Subjective job insecurity and the rise of the Precariat: evidence from the United Kingdom, Germany, and the United States

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Abstract

There is a widespread belief that work is less secure than in the past, that an increasing share of workers are part of the "precariat". It is hard to find much evidence for this in objective measures of job security, but perhaps subjective measures show different trends. This paper shows that in the US, UK, and Germany workers feel as secure as they ever have in the last thirty years. This is partly because job insecurity is very cyclical and (pre-COVID) unemployment rates very low, but there is also no clear underlying trend towards increased subjective measures of job insecurity. This conclusion seems robust to controlling for the changing mix of the labor force, and is true for specific sub-sets of workers. JEL Code: J28

1 Introduction

This paper investigates the trends in self-perceived job security in the advanced industrial economies of the United Kingdom, Germany, and the United States over the past four decades. In discussions about the evolution of the labor market it is common to hear what Hollister (2011) calls the "New Employment

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Narrative", or Standing (2011) the rise of the "precariat": the idea that security of employment has fallen substantially in recent decades. Putative causes include technological change (see Rifkin (1995) for an early expression of this view) and globalization (Kalleberg, 2009), with an associated decline of manufacturing employment and unionization, and the rise of "non-standard employment" i.e. temporary or part-time work, zero-hour contracts, out-sourcing, and other "flexible" work arrangements that are part of the "gig economy" (see, for example, Davis (2009); Fantasia and Voss (2004); or Weil (2014)). Academics have become increasingly interested in job security as a research topic, and the overwhelming consensus in those papers is that insecurity has risen or has been rising. We extracted all the papers in Scopus with the phrases "job security" or "job insecurity" in their abstracts and used a natural language processing (NLP) model to select those that make a claim about trends in job insecurity and to classify whether the claim was that job insecurity was rising or falling. The blue line in Figure 1 plots the three-year moving average of the gross number of papers making a claim about trending job insecurity, and the red line plots the number relative to the total number of social science publications in that year–each series is indexed to be equal to 100 in the base year of 1980. Both series show a rising level of interest. The green line (on the right-hand axis) shows the fraction of papers which claim that insecurity has risen or is rising. This fraction has been above 90% since the mid-2000s; the raw sample proportion for the entire period since 1980 is 92%.

[Figure 1 about here.]

Many proponents of the "precariat" theory of labor markets point to the rising proportion of jobs with "non-standard" characteristics (Standing (2011), Kalleberg (2018), and Thelen (2019)) as evidence that workers feel more insecure today than they did in the past. Mas and Pallais (2017) shows using experimental evidence from the US that workers' willingness to pay for the flexibility that is characteristic of these types of jobs is low. Datta (2019) performs a similar experimental exercise in the UK, and finds that around half of workers in flexible work arrangements would prefer to have more standard working arrangements. This work suggests that the rise of flexible work may be more to do with the desire of employers to contract flexibly with

their workers rather than vice versa. Nevertheless, though the rise of non-standard working arrangements is well-documented, the magnitudes involved are often less than one might infer from the "precariat" argument. Using data from OECD (2015), Kalleberg (2018) notes that the growth rate of non-standard jobs (defined as all temporary workers, those on part-time contracts, and own-account self-employed persons) in the UK was -0.5% between 1995 and 2007, and 3.2% between 2007 and 2013. In Germany, the growth rates over these periods were 12.7% and 2%, respectively over the same time period. The same data in OECD (2015) show that the overall proportion of non-standard work in the UK stayed virtually constant at around 33% from 1995 to 2013, while in Germany the non-standard proportion rose from just under 30% to just under 40% over the same time period. In the US, though Katz and Krueger (2019a) initially found a rise in independent contractors, freelancers, temporary workers, and fixed-term contract workers in the US from 10.7% of the labor force in 2005 to 15.8% in 2015, a later paper from the same authors reassessed the data and found a smaller increase of at most a couple of percentage points (see Katz and Krueger (2019b) for a discussion of the survey weighting issues that caused the initial overestimate of the growth in alternative working arrangements). It is important to map the consequences of these changes in working arrangements across all three countries into what they mean for job insecurity as experienced by workers; this is what our paper does. It shows that, while some forms of non-standard work are associated with greater job insecurity, the overall changes associated with any rises in the incidence of non-standard work are small.

Other objective measures of job insecurity, e.g. labor turnover rates (Neumark et al. (1999); Farber (1999); Fujita (2018); and Molloy et al. (2016)) and the job tenure distribution (Neumark (2000); Jaeger and Stevens (1999); Hollister (2011); and Bachmann and Felder (2018)), show little evidence of a rise in insecurity. Two recent papers, Molloy et al. (2020) and Copeland (2019), find no change in median job tenure of employees in the US since the early 1980s–though the absence of change in median tenure does mask falling tenure among men (primarily through the 1990s), counteracted by rising tenure among women. These studies do not include the self-employed or "gig economy" workers, but the surveys we study for the

UK and Germany contain information on job tenure for all workers, including these groups.

It is possible that objective measures of job security may not have changed but that workers feel more insecure, i.e. subjective job security may have fallen. This would be a cause for concern, as there is evidence that self-perceived job insecurity, whether or not a termination is realized, has a detrimental impact on the worker's psychological health, stress levels, and job attitudes (see Ferrie (2001) and Sverke et al. (2002) for summaries of the early literature, and Benach et al. (2014) or Laszlo et al. (2010) for more recent work). Some work has also found real effects of anticipated job loss: Hendren (2017) shows that fear of job loss lowers consumption and increases spousal labor supply even before job loss realization, while Basten et al. (2016) and Gallen (2013) both find evidence of increased saving in the years leading up to job loss or in an environment of increased layoff risk.

Most of the existing literature on subjective job security (Luebke and Erlinghagen (2014); Erlinghagen (2008); Green (2009)) focuses on cross-sectional analysis rather than long-term trends. It has found, for example, that temporary workers and those on fixed-term contracts report higher insecurity (Luebke and Erlinghagen (2014); Keim et al. (2014)). Some of the literature also compares perceived job security across countries, with mixed results: Hank and Erlinghagen (2011) conclude that factors like employment protection legislation, and levels of social trust cannot significantly explain job security on an individual level. One of the only robust results that has emerged from these macro-level studies is the correlation between the unemployment rate and the proportion of workers that feels insecure (Anderson and Pontusson (2007); Erlinghagen (2008); Schmidt (1999); Luebke and Erlinghagen (2014)). There is little literature on longer-run trends in self-perceived job security, though Molloy et al. (2020) do have a brief discussion of trends in the US using the General Social Survey, noting that changes in the job tenure distribution in the US since the 1980s, discussed above, have not been associated with a rise in perceived job insecurity (and in fact, they find that the subjective job security of short-tenured workers has improved).

In this paper, we examine trends in subjective job security in three countries (the US, UK, and Germany)

over the past four decades. The paper shows that, on the eve of the COVID-19 pandemic, workers in all three countries felt as secure as they ever have in the last thirty years . This is partly because job insecurity is very cyclical (e.g. rising in the Great Financial Crisis (GFC) beginning in 2007-08 and almost certainly rising during the pandemic) and pre-COVID unemployment rates were very low, but there is also no clear underlying trend towards increased subjective measures of job insecurity. We find that adjusting for changes in demographic and other socioeconomic characteristics in the workforce makes little difference to the overall raw trend, and that the proportion of workers that feels insecure at any given point time has not seen any sizable secular rise over the time period studied and shows a marked decline in the UK. This result is robust across all three countries in the sample, and we find very little heterogeneity in trends across different demographics and job types. Evidence from the rest of Europe suggests that these stylized facts are also likely to be true on the continent, with the proportion of workers that feel insecure today no higher than it was before the GFC in most European countries. Our findings call into question the validity of the "New Employment Narrative": by our accounting, there simply is not enough evidence that workers are more likely to feel insecure today than they did a few decades ago to support the claims made by those who promote narratives that emphasize the rise of the "precariat" as a new, highly-insecure stratum of workers on flexible contracts.

The plan of the paper is as follows. Section 2 describes the data we use, explains how each survey measures subjective job security, and measures the raw trend in subjective job security over time in each of the three countries, comparing this trend to the unemployment rate and job separation rates. In Section 3, we adjust these raw trends to account for the changing demographic and socioeconomic characteristics of the workforce, and show that the absence of a rise in subjective insecurity is robust to these adjustments. We also calculate the marginal effects of some of these worker characteristics on job security, confirming that job security varies across demographic and job categories. In Section 4, we investigate whether the heterogeneity in levels that we find extends to heterogeneity in trends; we find that most subgroups have

experienced remarkably similar trends, and that nearly all types of workers were experiencing record lows in subjective insecurity before the COVID-19 pandemic began. In Section 5, we look at broader evidence on job security in Europe, and show that the proportion of workers that report feeling insecure has not risen in the vast majority of European countries since the GFC. Section 6 considers the argument that the rise of the "precariat" is to be found in dimensions of security other than the subjective risk of job loss. We show that the level of general job satisfaction shows similar trends to those in subjective job security, suggesting there is no large determinant of job satisfaction missing from our analysis. Section 7 concludes.

2 Data

This section describes each dataset, the questions on perceived job insecurity (different in each survey), and the methodology used to construct a binary variable that indicates whether or not a respondent feels insecure in their job for the three datasets that do not ask respondents for a numerical probability of job loss.

2.1 US General Social Survey (GSS)

For the US, we use two surveys, the General Social Survey (GSS) and the Health and Retirement Study (HRS). The GSS is a repeated cross-sectional survey that has been conducted annually by the National Opinion Research Center at the University of Chicago since 1972, and aims to catalog Americans' attitudes towards various political, economic, and social issues[1]. The master dataset which contains all waves of the

[1] Smith, Tom W., Davern, Michael, Freese, Jeremy, and Morgan, Stephen L., General Social Surveys, 1972-2018 [machine-readable data file]. Principal Investigator, Smith, Tom W.; Co-Principal Investigators, Michael Davern, Jeremy Freese and Stephen L. Morgan; Sponsored by National Science Foundation. --NORC ed.-- Chicago: NORC, 2019. 1 data file (64,814 logical records) + 1 codebook (3,758 pp.). -- (National Data Program for the Social Sciences, no. 25).

survey has 64,814 individual observations. Not all respondents are employed, and not all respondents give answers to all of the questions that form the covariates used in the analysis below.

The GSS asks respondents if they are likely to lose their job on a scale of 1-4, with 1 being "very likely", 2 being "fairly likely", 3 being "not too likely", and 4 being "not likely". To enable simpler presentation of results, we construct a binary variable which takes the value 1 for respondents that answer 1 or 2, and the value 0 if they respond 3 or 4[2]. The question was first asked in 1978 and subsequently asked in 1983, 1985, 1986, 1988-1991, 1993, and then every two years from 1994 to 2018. We drop observations that do not have data on the respondent's sex, age, race/ethnicity, marital status, country of birth, education, self-employment status, part-time work status, union membership, and employment industry, as well as those over the age of 65. In total, we have 11,170 observations covering the period from 1978 to 2018, with around 500 observations per year. We use the cross-sectional weight variable *wtssall* in all our analyses, except where noted.

2.2 US Health and Retirement Study (HRS)

The HRS is a survey sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan[3]. It surveys a panel of Americans over the age of 50 every two years, collecting information on financial and labor market status, the health of the respondent, insurance coverage, and demographic characteristics. Since 1996, it has also asked respondents who are employed to assess the likelihood that they will lose their job in the next year, with the exception of the 2008 survey.

[2] In Appendix A.2, we show that the trend in the non-binned responses does not affect our conclusions about the overall trend in job security.

[3] "Health and Retirement Study, (RAND HRS Longitudinal File 2018 (v1)) public use dataset. Produced and distributed by the University of Michigan with funding from the National Institute on Aging (grant number NIA U01AG009740). Ann Arbor, MI, (2018)."

We restrict our sample to those who are employed and of working age and who have non-missing data on the same covariates as the GSS (with the exception of industry codes, which are masked in the public release version of the HRS), leaving an unbalanced panel from 1996 to 2016 with between 3,000 and 5,000 observations per year, for a total of 54,946 observations. We use the cross-sectional weight variable *wtresp* in all analyses, except where noted.

The HRS has the disadvantage that it covers a shorter sample period and more specific population than the GSS (it only samples workers over the age of 50), but it also possesses a number of advantages. First, it is a panel dataset, so one can verify (as Hendren (2017) does) whether those who report their job is insecure are more likely to subsequently lose their job. Secondly, the form of the job security question is different from the other datasets. It asks respondents to give a numerical probability that they will lose their job in the next year. The wording of this question follows the recommendation of Manski (2004), who argues that expectations questions contain useful information, but that these questions would more usefully be formulated as explicit probabilities of events such as job loss.

The proportion of US workers that report feeling insecure is plotted over time in Figure 2 for the GSS, and the mean response in percentage points for the HRS. Consistent with the findings of Fullerton and Wallace (2007) and Molloy et al. (2020), this series does not demonstrate a noticeable secular trend in reported job security. Reassuringly, the trends are similar for both the GSS and HRS questions–a rise in the early 2000s and during the GFC (i.e. tracking the business cycle), but flat or falling otherwise–suggesting that the way the question is formulated does not affect changes over time. Figure 2 also plots the annual unemployment rate from FRED (on the left-sided axis), and the layoff rate from the CPS (on the right-sided axis, multiplied by 10 to aid comparison to the other series)[4], two more objective measures of job insecurity.

[Figure 2 about here.]

[4] Construction of this measure is described in Appendix A.3.

2.3 British Household Panel Survey (BHPS) and UK Household Longitudinal Survey (UKHLS)

The BHPS (1991-2009) and its successor survey, the UKHLS (2009-present), are longitudinal surveys of British households conducted by the Institute for Social and Economic Research at the University of Essex[5]. The 18 waves of the BHPS have 10,000-15,000 respondents per year, while the UKHLS has around 40,000 to 50,000 per wave, each of which spans two calendar years. Restricting the data to working-age, employed adults with data on the covariates listed in Section 2.1, plus temporary work status and job tenure, we have a total of 144,444 usable observations, with between 4,000 and 5,000 observations per year until the end of the BHPS. From 2009 on, single years have between 6,000 and 10,000 observations.[6] Because individual UKHLS waves span two calendar years, and because only the relative magnitudes of weights in a given year matter to our estimation procedures, we adjust the provided cross-sectional weight variable (*xr_wght* in the BHPS, *indinus_xw* in the UKHLS), by replacing observation i in calendar year t's weight w_{it} with $\frac{w_{it}}{\overline{w_t}}$, where $\overline{w_t}$ is the mean cross-sectional weight for observations in year t. Omitting this adjustment procedure does not affect our results.

The question on subjective job insecurity is different in the BHPS and the UKHLS. The BHPS asks respondents to rank how satisfied they are with their job security on a scale of 1-7, with 1 indicating "Not satisfied at all", 4 indicating "Neither satisfied nor dissatisfied", and 7 indicating "Completely satisfied"[7]. We define insecurity as giving a response of 1, 2, or 3 to this job security question[8]. The UKHLS asks

[5] University of Essex, Institute for Social and Economic Research. (2020). Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009. [data collection]. 12th Edition. UK Data Service. SN: 6614, http://doi.org/10.5255/UKDA-SN-6614-13

[6] Because it falls in the gap between the end of the BHPS and the beginning of the UKHLS, 2009 has only 61 observations.

[7] Numbers in between do not have descriptions.

[8] Though, as in the US case, none of the conclusions are sensitive to converting to a binary outcome

respondents how likely it is that they will lose their job in the next 12 months, on a scale of 1-4, with 1 indicating "Very likely", 2 indicating "Likely", 3 indicating "Unlikely", and 4 indicating "Very unlikely"; this question is only asked in even-numbered waves.The difference in the question leads to a break in the time series, which is especially problematic because it occurs at the same time as the financial crisis, a point at which there may have been large changes in job security.

To deal with this problem, we use the fact that in Waves 6 and 7 (1996 and 1997) of the BHPS, respondents are asked both the original BHPS question and the UKHLS question about the likelihood of job loss. We use this crosswalk to make the two surveys comparable by using Waves 6 and 7 to "translate" the the 1-7 scale of the earlier BHPS question into the UKHLS question responses using the crosstab of the two questions, conditional on other characteristics[9]. This process allows us to assign each individual giving a response to the BHPS question a probability that they would have given the response to the UKHLS question; see Appendix A.1 for the technical details of this process and a discussion of the question of whether or not to include other covariates in the crosswalk. Using this approach, we can compute an estimate of the proportion of the workers in the BHPS who would have reported they felt insecure using the UKHLS question. Figure 3 plots our estimate of the proportion of UK workers feeling insecure over time, together with the UK unemployment rate and the involuntary separation rate (see Appendix A.3 for calculation details). As in the US, aggregate perceived job insecurity is cyclical, but with no long-run trend.

[Figure 3 about here.]

[9] We implement the crosswalk in this direction because the UKHLS question is more similar to that asked in the US and the German data.

2.4 German Socio-Economic Panel (SOEP)

The German Socio-Economic Panel (SOEP) is an independent longitudinal survey conducted by DIW Berlin that aims to collect data that allows researchers to "...study processes of transformation and change in our society"[10]. The survey has been conducted annually since 1984, and in 1992 the survey expanded to include respondents from East Germany in addition to the original West German respondents. The survey began by interviewing around 15,000 individuals per wave, rising to 30,000 per wave by 2000, and up to 60,000 per wave in recent years. Restricting the sample to working-age adults who answer the job security question and have non-missing responses for the covariates described in Section 2.1[11], plus job tenure, leaves 317,040 observations, with between 1,200 and 2,200 observations per year between 1985 and 1988, between 5,000 and 7,800 observations per year between 1989 and 1999, and between 11,000 and 17,000 observations per year between 2000 and 2018. We use the cross-sectional weight variable *phrf* in all analyses, except where noted.

Each year, SOEP asks whether the respondent is worried about his or her job security. Respondents can answer either 1 (very concerned), 2 (somewhat concerned), or 3 (not concerned). From these responses, we construct a binary variable which takes value 1 if the respondent answers 1 to the job security question, and value 0 if they give answer 2 or 3. The SOEP contains two other questions about the respondent's job security that are potentially relevant to our study of long-term trends in perceived insecurity–the first asks respondents how likely it is that they will lose their job on a scale of 1 to 4 with 1 indicating "Definitely", 2

[10] Socio-Economic Panel (SOEP), data for years 1984-2018, version 3y, SOEP, 2019, doi:10.5684/soep.v3y.; Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schrï¿œder, Jï¿œrgen Schupp. 2019. The German Socio-Economic Panel Study (SOEP). Jahrbï¿œcher fï¿œr Nationalï¿œkonomie und Statistik / Journal of Economics and Statistics , 239(2), 345-360.

[11] Though we do not have data on respondents' ethnicity or union membership status. For more details on the covariates we have for each dataset, see Section 3 and Table 1 therein.

indicating "Probable", 3 indicating "Improbable", and 4 indicating "Definitely not", while the second question asks the respondent to give a numerical probability (rounded to the nearest multiple of 10) that they will lose their job. However, because these two questions are asked irregularly[12] and not over the course of the entire sample, we focus on the first question and relegate analysis using the latter two to Appendix A.4 to establish the robustness of our main conclusions.

Figure 4 shows the proportion of German workers that feel insecure (East and West Germany combined and separately), overlaid with the annual unemployment rate and the involuntary separation rate[13]. Up to about 2005, job insecurity seemed to be rising, though it was much higher in the East than the West, almost certainly the result of the dislocation from reunification. But, after 2005 job insecurity is falling in both parts of Germany, and there is a noticeable convergence between East and West. The proportion of German workers that feel insecure today is the lowest in the sample period and over 15pp lower than its peak in the mid-2000s. Additionally, there is no long-term upward trend in involuntary separations, and our series has had a consistent negative trend since the early 2000s.

[Figure 4 about here.]

2.5 Interpreting and Reconciling Trends in Subjective Job Security

The graphs above tell us how people answer questions on subjective job security, but not what these responses mean. One concern is that questions on subjective expectations reflect little more than noise, as they are not based on actual behavior. However, Manski (2004) argues that questions on expectations often contain useful information. The simplest way to check this is to see whether variation in expectations is predictive of future events. In our context, we should check whether our subjective measures of job

[12] The first is asked 9 times between 1985 and 1998, and the second is asked 9 times between 1999 and 2018.
[13] Details of the calculation process for these separation rates can be found in Appendix A.3

insecurity have any predictive power for actual subsequent job loss[14]. Using the panel structure of the HRS, BHPS/UKHLS, and SOEP data, we show in Appendix B that insecurity today is strongly associated with job loss or job change tomorrow for all three countries. Thus, we can feel confident that the responses to the job security questions in our three datasets are informative about the changing (or unchanging) nature of objective job security, and do not simply illustrate changes in stress stemming from an ignorance of objective job loss probabilities on the part of workers.

Manski (2004) also argues that expectations questions that elicit subjective probabilities are to be preferred to other, vaguer questions. In our datasets, only the HRS takes this approach, but the fact that it has similar trends to the GSS (which, in turn asks similar questions to the one in the British and German data) provides reassurance that the exact form of the question is not the main driver of our results.

Our results tell us what has been happening to subjective job insecurity, but not how this can be reconciled with other trends in labor market outcomes such as the decline in the labor share that has occurred in the US and, to a smaller extent, Germany, though not in the UK (see, for example, Pak and Schwellnus (2019)). In the model of Mortensen and Pissarides (1994), a fall in worker bargaining power that reduces the labor share reduces the rate of job destruction, increasing job security. However, Appendix D shows that this prediction no longer necessarily holds in a modified version of Mortensen and Pissarides (1994) when one relaxes the assumption that all new matches are at the highest level of productivity. It is therefore possible to construct theoretical models in which there is any or no relationship between worker power and job security.

3 Adjusting for the Characteristics of Employment

Although there is little evidence in the raw data of rising job insecurity for any of the three countries we

[14] Even if there were no predictive power, one might still be concerned about subjective measures of job security because of the stress costs of feeling insecure, as well as other anticipatory effects (see Hendren (2017)).

study, it is possible that this is because the structure of the workforce is changing in ways that lead to less overall job insecurity even as job insecurity is deteriorating for any individual worker. For example, if older workers feel more secure on average, an increase in the average age of employees would produce a downward trend in aggregate job insecurity (Molloy et al. (2020) shows that the aging of the workforce can explain the fall in job-to-job mobility in the US). To address this, this section estimates models for the probability that a worker reports feeling insecure in their job: $Pr(insecure = 1)$, controlling for socioeconomic and demographic characteristics of workers that may affect job security, while also including dummy variables for each year. The coefficients on the year dummies then tell us about trends in perceived job insecurity after accounting for changing worker characteristics, relative to a base year.

We use the following controls in these regressions. We include standard demographic controls for the individual: dummies for sex, ethnicity, immigrant status, marital status, a quadratic function of age, and a dummy for if the individual has completed a tertiary degree. We also control for various job characteristics: job tenure, a dummy variable for whether a worker is a temporary employee or on a fixed-term contract, a dummy for part-time work, and a dummy for self-employment (with and without employees in the UK, where we have data on the number of employees). For Germany, we also include a dummy for residing in former East Germany as well as a dummy variable for being in marginal employment (sometimes known as a "mini job"), which became more common after the Hartz reforms and might be thought to be less secure. We also control for industry using single-digit International SOC codes for the UK and Germany, single-digit NAICS codes for the GSS, and manually-constructed single-digit industry codes derived from the 1980 Census and 2002 and 2007 NAICS codes for the HRS. We do not have all variables for all countries: we are missing whether a worker is on a temporary contract and job tenure for both US datasets, union membership and ethnicity in Germany, and we lack data on the job security of the self-employed in the HRS, as well as in the UK after the BHPS transitioned to the UKHLS because the job insecurity question was no longer asked to the self-employed. The longitudinal nature of the HRS, BHPS/UKHLS, and SOEP data allows us to include

individual fixed effects, which partial out time-invariant unobserved heterogeneity. Inclusion of fixed effects does not make a substantive difference to the trends, so in order to facilitate comparisons with the US GSS, we choose to exclude the individual FEs and include the time-invariant demographic controls. Results from the equivalent regressions that include individual fixed effects can be found in Appendix C.4.

Weighted summary statistics for the control variables can be found in Table 1, with separate columns for pre- and post-2008 data for each survey. The rise of "non-standard employment" is apparent, with a marked increase in part-time work in all three countries–however, trends in temporary work are more muted, higher in Germany by 2pp, but falling by around 0.5pp in the UK. The rise of short-term employment contracts in Germany can also be seen in the rise of marginal employment, from around 3.5% of our sample pre-2008 to nearly 7% post-2008. Self-employment has roughly the same prevalence pre- and post-2008 in the GSS (12-13%) and the SOEP (10-11%). It is also notable that mean job tenure in both the UK and in Germany is higher post-2008, perhaps consistent with Bachmann and Felder (2018)'s finding that crisis-era layoffs in Europe were concentrated among short-tenure workers, increasing the average tenure of remaining workers.

[Table 1 about here.]

For the GSS and the SOEP, we estimate logistic regressions where the dependent variable is our binary measure of perceived job insecurity, and for the HRS we estimate a Linear Probability Model with the elicited probability of job loss (1-100) as the dependent variable; technical details of our approach for the GSS, HRS, and SOEP data can be found in Appendix C.1. For the UK we use a different approach (based on the equivalence between a Poisson regression and a logit model) to handle the fact that we do not observe the "true" response to the BHPS job security question for the UKHLS portion of the sample, only an estimate of the probability of a particular response; technical details of our approach for the BHPS and UKHLS data can be found in Appendix C.2. The adjusted trends are marginal effects from the regressions, evaluated for each observation and then averaged over the sample, relative to the base year of 2001 (2002 for the US, because the GSS and HRS lack data on job security in odd years). The base year is chosen to represent

the pre-GFC baseline for job security. Because Germany experienced a pre-GFC downturn in the mid-2000s which led to a rise in unemployment and perceived job insecurity, we have chosen 2001 as a base year that precedes this downturn.

3.1 Trends in Adjusted Perceived Job Insecurity

One striking feature of the results for all countries is the similarity of the unadjusted and adjusted trends; the correlation is .99 for the GSS, .97 for the HRS, .96 for the BHPS/UKHLS, and .99 for the SOEP. To summarize the results concisely we use a simple linear regression model in which the unadjusted and adjusted marginal effects of the year dummies from the first-step regressions described above are regressed on a linear time trend (with time measured in decades because any trends are small) and the unemployment rate (to capture the cycle). Because the dependent variable in these regressions is estimated, we follow the advice of Lewis and Linzer (2005) in using heteroskedasticity-robust standard errors, as opposed to weighted least squares. To provide reassurance that these regressions are not missing some important aspect of the data, the unadjusted and adjusted trends in perceived job insecurity (i.e. the dependent variable in these regressions) are presented in Appendix C.3. We also discuss and test other possible functional forms for the time trend, as there is no intrinsic reason that the secular trend in job security would be linear in time. Other functional forms yield qualitatively similar results, so for simplicity we use a linear time trend throughout the analysis in the main text.

Table 2 presents the results from these regressions for our four datasets, along with the R-squared and the aggregate insecurity level in the baseline year, in order to make it easier to assess the magnitude of the marginal effects. Coefficients should be interpreted as the percentage point change in job insecurity per unit change in the covariate, which corresponds to a one percentage point change in the unemployment rate, or ten years for the time trend. In all data sets there is a significant positive relationship between job

insecurity and the unemployment rate, though there is some variation in the magnitude. The effect appears to be strongest in Germany, where a 1pp rise in the unemployment rate is estimated to raise the level of job insecurity by nearly 2pp. Our results here are in keeping with other papers that investigate trends in subjective job insecurity: Luebke and Erlinghagen (2014), Schmidt (1999), and Anderson and Pontusson (2007) all find the contemporaneous unemployment rate to be strongly predictive of subjective insecurity.

[Table 2 about here.]

For the US, the estimated underlying trend in job insecurity is positive, but the only trend coefficients that are significantly different from zero are in the HRS. Even in this case, though, the magnitude of the time trend coefficient is very small– a 0.9pp increase in insecurity over 10 years without controls (0.87pp without controls), from a baseline of 15.4%. In the UK, the time trend is significantly negative in both regressions, implying a 10-year fall in job insecurity of around 1.2pp (baseline mean = 9.6%). For Germany the estimated underlying trends are positive and significantly different from zero, though again here the magnitudes are small; about a 1.4pp point rise in job insecurity over a decade without controls, and only 1.08pp after adjusting for composition. To put in context, the effect of a decade in our estimation results is equivalent to the effect of a a 0.5pp increase in the unemployment rate. Because the unemployment rate in Germany is lowest at the end of the sample period and has much bigger effects on job insecurity, the overall level of job insecurity is also lowest at the end of the sample period in spite of the small positive underlying trend.

To conclude, there is at most a weak positive underlying trend in job insecurity but a clear large impact of unemployment. The similarity of adjusted and unadjusted results suggests that compositional changes in the workforce cannot explain the absence of a large increase in perceived job security in these three countries over the last four decades–in fact, the inclusion of these controls leaves even less evidence of a secular increase in job insecurity. However, personal and job characteristics are indeed correlated with reported levels of job insecurity, as the next section shows. Clarifying the magnitude of these differences in levels will help us

understand why the change in the proportion of jobs with atypical working arrangements has not led to a concomitant rise in insecurity.

3.2 The Impact of Personal and Job Characteristics on Perceived Job Insecurity

Table 3 presents the marginal effects of selected covariates of interest on the probability of feeling insecure from the regressions estimated in Section 3. These estimates should be interpreted as the difference in the probability of feeling insecure for workers of the given type who would otherwise have job characteristics which would have led to a level of job insecurity at the level listed in the "baseline insecurity" row of Table 3.[15]. We are agnostic about whether these relationships are causal. Many of our findings are in accordance with the findings of previous studies on the determinants of job security: temporary workers are much more likely to feel insecure than permanent workers (as in Clark and Postel-Vinay (2009); Keim et al. (2014); and Luebke and Erlinghagen (2014)), and higher-educated workers are less likely to feel insecure. Immigrants and those of non-white ethnicity also feel more insecure. In the US and Germany, the self-employed are less likely to feel insecure; this is also true of the self-employed with employees in the UK, while the coefficient for sole proprietors and freelancers is statistically insignificant and very close to zero, suggesting that self-employment's impact on insecurity depends on whether or not one has employees. The estimated effect of being in part-time employment also varies across countries: in the GSS, part-time workers appear to feel less secure, but in the UK and in Germany they are more secure. Interestingly, the marginally employed in Germany are significantly more secure than the non-marginally employed by over 4pp.

[Table 3 about here.]

[15] This is the mean level of insecurity corresponding to the covariate values observed in the sample in the base year, the point at which we evaluate the marginal effects.

The results in Table 3 can help us understand why the unadjusted and adjusted trends are so similar. The impact of some demographic variables like as age and sex are relatively small, so change in the demographic mix of employment would not be expected to change the overall level of job insecurity. Most other effects are no greater than 3 or 4pp, which is of modest magnitude relative to the baseline level of insecurity in the GSS (13.9%) and the BHPS/UKHLS (9.6%)–though in the US (GSS), immigrants and non-whites are likely to feel around 6pp more insecure than natives and whites. The largest effect by some distance is for being a temporary employee–an effect of 28pp in the UK data, and 9.9pp in the Germany data. One might expect these level differences to play an important role in explaining trends in job security, because it is a commonly-held view that temporary work and other forms of non-standard employment have been rising. However, not all types of non-standard employment are associated with higher job insecurity (e.g. part-time work and self-employment in some countries, and marginal employment in Germany), and the types of non-standard employment associated with job insecurity have not risen as much as often suggested. Together, these results imply that the rise of non-standard work is of limited importance in explaining trends in perceived job insecurity. In Appendix E, we present more formal quantitative evidence for this argument, using Oaxaca-Blinder decompositions (modified for our use of a binary dependent variable) and the re-weighting methodology of DiNardo et al. (1996) to show that the compositional changes in the labor forces of our three countries that have occurred over the course of our sample, combined with the level differences in subjective job insecurity implied by the average marginal effects we estimated in our models in Section 3.2, are not large enough to lead to big rises in aggregate job insecurity.

However, it is possible that our conclusions could be the result of using an empirical specification which allows different types of workers and jobs to be associated with different levels of job security, but requires the trends to be the same. Looking solely at the aggregate trend may obscure the fact that some sub-groups may now be experiencing greater insecurity than they did in the past. The next section therefore investigates whether there is important heterogeneity.

4 Heterogeneity in Trends in Perceived Job Insecurity

There are obviously many sub-groups that could be investigated, and a fishing expedition would undoubtedly uncover some with increased subjective job insecurity. Here, we focus on sub-groups where there has been more concern about deterioration in the quality of work: temporary workers vs. those on permanent contracts, part-time vs. full-time workers, self-employed vs. non-self-employed, men vs. women, the university-educated vs. less well-educated, the young (under 25) vs. prime-aged (25-49) vs. the old (over 50), and new starters (job tenure less than a year) vs. those with tenure longer than a year. Our technical approach for adjusting the results for compositional changes is the same as before, but now we estimate the model on the sub-groups; details of the approach can be found in Appendix C. We again summarize the results using the simple regression where the estimated marginal effects of the year dummies are regressed on the unemployment rate and a decadal linear time trend, with robust standard errors. The coefficients on the unemployment rate are shown in Table 4 and those on the linear trend in Table 5. These coefficients should be interpreted as the percentage point change in insecurity (relative to the base year) associated with a 1pp change in the aggregate unemployment rate and over the course of 10 years, respectively. The original plots with the year dummy marginal effects and CIs for these subgroups can be found in Appendix F.1.

The coefficients on the unemployment rate shown in Table 4 are positive and significantly different from zero in almost every sub-group in every data set, confirming that subjective job insecurity is very cyclical. The job security of temporary workers appears to be more sensitive to the unemployment rate than permanent workers in the UK and in Germany (though we lack data on temporary employees in the US data). Likewise, new starters experience more cyclical insecurity than incumbent employees in the UK and in Germany. Evidence on part-time workers vs. full-time workers is mixed: in both US datasets, the insecurity of part-time workers is more cyclical than that of full-time workers, but the opposite is true in the UK and in Germany.

The time trends in Table 5, meanwhile, are mostly either negative or not significantly different from zero. The US (GSS) time trends are all statistically insignificant and close to zero. The US (HRS) results do show positive trends in some subgroups in line with the overall results reported earlier, but all of them indicate a rise in insecurity of less than 1pp over a decade. The UK results show negative trends for all subgroups analyzed with the exception of new starters (whose trend is not statistically significant). The German results generally show positive trends, though the magnitudes are again small. We find support for Bachmann et al. (2020)'s finding about younger cohorts' greater propensity to be atypically employed–they have the largest (significant) trend in any of the four datasets. However, this trend in under-25s is not present in the other countries, where younger cohorts have experienced either a negative trend or one insignificantly different from 0, and even in Germany, a test for the equality of trends across age groups does not allow us to reject the null that they are equal at the 5% level.

The group with the second-largest trend in the GSS, though statistically insignificant, is over-50s, a fact which helps reconcile the HRS results with those from the GSS. Because the HRS is significantly older (a mean age of 56, compared to 40 in the GSS), and older Americans may have experienced a greater (though still small) trend in insecurity, the increase in insecurity in the unadjusted HRS is expected–though again, the trend becomes insignificant when it is adjusted for composition, supporting our claim about the age structure influencing the aggregate trend.

It is notable that the variation in the estimated trends do not generally fit the impression of the groups who are commonly believed to be faring worse–for example, the small downward trend in insecurity for part-time workers appears is of greater magnitude than that for full-time employees in the UK and the US (GSS; though it is statistically insignificant in the US case). To take another example, in the UK, workers without a tertiary degree have experienced a greater fall in insecurity than their university-educated counterparts. In Germany, temporary workers, part-time workers, and new starters all have insignificant time trends, as do the marginally employed, whose trend is negative. Additionally, the pairs of subgroups that we analyze

do not appear to have experienced vastly different secular trends in their insecurity over the course of the sample. In Appendix F.2, we present p-values from a series of F tests of the equality of these time trends for the subgroup pairs we study. In most cases, we cannot reject the null hypothesis that the time trends are equal for both subgroups. The main conclusion to be drawn from this exercise is that although there exist differences in levels of job security across sub-groups, there is little variation in trends, and the differences that do exist are small in magnitude–no greater than a percentage point or two in terms of divergence over a period of ten years.

[Table 4 about here.] [Table 5 about here.]

5 Broader European Evidence on Job Security

In this section, we briefly consider evidence on perceived job insecurity across a wider set of European countries using data from the European Working Conditions Survey (EWCS)[16]. The EWCS is conducted every four to five years in 36 European countries, with a rotating panel of questions and approximately 1,000 respondents per country-year[17]. The 2005, 2010, and 2015 editions of the survey, which contain 106,572 complete responses, asked respondents to rate on a scale of 1-5 their agreement or disagreement with the following statement: "I might lose my job in the next six months." 1 indicates "strongly agree", 2 indicates "tend to agree", 3 indicates "neither agree nor disagree", and 4 and 5 indicate different strengths of

[16] European Foundation for the Improvement of Living and Working Conditions. (2020). European Working Conditions Survey Integrated Data File, 1991-2015. [data collection]. 8th Edition. UK Data Service. SN: 7363, http://doi.org/10.5255/UKDA-SN-7363-8

[17] The European Social Survey (ESS) also contains a rotating question that asks respondents to assess the likelihood of losing their job in the near future. However, because only the 2004 and 2010 editions of the ESS ask this question, it is inferior to the EWCS as a data source for our purposes, and as such we only use the latter in our analysis.

disagreement. We drop observations that are missing information on the respondent's age, sex, employment contract type, self-employment status, job tenure, industry code, and highest education level attained, leaving us with 94,186 observations. Descriptive statistics for these variables can be found in Appendix G.

Table 6 presents the proportion of each country's respondents that responded 1 or 2 to the question for each survey year, along with the percentage point change in the insecure proportion from 2005 to 2015. All but five countries experienced a rise in insecurity from 2005 to 2010, and 20 of the 36 countries experienced a fall from 2010 to 2015 as the recession's impact began to fade. The overall change between 2005 and 2015, however, is more heterogeneous across countries[18]. It is possible that the cycle can explain most of this; 2010 was shortly after the GFC and the Eurozone crisis lasted until at least 2015, affecting some countries much more than others.

[Table 6 about here.]

To investigate more formally, Table 7 presents results of regressions in which the job insecurity indicator is regressed on a combination of the unemployment rate, the demographic and job characteristic controls listed above, country fixed effects, and year dummies (as there are only 3 years of data, there is no point in including a time trend). Our results are in keeping with what we found in the US, UK, and Germany data: the unemployment rate is a statistically significant predictor of insecurity in Europe, even controlling for country fixed effects and year dummies that capture structural shifts in the likelihood of feeling insecure. The 2015 dummy is negative in all four regressions, indicating that by 2015 the level of insecurity had fallen back to 2005 levels. As in our results for the US, UK, and Germany, adding controls for the composition of the labor force hardly affects the results. Country fixed effects also have very little noticeable impact on the results (the 2015 dummy indicates a marginally smaller decline in insecurity when country FEs are included), though with country FEs included, the relationship between the unemployment rate and job

[18] The population-weighted average change in insecurity over this period is 2pp.

insecurity appears to be more strongly positive. The general conclusion from this analysis of the EWCS is that workers in most European countries do not feel significantly more insecure in the post-GFC era than they did in the years leading up to it, after controlling for the level of unemployment, the composition of the labor force, and country-specific, time-invariant factors–and in fact, the inclusion of these other controls does not affect our conclusions.

[Table 7 about here.]

6 Other Dimensions of Job Security

This paper has focused on job security measured as risk of job loss, something that is undoubtedly important to many workers. However, Standing (2011) identifies eight dimensions of job security which define the "precariat", of which we have focused on only one. The OECD defines these other dimensions as earnings quality (including both level and volatility) and the quality of the working environment, which includes the "nature and content of the work performed", (lack of) risk to physical health, and workplace autonomy (OECD, 2014). It remains a possibility that the other constituent components of job quality and precarity are more important than subjective job insecurity and have deterioriated. Some scholars[19] theorize that the "post-" or "neo-Fordist" paradigm of production that has taken hold in advanced economies in the past few decades may have led to a fall in job quality along some dimensions like autonomy and challenge, despite rises in real wages. However, Green et al. (2013) finds that perceptions of job quality have remained relatively stable in Europe, including the UK and Germany. Handel (2005) reports similar findings for the

[19] See Chapter 7 of Edgell et al. (2015) on job quality for an overview of the issues surrounding job quality, Chapter 8 of Gregg and Wadsworth (2011) for a focus on the UK, and Howell and Kalleberg (2019) for a recent survey of evidence from the US.

US, and Bloom et al. (2017) find that earnings volatility in the US has fallen by one third since 1980, while Moffitt and Zhang (2020) concludes it has not changed for the past 30 years. There has also been little change in the generosity of social safety nets measured as replacement rates [20].

One approach to address the argument that we are missing the most important parts of insecurity would be to try to estimate trends in other important dimensions of job security. Our ability to do this is limited by the fact that questions vary across surveys and there is a lack of the long runs of data needed to identify trends. In this section, we take a different approach and explore whether there are any trends in overall job satisfaction. Overall job satisfaction is likely to encompass dimensions of work other than security and is a useful summary measure of how workers feel about their jobs.

6.1 Data and methodology

Each of our surveys (apart from the HRS) contains information on respondents' reported job satisfaction. The GSS asks its US respondents to rate their work satisfaction on a scale of 1 to 4, with 1 indicating "very satisfied", 2 indicating "moderately satisfied", 3 indicating "a little dissatisfied", and 4 indicating "very dissatisfied"[21]. The BHPS and UKHLS fortunately use the same question before and after the transition between surveys, asking respondents to rate their overall job satisfaction on a scale of 1 ("not satisfied at all") to 7 ("completely satisfied"), with 4 indicating neither satisfaction nor dissatisfaction. Finally, the German SOEP asks respondents to rate their satisfaction with their work on a scale of 0 to 10, with 0 being the lowest possible level of satisfaction and 10 being the highest.

Though job security might be considered a component of job satisfaction, our data suggests responses to the job satisfaction question provide new information not captured by the job security questions. In the

[20] Net replacement rate in unemployment, OECD.stat (database). https://stats.oecd.org/Index.aspx?DataSetCode=NRR (accessed on 29 October 2021). 2021.

[21] We reverse the ordering of these categories to be consistent with the questions in the other surveys.

BHPS sample, the correlation between job satisfaction and job security is .43, and in the UKHLS sample it is .19. In the GSS it is .16, and in the SOEP it is .17. These correlations suggest that there is a link between the two variables, but that job satisfaction also has other, non-security-related determinants.

To investigate the trends in job satisfaction, we construct binary variables indicating satisfaction with one's job for each of the three datasets. For the GSS, the dummy takes a value of 1 if the respondent answers 3 or 4 to the job satisfaction question. BHPS/UKHLS respondents get a value of 1 if their response is greater than or equal to 4. SOEP respondents are deemed satisfied if they answer 5 or more to their question. The raw trends in the proportion of each country's labor force that reports dissatisfaction with their job over time are plotted in Figure 5; there is no evidence of a a trend fall in overall job satisfaction. Appendix H shows this conclusion is robust to controlling for characteristics. Visual inspection of the trends post-recession suggest a return to "normal" levels of job satisfaction in the decade since the crash.

[Figure 5 about here.]

7 Conclusion

In this paper, we have shown that contrary to what Hollister (2011) calls the "New Employment Narrative", and despite the rise of non-standard work arrangements, workers in the US, UK, and Germany feel as secure as they ever have in the last thirty years. This is partly because job insecurity is very cyclical and (pre-COVID) unemployment rates have been very low, but there is also no marked underlying trend towards increased subjective measures of job insecurity. We have also demonstrated that there is an absence of a trend in perceived job security across workers with different types of working arrangements, different demographic characteristics, and different education levels–almost all subgroups along any dimension of interest feel approximately as secure in their jobs as they did in the early 2000s.

This conclusion should not be taken to mean that all is well in labor markets–only that there has not been a deterioration in the level of job insecurity. Wage inequality is higher in our three countries then 40 years ago (see, for example, Acemoglu and Autor (2011), Lindley and Machin (2013), and Dustmann et al. (2009)), though in the US and the UK much of this change in in the lower part of the income distribution occurred in the 1980s, and there has been stability since. Median real wages have been stagnant for a long period in the US and more recently in the UK OECD (2019). Additionally, the labor share has fallen in the US and Germany since the 1980s (Pak and Schwellnus (2019); ILO and OECD (2015)). There are also dimensions of work other than insecurity and pay that may be deteriorating; though we find little trend in overall job satisfaction in our three countries, there is evidence from the UK that work is becoming more stressful, and that workers feel they have to work harder than ever, while also having less say in their working arrangements (Green et al. (2018); Gallie et al. (2018)). In order to further our understanding of the dynamics of self-perceived job security and the impact of "atypical" work arrangements on these dynamics and on worker welfare more broadly, it would be useful to investigate whether job quality has adjusted along other margins, extending our preliminary analysis of overall job satisfaction in Section 6. However, before COVID, workers in the US, UK, and Germany felt as secure in their jobs as they ever have in the last thirty years, and subjective job insecurity does not seem one of the biggest problems in labor markets.

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Figures and Tables

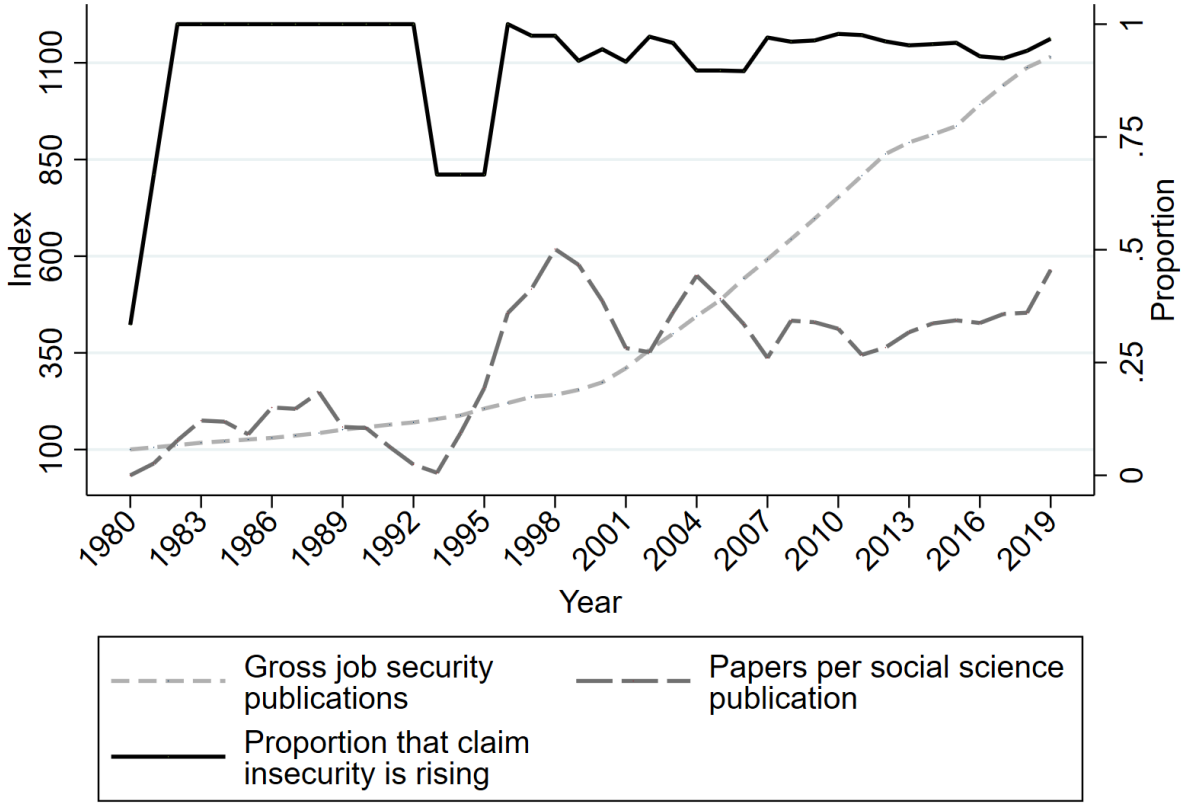

Figure 1: Job security publications on Scopus over time

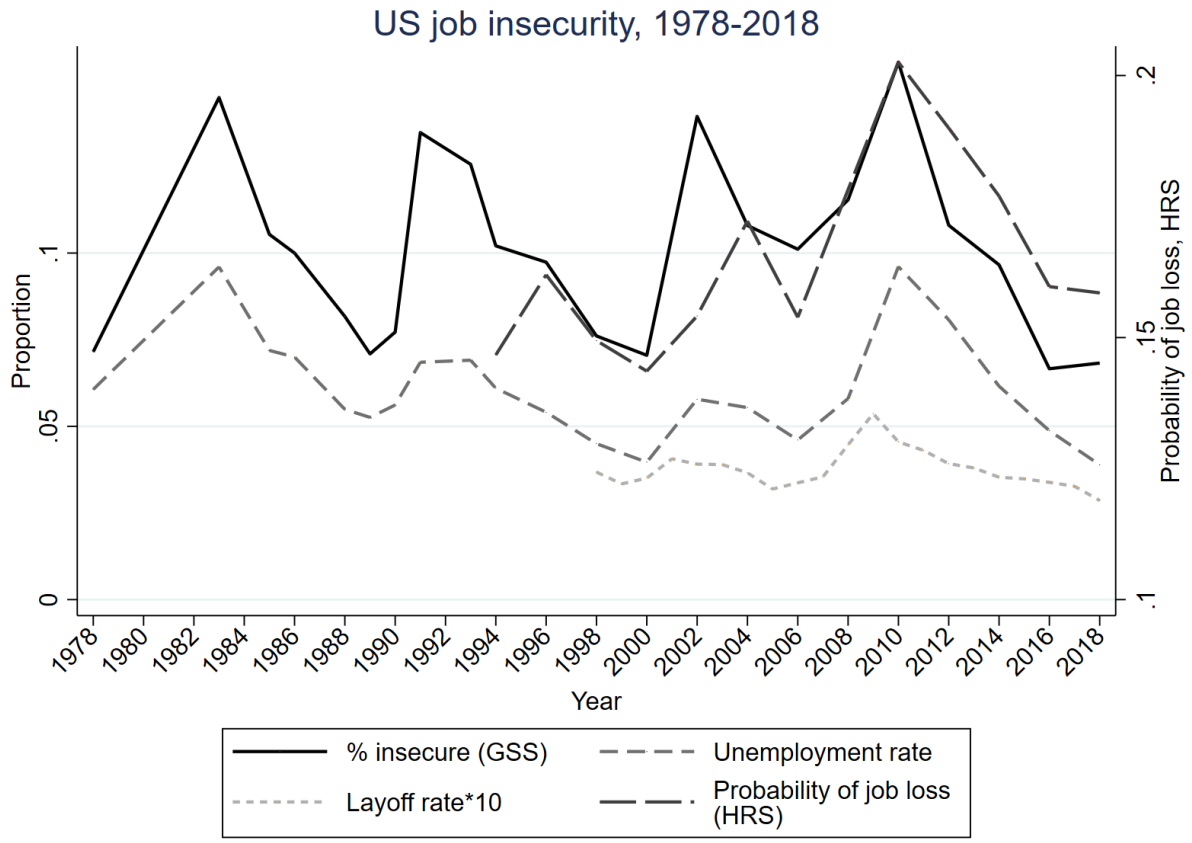

Figure 2: Job insecurity in the United States, 1978-2018

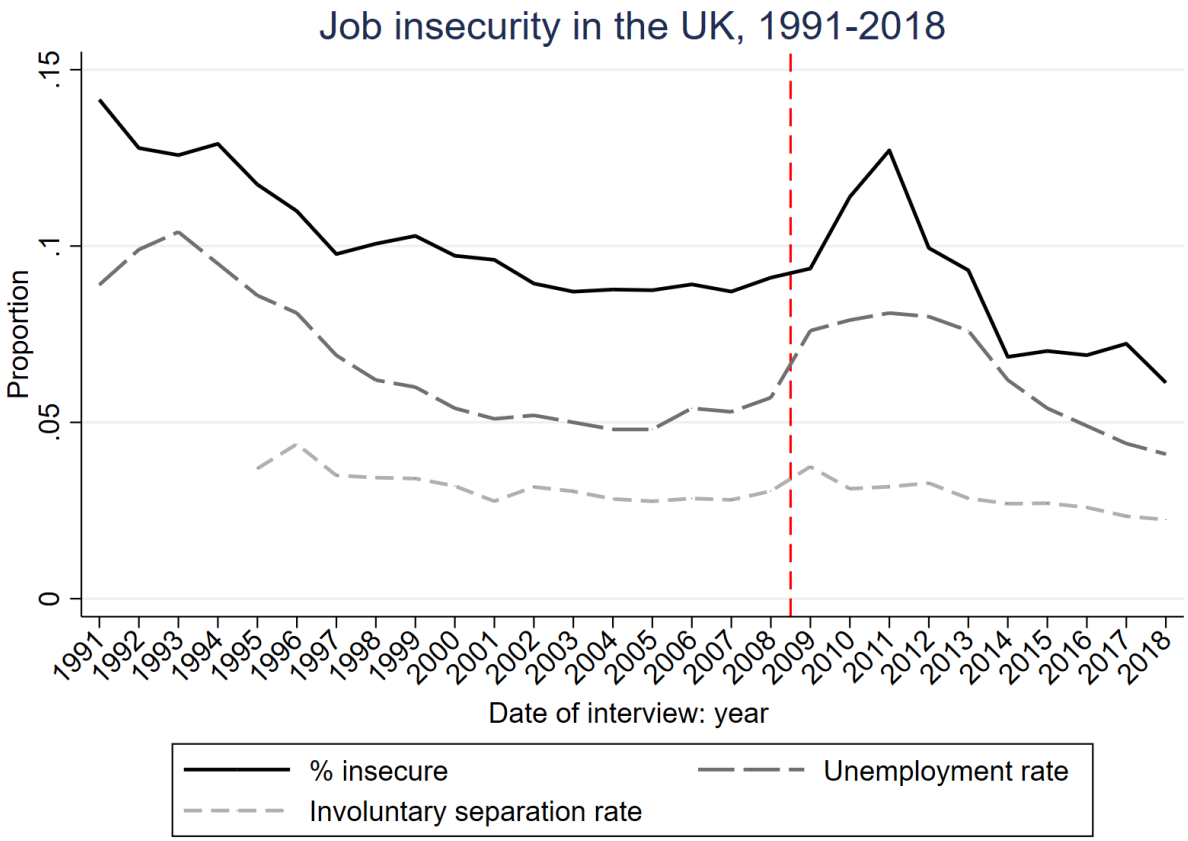

Figure 3: Job insecurity in the United Kingdom, 1991-2018

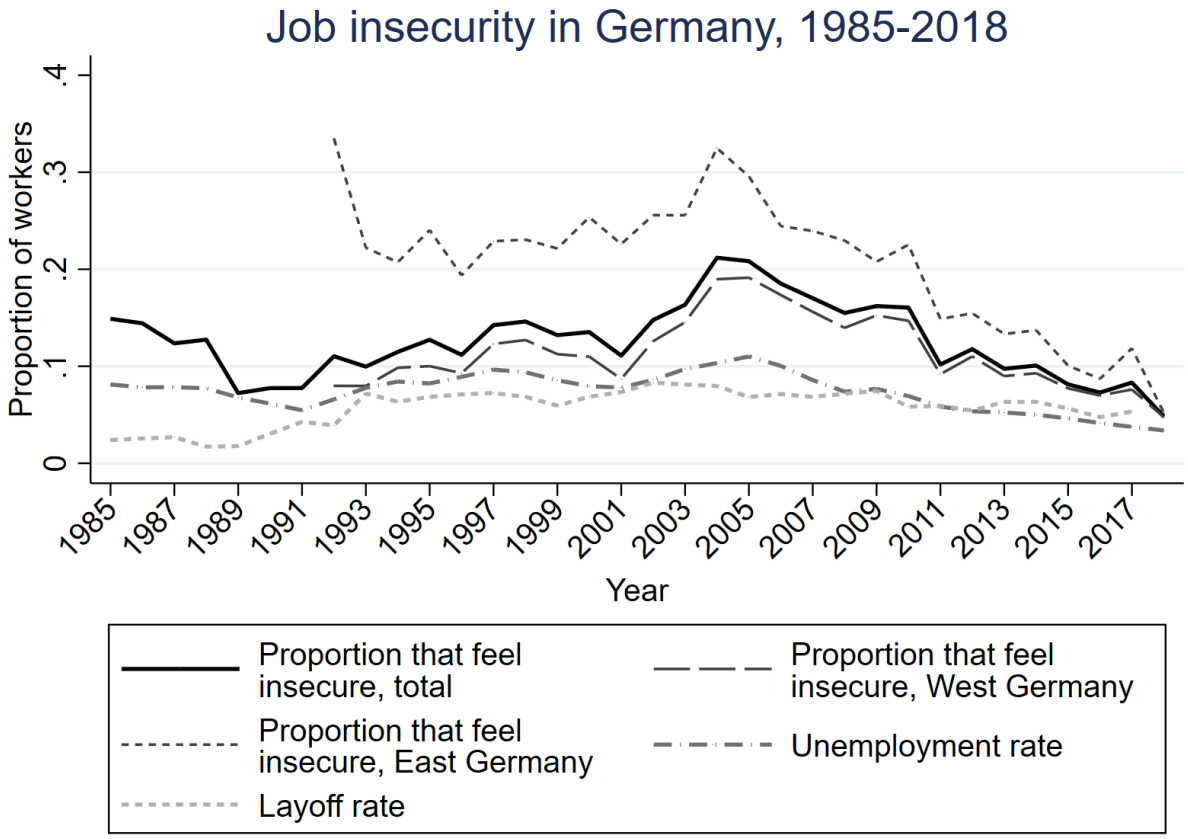

Figure 4: Job insecurity in Germany, 1985-2018

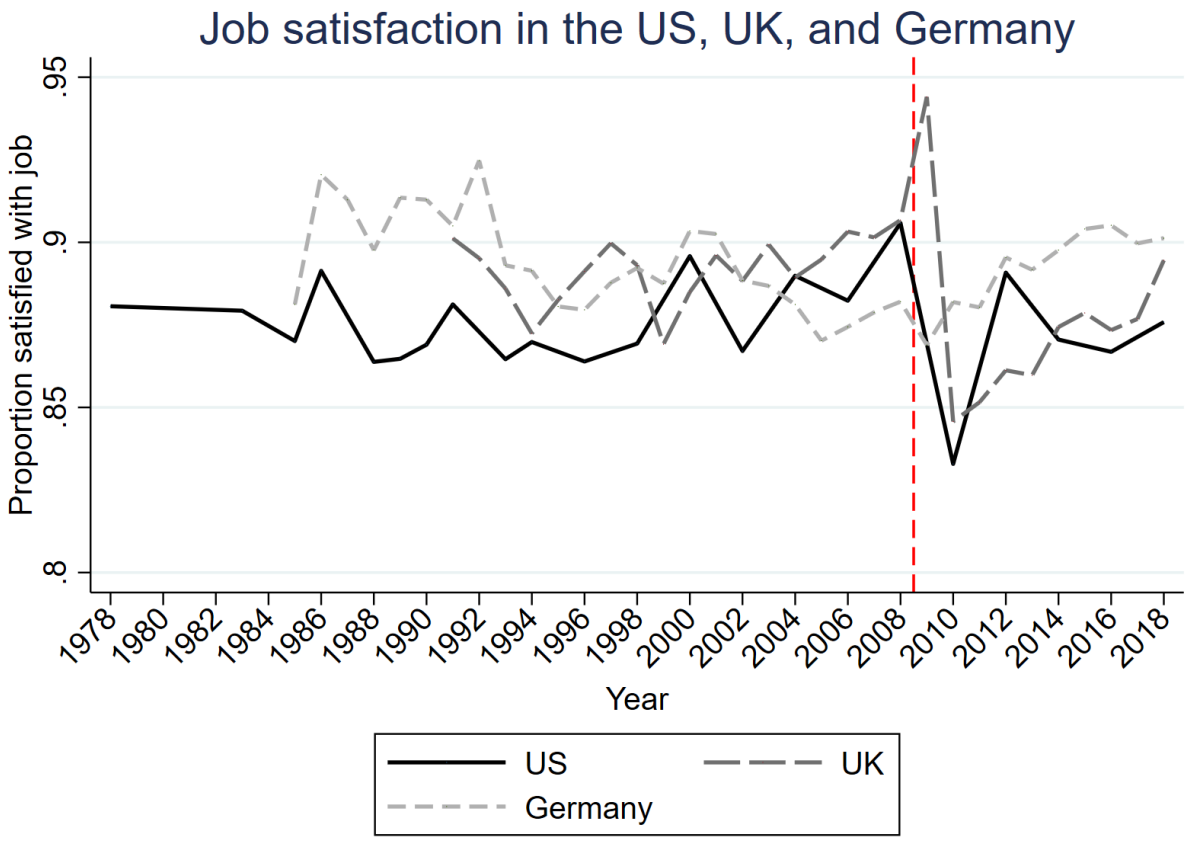

Figure 5: Job satisfaction in the US, UK, and Germany

Table 1: Descriptive statistics, pre- and post-2008

	GSS		HRS		BHPS		SOEP	
	pre-2008	post-2008	pre-2008	post-2008	pre-2008	post-2008	pre-2008	post-2008
Age	38.8	41.4	56.9	57.6	39.2	41	39.7	42.6
	(11.7)	(12.7)	(3.79)	(3.8)	(12.3)	(12.5)	(11.5)	(11.8)
Male	.529	.505	.479	.485	.525	.483	.576	.529
	(.499)	(.5)	(.5)	(.5)	(.499)	(.5)	(.494)	(.499)
Married	.628	.521	.732	.722	.575	.531	.589	.525
	(.483)	(.5)	(.443)	(.448)	(.494)	(.499)	(.492)	(.499)
Non-white	.165	.266	.135	.194	.0382	.078		
	(.371)	(.442)	(.342)	(.395)	(.192)	(.268)		
Immigrant	.0888	.127	.0818	.115	.0565	.1	.124	.14
	(.284)	(.333)	(.274)	(.319)	(.231)	(.3)	(.33)	(.347)
Tertiary degree	.257	.324	.549	.665	.474	.455	.27	.326
	(.437)	(.468)	(.498)	(.472)	(.499)	(.498)	(.444)	(.469)
Part-time worker	.167	.174	.118	.112	.245	.337	.153	.197
	(.373)	(.379)	(.322)	(.315)	(.43)	(.473)	(.36)	(.398)
Union member	.155	.115	.22	.188	.306	.293		
	(.362)	(.319)	(.414)	(.391)	(.461)	(.455)		
Temporary worker					.0689	.0641	.112	.132
					(.253)	(.245)	(.315)	(.339)
Self-employed without employees[a]	.129	.117			.119		.113	.1
	(.335)	(.322)			(.324)		(.316)	(.301)
Self-employed with employees					.0358			
					(.186)			
Marginally employed							.0362	.0688
							(.187)	(.253)
Job tenure					5.05	8.44	9.87	10.9
					(6.57)	(7.36)	(9.79)	(10.5)
N	8648	2521	29920	24518	84882	59562	164931	152109

a: This row displays the mean for all self-employed workers for the US and Germany.

Table 2: Linear time trend and unemployment rate regression results

	US (GSS)		US (HRS)		UK		Germany	
	No controls	Controls	No controls	Controls	No controls	Controls	No controls	Controls
Unemployment rate*100	1.39***	1.4***	.868***	.898***	.688***	.628***	1.99***	1.87***
	(.175)	(.177)	(.0443)	(.0539)	(.133)	(.138)	(.15)	(.161)
Linear time trend*10	.38	.313	.84*	.964*	-1.23***	-1.18**	1.42***	1.08*
	(.337)	(.357)	(.282)	(.316)	(.319)	(.348)	(.377)	(.413)
N	22	22	12	12	27	27	34	34
R^2	0.607	0.602	0.883	0.883	0.823	0.777	0.791	0.733
Baseline year insecurity	13.9	13.9	15.4	15.4	9.6	9.6	11.1	11.1

This table displays the results of regressions of the average marginal effects of the year dummies (with and without controls) on the unemployment rate and a linear time trend using the GSS, HRS, BHPS/UKHLS, and SOEP data. Standard errors in parentheses. *p $<$ 0.05, **p $<$ 0.01 ***p $<$ 0.001

Table 3: Average marginal effects of covariates on probability of insecurity

	US (GSS)	US (HRS)	UK	Germany
Temporary employee			.2812***	.0985***
			(.0091)	(.0041)
Self-employed without employees[a]	-.0488*		7.2e-04	-9.9e-04
	(.0197)		(.0099)	(.0032)
Self-employed with employees			-.0197*	
			(.0099)	
Immigrant	.0597***	.0437***	.0174	.0359***
	(.0159)	(.0064)	(.0093)	(.0026)
Non-white	.0652***	.0128**	.035***	
	(.0075)	(.0038)	(.0101)	
Part-time worker	.0677***	.0177***	-.0145	-.0273***
	(.0107)	(.0038)	(.0086)	(.0033)
Marginally employed				-.0422***
				(.0044)
Higher education degree	-.0719***	-.032***	-.0119	-.0188***
	(.0087)	(.0035)	(.0086)	(.0033)
Union active at workplace	.0327**	-.0415***	.013	
	(.0119)	(.0033)	(.0088)	
Male	.0179**	.0016	-.0101	-.0122***
	(.0059)	(.0015)	(.0079)	(.0017)
Age	.0031	.0089	.0028	.0087***
	(.0023)	(.0053)	(.0059)	(5.2e-04)
$(\text{Age}/10)^2$	-.0047	-.0085	-.0013	-.0092***
	(.0028)	(.0043)	(.0061)	(6.4e-04)
Length of job tenure			-2.9e-04	-.0013***
			(.006)	(1.2e-04)
N	11169	46903	144444	310738
Baseline insecurity	.1394	.1557	.0968	.1106

This table displays the marginal effects of covariates of interest on the probability of feeling insecure, derived from the logistic regressions specified in Appendix B for the US and Germany, and from the Poisson regression, specified in Appendix C, used to analyze the UK data. a: This row gives the marginal effect for all self-employed (with and without employees) for the US and Germany, as the GSS and SOEP lack data on the breakdown of the self-employed by number of employees. Standard error in parentheses. $^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Table 4: Average marginal effect of unemployment rate*100, by subgroup

	US (GSS)	US (HRS)	UK	Germany
Temporary workers			1.63***	2.59***
			(0.34)	(0.24)
Permanent workers			0.09	1.80***
			(0.20)	(0.16)
Part-time workers	2.55**	0.99***	0.32	1.43***
	(0.85)	(0.11)	(0.17)	(0.25)
Full-time workers	1.14***	0.88***	0.71***	1.99***
	(0.23)	(0.06)	(0.14)	(0.16)
New starters			1.66*	2.26***
			(0.65)	(0.27)
Non-new starters			0.63***	1.84***
			(0.14)	(0.15)
Males	1.60***	0.93***	0.71***	1.97***
	(0.29)	(0.05)	(0.15)	(0.15)
Females	1.26***	0.86***	0.53**	1.79***
	(0.16)	(0.07)	(0.15)	(0.18)
Over 50 y.o.	1.40***		0.29	1.56***
	(0.23)		(0.16)	(0.14)
25-49	1.14***		0.82***	1.95***
	(0.21)		(0.14)	(0.18)
Under 25 y.o.	3.40**		0.46**	2.47***
	(0.88)		(0.14)	(0.27)
Tertiary degree	0.56*	0.87***	0.72***	1.52***
	(0.20)	(0.07)	(0.13)	(0.18)
No tertiary degree	1.75***	0.95***	0.56*	1.99***
	(0.18)	(0.11)	(0.22)	(0.18)
Marginally employed				1.19*
				(0.51)
Non-marginally employed				1.90***
				(0.16)
N	21	12	27	34

This table displays the average marginal effect of the linear time trend in a linear regression, where the dependent variable is the AMEs of the year dummies from the main regression specification (Poisson for the UK, logistic for the GSS and SOEP, linear regression for the HRS) with the sample restricted to the subgroup of interest. Standard errors in parentheses. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 5: Average marginal effect of linear time trend, by subgroup

	US (GSS)	US (HRS)	UK	Germany
Temporary workers			0.22	-0.29
			(0.80)	(0.71)
Permanent workers			-2.37***	1.41***
			(0.48)	(0.35)
Part-time workers	-0.40	0.44	-1.53**	1.07
	(0.81)	(0.47)	(0.45)	(0.91)
Full-time workers	0.30	0.88*	-1.10**	1.09*
	(0.40)	(0.35)	(0.34)	(0.40)
New starters			2.30	0.94
			(1.86)	(0.62)
Non-new starters			-1.23**	1.22**
			(0.35)	(0.38)
Males	0.50	0.83*	-1.35***	0.92
	(0.47)	(0.32)	(0.35)	(0.46)
Females	-0.00	0.95*	-1.08*	1.38**
	(0.31)	(0.39)	(0.40)	(0.42)
Over 50 y.o.	0.51		-2.63***	0.99*
	(0.35)		(0.43)	(0.42)
25-49	0.15		-0.59	1.11*
	(0.45)		(0.37)	(0.45)
Under 25 y.o.	1.25		-0.72	1.93**
	(0.95)		(0.36)	(0.57)
Tertiary degree	-0.18	0.97*	-0.30	-0.06
	(0.39)	(0.36)	(0.31)	(0.46)
No tertiary degree	0.43	0.58	-1.72**	1.51**
	(0.38)	(0.44)	(0.58)	(0.46)
Marginally employed				-0.04
				(2.05)
Non-marginally employed				1.08*
				(0.40)
N	21	12	27	34

This table displays the average marginal effect of the linear time trend in a linear regression, where the dependent variable is the AMEs of the year dummies from the main regression specification (Poisson for the UK, logistic for the GSS and SOEP, linear regression for the HRS) with the sample restricted to the subgroup of interest. Standard errors in parentheses. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 6: Job insecurity in Europe

	2005	2010	2015	p.p. change, 2005-2015
Belgium	9.2	16.0	15.3	6.1
Bulgaria	23.1	29.4	10.9	-12.2
Czech Republic	32.0	34.0	17.0	-15.0
Denmark	7.3	9.8	10.9	3.6
Germany	12.6	.	9.2	-3.4
Estonia	19.5	35.3	18.5	-0.9
Greece	20.9	19.5	20.8	-0.2
Spain	15.1	24.7	26.0	10.8
France	7.9	12.0	13.5	5.6
Ireland	9.9	25.4	15.7	5.8
Italy	9.0	13.8	20.7	11.7
Cyprus	14.3	19.1	14.2	-0.2
Latvia	18.9	31.4	19.5	0.6
Lithuania	23.0	40.9	13.6	-9.4
Luxembourg	5.6	9.1	11.1	5.6
Hungary	22.0	24.2	17.2	-4.8
Malta	15.4	18.3	9.3	-6.1
Netherlands	17.7	14.0	25.3	7.6
Austria	8.9	10.8	10.5	1.6
Poland	26.7	17.9	23.3	-3.5
Portugal	19.5	18.2	18.7	-0.8
Romania	16.1	25.3	16.8	0.7
Slovenia	27.4	27.3	27.2	-0.1
Slovakia	15.1	13.6	8.2	-6.8
Finland	13.1	15.6	15.5	2.5
Sweden	20.3	22.7	14.6	-5.7
United Kingdom	6.5	12.6	12.9	6.4
Croatia	19.4	26.8	18.3	-1.1
North Macedonia	.	28.6	19.7	.
Turkey	18.2	20.8	15.2	-3.0
Norway	6.7	10.4	10.5	3.8
Albania	.	11.7	13.9	.
Kosovo	.	18.9	.	.
Montenegro	.	20.4	17.3	.
Switzerland	12.2	.	11.7	-0.5
Serbia	.	.	22.9	.

Data from the European Working Conditions Survey Table shows proportion of workforce that feels insecure.

Table 7: Job insecurity regression results (Europe 2005-2015)

	(1)	(2)	(3)	(4)
2010	0.0251***	0.0270***	0.0319***	0.0281***
	(0.00196)	(0.00287)	(0.000896)	(0.00200)
2015	-0.00789***	-0.00523**	-0.00312**	-0.00405*
	(0.00217)	(0.00181)	(0.000979)	(0.00181)
Unemployment rate*100	0.610***	0.732***	0.508***	0.738***
	(0.0764)	(0.0934)	(0.0689)	(0.0724)
N	94186	94186	94186	94186
Country FEs	No	Yes	No	Yes
Other controls	No	No	Yes	Yes

This table displays coefficients and SEs from a logistic regression of the indicator for feeling insecure on the unemployment rate and year dummies, with 2005 as the base year. Demographic and job characteristic controls are included in models (3) and (4), and country fixed effects in (2) and (4). Standard errors in parentheses. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$