Discussion Paper Series

IZA DP No. 18549

April 2026

Job Loss and Mental Health: The Role of Anticipation and Re-employment in Recovery Patterns

Olivier B. Bargain
University of Bordeaux and IZA@LISER

Nicolas Hérault
University of Bordeaux, IZA@LISER and
University of Melbourne

Daniel Nettle
Institut Jean Nicod and
Northumbria University

IZA DP No. 18549 April 2026

Job Loss and Mental Health: The Role of Anticipation and Re-employment in Recovery Patterns

Abstract

Job loss is known to adversely affect mental health, but the time course of recovery and the role of anticipation remain unclear. Using 22 annual waves (2001-2022) of the Household, Income and Labour Dynamics in Australia (HILDA) survey, we estimate fixed-effects models to examine the relationship between redundancy and mental health (SF-36), incorporating subjective probability of job loss to refine anticipation measures. The final sample consists of 14,195 individuals and 4,251 redundancy events. Three key findings emerge. First, we document a generalized decline in mental health prior to job loss that is not confined to individuals who anticipate redundancy, suggesting psychological costs of impending job loss due to factors other than anticipation. Second, we document complete recovery among those who are re-employed, revealing that psychological restoration can occur relatively quickly upon securing new employment. Third, perceived anticipation of job loss does not appear to meaningfully alter these post-redundancy recovery trajectories. These findings call for greater emphasis on employment trajectories in both research and policy aimed at understanding and mitigating the mental health impacts of job loss.

JEL classification

J63, J64, I31, I12, C23, D91

Keywords

job loss, mental health, anticipation, unemployment, panel data

Corresponding author

Nicolas Hérault
nicolas.herault@u-bordeaux.fr

1. Introduction

It is widely acknowledged that job loss has profound adverse effects on subjective well-being and mental health. The seminal contribution of Clark and Oswald (1994) established that unemployment is damaging not only because of financial hardship, but also due to the psychological costs associated with stigma. This finding, based on self-reported mental distress, has been confirmed with measures of life satisfaction—for instance, by Winkelmann and Winkelmann (1998) for Germany, Carroll (2007) for Australia, and cross-nationally by Stavrova et al. (2011), as well as in numerous studies surveyed in the meta-analysis of Paul and Moser (2009). Subsequent research has used local unemployment rates to proxy social norms, thereby capturing the stigma of joblessness (Clark, 2003), while also recognizing that higher unemployment increases job insecurity among the employed. This dual effect is analysed using life satisfaction in Clark (2003), Clark et al. (2010), Knabe et al. (2010), and Clark and Postel-Vinay (2009), and extended to clinical depression, anxiety, biomarkers of stress, and even mortality in Eliason and Storrie (2009), Browning and Heinesen (2012), Roelfs et al. (2011), Sullivan and von Wachter (2009), and Classen and Dunn (2012). Yet, the dynamics of the relationship between unemployment and well-being deserves further research. In particular, evidence is mixed or limited regarding the role of anticipation prior to job loss, the time course of recovery following unemployment, and how re-employment shapes trajectories of mental health.

Regarding anticipation effects, evidence is somewhat contradictory. Using panel data with individual fixed effects, Clark et al. (2008) and Frijters et al. (2011) developed an original approach that combines leads and lags of life events in order to disentangle anticipation from adaptation effects. This framework assumes that lead effects capture potential anticipation prior to actual job loss. Frijters et al. (2011) report no significant evidence of such anticipation when individual fixed effects are accounted for, suggesting that individuals' well-being might only

deteriorate once unemployment materializes. By contrast, Clark et al. (2008) and Clark and Georgellis (2013) find pronounced pre-unemployment declines in well-being. A related literature documents job insecurity experienced prior to job loss, highlighting significant negative effects on mental health (e.g. Knabe and Rätzel, 2011; Lange, 2012; Burgard et al., 2007; Kassenboehmer and Haisken-DeNew, 2009) and emotional dynamics (e.g. von Scheve et al., 2017). Economic anxiety and fear of job loss operate as independent psychological stressors, with effects that may be distinct from actual unemployment experiences (Avdic et al., 2021).

Evidence on adaptation and recovery is equally inconclusive. Using German and UK panel data, Clark et al. (2008), Clark and Georgellis (2013) and Clark (2013) find large, front-loaded effects of unemployment on life satisfaction: the most severe effects occur immediately after job loss rather than developing gradually over time. There is little evidence of subsequent recovery from ongoing unemployment (unemployment "starts bad and largely stays bad", unlike other life events where well-being returns to baseline). von Scheve et al. (2017) document partial adaptation using emotional measures, suggesting that negative emotions may diminish somewhat during continued unemployment. In this literature, a critical but under-researched issue concerns the role of re-employment in recovery patterns. Studies that focus on long-term unemployment (e.g. von Scheve et al., 2017) or that emphasize the scarring effects of past or ongoing unemployment (Clark et al., 2001; Frijters et al., 2011) rarely account explicitly for re-employment trajectories. Yet re-employment is likely to play an important role in well-being recovery patterns. Explicit evidence in Lucas et al. (2004) indicates that full recovery may not occur, highlighting persistent scarring effects beyond re-employment (but see also the meta-analysis by Luhmann et al., 2012, emphasizing the scarcity of longitudinal studies addressing unemployment dynamics, especially of those that account for re-employment).

Against this background, we provide novel evidence on the dynamics of mental health around job loss episodes. Our analysis adopts a clinical perspective by relying on the validated SF-36 mental health index, a widely used measure in medical and epidemiological research. The estimations draw on 22 years of panel data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, which provide exceptional detail on labour market transitions. Unlike most existing studies that rely on annual data, HILDA records not only the year but the specific quarter of job loss, enabling granular evidence on both adaptation and recovery patterns. A small number of studies also exploit panel data with quarterly timing. Frijters et al. (2011) exploit quarterly Australian data to study well-being responses to a range of life events, including job loss, but their analysis is not focused specifically on redundancy and relies on an earlier and smaller sample. Von Scheve et al. (2017) use German data to analyse mental health during ongoing unemployment rather than the experience of job loss. Differences in temporal resolution may nonetheless matter for characterizing potential anticipation and recovery dynamics around job loss.

We also exploit information on respondents' subjective job loss expectations to assess heterogeneity in mental health trajectories. In the lead–lag framework of Clark et al. (2008), pre-redundancy declines in well-being are interpreted as anticipation. However, such declines need not reflect subjective expectations and may instead arise from worsening working conditions or organisational distress preceding job loss. Individuals' reported probabilities of job loss directly measure perceived risk and allow us to test whether mental health trajectories differ depending on whether redundancy was anticipated. Finally, we explicitly consider the role of re-employment in shaping recovery patterns, a critical but often neglected aspect, as argued above.

Our results reveal three key findings regarding the dynamics of mental health around redundancy. *First*, we document a generalized decline in mental health prior to job loss. This

decline is not confined to individuals who anticipate redundancy, as measured by subjective job loss probabilities. This finding suggests that interpreting lead coefficients as pure anticipatory effects may be misleading. These pre-redundancy patterns may capture a range of processes unfolding prior to separation, including workplace or organizational deterioration. *Second*, we find complete recovery among those securing new employment, whereas mental health remains depressed for those still unemployed several quarters after the job loss. *Third*, perceived anticipation of job loss (as measured in our data) does not appear to meaningfully alter these post-redundancy trajectories. Importantly, our framework characterizes within-individual temporal dynamics but does not isolate a fully exogenous causal effect of job loss or re-employment.

These findings challenge assumptions about anticipatory mechanisms and underscore the strong association between post-redundancy employment status and mental health trajectories. The rapid improvement observed among those who secure re-employment provides evidence in favour of interventions aimed at facilitating swift job placement rather than policies focused exclusively on anticipatory support mechanisms. As a final step, we conduct additional analyses using life satisfaction as the outcome variable, to bridge the economics literature's emphasis on life satisfaction (e.g. Clark et al., 2008; Frijters et al., 2011; Clark and Georgellis, 2013) with psychology's focus on clinical symptomatology (e.g. Murphy and Athanasou, 1999; McKee-Ryan et al., 2005). Results based on life satisfaction as an alternative outcome yield very similar patterns compared to those obtained with the SF-36 mental health index.

2. Data and Methods

a. Data Source and Selection

We use 22 annual waves (2001-2022) of the HILDA Survey, a high-quality, nationally representative Australian panel survey. The HILDA survey was approved by the Human

Research Ethics Committee of The University of Melbourne (ID no. 1647030). This study uses de-identified HILDA data under the required Confidentiality Deed Poll. HILDA is particularly well-suited for this research as it collects information on labour market dynamics, comprehensive self-reported wellbeing and health measures, and unique variable such as the individual's subjective probability of job loss. For individuals who were fired or made redundant in the past 12 months, we use information on the actual quarter of the job loss and wellbeing measures captured at previous, current and subsequent interviews. Our analysis spans the period from 2001 to 2022.

HILDA is a widely used and validated longitudinal dataset, particularly relevant in research linking life events, unemployment, and subjective well-being. For instance, Carroll (2007) shows that unemployment is strongly associated with lower life satisfaction in Australia. Crowe et al. (2016) demonstrate how financial hardship and inadequate employment contribute to poor mental health outcomes. Qu and de Vaus (2015), Frijters et al. (2011) and O'Leary et al. (2020) trace well-being trajectories around major life events, analysing the distinct impact of transitions such as marriage, separation, parenthood and unemployment. Ervin et al. (2023, 2024) investigate the mental health consequences of unemployment and precarious employment. Together, these studies underscore HILDA's central role in advancing panel-based evidence on how economic and social shocks shape subjective well-being.

b. Measures and Selection

Our primary outcome is mental health measured by the SF-36 mental health index, scored from 0 to 100, with higher scores indicating better mental health. This self-reported measure captures psychological distress, anxiety, and depressive symptoms through five items assessing feelings of nervousness, depression, peacefulness, happiness, and feeling down or blue. Although not a diagnostic tool, the SF-36 mental health captures symptoms of the common mental disorders, depression and anxiety, and has been validated against clinical measures, providing a reliable

indicator of psychological well-being (e.g., van Leeuwen et al., 2012; Anderson et al., 1996; LoMartire et al., 2020). It offers a more clinically relevant perspective, and greater granularity, than life satisfaction while retaining the feasibility of large-scale panel data application as well as a continuous outcome variable. Nonetheless, we also provide results based on life satisfaction, since the latter provides a slightly different perspective by capturing a more cognitively oriented notion of well-being.

Our analysis focuses specifically on redundancies rather than all job separations, using respondents' indication on the nature of job separations and information on whether and when (i.e. in which quarter) individuals were fired or made redundant in the past 12 months. This allows us to examine a relatively homogeneous group of involuntary job losses while maintaining sufficient sample size for detailed temporal analysis.

We investigate how job loss anticipation, measured using respondents' subjective probability assessments, influences mental health trajectories before and after redundancy. Respondents are asked to report the likelihood of being fired or made redundant in the next 12 months on a scale from 0 to 100 percent. The distribution of this measure exhibits substantial bunching at zero and is highly non-continuous. We therefore construct a binary indicator distinguishing between no anticipation (probability = 0) and *some* anticipation (probability > 0).

We also assess the role of re-employment in driving mental health recovery, while assessing how it interacts with anticipation. For that, we use respondents' labour market status in the quarters following the job loss. For each individual and each redundancy, anticipation is observed once in the four quarters prior to redundancy. Similarly, re-employment status is observed once in the subsequent four quarters. Combining information on multiple redundancies allows us to estimate mental health trajectories before and after redundancy at the quarterly level in the same fashion as Frijters et al. (2011).

c. Empirical Strategy

Simple model

We begin with a fixed-effects panel regression, following Clark et al. (2008) and incorporating both leads and lags of the redundancy event. Mental health is specified as follows:

$$Y_{it} = \sum_{s=-4}^{4} \beta_s F_{s,it} + \sigma X_{it} + \alpha_i + \gamma_t + \epsilon_{it}$$

with Y_{it} denoting the SF-36 mental health index for individual *i* in period *t*. $F_{s,it}$ are dummy variables indicating the timing of observation *t* relative to redundancy, covering up to four quarters before (s=-4) and four quarters after (s=+4) the event. Leads indicators (s<0) capture pre-redundancy dynamics, commonly interpreted as anticipation effects (Clark et al., 2008), while lag indicators ($s > 0$) capture post-redundancy dynamics, commonly interpreted as adaptation effects. X_{it} includes the following set of time-varying covariates: other major life events, self-reported health, and household income. Other major life events are captured by three dummy variables indicating (i) any of the following 'negative' life events: separation from spouse, serious personal injury/illness, serious injury/illness to family member, death of spouse or child, death of close relative or detained in jail; (ii) if the 'negative' life event occurred before redundancy (within the last 12 months); and (iii) pregnancy or birth of new child. Self-reported health is captured by a categorical variable with five categories from poor to excellent (the reference group). While it may be correlated with mental health, its inclusion serves to absorb concurrent physical health shocks that could otherwise confound the estimated effects of job loss. By including this control, we follow earlier subjective well-being and health economics studies (e.g. Clark et al., 2008; Clark and Georgellis, 2013; Contoyannis et al., 2004; Schmitz, 2011). We have also checked that our estimates for leads and lags are robust to

excluding this control (see Section 3d). Finally, household income, in thousands of dollars per week, is controlled for with a linear and quadratic term.

The fixed effects α_i allow us to control for individual-specific characteristics that do not change over time, such as gender, ethnicity or personality traits. The handling of such a large number of individual fixed effects follows Guimarães and Portugal (2010) and Correia (2017). Additionally, γ_t captures year fixed effects. Standard errors are clustered at the individual level.

Extended model

We estimate an extended model that interacts the leads and lags indicators with self-reported job loss expectations. As explained above, the subjective probability is binarized into indicators for no anticipation and anticipation of redundancy in the next period, denoted $P_{no,it}$ and $P_{yes,it}$. In the simple model, lead coefficients are interpreted as average anticipation effects (following Clark et al. 2008). In the extended model, interactions between leads and expectation indicators allow us to test whether pre-redundancy trends reflect subjective anticipation or other mechanisms. Lag coefficients are likewise allowed to vary by expectation status and are further interacted with employment status, $I(Emp_{it} = 1)$ or $I(Emp_{it} = 0)$, to account explicitly for the role of re-employment in recovery patterns. Precisely:

$$Y_{it} = \overbrace{\sum_{s=-1}^{-4} \beta_{s,no} F_{s,it} P_{no,it}}^{leads \times no\ anticipation} + \overbrace{\sum_{s=-1}^{-4} \beta_{s,yes} F_{s,it} P_{yes,it}}^{leads \times anticipation}$$
$$+ \overbrace{\sum_{s=1}^{4} \sum_{e \in \{0,1\}} \{\beta_{s,e,no} F_{s,it} P_{no,it_0} + \beta_{s,e,yes} F_{s,it} P_{yes,it_0}\} I(Emp_{i,t} = e)}^{lags \times anticipation\ or\ not \times re-employment\ or\ not}$$
$$+ \delta 1(NotFired_{it}) \times P_{yes,it_0} + \sigma X_{it} + \alpha_i + \gamma_t + \epsilon_{it}$$

where t_0 denotes the last pre-redundancy interview. The first line captures pre-redundancy dynamics by anticipation status, while the second line captures post-redundancy dynamics that vary jointly with prior anticipation and contemporaneous re-employment status. The interaction between anticipation and the indicator for not experiencing redundancy accounts for the direct effect of perceived job loss risk in the absence of job loss (coefficient δ). If anticipation mitigates the psychological cost of redundancy, post-redundancy declines in mental health should be smaller among individuals who anticipated the event ($\beta_{s,e,no} < \beta_{s,e,yes} < 0$ for $s > 0$). Conversely, similar trajectories across anticipation groups would indicate that subjective expectations provide little protection beyond what is captured by event-time dynamics.

All models include individual and year fixed effects, as well as time-varying controls. We also report the p-value from a Wald test assessing whether cumulative mental health trajectories over the two-year window around redundancy differ across anticipation groups for individuals who remain unemployed. Specifically, the test compares the sum of pre- and post-redundancy coefficients between high- and low-anticipation groups in the absence of re-employment ($e = 0$).

d. Descriptive Statistics

We begin with a sample of 232,928 person-year observations drawn from 22 waves of HILDA, comprising individuals with non-missing information on redundancy status, mental health, and time-varying covariates (major life events, health, and income) over any two-year window. This sample is used to estimate the simple model with leads and lags. For the extended model, we further restrict the sample to observations with non-missing information on job loss expected probability (JLEP), yielding a final sample of 114,551 person-year observations. This corresponds to 14,195 individuals and 4,251 redundancy events.

Table 1 presents the summary statistics for the key variables used in our analysis for the full sample and then, separately, for those never fired, and for those fired. For the latter, we distinguish the year(s) of the redundancy(ies) and all other years. Table 1 reveals that the average mental health score among individuals experiencing redundancy is lower in the 12 months following the redundancy than in other years (69.71 vs. 73.31) and lower than for those never experiencing any redundancy (74.76). Among those fired, 65% reported a positive job loss expected probability (the mean probability is 28%) in the previous interview, versus 37% (mean of 8%) for those who were never observed to be fired in HILDA.

3. Results

a. Baseline Results: Mental Health Effects Across Time

Results from the approach used by Clark et al. (2008) are reported in Table 2. The main coefficients of interest (i.e. leads and lags) of all our models are also presented in Figure 1 (left panel a). They reveal a clear mental health deterioration in the quarters surrounding job loss. The lead coefficients, in column (1), document systematic pre-redundancy declines in mental health that begin four quarters before separation, with mental health declining by 0.8 points ($p<0.05$). These pre-event declines are often interpreted as anticipation effect in the literature but may also reflect unobserved processes that both worsen mental health and increase the likelihood of subsequent job loss, e.g., worsening workplace conditions, organizational distress, declining productivity, or other processes unfolding prior to redundancy. This deterioration intensifies as job loss approaches, reaching -2.1 points in the quarter immediately preceding redundancy ($p<0.01$).

Post-redundancy effects show an immediate and substantial decline in mental health of around 2 points in the first quarter following job loss ($p<0.01$). Mental health remains lower throughout the subsequent quarters, with some quarter-to-quarter variability and a gradual attenuation of

the initial decline. By the fourth quarter post-redundancy, mental health is still depressed by around 0.9 points ($p<0.05$).

Gender differences emerge in both anticipation and recovery patterns, as shown in columns (1) and (2). Women show larger immediate post-redundancy effects (-3 points, $p<0.01$, vs. -1.3 points, $p<0.01$, for men in the first quarter), while men show larger anticipation effects and more persistent effects in the fourth quarter.

b. The Extended Model

Our extended model interacts the leads and lags with self-reported anticipation (job loss expected probability, JLEP), distinguishing between anticipation vs no anticipation, while also accounting for re-employment status in the quarters following job loss. Results are presented in detail in Table 3 and, for ease of interpretation, in Figure 1 (right panel b).

The Role of Anticipation

It is important to stress that our empirical design does not treat anticipation as randomly assigned. Differences (or similarities) in trajectories by anticipation status therefore describe heterogeneity in observed dynamics rather than causal buffering effects. In particular, if unobserved workplace deterioration precedes redundancy, both anticipation and mental health may respond to the same underlying process.

A crucial finding emerges when examining differential effects by anticipation level. Contrary to expectations that anticipation might buffer job loss effects, we find no evidence of systematic or persistent differences in mental health trajectories by anticipation status. For individuals with no anticipation, mental health declines begin several quarters before redundancy (−1.4 points in q-3, $p<0.05$) and intensify as the event approaches (-2.1 points in q-1, $p<0.01$). The immediate post-redundancy effect is substantial for those who remain unemployed (-2.7 points, $p<0.01$) and marginally significant for those who are re-employed (-1.4 points, $p<0.10$).

Individuals who anticipate job loss display remarkably similar patterns: pre-redundancy effects emerge early and with comparable magnitudes (-1.1 points in q-4, $p<0.05$; -1.2 points in q-1, $p<0.05$).

Formal tests fail to reject equality of the coefficients between anticipation groups at nearly all quarters. The two exceptions (q+2 and q+3 for those not re-employed) show point estimate differences but no persistent pattern, and overall cumulative effects as well as pre- and post-redundancy cumulative effects remain statistically indistinguishable. For individuals who remain unemployed following redundancy, the cumulative redundancy effect is -14.7 points for the no-anticipation group and -14.4 points for the anticipation group, and the equality of these sums cannot be rejected ($p = 0.93$), as reported at the bottom panel of Table 3. Similar conclusions are obtained for both men and women, as well as for pre- and post-redundancy cumulative effects taken separately. Taken together, these findings indicate that job loss anticipation does not provide a systematic protective buffer against the mental health consequences of redundancy.

To better understand the mechanisms behind the null anticipation result, we examine several pre-redundancy coping responses observed in the HILDA data. More specifically, we use indicators of expenditure reduction on meals eaten out, pawning or selling belongings, and seeking financial assistance. While engaging in such coping responses is itself associated with worse mental health, accounting for them does not alter pre-redundancy mental health trajectories by anticipation status, suggesting that these coping strategies do not explain the absence of differential anticipation effects.

Re-employment and Recovery Patterns

Our quarterly-level analysis reveals pronounced differences in mental health trajectories between individuals who secure new employment and those who remain unemployed

following redundancy. These differences describe conditional within-individual changes coinciding with employment transitions. While the rapid improvement observed upon securing new employment is consistent with a restorative role of employment, our design does not isolate a causal effect of re-employment, as post-redundancy trajectories may partly reflect the continuation or reversal of pre-existing trends.

Individuals who remain jobless experience large and persistent mental health deterioration. In the first quarter post-redundancy, unemployed individuals exhibit mental health declines of around -2.8 points among those with no anticipation and -2.7 points among those with anticipation (both $p<0.01$). Mental health remains substantially lower throughout the subsequent quarters, with limited evidence of recovery and some quarter-to-quarter variability, notably in the third quarter. By the fourth quarter post-redundancy, estimated effects remain negative and economically large (-3.0 points, $p<0.1$, for the no-anticipation group, -3.4 points, $p<0.01$ for the anticipation group), consistent with persistent mental health deterioration among those who remain jobless.

Re-employed individuals demonstrate markedly different patterns. While initial post-redundancy declines in mental health are significant (-1.4 points, $p<0.10$, and, -1.6 points, $p<0.01$, for no anticipation and anticipation groups, respectively, in q+1), recovery begins quickly. By the second quarter post-redundancy, mental health declines for re-employed individuals become non-significant (-1 and -0.4 points, respectively, $p>0.10$). By quarters three and four, re-employed individuals show complete recovery, with coefficients becoming null (positive but not significant). The results by gender reveals that a stronger association between re-employment and mental health recovery patterns for men than for women.

c. Robustness and Alternative Specifications

As a first check, we provide sensitivity analysis on the period of analysis. We extend the estimations to eight quarters before and after job loss. Results are presented in Appendix Table A1. They confirm our main findings while providing additional insight into longer-term patterns. Mental health deterioration begins as early as five quarters before redundancy (-0.9 points, $p<0.05$) and persists up to eight quarters post-redundancy for those remaining unemployed, though again with substantial quarter-to-quarter variability.

A second check consists of using an alternative definition of anticipation. Instead of distinguishing between no anticipation (probability = 0) and some anticipation (probability > 0), we use 50 percent as the threshold probability. Results reported in Appendix Table A3 show that our conclusions are robust to this alternative definition of anticipation.

We also conduct additional analyses to bridge the economics literature's emphasis on life satisfaction (e.g. Clark et al., 2008; Frijters et al., 2011; Clark and Georgellis, 2013) with psychology's focus on clinical symptomatology (e.g. Murphy and Athanasou, 1999; McKee-Ryan et al., 2005). Life satisfaction, often used in economics and sociology, captures individuals' evaluative judgments about their overall circumstances. In contrast, clinical mental health measures—such as symptoms of depression, anxiety, and psychological distress—reflect states more closely aligned with psychiatric definitions of disorder. While the two constructs can be correlated, they could exhibit different temporal dynamics and may respond differently to stressors, including job loss. Results based on life satisfaction are reported in Appendix Table A2 and Figure A1. They turn out to be very much in line with mental health findings, showing little anticipation effects and the primacy of re-employment status in driving recovery patterns. Looking at a broad range of life events, Clark and Georgellis (2013) also find no qualitative difference between results based on life satisfaction and those based on a multiple-item measure of psychological functioning (the GHQ-12).

A final robustness check concerns the role of temporal aggregation. Much of the existing literature on job loss and well-being relies on annual data, which may mask short-run anticipation and recovery dynamics. To assess whether our findings are driven by the higher temporal resolution of the data, we re-estimate the baseline lead–lag specification à la Clark et al. (2008) using annual rather than quarterly leads and lags (results are available upon request). The resulting estimates for both mental health and life satisfaction are qualitatively consistent with our baseline results but show that leads and lags effects are highly concentrated in the period immediately surrounding redundancy. This supports the use of quarterly information to more precisely characterise mental health dynamics around job loss.

d. Confounding Events and Reverse Causality

A central limitation of our approach is that redundancy timing may be endogenous to evolving individual or firm-level conditions. On the individual side, poorer mental health or health-related shocks may reduce productivity or increase absenteeism, thereby raising the risk of subsequent job loss (see, e.g., Jusot et al., 2008; Suppa, 2021).

To assess whether observable health and life shocks account for the documented pre-event dynamics, our baseline specification controls for time-varying self-reported general health, which captures contemporaneous physical health shocks, as well as a rich set of other major life events unrelated to job loss, including both adverse events (such as illness, bereavement, or separation) and positive events (such as the birth of a child). To test whether such individual shocks may affect both mental health dynamics and job loss risk, we simply re-estimate the baseline specification excluding these events—separately or jointly—from the set of controls (see Appendix Table A4). The estimated pre-redundancy mental health declines remain virtually unchanged, indicating that such observable shocks do not account for the documented pre-event dynamics.

However, we are short of data that could deal with firm-level confounders. Adverse workplace developments—such as organizational restructuring, worsening management practice, performance pressures, heightened workload, or internal conflict—may simultaneously depress mental health and culminate in redundancy. In such cases, the pre-redundancy declines we document would reflect these underlying processes rather than purely anticipatory mechanisms.

Our event-study framework with individual fixed effects allows us to characterize within-individual temporal dynamics around redundancy, but it does not establish that redundancy occurs independently of evolving mental health trajectories and can be interpreted as causal anticipation effects (some studies establish a more causal effect of job loss on well-being using unexpected firm closures, e.g. Kassenboehmer and Haisken-DeNew (2009), but such designs focus on specific subsets of job losses and may still involve pre-event dynamics). Accordingly, the post-redundancy coefficients should be interpreted as conditional changes relative to the reference period. In the presence of systematic pre-redundancy trends, these estimates may capture the continuation, amplification, or partial reversal of pre-existing trajectories rather than a fully exogenous treatment effect of job loss or re-employment.

4. Discussion

Our findings challenge conventional interpretations of anticipatory effects in the context of job loss. The psychological literature suggests that anticipated stressful events may be less harmful due to preparation and coping mechanisms (Leotti et al., 2010) while other work emphasises that rising perceptions of job insecurity may themselves generate distress prior to job loss (e.g. Burgard et al., 2007; Knabe and Rätzel, 2011; Lange, 2012; Avdic et al., 2021). We find no evidence that subjective job loss expectations either mitigate or exacerbate pre- or post-redundancy mental health outcomes. Although we find that coping strategies that focus on

adjustments in savings and consumption entail psychological costs, accounting for these strategies does not alter the conclusion that expectations are neutral.

The broadly similar pre-redundancy mental health declines observed across expectation groups instead point to more general pre-separation processes affecting workers. These may include workplace deterioration and organisational distress, as discussed, as well as hidden labour-market adjustments prior to formal separation, including temporary stand-downs, unpaid leave, frozen wages, or reduced hours. Such factors may adversely affect mental health regardless of whether workers subjectively anticipate job loss. From this perspective, the pre-job-loss declines documented in earlier studies—typically captured through event-time lead indicators—may reflect deteriorating work conditions rather than anticipatory effects in the strict sense. Further research using more detailed workplace and organisational information would be needed to disentangle these mechanisms. Our own attempts to do so using job satisfaction measures were inconclusive, likely because this variable captures multiple dimensions beyond working conditions alone (e.g., overall attachment to the job or how much the individual likes the job), which may limit its usefulness for isolating specific workplace deterioration channels.

The strong association between re-employment and improved mental health trajectories suggests that employment status is closely linked to psychological well-being. While our design does not isolate a fully exogenous causal effect, the rapid normalization of mental health among those who secure new jobs is consistent with a restorative role of re-employment. In contrast, individuals who remain unemployed exhibit persistently lowered mental health levels. Current unemployment support systems often focus on income replacement and general assistance (e.g., Davidson and Whiteford, 2012). Our findings are consistent with the view that policies facilitating rapid job placement—such as active labour market programs, job-search assistance, and employer matching—may play a central role in limiting the psychological

burden associated with redundancy. The rapid improvement observed upon re-employment suggests that the psychological costs associated with redundancy may be substantially attenuated when employment is restored.

a. Limitations

Our analysis has several limitations –beyond those discussed in the previous section– that should be acknowledged. *First*, while the SF-36 mental health index provides a validated and clinically oriented measure, it still relies on self-reports. Linking redundancy events to administrative health data (e.g. medical records, prescriptions, hospitalizations) could provide more robust evidence. *Second*, although HILDA's quarterly employment histories offer a rare degree of temporal granularity, job loss events are still reported retrospectively and may suffer from recall error, especially regarding the exact timing within the reference year. *Third*, we focus on redundancies and exclude other types of job separations (voluntary quits, contract endings). This ensures comparability but may limit the generalizability of our findings to the broader population of displaced workers. *Finally*, further research should mobilise more detailed data to test whether deteriorating working conditions constitute a plausible channel underlying declines in mental well-being prior to redundancy.

In terms of heterogeneity, our study primarily distinguishes by gender, anticipation, and re-employment status. Future work could examine differences across age groups, socioeconomic backgrounds, or industries, as the psychological consequences of job loss are likely to vary with resources, family responsibilities, and local labour market conditions.

Finally, while our high-frequency panel design provides detailed evidence on dynamic patterns, it does not isolate a fully exogenous treatment effect of redundancy or re-employment. The documented trajectories should therefore be interpreted as descriptive within-individual dynamics rather than definitive causal impacts.

5. Conclusion

This study provides new evidence on the relationship between job loss, anticipation, and mental health using more than two decades of Australian panel data. Three key findings emerge, with important theoretical and policy implications. *First*, job loss is associated with lowered mental health in the quarters leading up to redundancy regardless of whether individuals explicitly anticipate the event. This broad pre-redundancy deterioration suggests that workplace and economic factors associated with impending job loss matter more than subjective expectations or coping mechanisms. *Second*, anticipation is not associated with any protective effect on post-redundancy recovery. Those who expected the redundancy show identical recovery patterns to those surprised by redundancy, challenging assumptions about anticipatory mechanisms in employment contexts. *Third*, re-employment emerges as the most prominent factor associated with mental health recovery. Our quarterly-level analysis reveals that mental health improves quickly among those who secure new employment, while those remaining jobless show no recovery even four quarters post-redundancy. Overall, these findings suggest that policy interventions may benefit from prioritizing rapid job placement over anticipatory support. The speed of recovery among those who become re-employed suggests that the psychological costs of unemployment, while severe, are closely linked to employment transitions rather than time-dependent adaptation processes.

Finally, while we highlight the primacy of re-employment in recovery patterns, the mechanisms through which re-employment restores mental health remain underexplored. It may relate to income security, social identity, daily structure, or workplace social networks. Disentangling these channels would enrich both theory and policy design. A promising avenue is to integrate information on job quality—such as contract type, wages, skill mismatch, and working conditions—into future analyses, since not all re-employment may be equally beneficial. In

addition, cross-country comparative studies could test whether our findings hold in institutional contexts with stronger or weaker employment protection and unemployment insurance.

Declaration of competing interest

The authors declare no conflict of interest.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used Claude and Mistral AI to assist them in proofreading the paper. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Table 1. Summary statistics

	Full sample		Never fired		Fired last 12 months		Ever fired (years not fired)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
SF-36 mental health	74.76	16.084	76.74	14.982	69.71	18.879	73.31	16.678
SF-36 mental health (first diff.)	-0.29	13.839	-0.16	12.938	-0.73	16.556	-0.36	14.328
Life satisfaction	7.93	1.236	8.04	1.140	7.52	1.581	7.76	1.288
Life satisfaction (first diff.)	-0.01	1.119	0.00	1.037	-0.06	1.482	-0.01	1.186
Job loss exp. prob. (JLEP, lagged)	0.10	0.198	0.08	0.173	0.28	0.325	0.13	0.215
Positive JLEP (lagged)	0.43	0.496	0.37	0.482	0.65	0.476	0.50	0.500
Self-assessed health	2.44	0.865	2.41	0.841	2.60	0.914	2.54	0.871
Female	0.52	0.500	0.57	0.495	0.42	0.493	0.44	0.497
Fired 0 to 3 months ago	0.01	0.110	0.00	0.000	0.33	0.471	0.00	0.000
Fired 4 to 6 months ago	0.01	0.099	0.00	0.000	0.27	0.443	0.00	0.000
Fired 7 to 9 months ago	0.01	0.09	0.00	0.00	0.22	0.41	0.00	0.00
Fired 10 to 12 months ago	0.01	0.083	0.00	0.000	0.19	0.390	0.00	0.000
Pregnancy or birth of new child	0.08	0.269	0.07	0.263	0.08	0.276	0.08	0.267
Any negative life event in last 12 months	0.29	0.453	0.28	0.450	0.36	0.479	0.30	0.460
Negative life event before redundancy in last 12 months	0.01	0.076	0.00	0.000	0.16	0.364	0.00	0.000
Household income ($1,000)	1.06	1.2	1.05	1.1	0.91	1.1	0.95	1.1
No. of observations	**114 551**		**43 049**		**4 251**		**33 245**	

Notes: Sample restricted to individual-year observations with non-missing (lagged) job loss expected probability and non-missing time-varying covariates included in the estimation samples (major life events, health and income), which corresponds to the estimation sample for the extended model presented in Table 3. See Section 2c for more detail on these variables, including a definition of negative life events. Expected job loss probability is lagged so that they relate to the pre-redundancy jobs for those who got fired. The full sample is based on a total of 14,195 individuals.

Table 2. Fixed effect estimates of the impact of redundancy on the SF36 mental health index (0-100)

	(1) ALL	(2) Males	(3) Females
q-4	-0.788**	-1.028**	-0.439
	(0.306)	(0.401)	(0.475)
q-3	-0.718**	-0.894**	-0.490
	(0.344)	(0.445)	(0.542)
q-2	-0.913**	-0.934**	-0.875
	(0.371)	(0.472)	(0.597)
q-1	-2.054***	-2.187***	-1.825***
	(0.380)	(0.459)	(0.643)
q+1	-1.993***	-1.253***	-2.965***
	(0.312)	(0.402)	(0.494)
q+2	-1.299***	-0.831*	-1.915***
	(0.349)	(0.449)	(0.555)
q+3	-0.193	-0.315	-0.0112
	(0.381)	(0.483)	(0.618)
q+4	-0.867**	-1.057**	-0.636
	(0.378)	(0.483)	(0.608)
Pregnancy or birth of new child	1.607***	1.233***	1.902***
	(0.115)	(0.164)	(0.161)
Any negative life event	-1.923***	-1.705***	-2.103***
	(0.0575)	(0.0824)	(0.0797)
Negative life event before redundancy	-1.372***	-1.537**	-1.184
	(0.499)	(0.658)	(0.769)
Very good health	-2.946***	-2.906***	-2.982***
	(0.0978)	(0.141)	(0.136)
Good health	-7.199***	-6.830***	-7.503***
	(0.118)	(0.171)	(0.163)
Fair health	-13.02***	-12.61***	-13.35***
	(0.158)	(0.229)	(0.217)
Poor health	-19.88***	-20.68***	-19.26***
	(0.285)	(0.420)	(0.387)
Household income ($1,000)	0.235***	0.214***	0.235***
	(0.0491)	(0.0796)	(0.0637)
Household income (squared)	-0.00669	-0.00733	-0.00576
	(0.00628)	(0.0125)	(0.00739)
Observations	232,928	107,613	125,315

Notes: All models include individual and year fixed effects. The omitted category for self-reported health is Excellent health. See Section 2c for a description of major life events, health, and household income variables.

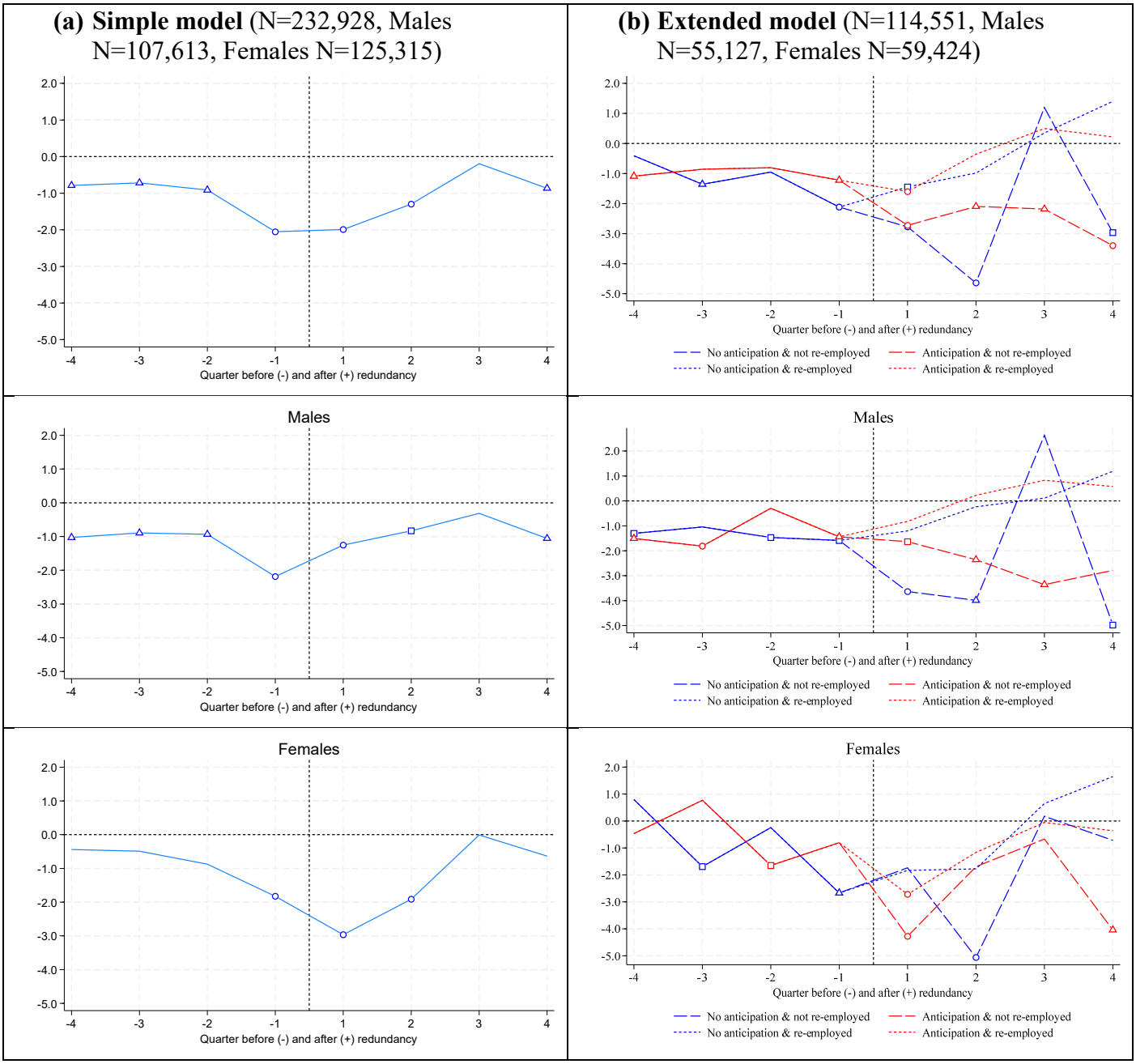
Table 3. Fixed effect estimates of the impact of redundancy on the SF36 mental health index (0-100) by job loss anticipation and re-employment status

	(1) ALL (No anticipation)	(2) Males (No anticipation)	(3) Females (No anticipation)	(1) ALL (Anticipation)	(2) Males (Anticipation)	(3) Females (Anticipation)
q-4	-0.409	-1.302*	0.798	-1.087**	-1.505**	-0.465
	(0.524)	(0.709)	(0.771)	(0.490)	(0.628)	(0.780)
q-3	-1.356**	-1.045	-1.691*	-0.856	-1.811***	0.770
	(0.644)	(0.873)	(0.959)	(0.556)	(0.683)	(0.944)
q-2	-0.954	-1.467*	-0.242	-0.807	-0.295	-1.648*
	(0.673)	(0.855)	(1.056)	(0.576)	(0.736)	(0.925)
q-1	-2.116***	-1.586*	-2.668**	-1.221**	-1.439**	-0.801
	(0.750)	(0.877)	(1.208)	(0.546)	(0.654)	(0.954)
q+1 (not re-employed)	-2.775***	-3.634***	-1.735	-2.727***	-1.634*	-4.275***
	(0.876)	(1.183)	(1.303)	(0.705)	(0.838)	(1.222)
q+2 (not re-employed)	-4.640***	-3.987**	-5.061***	-2.094**	-2.357**	-1.693
	(1.145)	(1.617)	(1.597)	(0.946)	(1.187)	(1.561)
q+3 (not re-employed)	1.195	2.633	0.177	-2.181**	-3.356**	-0.666
	(1.466)	(2.027)	(2.027)	(1.009)	(1.331)	(1.543)
q+4 (not re-employed)	-2.966*	-4.976*	-0.717	-3.399***	-2.785	-4.038**
	(1.708)	(2.613)	(1.950)	(1.242)	(1.940)	(1.615)
q+1 (re-employed)	-1.447*	-1.202	-1.831	-1.602***	-0.823	-2.717***
	(0.807)	(1.039)	(1.269)	(0.579)	(0.793)	(0.835)
q+2 (re-employed)	-0.983	-0.235	-1.774	-0.357	0.227	-1.163
	(0.859)	(1.155)	(1.274)	(0.569)	(0.690)	(0.989)
q+3 (re-employed)	0.350	0.113	0.650	0.497	0.827	-0.0534
	(0.914)	(1.183)	(1.431)	(0.599)	(0.706)	(1.114)
q+4 (re-employed)	1.403	1.188	1.649	0.220	0.579	-0.359
	(1.060)	(1.427)	(1.587)	(0.576)	(0.704)	(0.993)
Anticipation * Not Fired				-0.193**	-0.183	-0.185
				(0.0871)	(0.122)	(0.124)
Pregnancy or birth of new child	1.545***	1.161***	1.983***	1.545***	1.161***	1.983***
	(0.140)	(0.189)	(0.208)	(0.140)	(0.189)	(0.208)
Any negative life event	-1.953***	-1.816***	-2.072***	-1.953***	-1.816***	-2.072***
	(0.0822)	(0.117)	(0.116)	(0.0822)	(0.117)	(0.116)
Negative life event before redundancy	-1.811***	-2.045**	-1.552*	-1.811***	-2.045**	-1.552*
	(0.616)	(0.826)	(0.924)	(0.616)	(0.826)	(0.924)

	(1) ALL (No anticipation)	(2) Males (No anticipation)	(3) Females (No anticipation)	(1) ALL (Anticipation)	(2) Males (Anticipation)	(3) Females (Anticipation)
Very good health	-2.741***	-2.679***	-2.802***	-2.741***	-2.679***	-2.802***
	(0.126)	(0.180)	(0.176)	(0.126)	(0.180)	(0.176)
Good health	-6.897***	-6.418***	-7.324***	-6.897***	-6.418***	-7.324***
	(0.157)	(0.223)	(0.220)	(0.157)	(0.223)	(0.220)
Fair health	-12.56***	-11.84***	-13.20***	-12.56***	-11.84***	-13.20***
	(0.235)	(0.333)	(0.332)	(0.235)	(0.333)	(0.332)
Poor health	-20.23***	-20.49***	-20.12***	-20.23***	-20.49***	-20.12***
	(0.579)	(0.896)	(0.760)	(0.579)	(0.896)	(0.760)
Household income ($1,000)	0.192***	0.376***	0.0458	-0.193**	-0.183	-0.185
	(0.0679)	(0.113)	(0.0879)	(0.0871)	(0.122)	(0.124)
Household income (squared)	0.00182	-0.0240	0.0172	0.192***	0.376***	0.0458
	(0.00972)	(0.0211)	(0.0109)	(0.0679)	(0.113)	(0.0879)
Sum of leads & lags (not re-employed)	-14.021	-15.363	-11.140	-14.373	-15.183	-12.816
p-value (different sums for anticipation vs no anticipation)	0.9226	0.9722	0.7399	0.9226	0.9722	0.7399
Observations	114,551	55,127	59,424	114,551	55,127	59,424

Notes: All models include individual and year fixed effects. No anticipation corresponds to a zero job loss expected probability, while anticipation corresponds to a positive probability. The omitted category for self-reported health is Excellent health. See Section 2c for a description of major life events, health, and household income variables.

Figure 1. The dynamic effect of effect of redundancy on SF36 mental health index by quarter (coefficient estimates from Table 3)



Notes: o, Δ and □ denote significance at the 1%, 5% and 10% levels, respectively. Solid lines in the extended model represent the period before redundancy, thus at this point individuals are identified by their level of anticipation alone (No anticipation: blue; Anticipation: red). No anticipation corresponds to a zero job loss expected probability, while anticipation is for a positive probability. For each individual and each redundancy, anticipation is observed once in the four quarters prior to redundancy and re-employment status is observed once in the subsequent four quarters.

References

Anderson, C., Laubscher, S., Burns, R. (1996). Validation of the Short Form 36 (SF-36) Health Survey Questionnaire among stroke patients. *Stroke*, 27(10):1812–1816. https://doi.org/10.1161/01.STR.27.10.1812

Avdic, D., de New, S. C., Kamhöfer, D. A. (2021). Economic downturns and mental health in Germany. *European Economic Review*, 140, 103915. https://doi.org/10.1016/j.euroecorev.2021.103915

Browning, M., Heinesen, E., (2012). Effect of job loss due to plant closure on mortality and hospitalization. *Journal of Health Economics* 31(4):599–616.

Burgard, S. A., J. E. Brand, House, J. S. (2007). Toward a Better Estimation of the Effect of Job Loss on Health. *Journal of Health and Social Behavior* 48(4):369-384.

Carroll, N. (2007). Unemployment and psychological well-being. *Economic Record*, 83(262):287-302.

Clark, A. E. (2003). Unemployment as a social norm: Psychological evidence from panel data. *Journal of Labor Economics*, 21(2):323-351.

Clark, A. E. (2013). Unhappiness and Unemployment. In O. Ashenfelter D. Card (Eds.), *Handbook of Labor Economics*, 4B:489–554. Amsterdam: Elsevier.

Clark, A. E., Diener, E., Georgellis, Y., Lucas, R. E. (2008). Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis. *Economic Journal*, 118(529):F222–F243.

Clark, A. E., Georgellis, Y., Sanfey, P. (2001). Scarring: The psychological impact of past unemployment. *Economica*, 68(270), 221-241.

Clark, A. E., Georgellis, Y. (2013). Back to baseline in Britain: Adaptation in the British household panel survey. *Economica*, 80(319):496-512.

Clark, A. E., Knabe, A., Rätzel, S. (2010). Boon or bane? Others' unemployment, well-being and job insecurity. *Labour Economics*, 17(1):52-61.

Clark, A. E., Oswald, A. J. (1994). Unhappiness and unemployment. *Economic Journal*, 104(424):648-659.

Clark, A. E., Postel-Vinay, F. (2009). Job security and job protection. *Oxford Economic Papers*, *61*(2), 207–239. https://doi.org/10.1093/oep/gpn017

Classen T.J., Dunn R.A. (2012). The effect of job loss and unemployment duration on suicide risk in the United States: a new look using mass-layoffs and unemployment duration. *Health Economics* 21(3):338-350.

Contoyannis, P., Jones, A. M., Rice, N. (2004). The dynamics of health in the British Household Panel Survey. *Journal of Health Economics*, 23(3), 499–522.

Correia, S. (2017). Linear Models with High-Dimensional Fixed Effects: An Efficient and Feasible Estimator, Working Paper.

Crowe, L., Butterworth, P., Leach, L. (2016). Financial hardship, mastery and social support: Explaining poor mental health amongst the inadequately employed using data from the HILDA survey. *SSM – Population Health*, 2:407–415.

Davidson, P., Whiteford, P. (2012). An overview of Australia's system of income and employment assistance for the unemployed. OECD Social, Employment and Migration Working Papers No. 129. https://doi.org/10.1787/5k8zk8q40lbw-en

Eliason, M., Storrie, D. (2009). Does Job Loss Shorten Life?, *The Journal of Human Resources* 44(2):277-302.

Ervin, J., Taouk, Y., Hewitt, B., King, T. Doan, T. (2023). The gendered associations between precarious employment and mental health in working-age Australians: A longitudinal analysis using 16 waves of the HILDA survey. *Social Science & Medicine*, 339, 116382.

Ervin, J., Taouk, Y., Hewitt, B., King, T., Doan, T. (2024). A longitudinal analysis of the impact of multidimensional precarious employment on the mental health of men and women. *Scientific Reports*, 14, 30470.

Frijters, P., Johnston, D. W., Shields, M. A. (2011). Life satisfaction dynamics with quarterly life event data. *Scandinavian Journal of Economics*, 113(1):190-211.

Guimarães, P., Portugal, P. (2010). A Simple Feasible Procedure to Fit Models with High-Dimensional Fixed Effects. *Stata Journal* 10 (4), 628–649.

Jusot, F., Geoffard, P.-Y., Ricci, T. P. (2008). The causal effect of unemployment on health: Evidence from France. *Journal of Health Economics*, 27(5), 1139–1155.

Kassenboehmer, S. C., Haisken-DeNew, J. P. (2009). You're fired! The causal negative effect of entry unemployment on life satisfaction. *Economic Journal*, 119(536):448-462.

Knabe, A., Rätzel, S. (2011). Scarring or scaring? The psychological impact of past unemployment and future unemployment risk. *Economica*, 78(310):283-293.

Knabe A, Rätzel S, Schöb R, Weimann J. (2010). Dissatisfied with life, but having a good day: Time-use and well-being of the unemployed. *Economic Journal*, 120(547):867–889.

Lange, T. (2012). Scarred from the past or afraid of the future? Unemployment and job satisfaction across European labour markets. *International Journal of Human Resource Management*, 23(6):1096-1112.

Leotti, L. A., Iyengar, S. S., Ochsner, K. N. (2010). Born to choose : The origins and value of the need for control. *Trends in Cognitive Sciences*, 14(10):457-463. https://doi.org/10.1016/j.tics.2010.08.001

LoMartire, R., Äng, B. O., Gerdle, B., Vixner, L. (2020). Psychometric properties of Short Form-36 Health Survey, EuroQol 5-dimension, and Hospital Anxiety and Depression Scale in patients with chronic pain. *PAIN*, 161(1):83–95. https://doi.org/10.1097/j.pain.0000000000001700

Lucas, R. E., Clark, A. E., Georgellis, Y., Diener, E. (2004). Unemployment Alters the Set Point for Life Satisfaction. *Psychological Science* 15(1):8-13.

Luhmann, M., Hofmann, W., Eid, M., Lucas, R. E. (2012). Subjective Well-Being and Adaptation to Life Events, *J Pers Soc Psychol*. 102(3):592-615.

McKee-Ryan, F. M., Z. Song, C. R. Wanberg, Kinicki, A. J. (2005). Psychological and Physical Well-being During Unemployment: A Meta-analytic Study. *Journal of Applied Psychology* 90(1):53-76.

Murphy, G. C., Athanasou, J. A. (1999). The Effect of Unemployment on Mental Health. *Journal of Occupational and Organizational Psychology* 72(1):83-99.

O'Leary, N., Li, Ian W., Gupta, P., Blackaby, D. (2020). Wellbeing trajectories around life events in Australia. *Economic Modelling* 93:499–509

Paul, K. I., Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74(3):264-282.

Qu, L., De Vaus, D. (2015). Life satisfaction across life course transitions. *Journal of the Home Economics Institute of Australia* 22(2):15-27.

Roelfs, D., Shor, E., Davidson, K., Schwartz, J., (2011). Losing life and livelihood: a systematic review and meta-analysis of unemployment and all-cause mortality. *Social Science & Medicine* 72, 840–854.

Schmitz, H. (2011). Why are the unemployed in worse health? The causal effect of unemployment on health. *Journal of Health Economics*, 30(1), 71–88.

Stavrova, O., Schlösser, T., Fetchenhauer, D. (2011). Are the unemployed equally unhappy all around the world? The role of the social norms to work and welfare state provision in 28 OECD countries. *Journal of Economic Psychology* 32(1), 159–171. https://doi.org/10.1016/j.joep.2010.11.002

Sullivan, D., Von Wachter, T., (2009). Job displacement and mortality: An analysis using administrative data. *Quarterly Journal of Economics*, 124 (3):1265–1306.

Suppa, N. (2021). Job loss and health. *Labour Economics*, 71, 102014

van Leeuwen, C. M. C., Post, M. W. M., Westers, P., van der Woude, L. H. V., de Groot, S. (2012). Validation of the mental health subscale of the SF-36 in persons with spinal cord injury. *Spinal Cord* 50(9):707–710. https://doi.org/10.1038/sc.2012.33

von Scheve, C., Esche, F., Schupp, J. (2017). The Emotional Timeline of Unemployment: Anticipation, Reaction, and Adaptation. *Journal of Happiness Studies*, 18(4), 1231–1254. https://doi.org/10.1007/s10902-016-9773-6

Winkelmann, L., Winkelmann, R. (1998). Why are the unemployed so unhappy? Evidence from panel data. *Economica* 65(257):1–15. https://doi.org/10.1111/1468-0335.00111

Appendix

Table A1. Fixed effect estimates of the impact of redundancy on the SF36 mental health index (0-100) (+/- 8 quarters)

	(1) ALL	(2) Males	(3) Females
q-8	-0.420	-0.446	-0.371
	(0.354)	(0.436)	(0.589)
q-7	0.436	0.782	-0.0142
	(0.395)	(0.489)	(0.652)
q-6	-0.0586	0.246	-0.466
	(0.419)	(0.539)	(0.664)
q-5	-0.899**	-0.627	-1.309*
	(0.431)	(0.534)	(0.707)
q-4	-0.511	-1.068**	0.264
	(0.376)	(0.491)	(0.582)
q-3	-0.319	-0.429	-0.148
	(0.393)	(0.499)	(0.631)
q-2	-0.574	-0.308	-0.919
	(0.433)	(0.561)	(0.682)
q-1	-2.290***	-2.050***	-2.559***
	(0.446)	(0.529)	(0.769)
q+1	-1.971***	-1.506***	-2.567***
	(0.379)	(0.483)	(0.605)
q+2	-0.936**	-0.326	-1.716***
	(0.398)	(0.519)	(0.619)
q+3	0.330	0.382	0.250
	(0.440)	(0.558)	(0.711)
q+4	-0.760	-0.354	-1.335*
	(0.467)	(0.593)	(0.753)
q+5	-0.516	-0.890*	-0.0243
	(0.358)	(0.477)	(0.543)
q+6	0.0268	0.420	-0.487
	(0.387)	(0.502)	(0.608)
q+7	0.00908	-0.455	0.724
	(0.396)	(0.508)	(0.629)
q+8	-0.806**	-0.706	-0.949*
	(0.367)	(0.485)	(0.562)
Observations	175,445	80,054	95,391

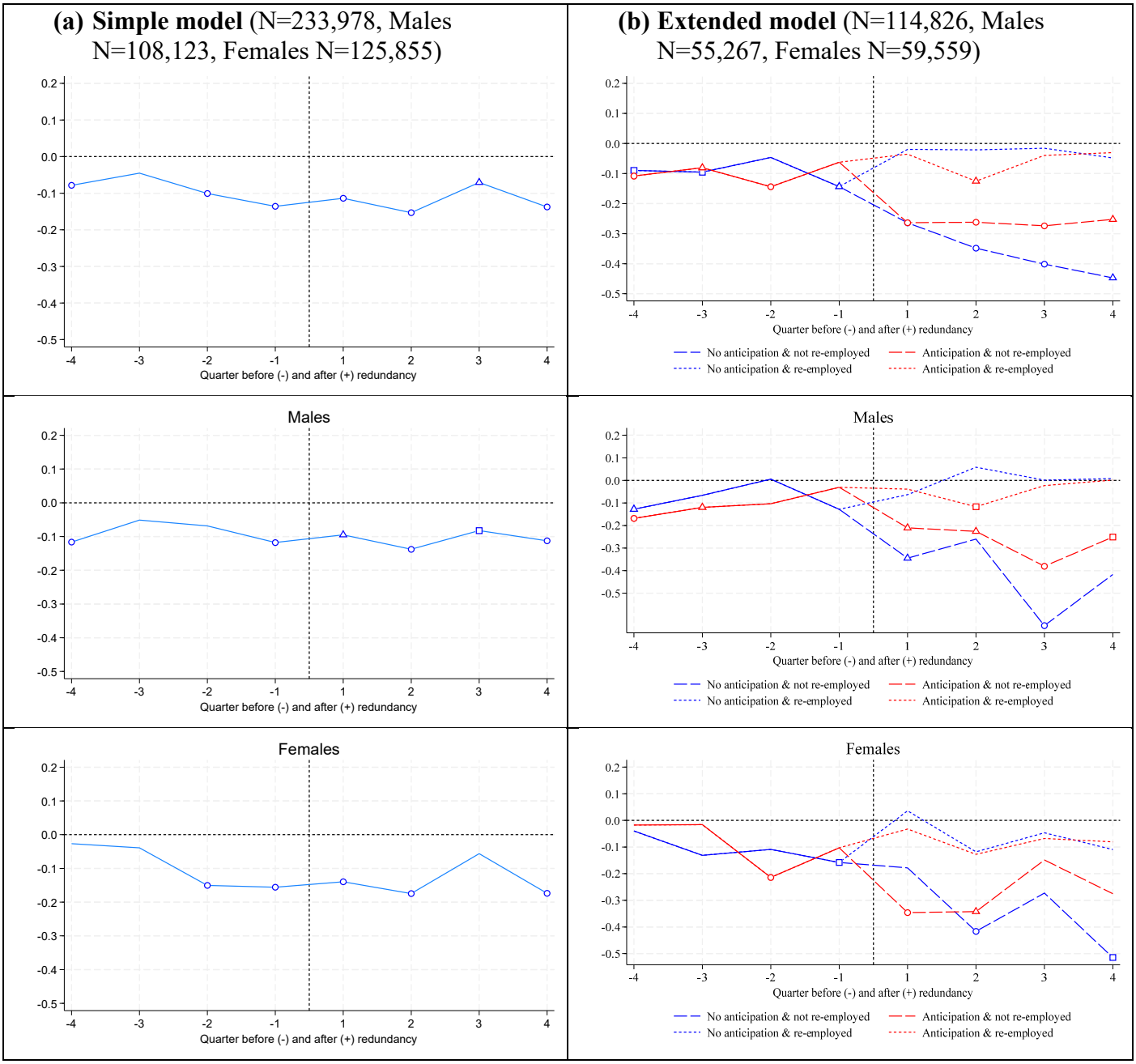
Notes: All models include individual and year fixed effects and controls for major life events, health, and other household income (not shown).

Table A2. Fixed effect estimates of the impact of redundancy on life satisfaction (0-10) by job loss anticipation and re-employment status

	(1) ALL (No anticipation)	(2) Males (No anticipation)	(3) Females (No anticipation)	(1) ALL (Anticipation)	(2) Males (Anticipation)	(3) Females (Anticipation)
q-4	-0.0897*	-0.128**	-0.0399	-0.108***	-0.168***	-0.0174
	(0.0459)	(0.0616)	(0.0686)	(0.0394)	(0.0494)	(0.0650)
q-3	-0.0955*	-0.0663	-0.131	-0.0808**	-0.120**	-0.0160
	(0.0529)	(0.0674)	(0.0839)	(0.0406)	(0.0522)	(0.0646)
q-2	-0.0466	0.00531	-0.109	-0.144***	-0.103	-0.214***
	(0.0547)	(0.0764)	(0.0782)	(0.0503)	(0.0636)	(0.0824)
q-1	-0.144**	-0.128	-0.158*	-0.0624	-0.0308	-0.103
	(0.0609)	(0.0833)	(0.0881)	(0.0514)	(0.0617)	(0.0898)
q+1 (not re-employed)	-0.264***	-0.345**	-0.178	-0.264***	-0.211**	-0.346***
	(0.0940)	(0.137)	(0.127)	(0.0745)	(0.0918)	(0.125)
q+2 (not re-employed)	-0.348***	-0.260	-0.416***	-0.262***	-0.226**	-0.342**
	(0.113)	(0.175)	(0.149)	(0.0903)	(0.104)	(0.168)
q+3 (not re-employed)	-0.402***	-0.644***	-0.273	-0.274***	-0.381***	-0.148
	(0.153)	(0.201)	(0.215)	(0.101)	(0.133)	(0.152)
q+4 (not re-employed)	-0.447**	-0.417	-0.515*	-0.252**	-0.251*	-0.275
	(0.215)	(0.310)	(0.286)	(0.128)	(0.146)	(0.202)
q+1 (re-employed)	-0.0196	-0.0634	0.0359	-0.0355	-0.0388	-0.0324
	(0.0732)	(0.0966)	(0.111)	(0.0494)	(0.0671)	(0.0720)
q+2 (re-employed)	-0.0212	0.0583	-0.118	-0.125**	-0.117*	-0.127
	(0.0657)	(0.0815)	(0.104)	(0.0531)	(0.0672)	(0.0870)
q+3 (re-employed)	-0.0159	0.000885	-0.0465	-0.0397	-0.0230	-0.0678
	(0.0783)	(0.108)	(0.112)	(0.0507)	(0.0611)	(0.0908)
q+4 (re-employed)	-0.0481	0.00809	-0.109	-0.0304	0.00123	-0.0806
	(0.0896)	(0.109)	(0.148)	(0.0538)	(0.0637)	(0.0982)
Anticipation * Not Fired				-0.0399***	-0.0496***	-0.0300***
				(0.00697)	(0.00993)	(0.00978)
Sum of leads & lags (not re-employed)	-1.837	-1.983	-1.820	-1.448	-1.491	-1.462
p-value (different sums for anticipation vs no anticipation)	0.3085	0.3422	0.5197	0.3085	0.3422	0.5197
Observations	114,826	55,267	59,559	114,826	55,267	59,559

Notes: All models include individual and year fixed effects and controls for major life events, health, and other household income (not shown). Anticipation corresponds to a zero job loss expected probability, while anticipation corresponds to a positive probability.

Figure A1. The dynamic effect of redundancy on life satisfaction by quarter (coefficient estimates from Table A2)



Notes: o, Δ and □ denote significance at the 1%, 5% and 10% levels, respectively. Solid lines in the extended model represent the period before redundancy, thus at this point individuals are identified by their level of anticipation alone (low: blue; high: red). Low anticipation corresponds to a zero job loss expected probability, while high anticipation corresponds to a positive probability. For each individual and each redundancy, anticipation is observed once in the four quarters prior to redundancy and re-employment status is observed once in the subsequent four quarters.

Table A3. Fixed effect estimates of the impact of redundancy on the SF36 mental health index (0-100) by job loss anticipation and re-employment status – 50% threshold to distinguish high vs low anticipation

	(1) ALL (Low anticipation)	(2) Males (Low anticipation)	(3) Females (Low anticipation)	(1) ALL (High anticipation)	(2) Males (High anticipation)	(3) Females (High anticipation)
q-4	-0.676*	-1.293**	0.154	-1.243	-1.902*	-0.157
	(0.395)	(0.513)	(0.619)	(0.846)	(1.142)	(1.214)
q-3	-0.926**	-1.409**	-0.237	-1.715	-1.908	-1.171
	(0.459)	(0.593)	(0.727)	(1.046)	(1.267)	(1.791)
q-2	-0.727	-0.979	-0.364	-1.352	0.324	-3.773**
	(0.477)	(0.626)	(0.738)	(1.055)	(1.250)	(1.837)
q-1	-1.888***	-1.667***	-2.139**	-0.605	-0.817	0.149
	(0.510)	(0.597)	(0.876)	(0.890)	(1.086)	(1.465)
q+1 (not re-employed)	-2.610***	-2.850***	-2.274**	-2.928***	-1.380	-5.551***
	(0.641)	(0.845)	(0.984)	(1.060)	(1.170)	(1.973)
q+2 (not re-employed)	-3.541***	-3.471***	-3.650***	-1.589	-1.462	-1.906
	(0.839)	(1.094)	(1.290)	(1.455)	(1.891)	(2.250)
q+3 (not re-employed)	-0.208	-1.079	0.680	-2.246*	-2.833	-1.770
	(1.054)	(1.390)	(1.586)	(1.359)	(1.919)	(1.960)
q+4 (not re-employed)	-2.518*	-2.869	-2.262	-3.917***	-4.417*	-3.669*
	(1.329)	(2.016)	(1.626)	(1.513)	(2.486)	(1.908)
q+1 (re-employed)	-1.662***	-1.683**	-1.704**	-0.916	1.318	-3.845***
	(0.535)	(0.715)	(0.807)	(0.993)	(1.316)	(1.451)
q+2 (re-employed)	-0.594	-0.130	-1.168	-0.312	0.590	-1.840
	(0.565)	(0.710)	(0.918)	(0.877)	(1.070)	(1.485)
q+3 (re-employed)	0.102	0.271	-0.283	1.213	1.146	1.290
	(0.634)	(0.772)	(1.088)	(0.813)	(0.971)	(1.490)
q+4 (re-employed)	1.359*	1.461*	1.207	-0.389	-0.178	-0.661
	(0.694)	(0.847)	(1.206)	(0.719)	(0.934)	(1.110)
High anticipation X Not Fired				-0.238*	-0.580***	0.0674
				(0.140)	(0.201)	(0.195)
Sum of leads & lags (not re-employed)	-13.093	-15.617	-10.091	-15.594	-14.395	-17.846
p-value (different sums for high vs low anticipation)	0.5165	0.8177	0.1848	0.5165	0.8177	0.1848
Observations	114,551	55,127	59,424	114,551	55,127	59,424

Notes: All models include individual and year fixed effects and controls for major life events, health, and other household income (not shown). High anticipation corresponds to job loss expected probability greater than 50%, while low anticipation corresponds to probability smaller than 50%.

Table A4. Fixed effect estimates of the impact of redundancy on the SF36 mental health index (0-100) by job loss anticipation and re-employment – Sensitivity of lead effects to major life events

No anticipation

	(1) Baseline	(2) No health shock	(3) No MLE1	(4) No MLE2	(5) No MLE3	(6) No MLE4	(7) No MLE5	(8) No MLE6	(9) No MLE7	(10) All MLEs excluded
No anticipation										
q-4	-0.409	-0.496	-0.404	-0.401	-0.412	-0.406	-0.406	-0.417	-0.404	-0.447
	(0.524)	(0.534)	(0.525)	(0.526)	(0.522)	(0.524)	(0.523)	(0.524)	(0.525)	(0.537)
q-3	-1.356**	-1.434**	-1.351**	-1.354**	-1.379**	-1.356**	-1.299**	-1.360**	-1.321**	-1.371**
	(0.644)	(0.655)	(0.647)	(0.647)	(0.645)	(0.644)	(0.643)	(0.644)	(0.647)	(0.667)
q-2	-0.954	-0.681	-0.953	-0.960	-0.949	-0.954	-0.910	-0.953	-0.957	-0.643
	(0.673)	(0.681)	(0.675)	(0.674)	(0.675)	(0.673)	(0.671)	(0.673)	(0.673)	(0.684)
q-1	-2.116***	-1.844**	-2.130***	-2.132***	-2.094***	-2.123***	-2.105***	-2.115***	-2.100***	-1.890**
	(0.750)	(0.790)	(0.750)	(0.750)	(0.748)	(0.751)	(0.747)	(0.750)	(0.750)	(0.793)
Anticipation										
q-4	-1.087**	-0.932*	-1.098**	-1.090**	-1.071**	-1.084**	-1.104**	-1.089**	-1.049**	-0.886*
	(0.490)	(0.510)	(0.490)	(0.490)	(0.488)	(0.490)	(0.490)	(0.490)	(0.490)	(0.511)
q-3	-0.856	-0.882	-0.855	-0.876	-0.866	-0.861	-0.865	-0.855	-0.857	-0.927
	(0.556)	(0.568)	(0.557)	(0.557)	(0.558)	(0.556)	(0.556)	(0.556)	(0.557)	(0.572)
q-2	-0.807	-0.841	-0.809	-0.801	-0.809	-0.821	-0.830	-0.813	-0.785	-0.853
	(0.576)	(0.586)	(0.576)	(0.577)	(0.575)	(0.576)	(0.575)	(0.577)	(0.577)	(0.590)
q-1	-1.221**	-1.483***	-1.227**	-1.271**	-1.234**	-1.219**	-1.224**	-1.216**	-1.194**	-1.547***
	(0.546)	(0.572)	(0.547)	(0.547)	(0.547)	(0.546)	(0.546)	(0.546)	(0.547)	(0.575)
Observations	114,551	115,708	114,551	114,551	114,551	114,551	114,551	114,551	114,551	115,708

Notes: All models include individual and year fixed effects, controls for other household income as well as lags (not shown). In each panel, the first column reproduces the baseline estimates from Table 3 of the paper (full sample). The first panel presents coefficient estimates on the pre-redundancy lead indicators for individuals with no anticipation (i.e., zero job loss expected probability), while the second panel reports the corresponding estimates for individuals with positive anticipation. In columns (2) to (9), we drop the following major life events from the set control variables one by one: health shock in column (2), separation from spouse (3), serious personal injury/illness (4), serious injury/illness to family member (5), death of spouse or child (6), death of close relative (7), detained in jail (8) and pregnancy or birth of new child (9). In column (10), we drop all major life events. Gender-specific estimates yield similar conclusions and are available upon request.