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DISCUSSION PAPER SERIES

IZA DP No. 14706

Footsie, Yeah! Share Prices and Worker Wellbeing

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ABSTRACT

Footsie, Yeah! Share Prices and Worker Wellbeing[1]

A small literature has shown that individual wellbeing varies with the price of company stock, but it is unclear whether this is due to wealth effects among those holding stock, or more general effects on sentiment, with individuals taking rising stock prices as an indicator of improvements in the economy. We contribute to this literature by using two data sets to establish the relationship between share prices on the one hand and worker wellbeing on the other. First, we use data on share price movements and employee stock holding in a single corporation and provide suggestive evidence that an increase in the firm's stock price increases the wellbeing of those who belong to its employee share purchase plan (ESPP), and that these effects are greatest among those making the largest monthly contributions to the program who have the most to gain (or lose) from stock price fluctuations. There is also some tentative evidence that the wellbeing effects of a rise in the share price are greatest among those with the largest shareholdings. We then use almost 30 years of British panel data to show that employee job satisfaction moves with share prices among those whose pay is partly determined by company fortunes. Taken together these results suggest that the well-being effects of share prices work at least partly via changes in wealth.

JEL Classification: J28, J33, J54, J63, J81, M52

Keywords: job satisfaction, wellbeing, share prices, share ownership, profit-sharing

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1. Introduction

A large body of research has underlined the impact of business conditions, and in particular economic downturns, on individuals' mental health and wellbeing. Part of this impact reflects individual unemployment, as in Clark and Oswald (1994), or lower pay. At the more aggregate level, and conditional on own outcomes, wellbeing has been shown to be positively correlated with indicators of national economic performance, such as the unemployment rate in Di Tella *et al*. (2001) and GDP in Kaiser and Vendrik (2019) and Stevenson and Wolfers (2008).

One barometer of business conditions is the stock market. This has the advantage, over GDP or unemployment, of varying at a high frequency. Deaton (2011) reports that the Great Recession (GR) resulted in both large declines in self-reported wellbeing and greater stress. Moreover, subjective measures of wellbeing tracked the stock market very closely between 2008 and 2010, when the GR was at its most acute. This relationship was most apparent amongst low-income households who have little or no financial interest, either directly or indirectly, in the share market. The implication drawn is that the GR share-price shock must have affected individuals' expectations about future economic prospects, rather than having any effect via wealth. However, subsequent work has challenged this proposition. Using UK data over the 20 years ending in 2008, Ratcliffe and Taylor (2015) show that higher stock prices are associated with greater individual wellbeing, while greater volatility in stock prices reduces wellbeing. Their results are robust to the introduction of controls for macro-conditions, which they suggest is consistent with the effect of stock prices coming via direct wealth effects. Further indirect support for a direct wealth effect is found in McInerney *et al*. (2013), where increases in depression and the use of anti-depressant drugs following the GR were concentrated amongst those with large shareholdings.

As well as acting as a barometer for future economic conditions or changing the value of an individual's stock portfolio, share prices can affect individual wellbeing via the link between workers' compensation and firm performance. Relating worker compensation directly to business conditions via share ownership and profit-sharing has long been viewed as a way of

smoothing labour-demand fluctuations over the business cycle (Weitzman, 1985). This arrangement reduces the probability of job loss during economic downturns, as the automatic adjustment of the price of labour, earnings, reduces the need for changes in quantity (employment).

At the same time, previous research has demonstrated how group-based payments, such as profit sharing, are linked to higher job satisfaction in a way that is not necessarily found for individual-based performance pay (Green and Heywood, 2008; Bryson *et al*. 2016; Bryson and Freeman, 2019). Green and Heywood (2016) argue these payments are often made on top of base pay (what they term 'gravy'), particularly for high-income workers, although there is partial substitution between base pay and bonuses. This suggests some of the wellbeing effect of share-price changes may be linked to wealth effects. However, to the best of our knowledge, there is no work that has investigated the variance in these links between wellbeing and group-based performance pay over the business cycle.

We contribute to this literature by using two data sets to establish the relationship between share prices on the one hand and worker wellbeing on the other. First, we use data on share-price movements and employee stock holding in a single corporation and provide suggestive evidence that an increase in the firm's stock price increases the wellbeing of those who belong to its employee share purchase plan (ESPP), and that these effects are largest among those who make the largest monthly contributions to the program and who thus have the most to gain (or lose) from stock-price fluctuations. There is also some tentative evidence that the wellbeing effects of a rise in the share price are larger for those who have larger shareholdings. We then use almost 30 years of British panel data to show that worker wellbeing and job satisfaction are both correlated with an index of general share prices, the FTSE 100. This effect is concentrated heavily among those who hold company shares or profit shares as part of their compensation, suggesting the well-being effect may be due, at least in part, to changes in wealth.

The remainder of this paper is structured as follows. Section Two presents our data, and Section Three outlines our empirical approach. The results then appear in Section Four. Last, Section Five concludes.

2. Data

Our data come from two sources. The first is a single company that we call ShareCo (a pseudonym). This is a multinational business services corporation employing roughly 12,000 full-time equivalent employees globally. The data come from a dedicated web-based survey, designed by Alex Bryson and Richard Freeman in conjunction with the firm. We analyze pooled data from this firm in the UK that was collected in 2007 and 2010. The company operates an employee share purchase plan (ESPP) that is central to its remuneration strategy. Employees can choose to join this tax-privileged plan, and if they do so they can decide how much to contribute to the plan each month, up to a maximum limit set by the tax authorities.[2] Our data identify whether an employee had chosen to join the plan, the monthly contribution the employee paid into the plan, and the number of shares the employee owned.

The ShareCo data provide an opportunity to assess the effects of share-price movements in an employee's own company stock, and how this effect varies according to the employee's financial interest in the plan, as indicated by plan membership, contributions to the plan and the number of shares held. By linking the survey data to ShareCo's stock price on the day the respondent completed the survey we can assess how employees' job satisfaction varied with the share price for both ESPP members and non-members. The survey fieldwork period was roughly three weeks in both 2007 and 2010. There were substantial share-price movements in both of these years, of nearly AU$2 in 2007 and AU$1 in 2010 (see Appendix Figure A1).

We relate the company's share price to worker job satisfaction using the responses to the question "*How satisfied are you in your job?*", with answers on a 5-point Likert scale from 1 = Very Dissatisfied to 5 = Very Satisfied.[3]

[2] For further detail on the nature of the ESPP and its role in eliciting productivity-enhancing behaviours from members see Bryson and Freeman (2019). For an analysis of the reasons why employees choose (not) to join the plan see Bryson and Freeman (2010).

[3] In earlier work, we established that ESPP members were more satisfied with their jobs than were non-members, *ceteris paribus* (Bryson *et al*., 2016).

Summary statistics for the ShareCo variables in our estimation sample (N=1,890) are presented in Appendix Table A1.

The second data source combines the British Household Panel Survey (BHPS; 1991-2008) with the Understanding Society (USoc) data set (2009-2018) (University of Essex, 2020). The BHPS is a random sample of approximately 10,000 individuals in 5,500 households, which was increased to 16,000 individuals in 9,000 households in 1999. USoc is the follow-on to the BHPS starting in 2009, and covers approximately 100,000 individuals in 40,000 households. The BHPS households comprise a subset of the USoc sample and can be followed in the latter, except for the first USoc wave where the BHPS households were not interviewed. We initially use the full sample of respondents from the BHPS and USoc. However, some of the key variables are only available in certain waves of the BHPS/USoc. In particular, the questions on performance and bonus pay are only available from 1998 on, and in every second USoc wave. As such, some analyses cover different periods in the data, as we will highlight in the text. Reflecting our focus on workers, we exclude those not in employment, and retain individuals aged from 18 to 65. The survey interview data from BHPS/USoc are combined with financial data drawn from the FTSE 100 for the corresponding period.[4]

While the structure of the BHPS/USoc has changed over time, one permanent theme has been a battery of questions on individual wellbeing and job satisfaction. As a result, these datasets have often been used to examine a range of issues related to subjective wellbeing (see, for example Bryson *et al*., 2016; Clark *et al*., 2018; Gray *et al*., 2021; and Liberini *et al*., 2019). We focus on three standard measures of wellbeing that have consistently been asked across all data waves: the 36-point scale from the validated General Health Questionnaire (GHQ); a four-point happiness scale with responses that range from much less happy than usual through to more (happy) than usual (this is one of the 12 GHQ questions); and a seven-point job satisfaction measure. The scales are inverted when necessary to ensure that higher scores always reflect higher wellbeing.

[4] In unreported estimates we also used data from the FTSE350. While often less precise, the resulting estimates are essentially unchanged in nature.

The BHPS /USoc contains information on performance-related pay (see for instance Green and Heywood 2008, and Bryson *et al*. 2016), although the format of the questions has changed over time. Initially in 1991-1997 there was one catch-all performance-pay question. We drop all observations for this earlier period. From 1998-2008, respondents were asked two separate questions: "Does your pay include performance-related pay?"; and "In the last 12 months have you received any bonuses such as a Christmas or quarterly bonus, profit-related pay or profit-sharing bonus, or an occasional commission? [excludes overtime payments]". These questions only appear in every second wave of USoc. However, each wave of USoc takes 24 months in total to conduct and the waves overlap with each other such that some individuals are, for example, being surveyed for wave 3 at the same time as individuals for wave 4. This means that we observe both performance pay receipt and FTSE for all of 2009 to 2018 inclusive. These questions produce binary indicators of the receipt of performance related pay (PRP) and bonus/profit share receipt respectively. We cannot rule out that the former indicator, PRP, could potentially capture some elements of group payment. However, the latter question and resultant indicator clearly captures two prominent forms of group-based payment, profit-related pay and profit shares, that fit with our main interest.[5] These are our key control variables.

3. Empirical Approach

Our objective is to establish the relationship between share price variations and measures of worker wellbeing. In particular, we wish to establish how this relationship is influenced by a variety of forms of performance-pay receipt, with a focus on forms that are more likely to directly link worker compensation to worker outcomes (namely share ownership, profit sharing, and bonuses).

For the analysis of ShareCo our estimation equations take the following form:

[5] Consequently existing literature has often interpreted this question as capturing group and profit share payment (see for instance Gielen, 2011, and Green and Heywood, 2010 and 2011).

$$W_{it} = \delta_i + \underline{\beta}'\underline{\boldsymbol{X}_{it}} + \alpha Share_{it} + \gamma FT_{it} + \theta FT_{it} * Share_{it} + \varepsilon_{it} \quad (1)$$

Where W is the job satisfaction of individual i at time t, $\boldsymbol{X}$ a vector of individual-specific characteristics, and FT measures the opening stock-market price for ShareCo stock on the day of the interview. *Share* captures one of three measures of ESPP participation: membership, monthly contribution and total number of shares held. We initially enter *Share* and FT separately, but our main focus is on the interaction term that reveals how the effect of the ShareCo stock price on the day of the interview affects job satisfaction differentially according to the employee's exposure to the ESPP. We estimate OLS equations with a robust estimator. Similar results are obtained from ordered probits (results available on request).

Our initial step with the BHPS/USoc is to extend existing research over a longer time period. As discussed above, the BHPS/USoc data differs in terms of the performance-related pay measures that are included. This leads us to estimate the following equation:

$$W_{it} = \delta_i + \underline{\beta}'\underline{\boldsymbol{X}_{it}} + \alpha PerfPay_{it} + \vartheta Bonus/Profit_{it} + \gamma FT_{it} + \theta FT_{it} * PerfPay_{it} + \omega FT_{it} * Bonus/Profit + \varepsilon_{it} \quad (2)$$

The estimation of Equation (2) provides the association (conditional on observables) between changes in the FT over time, and how this varies according to both individual performance pay and bonus/profit-share receipt. In our most complete specifications, we include controls for age, gender, marital status, educational level, occupation, industry, region of residence, as well as day of the week and year effects. In Equation (3) we extend (2) further by including individual fixed effects (μ_i) such that our parameters of interest are identified by the within-individual changes in FT and PRP receipt.

$$W_{it} = \delta_i + \underline{\beta}'\underline{\boldsymbol{X}_{it}} + \alpha PerfPay_{it} + \vartheta Bonus/Profit_{it} + \gamma FT_{it} + \theta FT_{it} * PerfPay_{it} + \omega FT_{it} * Bonus/Profit + \mu_i + \varepsilon_{it} \quad (3)$$

The individual fixed effects models are our preferred estimates as they avoid any potential

biases in the association that come from sorting into various compensation schemes, on the one hand, and individuals' propensities for wellbeing, insofar as these are captured by fixed unobserved individual traits. This within-person estimator allows us to abstract from comparisons across individuals who may have different reference points when responding to wellbeing questions.

4. Results

4.1. ShareCo

Tables 1-3 show the estimates from job-satisfaction equations for ShareCo employees using our three alternative metrics of ESPP participation, namely plan membership, number of shares held, and monthly contributions.

[INSERT TABLE 1]

Table 1 focuses on share-plan membership. There is a positive correlation between being an ESPP member and job satisfaction (column 1). Job satisfaction rises with ShareCo share price, but only for scheme members, an association which becomes statistically significant when we add controls to the model (columns 2 and 3). The effect is robust to the inclusion of the log annual wage (column 4).

[INSERT TABLE 2]

In Table 2 we replace ESPP membership by the number of shares the employee currently holds, where the reference category is none. Job satisfaction rises with the number of shares held (column 1). When the number of shares held is interacted with the share price on the day of the interview there is some suggestive evidence that job satisfaction is higher among those with large shareholdings on days when the ShareCo price is higher. The coefficients on the interactions between share price and holding at least 500 shares are positive and statistically significant in columns 3 and 4 with the inclusion of controls. However, closer

inspection of the interaction coefficients indicates that the differences in job satisfaction between those holding fewer than 100 shares and those holding at least 500 are not statistically significant.[6]

[INSERT TABLE 3]

Last, Table 3 replaces the number of shares held by the amount of monthly contributions the employee makes to the plan. Those making larger contributions are more satisfied with their jobs (column 1). It is only those making the maximum contribution under the UK tax rules whose job satisfaction is higher when the ShareCo share price is higher (columns 3 and 4). Although the number of shares held and monthly contributions are fairly highly correlated (coefficient 0.84), when comparing the results in Tables 2 and 3, it seems that people who are currently contributing the most are the most engaged with the firm, as opposed to people whose shares may be more historical.

4.2: BHPS/USoc Results

[INSERT TABLE 4]

As a first step, we replicate the earlier results of Ratcliffe and Taylor (2015) over the longer time period that is now available in the BHPS/USoc data. As our interest is in compensation types, we additionally focus only on those who are in employment. Table 4 presents estimates of the value of the FTSE 100 (in logs) on our three measures of wellbeing. For each measure we report a simple estimate that controls only for year fixed effects, day of the week and month effects, along with region of residence fixed effects (columns I) and then estimates where we additionally control for age, age-squared, educational level, gender, marital status, and industry and occupation fixed effects (columns II). The estimates for both (the inverted) GHQ and Happiness fit with the prior evidence: higher values of the FTSE 100 are associated

[6] 28 respondents did not know how many shares they held. Their job satisfaction appears to be lower on days when the share price is higher. Our basic results continue to hold when these 28 cases are removed from the estimations.

with higher worker wellbeing. However, the happiness effects are not statistically significant. A one standard deviation increase in the log FTSE score (which corresponds to 0.2 in Table A2) is associated with an approximately 0.08 points higher GHQ score (corresponding to 0.2 of a standard deviation). These estimates show that the main effects highlighted in Ratcliffe and Taylor (2015), who considered data up to 2008, continue to hold over a longer time period which covers more post-financial crisis years. In contrast, the relationship between the FTSE 100 and job satisfaction is negative and statistically significant at the 10% level in the most complete specification. There is, to our knowledge, no existing evidence on this point. This could, for example, reflect increased worker stress and effort during economic upturns. It could also reflect selection, if for instance only the more-satisfied workers remain in employment during recessions. Our panel results seek to control for this selection.

[INSERT TABLE 5]

Table 5 provides comparable estimates but now including individual fixed effects. This table hence reveals the correlation between within-individual changes in subjective well-being and the change in the FTSE index. While all of the estimates have the same signs as in Table 4, the estimated coefficients are all about half the size and are no longer statistically significant. As such, at least some of the effects of the FTSE on the wellbeing of employees apparent in Table 4 may reflect sorting over the business cycle.

[INSERT TABLE 6]

We next turn to the role of performance pay receipt in influencing the effect of stock market prices on wellbeing. Table 6 presents estimates of Equation (2), where we distinguish between the different types of performance pay receipt, and allow the effect of changes in the FTSE 100 to vary by this receipt.[7] The interaction between Bonus/Profit Share receipt and the FTSE100 routinely attracts a positive and statistically-significant estimate in both the

[7] An alternative approach where we estimate the effect of *changes* in FTSE, and its interaction with payment type, on wellbeing is reported in Table A3. The pattern of results largely follows that reported in Table 6.

inverted GHQ and Happiness regressions. Focusing on GHQ and taking the minimum value of FTSE, as reported in Appendix Table A2, the effect of Bonus/Share receipt on wellbeing is 0.045 and is not statistically-different from zero at standard levels. However, at the mean value of FTSE, the effect of bonus/profit share receipt grows to 0.22 and is statistically different from zero at the 1% level. As such, worker wellbeing mostly increases with stock-market prices for those who receive bonuses or profit shares. Likewise, there is a clearly positive relationship between bonus/profit-share receipt and FTSE values on job satisfaction. While the negative level effect of the FTSE on job satisfaction that was reported in Table 4 remains in the absence of any form of performance pay receipt (either PRP or bonus/profit share), the results in Table 6 make clear that this negative effect is not found for those whose pay varies with economic performance. Economic upturns may lead to lower job satisfaction in the cross-section for reasons of worker effort or selection, but performance pay may mitigate this relationship or reverse it. Performance-pay receipt does appear to reverse this relationship, the estimated FTSE*PRP pay slope is substantially larger than the estimated FTSE slope in the absence of PRP receipt, with this difference being statistically significant at the 1% level. The analogous difference for bonus/profit shares are more muted, and in fact, the estimated bonus/profit share*FTSE slope is smaller than the estimated FTSE slope, although these differences are not statistically significant at standard levels. Together, this suggests that the small (but positive) effects of stock market prices highlighted in Table 4 and previous research may hide substantive heterogeneity according to compensation type.

However, we may worry that the results in Table 6 do not account for selection both into employment and performance-pay contracts, on the basis of time-invariant observables, across the business cycle

[INSERT TABLE 7]

Table 7 thus presents the results of estimating Table 6 when we include fixed effects to address this concern. This is a demanding specification, and our main estimates of interest are identified by changes in the FTSE for the same individual over all of the years in which they are interviewed, or by changes in the individual's PRP or bonus / profit share status.

The results in Table 7 show that the panel estimated coefficients on the interaction terms are attenuated compared to their cross-section equivalents in Table 6. Combined with a rise in the standard errors, this renders a number of the estimated coefficients insignificant. It is however notable that the bonus/profit share and FTSE interaction retains its positive and statistically-significant effect on job satisfaction. The fact that the estimated coefficients in the panel regressions are not drastically different from those reported in Table 6 provides some supporting evidence that these effects do not (solely) reflect the sorting of individuals with specific traits into employment and bonus/profit-share receipt. More generally, these results suggest that bonus/profit-share receipt fundamentally changes the relationship between stock-market performance and worker wellbeing.

5. Conclusion

A small literature has found that individual wellbeing varies with share prices, but it is unclear whether this is due to wealth effects of those holding stock, or to more general effects on sentiment, with individuals taking rising stock prices as an indicator of improvements in the economy. We contribute to this literature by using two data sets to establish the relationship between share prices on the one hand and worker wellbeing on the other.

Using two very different data sets we have found that employees' job satisfaction rises with stock prices when their compensation is tied to the fortunes of the firm. We first use data on share-price movements and employee stock holding in a single corporation, and provide suggestive evidence that an increase in the firm's stock price increases the wellbeing of those who belong to its employee share purchase plan (ESPP) and that these effects are greatest among those making the largest monthly contributions to the program who have the most to gain (or lose) from stock-price fluctuations. There is also some tentative evidence that wellbeing effects of a rise in the share price are greatest among those with the largest shareholdings.

One concern with these data is that we are unable to account for selection into the ESPP and into employment over the business cycle. We address this in our second set of analyses on

employees using almost 30 years of British panel data. We show that employee job satisfaction rises with FTSE share prices among those who are in receipt of company bonuses.

Taken together these results suggest the effects of share plans and bonuses may be due, at least in part, to a wealth effect. Future research might fruitfully examine the mechanisms at play, and whether the effects identified here are linked to differences in employee motivation and effort over the business cycle.

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Table 1: Job Satisfaction and ESOP Membership, ShareCo

	(I)	(II)	(III)	(IV)
Share-plan member	0.362***	-0.889	-1.198	-1.135
	(0.043)	(0.800)	(0.804)	(0.817)
Share price	0.061	-0.004	0.004	0.029
	(0.061)	(0.075)	(0.077)	(0.078)
Member*price		0.131	0.156*	0.150*
		(0.084)	(0.084)	(0.085)
Controls	Year	Year	Year, age (5), male, white, qualifications (3), family status (4), occupation (8), supervisor, hours (4), tenure (5), paid hourly, paid commission	Year, age (5), male, white, qualifications (3), family status (4), occupation (8), supervisor, hours (4), tenure (5), paid hourly, paid commission, log wage
R-squared	0.037	0.038	0.085	0.085
Unweighted Sample	1890	1890	1890	1849

Notes: Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table 2: Job Satisfaction and Number of Shares Held, ShareCo

	(I)	(II)	(III)	(IV)
Share price	0.074	-0.009	-0.000	0.020
	(0.061)	(0.076)	(0.077)	(0.078)
No. shares held (ref: none)				
<100	0.262***	-2.361*	-1.928	-1.862
	(0.074)	(1.307)	(1.310)	(1.315)
100-499	0.187***	-1.048	-1.348	-1.087
	(0.066)	(1.384)	(1.407)	(1.406)
500-1999	0.400***	-1.521	-1.742	-1.601
	(0.059)	(1.138)	(1.153)	(1.185)
2000+	0.567***	-0.894	-1.655	-1.695
	(0.057)	(1.021)	(1.038)	(1.061)
Don't know	0.328*	7.188**	7.712**	9.009**
	(0.174)	(2.976)	(3.093)	(3.872)
<100*share price		0.274**	0.228*	0.219
		(0.135)	(0.135)	(0.136)
100-499*share price		0.130	0.158	0.131
		(0.146)	(0.148)	(0.148)
500-1999*share price		0.202*	0.225*	0.213*
		(0.119)	(0.121)	(0.124)
2000+*share price		0.154	0.220**	0.226**
		(0.107)	(0.108)	(0.111)
DK*share price		-0.733**	-0.794**	-0.923**
		(0.319)	(0.331)	(0.423)

Controls	Year	Year	Year, age (5), male, white, qualifications (3), family status (4), occupation (8), supervisor, hours (4), tenure (5), paid hourly, paid commission	Year, age (5), male, white, qualifications (3), family status (4), occupation (8), supervisor, hours (4), tenure (5), paid hourly, paid commission, log wage
R-squared	0.051	0.056	0.096	0.096
Unweighted Sample	1890	1890	1890	1849

Notes: Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table 3: Job Satisfaction and Monthly Contributions to ESOP, ShareCo

	(I)	(II)	(III)	(IV)
Share price	0.058	-0.000	0.006	0.035
	(0.061)	(0.074)	(0.076)	(0.077)
Monthly contribution (Ref: None)				
£10-124	0.257***	-0.760	-1.002	-0.767
	(0.050)	(0.926)	(0.930)	(0.950)
£125 (max)	0.506***	-0.877	-1.361	-1.279
	(0.051)	(0.998)	(0.987)	(1.003)
£10-124*Share price		0.107	0.128	0.103
		(0.097)	(0.098)	(0.100)
£125*share price		0.145	0.184*	0.177*
		(0.104)	(0.103)	(0.104)
Controls	Year	Year	Year, age (5), male, white, qualifications (3), family status (4), occupation (8), supervisor, hours (4), tenure (5), paid hourly, paid commission	Year, age (5), male, white, qualifications (3), family status (4), occupation (8), supervisor, hours (4), tenure (5), paid hourly, paid commission, log wage
R-squared	0.046	0.047	0.089	0.089
Unweighted Sample	1890	1890	1890	1849

Notes: Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table 4: FTSE 100 and Measures of Individual Wellbeing, BHPS/USoc 1991-2018

	(I)	(II)	(I)	(II)	(I)	(II)
	GHQ		Happiness		Job Satisfaction	
Ln(FTSE)	0.397**	0.370**	0.0276	0.0171	-0.0756	-0.0877*
	(0.179)	(0.182)	(0.0202)	(0.0208)	(0.0468)	(0.0485)
Constant	22.50***	26.35***	2.798***	3.364***	5.976***	6.853***
	(1.279)	(1.332)	(0.144)	(0.151)	(0.335)	(0.354)
Observations	248,401	237,444	249,517	238,518	258,935	248,189
R-squared	0.002	0.019	0.002	0.010	0.004	0.019

Notes: (1) The dependent variable is the inverted GHQ score (0,36) in cols. 1 and 2, happiness compared to last year (1,4) in cols. 3 and 4, and job satisfaction (1,7) in cols. 5 and 6. (2) Standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1.
(4) Specification (I) includes controls for day of week, month and year effects, region dummies; (II) adds controls for age, gender, married, education, industry dummies and occupation dummies.

Table 5: FTSE 100 and Measures of Individual Wellbeing, Individual Fixed Effects Models, BHPS/USoc 1998-2018

VARIABLES	(I) GHQ	(II) GHQ	(I) Happiness	(II) Happiness	(I) Job Satisfaction	(II) Job Satisfaction
Ln(FTSE)	0.160	0.220	0.0220	0.0170	-0.0497	-0.0629
	(0.169)	(0.175)	(0.0215)	(0.0223)	(0.0461)	(0.0481)
Constant	23.92***	25.59***	2.861***	3.181***	5.894***	6.298***
	(1.239)	(1.677)	(0.158)	(0.213)	(0.338)	(0.461)
Observations	248,401	237,444	249,517	238,518	258,935	248,189
R-squared	0.532	0.590	0.411	0.459	0.521	0.530
Number of ID	50,469	49,380	50,592	49,499	51,461	50,625

Notes: (1) The dependent variable is the inverted GHQ score (0,36) in cols. 1 and 2, happiness compared to last year (1,4) in cols. 3 and 4, and job satisfaction (1,7) in cols. 5 and 6. (2) Standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1.
(4) Specification (I) includes controls for day of week, month and year effects, region dummies; (II) adds controls for age, gender, married, education, industry dummies and occupation dummies.

Table 6: FTSE 100 and Measures of Individual Wellbeing, Pooled Models, BHPS/USoc 1998-2018

	(I)			(II)		
	GHQ	Happiness	Job Satisfaction	GHQ	Happiness	Job Satisfaction
Ln(FTSE)	-0.0113	0.0136	-0.142**	-0.140	-0.0125	-0.179***
	(0.255)	(0.0282)	(0.0650)	(0.266)	(0.0294)	(0.0688)
PRP	0.120	-0.144	-1.975***	-0.438	-0.153	-1.725***
	(1.585)	(0.175)	(0.413)	(1.584)	(0.175)	(0.417)
Bonus/Profit	-2.008	-0.245*	-0.791**	-1.657	-0.285**	-0.923***
	(1.261)	(0.139)	(0.329)	(1.264)	(0.140)	(0.332)
PRP*Ln(FTSE)	-0.0004	0.0206	**0.247*** **	0.0612	0.0210	**0.218*** **
	(0.199)	(0.0219)	**(0.0518)**	(0.199)	(0.0220)	**(0.0522)**
Bonus*Ln(FTSE)	**0.291***	**0.0320***	**0.0999** **	0.225	**0.0361** **	**0.124*** **
	(0.158)	**(0.0175)**	**(0.0413)**	(0.159)	**(0.0176)**	**(0.0417)**
Constant	25.28***	2.908***	6.385***	25.34***	3.117***	5.441***
	(1.994)	(0.220)	(0.508)	(0.505)	(0.0558)	(0.118)
Observations	137,749	138,447	145,886	130,172	130,856	137,095
R-squared	0.003	0.003	0.005	0.016	0.008	0.017

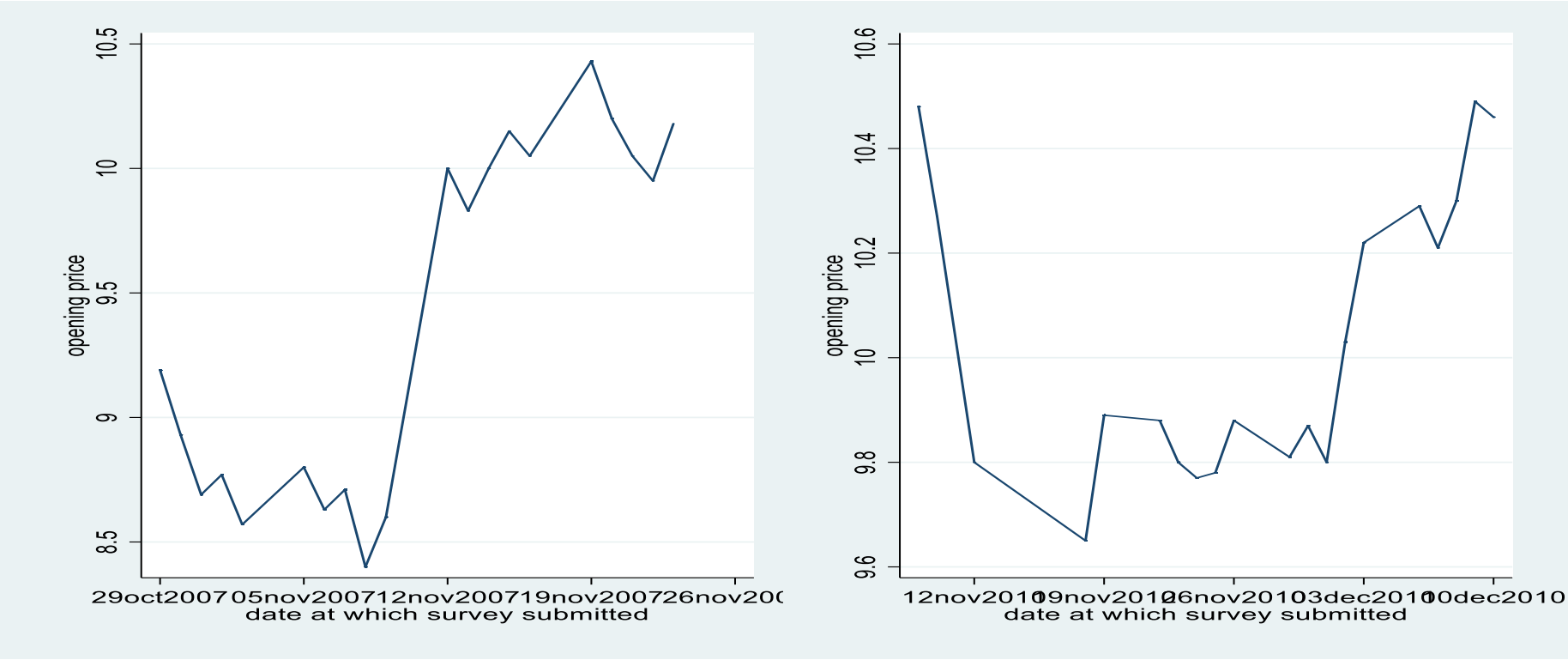
Notes: (1) The dependent variable is the inverted GHQ score (0,36) in cols. 1 and 4, happiness compared to last year (1,4) in cols. 2 and 5, and job satisfaction (1,7) in cols. 3 and 6.. (2) Standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1. (4) Specification (I) includes controls for day of week, month and year effects, region dummies; (II) adds controls for age, gender, married, education, industry dummies and occupation dummies.

Table 7: FTSE 100 and Measures of Individual Wellbeing, Individual Fixed Effects Models, BHPS/USoc 1998-2018

	(I)			(II)		
	GHQ	Happiness	Job Satisfaction	GHQ	Happiness	Job Satisfaction
Ln(FTSE)	-0.00805	0.0302	-0.0992	0.00739	0.0164	-0.136**
	(0.233)	(0.0296)	(0.0611)	(0.246)	(0.0312)	(0.0642)
PRP	-0.513	-0.101	-0.503	-0.303	-0.0644	-0.435
	(1.555)	(0.198)	(0.416)	(1.586)	(0.202)	(0.424)
Bonus/Profit	-1.511	-0.175	-0.687**	-1.641	-0.223	-0.775**
	(1.241)	(0.158)	(0.333)	(1.270)	(0.161)	(0.340)
PRP*Ln(FTSE)	0.0637	0.0129	0.0688	0.0372	0.00835	0.0602
	(0.195)	(0.0248)	(0.0523)	(0.199)	(0.0253)	(0.0533)
Bonus* Ln(FTSE)	0.196	0.0229	**0.0884****	0.214	0.0292	**0.101****
	(0.156)	(0.0198)	**(0.0419)**	(0.160)	(0.0203)	**(0.0429)**
Constant	25.52***	2.780***	6.290***	20.69***	2.699***	6.816***
	(1.878)	(0.238)	(0.492)	(2.586)	(0.328)	(0.676)
Observations	137,749	138,447	145,886	130,173	130,856	138,135
R-squared	0.547	0.437	0.556	0.597	0.456	0.561
Number of Workers	38,880	38,974	40,499	38,365	38,457	39,968

Notes: (1) The dependent variable is the inverted GHQ score (0,36) in cols. 1 and 4, happiness compared to last year (1,4) in cols. 2 and 5, and job satisfaction (1,7) in cols. 3 and 6. (2) Standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1. (4) Specification (I) includes controls for day of week, month and year effects, region dummies; (II) adds controls for age, gender, married, education, industry dummies and occupation dummies

Appendix Figure 1: Movements in ShareCo's Share Price During the Survey Periods in 2007 and 2010



Appendix Figure 2: FTSE 100 Values 1998-2018

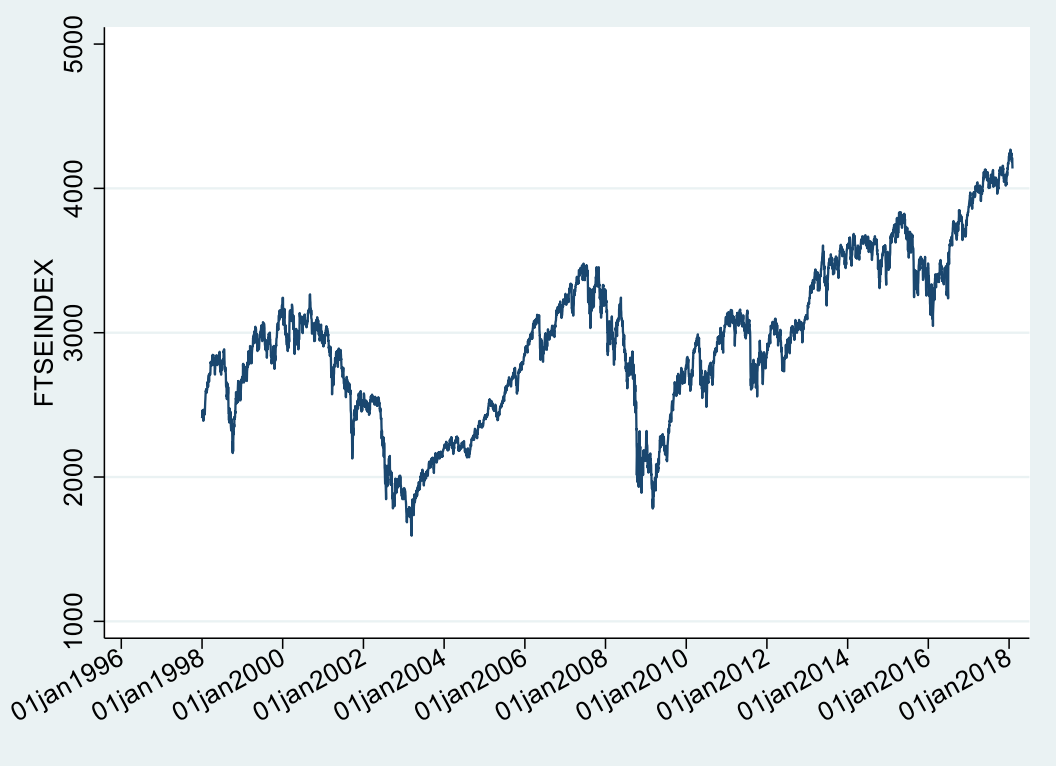


Table A1: Summary Statistics, ShareCo

	Mean	Std. dev	Min	Max
Job satisfaction				
Very dissatisfied	0.03	0.17	0	1
Fairly dissatisfied	0.09	0.28	0	1
Neither	0.19	0.39	0	1
Fairly satisfied	0.53	0.50	0	1
Very satisfied	0.16	0.37	0	1
ESPP member	0.56	0.50	0	1
Current weekly contribution (£ UK)				
Nothing	0.45	0.50	0	1
£10-124	0.33	0.47	0	1
£125 (max)	0.23	0.42	0	1
Current No. ShareCo Shares:				
None	0.43	0.50	0	1
>0, <100	0.11	0.31	0	1
100-499	0.15	0.36	0	1
500-1999	0.14	0.35	0	1
2000+	0.16	0.36	0	1
Missing	0.01	0.12	0	1
Share price (AUS dollars)	9.52	0.50	8.4	10.49
Age				
<25 years	0.14	0.35	0	1
25-34 years	0.38	0.49	0	1
35-44 years	0.26	0.44	0	1
45-54 years	0.15	0.36	0	1
55+ years	0.06	0.23	0	1
Male	0.51	0.50	0	1
White	0.93	0.25	0	1
Degree	0.30	0.46	0	1
Professional qualification	0.18	0.38	0	1

Family status				
Not married, no children	0.35	0.48	0	1
Married, no children	0.31	0.46	0	1
Not married, with child	0.06	0.24	0	1
Married with child	0.28	0.45	0	1
Missing	0.00	0.05	0	1
Occupation				
Senior Manager	0.04	0.20	0	1
Middle Manager	0.07	0.25	0	1
Lower Manager	0.09	0.28	0	1
Operational/delivery	0.43	0.50	0	1
Support	0.13	0.34	0	1
Technical	0.14	0.34	0	1
Sales	0.11	0.31	0	1
No. employees directly supervised				
None	0.70	0.46	0	1
1-2	0.08	0.27	0	1
3-9	0.14	0.35	0	1
10-19	0.06	0.24	0	1
20+	0.02	0.16	0	1
Contractual hours				
<35	0.16	0.36	0	1
35	0.56	0.50	0	1
>35, <40	0.22	0.41	0	1
40+	0.06	0.24	0	1
Years working at ShareCo				
< 1 year	0.21	0.41	0	1
1, <2 years	0.07	0.25	0	1
2, <5 years	0.27	0.44	0	1
5, <10 years	0.26	0.44	0	1
10+ years	0.19	0.39	0	1

Missing	0.00	0.02	0	1
Hourly paid	0.08	0.27	0	1
Paid commission	0.17	0.37	0	1
Log annual earnings	9.87	1.10	0	12.39

Table A2: Selected Summary Statistics, BHPS/USoc 1998-2018

	Mean	Std. Dev	Min	Max
GHQ	25.27	5.00	0	36
Happiness	2.99	0.55	1	4
Job Satisfaction	5.32	1.33	1	7
Ln(FTSE)	7.97	0.20	7.37	8.36
Performance Pay	0.154	0.361	0	1
Bonus/Profit Share	0.282	0.450	0	1
Age	41.16	11.292	21	65
Male	0.465	0.499	0	1
A-Level	0.230	0.421	0	1
Degree or Higher	0.385	0.487	0	1
Married	0.288	0.453	0	1
Observations	138191			

Table A3: Quarterly Changes in FTSE 100 and Measures of Individual Wellbeing, BHPS/USoc 1998-2018

VARIABLES	(1) GHQ	(2) Happiness	(3) Job Satisfaction	(4) GHQ	(5) Happiness	(6) Job Satisfaction
Change FTSE	0.171	0.0238	-0.104	0.0887	0.0190	-0.123
	(0.297)	(0.0327)	(0.0763)	(0.298)	(0.0330)	(0.0774)
PRP	0.124***	0.0210***	-0.00583	0.0406	0.0142***	0.0107
	(0.0391)	(0.00431)	(0.0101)	(0.0405)	(0.00448)	(0.0105)
Bonus/Profit	0.307***	0.0100***	0.00610	0.120***	0.00100	0.0679***
	(0.0314)	(0.00347)	(0.00814)	(0.0341)	(0.00378)	(0.00888)
PRP*Ln(FTSE)	0.770	0.149***	**0.291****	0.769	**0.146****	**0.272****
	(0.521)	(0.0575)	**(0.135)**	(0.522)	**(0.0578)**	**(0.137)**
Bonus* Ln(FTSE)	0.0260	-0.0139	**0.188***	0.0706	-0.00621	**0.209***
	(0.408)	(0.0450)	**(0.106)**	(0.410)	(0.0453)	**(0.107)**
Constant	24.64***	2.995***	5.214***	24.76***	3.074***	5.300***
	(0.432)	(0.0477)	(0.0610)	(0.276)	(0.0306)	(0.105)
Observations	137,749	138,447	145,886	130,172	130,856	137,095
R-squared	0.003	0.003	0.005	0.016	0.008	0.017

Notes: (1) The dependent variable is the inverted GHQ score (0,36) in cols. 1 and 4, happiness compared to last year (1,4) in cols. 2 and 5, and job satisfaction (1,7) in cols. 3 and 6. (2) Standard errors in parentheses. (3) *** p<0.01, ** p<0.05, * p<0.1.
(4) Specification (I) includes controls for day of week, month and year effects, region dummies; (II) adds controls for age, gender, married, education, industry dummies and occupation dummies.