DISCUSSION PAPER SERIES

Extra Status and Extra Stress: Are Promotions Good for Us?

David Johnston
Wang-Sheng Lee

June 2012

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David Johnston
Monash University

Wang-Sheng Lee
Deakin University
and IZA

ABSTRACT

Extra Status and Extra Stress: Are Promotions Good for Us?[*]

Promotions ordinarily involve higher wages and greater privileges; but they also often involve increased responsibility, accountability and work hours. Therefore, whether promotions are good for workers' wellbeing is an empirical question. Using high-quality panel data we estimate pre- and post-promotion effects on job attributes, physical health, mental health and life satisfaction, in an attempt at answering this question. We find that promotions substantially improve job security, pay perceptions and overall job satisfaction in the short term, and that promotions have short and longer term effects on job control, job stress, income and hours worked. However, despite these large effects on job attributes, we find that promotions have negligible effects on workers' health and happiness. Only mental health seems affected, with estimates suggesting significant deterioration two years after receiving a promotion. Thus, it seems the additional stress involved with promotions eventually outweighs the additional status, at least for the average worker.

Corresponding author:

David Johnston
Monash University
Centre for Health Economics
Level 2, Building 75
Clayton, Victoria 3800
Australia
E-mail: david.johnston@monash.edu

1. Introduction

Most workers desire promotions. Promotions are usually accompanied by higher wages, more interesting tasks, and greater authority and privileges. In other words, a promotion usually improves a worker's job-related 'status'. But does the higher status from promotions increase worker job satisfaction, and perhaps more importantly, does it improve worker health and happiness? If being promoted results in higher stress because of added responsibility and longer working hours, perhaps the additional status is not substantial enough compensation to improve wellbeing. Perhaps wellbeing is actually reduced. In this paper, we estimate how job-related status and stress – as measured by job attributes such as control, security, stress, and work hours – are influenced by promotions, and whether the changes in status and stress improve or worsen worker health and happiness.

Our main empirical approach involves estimating fixed-effect regression models with indicators for promotions received in the future and in the past. The lag and lead terms allow the effects of promotions on job attributes and wellbeing to vary for two years before a promotion and for three years after a promotion. By examining anticipation as well as adaptation effects, and tracing out changes in worker wellbeing over time (e.g. Clark et al., 2008; Frijters et al., 2011; Powdthavee, 2011), we provide a clearer picture of the time-varying effects of a promotion. The regression models are estimated using data from nine waves of the Household, Income and Labour Dynamics in Australia (HILDA) survey, which includes a large sample of employees drawn from the Australian population over the period 2002-2010. An advantage of HILDA is that it contains direct information on promotions and employer changes for all respondents, including information on when in the past year the promotions and employer changes occurred. This allows us to detect short-run changes in job attributes and wellbeing. HILDA also contains detailed information on job attributes and health that is not often collected in nationally-representative panel surveys: we estimate the effects of promotions on seven job attributes – control, stress, security, perceived pay fairness, income, work hours and overall satisfaction – and four wellbeing measures – general health, vitality, mental health and life satisfaction.

Surprisingly, very few studies have used nationally-representative panel data to examine the well-being effects from promotions, with the majority of work in this literature instead using data that describe workers in specific industries or firms (e.g. the British Whitehall studies). One

important exception is Boyce and Oswald (2012). Using data from the 1991-2007 waves of the British Panel Household Study (BHPS), they estimate difference-in-differences models to examine the hypothesis that greater job status makes a person healthier. They find that workers moving from a non-supervisory role to a managerial role have better health before the role change, but experience a significant deterioration in their mental health three years afterwards.

Studies examining changes in job satisfaction are relatively more plentiful. Francesconi (2001) uses data from the first five waves of the BHPS and a logit regression framework to analyse changes in job satisfaction levels between successive years. His results suggest that receiving a promotion during the past 12 months significantly increases the overall job satisfaction of men – particularly older men and men with no academic qualifications – but not women. Kosteas (2011) estimates fixed-effects models with data from the 1996-2006 waves of the 1979 National Longitudinal Surveys of Youth (NLSY), and finds that workers who received a promotion within the past 2 years experienced significant increases in their job satisfaction, and that workers who believe receiving a promotion is likely within the next 2 years also report significantly higher job satisfaction. Notably, these studies focus on job satisfaction, and not on the other job attributes considered in this paper, and do not consider the possibility of anticipation effects.

2. Background Literature

The influence of working conditions on wellbeing has been the subject of considerable study in the fields of epidemiology, medicine, psychology, organisational behavior, industrial relations, and economics. In this section we briefly review this large literature; though, given the enormous quantity of research, we have had to omit many interesting theories and empirical results. Moreover, we naturally concentrate on work that encompasses the effects of changes in working conditions brought on by promotion.

Several conceptual frameworks have been developed in the organizational behavior literature that link working conditions and wellbeing. One of the most influential frameworks is the 'job demand-control' model formulated by Karasek (1979), which identifies two crucial work conditions: job demands and job control. According to this framework, the most adverse reactions in relation to wellbeing occur in jobs that have high demand (e.g. high pace, effort or volume) but low levels of control (e.g. lack of decision authority and high monotony). In related

work, Karasek and Theorell (1990) postulate that higher occupational levels (that would arise via promotions) entail less stress because employees have more autonomy over their work and that this control helps to mitigate the adverse effects of high job demands. Another influential framework in this literature is the 'effort-reward imbalance' model (Siegrist, 1996). It assumes that job stress results from an imbalance between work effort and work rewards (e.g. salary, esteem, career opportunities such as promotion prospects, and job security).

In reviewing empirical studies of the job demand-control model, Van der Doef and Maes (1999) found considerable support for the notion that the most negative psychological wellbeing was found in employees working in high demands-low control jobs. Van Vegchel et al. (2005) reviewed 45 empirical studies of the effort-reward imbalance model and found that the combination of high demands and low rewards at work was a risk factor for adverse physical and mental health outcomes. In general, these previous studies have focused on comparing workers in one type of scenario with workers in alternative scenarios (e.g., blue vs. white collar) at a time *t*, and examining job satisfaction and psychological distress in some future time period. Little attention has been placed on analysing a discrete increase in job demands such as that brought about by a job promotion. In addition, the organizational behaviour literature has generally not made a distinction between two types of stress – eustress and distress. The former is a term coined by Selye (1974) that refers to a kind of stress or pressure that is stimulating and which enhances performance. On the other hand, distress is the more commonly referred to form of stress which has negative health implications. In the context of this paper, experiencing a job promotion could be a form of eustress because it gives one a feeling of fulfilment or other positive feelings, at least in the short run. However, it is possible that if the job demands become too large, the promoted worker might become subject to distress because of an inability to cope with the new situation and responsibilities, which in turn may lead to declines in performance and wellbeing.

Greiner's (2008) theoretical economic model of job stress focuses on the dynamics of eustress and distress and how they affect productivity. Based on optimal control theory, he finds that it might be optimal for an individual to work intensively for certain periods followed by subsequent periods with less work. This implies that the effects of an event like a job promotion on job attributes and wellbeing is likely to be time varying and affected by the balance of eustress and distress experienced.

The largest and most influential empirical literature on the health effects of job rank is based on the Whitehall studies. The original Whitehall study collected data on over 18,000 white-collar male civil servants in London. The considerable research on job rank and health originating from this study prompted the design of a second Whitehall study. In summary, comparisons of the current and future health of civil servants' working at different employment grades in the Whitehall studies show that working in low ranked jobs is associated with increased risk of heart disease (Marmot et al., 1997; Bosma et al., 1997; Kuper and Marmot, 2003), poor mental health (Stansfeld et al., 1999; Ferrie et al., 2002; Griffin et al., 2002), sickness absence (North et al., 1996) and reduced social functioning (Stansfeld et al., 1998). Given that promotions often (but not always) involve an increase in job rank, these results from the Whitehall studies suggest that promotions will improve health, especially in the medium to longer term.

The potential effects of promotions on health may also be inferred from literatures that examine the effects of changes in job characteristics that are related to promotions. Perhaps the largest of such literatures examines the effects of job satisfaction on health. In a meta-analysis of 485 studies, Faragher et al. (2005) find that low job satisfaction is strongly associated with mental and psychological problems and that job satisfaction in general is an important factor influencing the health of workers. It is also possible to indirectly infer the effects of promotions on health by examining the literature on long work hours and health, because job rank and work hours are typically correlated. The relationship between work hours and health has been studied extensively, although most studies have focused on the effects of shift work, rather than longer working hours associated with higher job ranks. In a meta-analysis based on 21 studies, Sparks et al. (1997) found a weighted mean correlation of 0.13 between weekly work hours and negative health outcomes (both physiological and psychological), which is suggestive of a positive but weak association. A third way of indirectly inferring the effects of a promotion on health is to examine the literature on income and health, as promotions almost always lead to higher wages. Naturally, greater income allows the possibility for greater health producing expenditures, such as on doctors, pharmaceuticals and other therapeutic goods and services (e.g. Johnson et al., 2006), as well as an ability to minimize negative health shocks, such as by choosing a safe and clean neighbourhood in which to live. Consequently, there is econometric evidence demonstrating a positive health-income gradient in the sense that individuals with higher

incomes tend to be healthier and live longer lives – for examples, see Cutler et al. (2006), Frijters et al. (2005) and Marmot (2002).

3. Data

To investigate the impacts of promotions we require panel data that contain information on promotions, job attributes, health and happiness, and other time-varying characteristics that may be associated with promotions, such as education and whether the worker has changed jobs. It is also beneficial if information on the timing of promotions is available, because if there is particularly quick adaptation to changes in working conditions, promotion effects may be overlooked when looking at year-on-year changes only. The British Household Panel Survey, German Socio-Economic Panel, Panel Study of Income Dynamics, National Longitudinal Survey of Youth and other commonly used panel data sets do not contain all of this information, and so we instead use data from nine waves (2002-2010) of the Household, Income and Labour Dynamics in Australia (HILDA) survey. HILDA is a household-based longitudinal study that is nationally-representative with the exception of under-sampling individuals living in more remote areas of Australia. It began in 2001 with the interview of 13,969 persons in 7,682 households, and in each year since interviews have been conducted with all willing members of each household who are at least fifteen years old. In these interviews, information is collected on labour force dynamics, education, income, family formation, health and other specialised topics.

Our analysis uses only those HILDA respondents aged 18-64 who are working 30+ hours per week in each wave, have an observed employment spell spanning at least 5 years (so that anticipation and adaptation effects can be estimated), and who have non-missing promotion, job attribute, health and happiness information. These strict sample restrictions give us a sample size of 2681 workers and 19306 worker-year observations. Within our estimation sample 1079 workers report receiving a total of 1985 promotions. The age and work hour restrictions are imposed to form a sample of full-time, highly-attached workers. Restricting the sample to employed individuals is necessary because we naturally do not observe job attribute information for the non-employed. The consequence of this necessary restriction is that we are likely to underestimate any negative effects of receiving a promotion. For instance, suppose that receiving a promotion significantly worsens job satisfaction for some workers (e.g. due to additional responsibilities) and as a consequence the mental health of these workers worsens and they leave

the labour force. The negative job satisfaction and mental health changes experienced by these workers will not be (fully) captured by our analyses and so the estimated effects will be over-estimated (i.e. too positive or not sufficiently negative).[1]

Information on whether an individual has received a promotion and on the timing of any promotions is contained in waves 2 to 10 of HILDA. All respondents are asked whether they have been "promoted at work" during the past 12 months, and whether the promotion occurred 0 to 3, 4 to 6, 7 to 9, or 10 to 12 months ago. Importantly, some workers receive promotions when changing employers, and so reported promotions represent both within-employer promotions and across-employer promotions. Fortunately, HILDA respondents are also asked whether they have "Changed jobs (i.e., employers)", and so we are able to create promotion variables which represent promotions that do not involve employer-changes (6% of promotions involve employer-changes). In other words, our promotion variables represent within-employer promotions only.

HILDA Respondents are also asked each wave to evaluate statements regarding their current job. The statements we use are:

 (i) I have a lot of freedom to decide how I do my own work

 (ii) I have a lot of say about what happens on my job

 (iii) I have a lot of freedom to decide when I do my work

 (iv) My job is more stressful than I had ever imagined

 (v) I fear the amount of stress in my job will make me physically ill

 (vi) My job is complex and difficult

 (vii) I have a secure future in my job

 (viii) The company I work for will still be in business 5 years from now

 (ix) I worry about the future of my job

 (x) I get paid fairly for the things I do in my job

where the respondents could answer with an integer between (1) strongly disagrees and (7) strongly agrees. These statements are very similar to some of the items included in the original Quality of Employment Surveys that were used in constructing the different dimensions of the

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[1] In our sample, 128 respondents left the labour market after being promoted in the previous 12 months, and 256 respondents left the labour market after being promoted 12-24 months ago. Of this later group, it is estimated that mean job satisfaction dropped by approximately 0.15 units (0-10 scale) in the year after receiving the promotion.

demand-control model (Karasek, 1979). Morgeson and Humphrey (2006) provide a recent review of the large literature on work- and job-design measurement, including a detailed discussion on the validity of different survey measures.

We average responses to statements (i), (ii) and (iii) to form a measure of job control; (iv), (v) and (vi) to form a measure of job stress; and (vii), (viii) and (ix) to form a measure of job security.[2] The statements to group together seemed to us natural, but the choice was also driven by a principal components factor analysis. The factor analysis indicated that there were three principal components driving working conditions (eigenvalues equal 2.5, 2.1 and 1.5), with the three control statements driving factor one, the three stress statements driving factor two, and the three security statements driving factor three.

Responses to statement (x) are used to measure changes in perceived fairness of pay. We use this attitude variable because pay perceptions are able to capture the fact that workers care about relative wages in addition to (and perhaps even more than) absolute wages (Brown et al., 2008). We also measure changes in disposable household income. This particular income measure is chosen because it should theoretically be most strongly associated with health and happiness, is a commonly used income measure in the empirical health and happiness literatures, and the positive effects of promotions on hourly wages are already well documented (see Johnston and Lee (2012) for evidence using HILDA). An hours worked variable is formed using answers to the question "How many hours per week do you usually work in your main job?". To form a measure of workers' overall job satisfaction we use the question, "All things considered, how satisfied are you with your job?", to which respondents could answer with an integer between (0) completely dissatisfied and (10) completely satisfied.

In the top panel of Table 1 we present summary statistics for our 'status' job attributes (control, security, pay fairness, income), our 'stress' job attributes (stress, work hours), and our overall measure of job satisfaction. The control, stress, security and pay attributes each range from 1 to 7; though, their means vary, with the lowest mean equalling 3.4 for the stress attribute, and the highest mean equalling 5.5 for the security attribute. As the medians are close to the means, this indicates that most workers are not stressed and that most workers feel secure. The job satisfaction variable has a mean of 7.7 and is negatively skewed, with 85% of workers

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[2] To create the index, the responses for (ix) are reversed so that higher values indicate that a person is not worried about the future of their job.

reporting satisfaction levels between 7 and 10. Unsurprisingly, the standard deviations vary across job attributes (range from 1.211 to 1.584), and so standardised versions of the attributes (standard deviation equal to one) are used in all regression analyses to allow for comparisons of effect sizes.

Health outcomes are generated from responses to the Short-Form General Health Survey (SF-36). The SF-36 is a widely used 36-item questionnaire that measures health related functioning on eight subscales: physical functioning, role limitations due to physical health problems, social functioning, bodily pain, general mental health, role limitations due to emotional problems, vitality and general health perceptions.[3] The experience to date with the SF–36 is documented in many publications and its reliability and validity are documented in the SF-36 user's manual (Ware, Snow and Kosinski, 1993). From the SF-36 we extract three measures of health that are hypothesised to be most affected by promotions: (i) a general health index that is created by aggregating responses to five questions evaluating overall health (e.g. in general would you say your health is); (ii) a vitality index that is created by aggregating responses to four questions evaluating how much energy the respondent has (e.g. did you feel worn out?); and (iii) a mental health index that is created by summing responses to 5 questions regarding symptoms of anxiety and depression (e.g. have you felt so down in the dumps nothing could cheer you up?). Life satisfaction is assessed using the response to the familiar question: "All things considered, how satisfied are you with your life?" to which respondents are told to: "Pick a number between 0 and 10 to indicate how satisfied you are" and that "the more satisfied you are, the higher the number you should pick".

Table 1 shows that the general health, vitality, and mental health outcomes each range from 0 to 100, with 0 signifying very poor health and 100 signifying excellent health. Similar to the job satisfaction variable, life satisfaction has a mean of 7.9 with 90% of workers reporting satisfaction levels between 7 and 10. As for the job attribute variables, standardised versions of the health and happiness variables (standard deviation equal to one) are used in all regression analyses.

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[3] In our data, we do not have access to physiological reactions to stress such as cortisol levels or changes in blood pressure. Future research might consider extending research on the dynamic effects of promotions to these more objectively measured outcomes.

4. Empirical Methodology

The effect of a promotion on wellbeing is likely to occur across a number of periods. For example, a promotion may have a slowly increasing effect on a person's health. Alternatively, worker happiness may only briefly increase on news of a promotion before quickly returning to its baseline level. Following the methodological approach in Frijters et al. (2011), who analyse the effects of major life events (e.g. death of a spouse) on life satisfaction, we estimate fixed-effects regression models that include a series of dummies capturing anticipation and adaptation effects. In particular, we estimate models of the form:

$$(1) \qquad Y_{it} = \alpha_i + \beta X_{it} + \gamma_1 P_{it}^{+24} + \gamma_2 P_{it}^{+18} + \gamma_3 P_{it}^{+12} + \gamma_4 P_{it}^{+6} + \delta_1 P_{it}^{-6} + \delta_2 P_{it}^{-12} +$$
$$\delta_3 P_{it}^{-18} + \delta_4 P_{it}^{-24} + \delta_5 P_{it}^{-30} + \delta_6 P_{it}^{-36} + \delta_7 P_{it}^{-\infty} + \sum_{k=1}^{11} \theta_k EC_{it}^k + \varepsilon_{it}$$

where Y_{it} is the job attribute or wellbeing associated with worker i in year t, α_i is a worker-level fixed-effect, and X_{it} is a vector of time-varying controls, including age, highest educational attainment, marital status, number of children, and year dummies.

The P terms are dummy variables indicating the occurrence of a promotion: P^{+24}, P^{+18}, P^{+12}, P^{+6} are anticipation effects and indicate that a promotion will occur in 18-24, 12-18, 6-12, and 0-6 months, respectively.[4] These dummy variables allow for changes in wellbeing that result from workers changing their behaviour in order to receive a promotion (e.g. working extra hours) and from workers becoming informed of their future promotion. They also capture any selection effects caused by healthier workers having greater promotion prospects. $P^{-6}, P^{-12}, \cdots, P^{-36}$ indicate that a promotion occurred 0-6, 6-12,…,30-36 months ago and $P^{-\infty}$ indicates that a promotion occurred 3 or more years ago. These are adaptation effects and allow for any post-promotion effects to change across time after controlling for well-being movements in the pre-promotion period. A six month period length is chosen because it is short enough to capture brief wellbeing effects, but also long enough so that each of the γ and δ coefficients are identified from a sufficient number of observations.[5] Our dynamic approach contrasts with the more typical

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[4] The promotion dummy indicating that a promotion will occur in two or more years is omitted to create a comparison group. Omitting one anticipation or adaptation promotion dummy is necessary because promotion effects are identified from within-worker changes across time.

[5] We experimented with a period length of 3 months, but the 11 additional dummies provided little additional information about the dynamic effects of receiving a promotion and at the same time decreased the precision of the

panel-data specification in which a contemporaneous job promotion indicator is the sole regressor of interest. A limitation of the more parsimonious approach is that it assumes worker wellbeing is unaffected until the promotion is officially received, and that a promotion will have a constant, permanent effect on wellbeing thereafter. In other words, it assumes there are zero anticipation and adaptation effects.

The *EC* terms in equation (1) are employer-change dummy variables, defined in an equivalent way to the promotion dummies. The employer-change variables are included to control for correlation between the promotion lag and lead variables and employer-changes. The correlation between employer-changes and the longer lagged promotion variables may be particularly large – presumably, the longer it has been since the last promotion, the higher the chance the worker will change jobs. We control for but do not focus on the effects of employer-changes.

The inclusion of the worker-level fixed-effect α_i in equation (1) implies we are controlling for all time-invariant unobservable characteristics. Moreover, its inclusion coupled with the choice of omitted promotion dummy implies that we are effectively comparing the wellbeing of a worker before and after the promotion with the wellbeing of the same worker two or more years before the promotion occurred, which we interpret as a worker's 'base-line' level. Lengthening or shortening the comparison point by six months or a year has little effect on the results.

Rather than only analysing the first observed promotion per worker and omitting data from the sample if future promotions occur, we analyse all observed promotions in our data from each worker. Hence in the case of workers experiencing multiple promotions, the set of binary variables discussed above could at time *t* simultaneously indicate months prior to a promotion and months after a promotion. In other words, for workers experiencing multiple promotions, the outcome observed at a point in time could theoretically reflect both an adaptation effect to a past promotion and an anticipation effect of a future promotion (though, we find no empirical evidence of anticipation to promotions).

Before presenting estimates of our main estimating equation (1), we present in Section 5 'naïve' estimates from the more standard static ordinary least squares (OLS) and fixed effects

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estimates. We also experimented with a period length of 12 months (i.e. the more standard approach), but some of the very short-run effects were missed.

(FE) models. The pooled OLS models simply compare the health of workers who have received a promotion with those that have not:

(2) $Y_i = \alpha + \beta X_i + \delta \check{P}_i + \varepsilon_i$

where $\check{P}_i$ equals one if the worker received a promotion in the past 12 months and zero otherwise. The static FE model assumes that the effect of a promotion is fixed after receipt and that there are no anticipation effects:

(3) $Y_{it} = \alpha_i + \beta X_{it} + \delta \tilde{P}_{it} + \varepsilon_{it}$

In Equation (3), $\tilde{P}_{it}$ takes on two forms depending on whether we assume that the effect of a promotion lasts one period only (full adaptation) or whether we assume the effect is permanent (zero adaptation). In the former, $\tilde{P}_{it}$ is a variable that equals 1 in the period when the promotion occurs and is 0 otherwise. In the latter, $\tilde{P}_{it}$ is a single step variable that equals 0 in all periods before the promotion, and equals 1 in all periods after the promotion.

5. Results

5.1. Promotion Effect Estimates from Cross-sectional and Static Panel Models

Table 2 presents the effects of promotions on job attributes and wellbeing from a cross-sectional OLS model (equation 2) and two static FE models (equation 3). The OLS estimates presented in column (1) better our understanding of the types of workers who receive promotions (i.e. positive or negative selection), and allow for a comparison with the many cross-sectional studies. The OLS estimates show that the majority of job attributes – control, stress, security, income, hours and satisfaction – are higher for workers who received a promotion in the preceding year. The largest effects are on stress (0.161), security (0.180) and satisfaction (0.143). The only unaffected job attribute is perceived fairness of pay. To place these effect sizes in perspective, the effect of a promotion on job satisfaction is larger than the gender gap in job satisfaction (estimated effect of female equals 0.11).

Somewhat surprisingly, the OLS estimates indicate that promoted workers are no healthier than non-promoted workers; the estimates are positive but statistically insignificant.

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Our *a priori* expectation was for significantly positive effects, driven at least in part by positive health selection into promotions; for an example of positive health selection in promotions see Case and Paxson's (2011) analysis of data from the Whitehall II Study.

Estimates from FE models assuming full adaptation and assuming zero adaptation are presented in columns (2) and (3), respectively. In both cases, they show that all attributes increase following a promotion; however, there are some noticeable differences between columns. For example, the job satisfaction estimate is over two times larger in the FE model with full adaptation than in the FE model with zero adaptation (0.152 vs. 0.061). This indicates that the effect of a promotion is significantly larger immediately after the promotion than in the longer term, i.e. there is adaptation in job satisfaction. Another similar example is job security (0.106 vs. 0.066).

The only significant wellbeing estimate is a positive effect on mental health in the full adaptation FE model. The estimate suggests that the mental health of workers who receive a promotion is 0.052 standard deviations higher in the year following a promotion than in other years. Interestingly, the estimated mental health effect in the zero adaptation model is negative and insignificant. As for the job satisfaction and job security attributes, this result indicates that the mental health effect immediately after the promotion is higher than the mental health effects 1+ years after the promotion. Again, this is evidence of adaptation.

Another insight from Table 2 can be gained by comparing OLS and FE estimates, as differences can be interpreted as evidence of selection (with respect to time invariant characteristics). In general, the fixed effect estimates are smaller than the OLS estimates, indicating that worker unobserved characteristics are positively correlated with both promotions and job attributes. For example, comparing columns (1) and (2), we can see that the FE estimates are much smaller for job stress, job security and income, suggesting that high-income workers with secure but stressful jobs are more likely to receive promotions than other workers. Conversely, the OLS estimate for pay fairness is much smaller than the corresponding FE estimates. This difference suggests that workers who are unsatisfied with their pay are more likely to receive promotions. The similarity of the job satisfaction OLS and FE estimates (assuming full adaptation) suggests that promotions are not correlated with worker fixed effects and is in accordance with the findings in Kosteas (2011), who concludes from this that "[i]t does

not appear that people who are more inclined to be satisfied with their jobs are also more likely to be promoted."

5.2. Effects of a Promotion on Status and Stress at Work

As discussed in Section 4, the limitation of the FE estimates in Table 2 is that the use of a single variable to capture the effect of a promotion does not allow sufficient flexibility in the way a promotion can influence the dependent variables. Thus, in this sub-section we present results from a more flexible model (equation 1). This model allows for anticipation and adaptation effects, and has been applied in recent analyses of the effects of life events on life satisfaction (Frijters et al., 2011) and union status on job satisfaction (Powdthavee, 2011). Table 3 displays estimates of the relationship between receiving a promotion and status (control, security, pay fairness, log income), stress (stress, work hours) and overall job satisfaction. For each outcome, only the estimated coefficients of the main variables of interest – the lags and leads of a promotion occurring – are presented.[6] Naturally, given the number of observed promotions every 6 months, the estimated effects are somewhat volatile. Despite this volatility, however, a clear picture emerges of how promotions affect work.

A common finding across attributes is the small and generally insignificant estimates prior to receipt of a promotion, i.e. there is little evidence of any anticipation.[7] The insignificant before-promotion effects are unsurprising, because until the worker changes roles there should be little change in job attributes. Another common finding is a large positive effect after the promotion occurs, with the largest promotion effects occurring for most attributes 6-12 months after the promotion: 6-12 months after the promotion control increases by 0.112, stress increases by 0.082, security increases by 0.095, perceived pay fairness increases by 0.118, work hours increase by 1.258 (0.136 SD), and job satisfaction increases by 0.109.[8] The peak at 6-12 months

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[6] In Appendix Table A1 we present the effects of an employer change. The results are as expected with large negative job satisfaction effects prior to the employer change (showing that job satisfaction is predictive of quits), and large positive job satisfaction effects after the employer change (at least in the short-term).

[7] Given the multiple hypothesis (significance) tests conducted in Table 3, it is important to recognize the multiple comparisons problem, which increases the probability of committing a type 1 error. Though we signify statistical significance at the 5% level in Table 3, we typically apply a stricter cut-off – 1% level – when arguing for the statistical significance of individual coefficients.

[8] While the effect sizes presented here in standard deviation units are useful in assessing and comparing the effects of promotions on different job attributes, it is likely that a standard deviation change in one job attribute (e.g. job control) will have different consequences for worker utility than a standard deviation change in another job attribute

for many (but not all) of the attributes may reflect a lag between the knowledge or expectation of a promotion, and the actual commencement of duties at the higher job level.

After the positive, short-run promotion effects, the attributes job security, pay fairness and job satisfaction trend downwards towards their pre-promotion baseline levels. For each of these attributes the estimated promotion effects after two years are jointly insignificant (p-values equal 0.259, 0.221 and 0.963), and over the three year post-promotion period, job security effects decrease from 0.106 to 0.035 and job satisfaction effects decrease from 0.156 to 0.004. The promotion effects on pay fairness initially increase to 0.127 at the two year mark but decrease thereafter and are not statistically different from zero after that. The adaptation in job satisfaction is at odds with Kosteas (2011), who finds that promotions received 3-4 years ago continue to have a significantly positive effect on job satisfaction, although he also finds that the effects of promotions on job satisfaction fades over time.

The adaptation in pay fairness is particularly interesting since it is well established that most promoted workers receive a significant wage increase (e.g. Johnston and Lee, 2012), and our results in Table 3 show that promotions significantly increase household disposable income (by around 4% per annum). Hence, the finding that promoted workers no longer feel they are "paid fairly for the things I do in my job", suggests that either the increase in pay is not commensurate with the (eventual) increase in workload, or that workers' income-comparison group changes with time (e.g. now comparing against co-workers at higher job rank) and that relative income effects begin to dominate absolute income effects (see Brown et al. 2008).

For the job attributes control, stress, income and hours, each joint F-test indicates that the effects are significantly different from zero 24+ months after the promotion (p-values equal 0.005, 0.008, 0.008 and <0.0001). For example, 36+ months after a promotion, control is 0.088 higher than prior to the promotion, stress is 0.058 higher, income is 3.3% higher, and hours are 1.141 higher. Thus, it appears there are positive and negative medium-term effects from promotions, and as a result it is difficult to predict the impact of promotions on wellbeing. It is possible that the negative and positive effects nullify one another, and the insignificant job satisfaction effects provide support for this hypothesis. However, job satisfaction may not encapsulate all of the job attributes, and so it is also possible that the extra status (increased

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(e.g. job security). In other words, a one standard deviation increase in control may not be equally as 'good' as a one standard deviation increase in security.

control and income) dominates the extra stress (increased stress and work hours), or vice-versa. The following section attempts to shed light on this issue.

5.3. Effects of a Promotion on Health and Happiness

Table 4 presents the estimated wellbeing effects from receiving a promotion. Given the large impacts on status and stress observed in Table 3, in the short- and medium-term, the most striking aspect of the results is the lack of any large significant effects. General health, vitality and life satisfaction are unaffected in all time periods, with the insignificant effects generally less than 5% of a standard deviation. The only strongly significant effect is for mental health, which is little affected in the first two years, but becomes more negative thereafter: 24-30 months after a promotion the effect equals -0.078 and is significant at the 1% level (p-value equals 0.004); 30-36 months and 3+ years after a promotion the effects equal -0.057 and -0.050, and are significant at the 10% level; and the F-test on the medium-term effects has a p-value equalling 0.013.

The generally insignificant effects, especially those in the short-term, indicate that large changes in job attributes do not necessarily lead to discernible changes in life satisfaction or in perceived health. A possible explanation is that the positive effects on health and happiness due to increased job control, security, pay fairness, income and overall satisfaction are negated by the negative health effects of increased stress and longer hours worked. Another possible explanation is that moderate changes in job satisfaction are insufficient to affect worker health and happiness levels. As Boyce and Oswald (2012) conjecture, it may take "a major change in [job] status to make a difference to physical and mental health." This conclusion runs contrary to many findings in the job satisfaction literature, which typically show a strongly positive relationship between job satisfaction and wellbeing (e.g. see Fischer and Sousa-Poza's (2008) panel-data analysis). However, we are not aware of any study in this literature that convincingly controls for the effects of health and happiness (due to non-work reasons) on self-reported job satisfaction. To control for such reverse causality an instrumental variables approach is needed, though it is hard to imagine an exogenous shock that influences health and happiness purely through its effect on job satisfaction.

Our somewhat surprising finding of no life satisfaction effects contrasts with findings in Di Tella et al. (2010) using the German Socioeconomic Panel. They report that there is little adaptation to job status changes after several years, where status changes are measured using

changes in a subjective 'job prestige score' (ranging from 1 to 90) based on the Standard International Occupational Prestige Scale. However, these status changes do not necessarily capture promotions as many occupational titles remain the same even following a promotion (e.g. there is just one occupational category each for accountants and lawyers). Instead, their findings more likely reflect changes in vocation and its effect on happiness (e.g. a computer programmer increases in status if he/she becomes a school teacher). Our findings are generally consistent, however, with other results from the life satisfaction literature. A number of studies show that shocks to income and other major life events improve life satisfaction only in the short-run (e.g. Frijters et al., 2011). These results are often rationalised with the 'hedonic treadmill' or 'set-point' hypotheses, which postulates that people quickly return to their baseline levels of satisfaction following common life events (Fujita and Diener, 2005).

Given the 44 estimates presented in Table 4 and the 44 corresponding t-tests, it is sensible to view the one significant mental health effect at the 1% level (and the two significant mental health effects at the 10% level) with caution. We investigate the statistical robustness of this effect by splitting the mental health score into components that very broadly reflect anxiety and depression. The two anxiety-type questions are "Have you been a nervous person?" and "Have you felt calm and peaceful?", and the three depression-type questions are "Have you felt so down in the dumps that nothing could cheer you up?", "Have you felt down?", and "Have you been a happy person?". To each question respondents could answer with options ranging from (1) "All of the time" to (7) "None of the time"; we average and standardize the responses such that the anxiety and depression indices are increasing in good mental health (as the original mental health index does). The results strongly indicate that the medium-term mental health effects shown in Table 4 are driven by the anxiety-type questions. Promotions are estimated to reduce feelings of calm and peacefulness, and increase feelings of nervousness. In particular, the effect sizes (in standard deviation units) at 24-30, 30-36, and 36+ months equal -0.079 (p = 0.004), -0.089 (p = 0.006) and -0.054 (p = 0.046), and the medium-term F-test equals 4.89 (p = 0.002). Given the strong statistical significance of these effects, we conclude that promotions do have a negative effect on aspects of mental health in the medium-term. Significantly, our finding of negative mental health effects is in-line with the results in Boyce and Oswald (2012). They find that workers promoted to manager from non-supervisory roles experience deterioration in their (GHQ) mental health, as compared to workers who are not promoted.

The most likely explanation for the negative effects of promotions on mental health is that the additional job-related stress and work hours following a promotion outweigh the positive changes in job control and income. Figure 1 illustrates this potential explanation. It presents the dynamic effects of promotions on job satisfaction, job stress and the anxiety component of mental health. Note that for ease of interpretation the series have been slightly smoothed using a kernel-weighted local polynomial regression with an Epanechnikov kernel and a rule-of-thumb bandwidth, and thus the effect magnitudes in the Figure do not exactly match the figures in Tables 3 and 4. As can be clearly seen, promotion effects on job stress are high each year post-promotion, while at the same time the promotion effects on job satisfaction steadily decrease after the first 12 months. The effects on the anxiety component of mental health are roughly zero until the gap between stress and satisfaction opens up, at which point, the anxiety effects decrease (implying worse mental health) at a similar rate to satisfaction.

5.4. Alternative Promotion Definition

The results in Table 4 demonstrate that even though promotions have large effects on job-related status and stress, promotions have only small effects on worker wellbeing (except for medium-term mental health). One possible explanation for this result is that only particularly important promotions are influential, and our promotion measure treats small and large promotions alike. For example, some reported promotions will consist of only a small step upwards on a firm's hierarchical ladder and these 'small' promotions may have no effect on worker wellbeing. On the contrary, other reported promotions will consist of a large jump in hierarchy and these 'large' promotions may greatly affect the worker. To test this proposition, we group small and large promotions into those with no or small wage increases, and those with large hourly wage increases ($> 10\%$); roughly two-thirds of promotions had large wage increases. Naturally, there will be some major changes in job rank that do not attract a significant increase in pay and hence our strategy will misallocate such cases; however, given our data an approach based upon wage increases is, in our view, best able to encompass different types of professions and employers.[9] The results are similar to the results in Table 4: large promotions are insignificantly related to

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[9] An alternative approach is to group promotions based on whether the worker has moved from a non-supervisory role to a supervisory role, as in Boyce and Oswald (2012). This approach has the advantage of highlighting large changes in job rank. The disadvantage is that not all professions involve supervision of staff, and hence large promotions in these professions will all be misclassified as 'small'.

general health, vitality and life satisfaction in every time period, and the largest effect is for mental health 30-36 months after a promotion (-0.089). The only noticeable difference is that the effects of large promotions on vitality are more negative. For example, 30-36 months after a promotion the effect equals -0.078 with p-value equalling 0.038.

6. Subgroup Analysis

The effects of a promotion operate through multiple channels and likely have heterogeneous effects, and so it is possible that the largely insignificant wellbeing estimates for the total sample are concealing important effects for certain subgroups of workers. We investigate this possibility by re-estimating the promotion effects on wellbeing for several subgroups: (i) age (<40 and ≥40 at the beginning of the panel); (ii) gender; and (iii) highest educational attainment (non-university graduate and university graduate).[10] The first and most important conclusion from these additional analyses is that promotions have little effect on health and happiness, regardless of age, gender or education. Thus, the somewhat surprising conclusion that promotions are not good for health and happiness appears robust. The second conclusion is that the significantly negative mental health effects seen for the full-sample (Table 4) are repeated for younger workers (-0.088 at 24-30 months), male workers (-0.092 at 24-30 months), and less educated workers (-0.093 at 24-30 months and -0.108 at 30-36 months), but not for older, female and highly educated workers. If we re-estimate the mental health regression model for male workers who are <40 and who do not hold university degrees (632 workers and 4566 observations), the negative mental health effects are particularly strong: -0.168 at 24-30 months (p-value = 0.003) and -0.216 at 30-36 months (p-value = 0.007), and the medium-term F-test equals 5.93 (p-value = 0.0005). If we also split mental health by anxiety-type and depression-type questions, the results again show that the mental health effects are primarily driven by anxiety-type feelings: medium-term F-test equals 6.31 (p-value = 0.0003).

It is unclear why promotions have particularly large negative effects on young, male, lower educated workers. The effects of promotions on job attributes for this subgroup do not indicate that these workers experience more stress than other promoted workers. In fact, their job satisfaction increases slightly more following a promotion (0.159 at 0-6 months and 0.132 at 6-

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[10] These estimated effects are available from the authors upon request.

12 months) than for other workers (0.154 at 0-6 months and 0.108 at 6-12 months). Moreover, there are no strikingly large effects for hours worked or job stress for this subgroup.

In an attempt to explain the negative mental health effects for these workers, we examined whether promotions for young men with low education were more likely to involve moves to supervisory roles, which may be a particularly stressful change for this subset of workers. However, the data does not support this hypothesis, with the effect of promotions on the probability of having supervisory responsibilities being smaller for these workers than for other workers. Interestingly though, young men with low education who receive a promotion experience particularly large positive gains in job control, relative to other workers (around 2.5 times larger), suggesting that their roles do change significantly.

7. Conclusion

Are promotions good for us? To answer this question, we first examined changes in workers' perceptions of their job in the lead up to receiving their promotion and in the several years afterwards. Perhaps unsurprisingly, we find that in the first year or two afterwards, workers feel their jobs are more secure, they have more control (decision-making freedom), and they are more fairly paid, while at the same time, they feel more stressed and work longer hours. Overall, worker job satisfaction is significantly higher than it was preceding the promotion. By the three year mark, however, the positive feelings are largely absent. Workers no longer feel more secure or well paid (despite having higher incomes and greater job control), and their overall job satisfaction has returned to pre-promotion levels, while in contrast, stress and work hours remain high.

Surprisingly, the positive promotion effects in the short-term and the negative effects in the longer-term do not translate in to large wellbeing effects. We find no evidence that promotions impact general health or life satisfaction, before or after receiving the promotion. The only significant promotion effects are for mental health: in the medium term – 2+ years after promotion receipt – worker mental health is significantly lower than before the promotion. The negative mental health effects are primarily driven by anxiety-type feelings, with promotions estimated to reduce feelings of calm and peacefulness, and increase feelings of nervousness. In addition, the effects are particularly severe for younger male workers without university degrees.

In conclusion, we find that promotions do not greatly influence workers' wellbeing one way or the other, and if anything, there appears to be negative mental health effects for certain groups of workers. Given this result, it is interesting that workers throughout the world, in all types of industries and occupations, strive to be promoted.

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Table 1: Description of Job Attribute, Wellbeing and Control Variables

Variable	Mean	Std Dev.	Min	Max
Job Attributes				
Control	4.429	1.515	1	7
Stress	3.445	1.293	1	7
Security	5.475	1.211	1	7
Pay fairness	4.618	1.584	1	7
Log income	11.06	0.514	3.833	13.019
Hours	44.54	9.267	30	120
Satisfaction	7.681	1.524	0	10
Health and Wellbeing				
General Health	73.63	17.43	0	100
Vitality	63.78	17.61	0	100
Mental Health	77.51	14.37	0	100
Life Satisfaction	7.865	1.198	0	10
Selected Control Variables				
Age	42.30	10.34	18	64
University Degree	0.328	0.470	0	1
Certificate	0.256	0.436	0	1
High School	0.134	0.341	0	1
Couple	0.750	0.433	0	1
Divorced/Separated	0.092	0.289	0	1
Number of Children	0.715	1.022	0	8

Note: Sample size used to calculate descriptive statistics equals 19,306.

Table 2: Estimated Effects of Promotions from Pooled OLS and Static Fixed-Effects Regression Models

	Pooled OLS		FE with full adaptation		FE with zero adaptation	
	Estimate	SE	Estimate	SE	Estimate	SE
Job Attributes						
Control	0.098**	(0.028)	0.087**	(0.017)	0.087**	(0.013)
Stress	0.161**	(0.028)	0.048*	(0.019)	0.065**	(0.014)
Security	0.180**	(0.026)	0.106**	(0.020)	0.066**	(0.015)
Pay fairness	0.033	(0.028)	0.070**	(0.022)	0.080**	(0.016)
Log income	0.061**	(0.013)	0.003	(0.008)	0.030**	(0.008)
Hours	0.947**	(0.263)	0.856**	(0.154)	0.836**	(0.123)
Satisfaction	0.143**	(0.025)	0.152**	(0.022)	0.061**	(0.016)
Health and Wellbeing						
General Health	0.048	(0.030)	0.004	(0.016)	0.008	(0.013)
Vitality	0.022	(0.028)	0.032	(0.017)	-0.003	(0.013)
Mental Health	0.032	(0.027)	0.052**	(0.019)	-0.011	(0.013)
Life Satisfaction	0.053	(0.028)	0.022	(0.020)	-0.007	(0.013)
Sample size	19306		19306		19306	

Note: Standard errors clustered at the worker level are shown in parentheses. * and ** denote significance at .05 and .01 levels. The covariates are age, age squared, educational attainment (degree, certificate, high school graduate), marital status (married/cohabitating, divorced/separated), number of children and year dummies. Full adaptation implies that the effect of a promotion lasts one period only and zero adaptation implies that the effect is permanent. All job attributes and health and wellbeing outcome variables are standardized (standard deviation one) with the exception of log income and hours.

Table 3: Estimated Effects of Promotions on Job Attributes from Fixed-Effects Regression Models allowing for Anticipation and Adaptation

	Control	Stress	Security	Pay Fair	Log income	Hours	Satisfaction
Effects preceding a promotion							
18 – 24 months before	-0.044	-0.029	-0.060	-0.017	-0.008	0.043	-0.009
	(0.028)	(0.028)	(0.031)	(0.035)	(0.014)	(0.221)	(0.031)
12 – 18 months before	-0.029	0.028	-0.033	-0.040	0.002	0.096	-0.050
	(0.031)	(0.032)	(0.036)	(0.038)	(0.016)	(0.258)	(0.039)
6 – 12 months before	-0.025	-0.026	-0.023	-0.059	0.013	-0.070	-0.027
	(0.027)	(0.028)	(0.030)	(0.030)	(0.013)	(0.232)	(0.031)
0 – 6 months before	-0.007	0.007	0.020	-0.053	0.010	0.018	0.005
	(0.030)	(0.032)	(0.035)	(0.038)	(0.018)	(0.281)	(0.035)
Effects following a promotion							
0 – 6 months after	0.095^{**}	0.065^{*}	0.106^{**}	0.053	0.003	1.098^{**}	0.156^{**}
	(0.025)	(0.027)	(0.030)	(0.032)	(0.012)	(0.237)	(0.031)
6 – 12 months after	0.112^{**}	0.082^{**}	0.095^{**}	0.118^{**}	0.022	1.258^{**}	0.109^{**}
	(0.029)	(0.031)	(0.030)	(0.035)	(0.015)	(0.269)	(0.034)
12 – 18 months after	0.072^{**}	0.046	0.095^{**}	0.035	0.040^{**}	0.711^{**}	0.051
	(0.026)	(0.028)	(0.029)	(0.032)	(0.012)	(0.235)	(0.031)
18 – 24 months after	0.071^{*}	0.055	0.049	0.127^{**}	0.063^{**}	0.713^{**}	0.101^{**}
	(0.029)	(0.033)	(0.033)	(0.037)	(0.015)	(0.266)	(0.035)
24 – 30 months after	0.041	0.065^{*}	0.010	-0.019	0.012	0.339	0.006
	(0.025)	(0.028)	(0.030)	(0.033)	(0.012)	(0.239)	(0.031)
30 – 36 months after	0.054	0.088^{**}	0.055	0.020	0.042^{**}	0.743^{**}	0.020
	(0.029)	(0.033)	(0.032)	(0.035)	(0.014)	(0.255)	(0.038)
3+ years after	0.088^{**}	0.058^{*}	0.035	0.053	0.033^{**}	1.141^{**}	0.004
	(0.026)	(0.027)	(0.029)	(0.031)	(0.013)	(0.250)	(0.031)
Worker fixed effects	Y	Y	Y	Y	Y	Y	Y
Job change indicators	Y	Y	Y	Y	Y	Y	Y
Time-varying covariates	Y	Y	Y	Y	Y	Y	Y
Sample size	19306	19306	19306	19306	19247	19306	19306
Number of workers	2681	2681	2681	2681	2681	2681	2681
Test of anticipation	0.493	0.666	0.231	0.203	0.492	0.989	0.576
Test of short-run effect	<0.001	0.017	<0.001	0.001	<0.001	<0.001	<0.001
Test of medium-term effect	0.005	0.008	0.259	0.221	0.008	<0.001	0.963

Note: Standard errors clustered at the worker level are shown in parentheses. * and ** denote significance at .05 and .01 levels. The time-varying covariates are: age, educational attainment (degree, certificate, high school graduate), marital status (married/cohabitating, divorced/separated), number of children and year dummies. Anticipation, short-run and medium-term test figures are p-values from F-tests of joint significance of (i) 0-6, 6-12, 12-18 and 18-24 months before; (ii) 0-6, 6-12, 12-18 and 18-24 months after, and (iii) 24-30, 30-36 and 36+ months after. All job attribute outcome variables are standardized (standard deviation one) with the exception of log income and hours.

Table 4: Estimated Effects of Promotions on Health and Wellbeing from Fixed-Effects Regression Models allowing for Anticipation and Adaptation

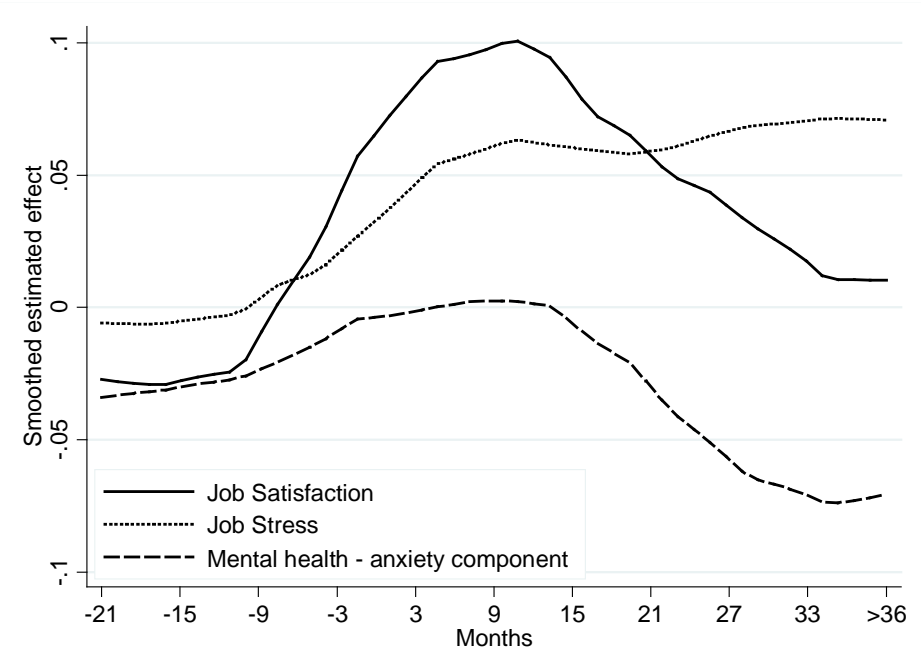| Promotion indicators	General Health	Vitality	Mental Health	Life Satisfaction
Effects preceding a promotion				
18 – 24 months before	-0.024	-0.024	-0.047	0.019
	(0.024)	(0.028)	(0.029)	(0.027)
12 – 18 months before	-0.025	-0.053	-0.044	-0.039
	(0.028)	(0.031)	(0.035)	(0.038)
6 – 12 months before	-0.002	0.035	-0.024	-0.007
	(0.025)	(0.027)	(0.028)	(0.028)
0 – 6 months before	-0.041	-0.017	-0.002	0.050
	(0.029)	(0.032)	(0.034)	(0.033)
Effects following a promotion				
0 – 6 months after	0.019	0.033	0.028	0.016
	(0.023)	(0.025)	(0.028)	(0.026)
6 – 12 months after	-0.034	-0.002	0.018	0.006
	(0.029)	(0.031)	(0.032)	(0.032)
12 – 18 months after	0.010	-0.007	0.000	-0.009
	(0.023)	(0.026)	(0.028)	(0.026)
18 – 24 months after	-0.012	-0.052	-0.008	0.029
	(0.030)	(0.031)	(0.033)	(0.028)
24 – 30 months after	-0.007	0.007	-0.078**	-0.022
	(0.025)	(0.027)	(0.027)	(0.027)
30 – 36 months after	-0.016	-0.047	-0.057	-0.049
	(0.031)	(0.030)	(0.033)	(0.031)
3+ years after	-0.014	-0.031	-0.050	-0.015
	(0.025)	(0.026)	(0.027)	(0.026)
Worker fixed effects	Y	Y	Y	Y
Job change indicators	Y	Y	Y	Y
Time-varying covariates	Y	Y	Y	Y
Sample size	19306	19306	19306	19306
Number of workers	2681	2681	2681	2681
Test of anticipation	0.566	0.201	0.367	0.219
Test of short-run effect	0.629	0.246	0.821	0.724
Test of medium-term effect	0.934	0.268	0.013	0.423

Note: Standard errors clustered at the worker level are shown in parentheses. * and ** denote significance at .05 and .01 levels. The time-varying covariates are: age, educational attainment (degree, certificate, high school graduate), marital status (married/cohabitating, divorced/separated), number of children and year dummies. Anticipation, short-run and medium-term test figures are p-values from F-tests of joint significance of (i) 0-6, 6-12, 12-18 and 18-24 months before; (ii) 0-6, 6-12, 12-18 and 18-24 months after, and (iii) 24-30, 30-36 and 36+ months after. All wellbeing outcome variables are standardized (standard deviation one).

Figure 1: Estimated Effects of Promotions on Job Satisfaction, Job Stress and Anxiety across Time

Note: The anxiety index increases with better mental health and therefore less anxiety.

Table A1: Estimated Effects of Employer-Changes from Fixed-Effects Regression Models allowing for Anticipation and Adaptation

	Control	Stress	Security	Pay Fair	Log income	Hours	Satisfaction
Effects preceding an employer change							
18 – 24 months before	-0.043	0.053	-0.117**	-0.076*	-0.010	0.141	-0.165**
	(0.029)	(0.029)	(0.031)	(0.034)	(0.013)	(0.241)	(0.036)
12 – 18 months before	-0.088**	0.094**	-0.026	-0.105**	-0.012	0.216	-0.154**
	(0.031)	(0.033)	(0.036)	(0.040)	(0.014)	(0.255)	(0.041)
6 – 12 months before	-0.128**	0.067*	-0.320**	-0.196**	-0.027*	-0.194	-0.438**
	(0.028)	(0.029)	(0.035)	(0.036)	(0.013)	(0.249)	(0.041)
0 – 6 months before	-0.178**	0.087**	-0.271**	-0.186**	-0.007	0.184	-0.541**
	(0.032)	(0.032)	(0.038)	(0.040)	(0.014)	(0.274)	(0.045)
Effects following an employer change							
0 – 6 months after	-0.094**	-0.195**	-0.058	0.200**	-0.047**	-0.848**	0.133**
	(0.029)	(0.028)	(0.032)	(0.034)	(0.014)	(0.235)	(0.036)
6 – 12 months after	-0.043	-0.126**	-0.022	0.108**	-0.026	0.121	0.132**
	(0.030)	(0.031)	(0.034)	(0.037)	(0.014)	(0.282)	(0.037)
12 – 18 months after	-0.004	-0.046	-0.004	0.049	-0.036**	-0.031	0.056
	(0.025)	(0.027)	(0.030)	(0.032)	(0.013)	(0.215)	(0.032)
18 – 24 months after	-0.033	-0.076*	-0.012	0.020	-0.009	0.404	0.096**
	(0.028)	(0.031)	(0.032)	(0.034)	(0.013)	(0.265)	(0.034)
24 – 30 months after	0.003	-0.004	0.015	-0.012	-0.009	0.151	0.005
	(0.024)	(0.026)	(0.029)	(0.031)	(0.013)	(0.228)	(0.031)
30 – 36 months after	-0.016	-0.027	-0.003	0.022	0.007	0.152	0.049
	(0.027)	(0.028)	(0.031)	(0.034)	(0.014)	(0.244)	(0.033)
3+ years after	0.036	0.019	0.040	0.011	0.007	0.460*	0.003
	(0.025)	(0.026)	(0.030)	(0.032)	(0.013)	(0.229)	(0.030)
Sample size	19306	19306	19306	19306	19247	19306	19306

Note: Estimates from seven linear regression models with worker-level fixed effects. See Table 3 for list of covariates not presented. Standard errors clustered at the worker level are shown in parentheses. * and ** denote significance at .05 and .01 levels.