10			.0896 (42.70)
Country/ wave dummies	No	Yes	Yes
Constant	6.9187	6.6398	5.9595
N	208,535	207,641	176,224
Adjusted R ²	.0134	.1635	.1870

T-statistics in parentheses.

Table 8. Stress and worry from Gallup US Daily Tracker, 2009-2017 – workers only.

	Stress	Worry	Worry about money	
	2009-2017	2009-2017	2013-2017	2013-2017
Union	-.0422 (9.65)	-.0388 (8.49)	-.0278 (3.54)	-.0181 (2.34)
Male	.0177 (33.36)	.0255 (46.07)	-.2111 (42.95)	-.1387 (28.48)
Age	-.0342 (60.92)	-.0339 (58.03)	.0154 (17.48)	.0303 (34.52)
Age ² *100	-.1464 (52.62)	-.1320 (45.55)	-.0291 (31.51)	-.0438 (47.57)
African American	-.3329 (51.39)	-.1933 (28.30)	.1120 (12.27)	.0127 (1.41)
Asian	-.2094 (18.23)	-.0688 (5.71)	-.2341 (14.39)	-.2393 (14.98)
Native	-.1125 (6.97)	-.0464 (2.73)	.0764 (3.97)	.0200 (1.06)
Hispanic	-.2045 (39.93)	-.0019 (0.37)	.0474 (5.44)	-.0634 (7.36)
High school diploma	-.0209 (2.52)	-.1453 (17.30)	-.2098 (15.14)	-.0768 (5.59)
Tech/Voc school	.0485 (5.09)	-.1054 (10.87)	-.1788 (10.45)	-.0251 (1.48)
Some college	.0952 (11.73)	-.1075 (13.07)	-.2239 (16.37)	-.0207 (1.51)
College graduate	.0922 (11.36)	-.1482 (18.01)	-.3963 (28.92)	-.0833 (6.02)
Postgraduate	.1440 (17.49)	-.1345 (16.10)	-.5107 (36.63)	-.1266 (8.94)
Income controls	No	No	No	Yes
Constant	-.4033	-.8500	3.0415	2.8277
Pseudo/Adj R ²	.0286	.0121	.0352	.0691
N	870,802	870,240	394,500	394,500
Mean	.363	.290	2.606	

All equations include year and month of interview and state. Columns 1 and 2, estimated by probit, columns 3 and 4 by OLS
 In the last seven days have you worried about money (hwb6) – 1=strongly disagree to 5 = strongly agree.
 Did you experience pain (worry) yesterday, Yes or No? T-statistics in parentheses.

Table 9. Pain and anger, life and job satisfaction from Gallup US Daily Tracker, 2008-2017 – workers only.

	Pain 2009-2017	Anger 2008-2013, 2016	Cantril 2008-2013, 2016	Job satisfaction 2009-2013
Union	.0367 (7.43)	.0254 (4.07)	.0971 (3.72)	.0467 (6.46)
Male	-.0571 (17.84)	.0419 (10.30)	.0172 (1.11)	.0003 (0.06)
Age	.0163 (27.56)	.0080 (10.37)	-.0125 (4.49)	-.0207 (22.11)
Age ² *100	-.0109 (17.83)	-.0169 (20.49)	.0783 (2.76)	.0321 (31.65)
African American	-.0825 (11.05)	-.0082 (0.83)	-.2959 (9.70)	-.2196 (19.38)
Asian	-.1841 (12.27)	-.1497 (7.70)	-.1722 (2.10)	-.0005 (0.02)
Native	.1478 (8.45)	.0618 (2.16)	-.3395 (4.17)	-.1258 (2.96)
Hispanic	.0112 (1.92)	.0279 (3.88)	-.1535 (6.25)	-.0463 (5.61)
High school diploma	-.1948 (22.39)	-.1251 (11.13)	.2963 (10.83)	.0719 (5.43)
Tech/Voc school	-.1561 (15.51)	-.1288 (10.07)	.4260 (12.08)	.0603 (4.10)
Some college	-.2450 (28.66)	-.1468 (13.36)	.5143 (18.23)	.0251 (1.95)
College graduate	-.4458 (51.69)	-.2342 (21.24)	.6912 (22.71)	.1061 (8.20)
Postgraduate	-.4961 (56.48)	-.2581 (22.95)	.8634 (24.71)	.1770 (13.37)
Pain			-.2641 (16.04)	-.3015 (54.24)
Anger			-.4843 (28.64)	-.5586 (93.98)
Constant	-1.0884	-1.0811	3.0956	1.6972
Pseudo R ²	.0157	.0121	.0982	.0539
N	870,265	663,162	661,420	571,961

All equations include year and month of interview and state. Columns 1-3, estimated by probit, columns 4 and 5 by OLS. T-statistics in parentheses.

Table 10. Broader Well-Being Measures ESS, OLS, 2002-2019 – workers only

	Union	T	N	Mean	Scale
a) Positive affect					
Satisfaction work life balance~	.0953	4.47	69,953	2.24	0-10
Satisfaction with life so far#	.0894	3.08	22,754	6.82	0-10
Enjoyed life**	.0165	1.97	58,346	2.93	1-4
Felt calm & peaceful*	.0383	3.82	40,512	2.75	1-4
b) Negative affect					
Felt depressed**	-.0262	4.15	58,476	1.41	1-4
Everything an effort**	-.0248	3.33	58,433	1.62	1-4
Felt lonely**	-.0222	3.49	58,426	1.36	1-4
Felt sad**	-.0201	3.13	58,427	1.51	1-4
c) Trust					
Trust in people	.0719	5.61	182,598	4.96	0-10
Trust in the police	.0923	6.86	175,738	5.94	0-10
Trust in politicians	.0732	5.67	175,124	3.52	0-10
Trust political parties	.0833	6.13	157,423	3.47	0-10
Trust in European Parliament	.0390	2.67	164,278	4.46	0-10
d) Macro views					
The economy	.0286	2.30	181,725	4.48	0-10
Democracy	.0270	1.99	174,341	5.25	0-10
State of education	.0277	2.18	172,468	5.54	0-10

Notes # Sweep 3. *=sweeps 3 & 6. ** = sweeps 3,6, & 7. ~sweeps 3, 5 & 6. Same controls as Table 6 column 3. T-statistics in parentheses.

Q9. How satisfied are you with the balance between the time you spend on your paid work and the time you spend on other aspects of your life? Extremely dissatisfied=zero to extremely satisfied=10.

Q10. How satisfied are you with how your life has turned out so far? Extremely dissatisfied=zero to extremely satisfied=10.

Q11. I will now read out a list of the ways you might have felt or behaved during the past week. Using this card, please tell me how much of the time during the past week –

You felt depressed?

You enjoyed life?

You felt calm and peaceful?

You felt everything was an effort?

You felt lonely?

You felt sad?

– none or almost none of the time; some of the time; most of the time; all or almost all of the time.

Q12. Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust.

The police?

This country's parliament?

Politicians?

The European Parliament?

Q13. Using this card, generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please tell me on a score of 0 to 10, where 0 means you can't be too careful and 10 means that most people can be trusted?

Q14. And on the whole, how satisfied are you with the way democracy works in [country]?

Now, using this card, please say what you think overall about the state of education in [country] nowadays?

On the whole how satisfied are you with the present state of the economy in [country]?

Extremely dissatisfied=zero to extremely satisfied=10.

Table 11. Probability of finding or losing a job, GSS, 1977-2018

a) Over the next 12 months, likelihood you will lose your job or be laid off

			1977-1998	2000-2018
Union	.0620 (2.95)	.1066 (4.11)	.1081 (4.08)	-.0160 (0.46)
Union*2000+		-.1224 (2.94)		
Age	-.0026 (4.47)	-.0026 (4.48)	-.0031 (4.04)	-.0017 (1.89)
Male	.0152 (1.04)	.0140 (0.95)	.0095 (0.50)	.0204 (0.89)
Self-employed	-.1804 (8.21)	-.1802 (8.21)	-.2125 (7.54)	-.1323 (3.77)
Black	.1618 (7.11)	.1611 (7.08)	.1953 (6.24)	.1257 (3.79)
Other race	.0753 (2.42)	.0742 (2.39)	.0132 (0.25)	.0962 (2.46)
Years education	-.0296 (11.40)	-.0293 (11.31)	-.0249 (7.25)	-.0358 (8.94)
Time	.0017 (2.62)	.0023 (3.40)	.0043 (2.73)	-.0019 (0.98)
Constant	-1.4307	-2.6726	-6.6438	5.8996
Adjusted R ²	.0295	.0301	.0324	.0296
N	12,000	12,000	7,135	4,865

b) Ease of finding a comparable job

			1977-1998	2000-2018
Union	-.2434 (11.81)	-.2828 (11.13)	-.2690 (10.35)	-.1959 (5.79)
Union*2000+		.1083 (2.65)		
Age	-.0103 (18.13)	-.0103 (10.13)	-.0112 (14.66)	-.0092 (10.62)
Male	-.0083 (0.57)	-.0071 (0.50)	-.0058 (0.31)	-.0036 (0.16)
Self-employed	.1176 (5.39)	.1176 (5.40)	.1577 (5.62)	.0555 (1.61)
Black	-.0486 (2.17)	-.0479 (2.14)	-.0684 (2.22)	.0267 (0.83)
Other race	-.0358 (1.18)	-.0349 (1.15)	-.0025 (0.05)	-.0439 (1.15)
Years education	.0302 (11.81)	.0300 (11.74)	.0272 (8.00)	.0316 (8.06)
Time	-.0009 (1.48)	-.0015 (2.23)	.0012 (0.75)	-.0124 (6.53)
Constant	2.0767	4.8777	-.3368	26.7403
Adjusted R ²	.0743	.0566	.0671	.0296
N	11,954	11,954	7,093	4,861

Notes: all equations are OLS and include 8 region dummies. T-statistics in parentheses.

Excludes 1979-1981; 1984; 1987; 1992 and is then very two years from 1994.