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ELUSIVE EFFECTS OF UNEMPLOYMENT ON HAPPINESS

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ABSTRACT. This paper explores the connection between unemployment and subjective well-being in Finland using cross-sections for the years 1990, 1996 and 2000 from World Values Surveys. Interestingly, an unprecedented increase in the national unemployment rate (from 3 to 17%) did not produce a drop in the mean level of subjective well-being. Personally experiencing unemployment reduces life satisfaction, but does not have a significant effect on happiness in ordered logit estimation. However, generalized ordered logit estimation reveals that being unemployed has a negative effect on happiness at lower happiness scores, but no significant effect at high happiness levels.

KEY WORDS: happiness, unhappiness, life satisfaction, unemployment

1. INTRODUCTION

The empirical literature on happiness has found that unemployment makes one very unhappy (e.g., Clark and Oswald, 1994; Winkelmann and Winkelmann, 1998; Di Tella et al., 2001).[1] Does this really hold always and everywhere? The purpose of this paper is to analyse the determinants of subjective well-being in Finland, in particular the connection between subjective well-being and unemployment. The results are, however, interesting from a broader perspective. The national unemployment rate rose very rapidly from 3 to 17% in the early 1990s. Such an increase has been unprecedented in industrial countries since the Second World War. If there is a connection between unemployment and happiness, this is definitely a situation where one would expect to find a considerable drop in population happiness. However, our results show that this has not been the case.

There are factors that may weaken the connection of unemployment and happiness. First, high unemployment reduces the social stigma associated with the experience of unemployment (e.g., Lindbeck et al., 1999). The social stigma can also weaken through habituation effects while one is

unemployed over a long period of time (e.g., Clark, 2002). This point is relevant, because the relatively high unemployment rate has persisted in Finland since the great depression of the early 1990s. Second, unemployment is somewhat more concentrated in Finland among older people (aged 55–64) than it is in the average figure for the European Union. The ratio of the unemployment rate for those aged 25–54 compared with those aged 55–64 is, on average, 0.88 for the European Union. The same figure for Finland is 1.11 (OECD, 2003). This feature of the labour market may further weaken the connection between happiness and unemployment, because unemployment does more harm to young people in terms of permanent losses of future earnings (e.g., Ruhm, 2001).

Our analysis is structured as follows. Section 2 provides a description of the data. Section 3 reports the results and Section 4 concludes the paper.

2. THE DATA

This paper uses World Values Surveys for Finland for the years 1990, 1996 and 2000 (Gallup Finland, 2004). The data set is not a panel, but three separate cross-sections.[2] It provides two measures for the level of overall subjective well-being. The variable on happiness is an answer to the question: "Taking all things together, would you say you are 4 (very happy), 3 (quite happy), 2 (not very happy), or 1 (not at all happy)." The variable on life satisfaction is an answer to the question: "All things considered, how satisfied are you with your life as a whole in these days?" Life satisfaction is measured on a scale from 1 to 10. (A higher value means that a person is currently more satisfied with his/her life.)

Interestingly, the mean level of happiness has not reacted at all to the unprecedented increase in the national unemployment rate, and the same applies to life satisfaction (see Figure 1).[3] This is in sharp contrast with the findings reported by Di Tella et al. (2001) for 12 European countries[4] over the period 1975–1991, according to which an increase in the general rate of unemployment produces a substantial decrease in life satisfaction.[5]

The main interest of this paper is a dummy variable that captures the current unemployment status (Unemployed, 9.4% of all survey respondents). There has been a lot of debate in the literature about the relevance of income in the determination of subjective well-being (e.g., Veenhoven, 1993; Easterlin, 2001). The income variable that it is possible to construct for all years is Low_Income, which is a dummy for persons whose income is within the lowest three income deciles.[6] We include a wide set of individual-level control variables (Appendix A). Their coefficients are not reported in the

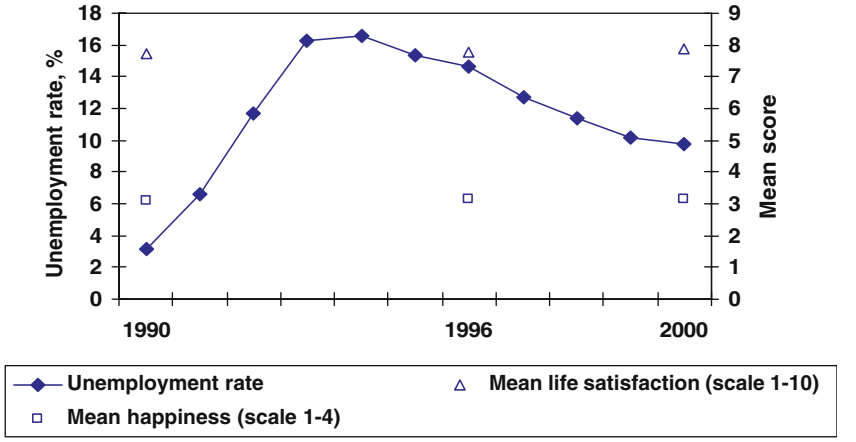

Fig. 1. Unemployment, life satisfaction, and happiness in Finland.

following tables, because they show that the other individual-level factors that account for subjective well-being in Finland are largely similar to what has been found for other countries in the literature.[7]

3. THE RESULTS

3.1. *Basic Results*

The ordered logit estimation results for the pooled data are reported in Table I. The robust *z*-statistics account for clustering by year, i.e., the error terms are allowed to be correlated within a survey year. The reference group in the models represents persons that have a strong attachment to the labour market, because it includes those working weekly over 30 h. Thus, the unemployed are compared with persons with a strong attachment to the labour market.[8]

The results reveal that unemployment reduces life satisfaction, while having an insignificant effect on happiness (conditional on income).[9] Low income has a clear negative effect on both happiness and life satisfaction. One interpretation of the result on unemployment and happiness is that society has adapted itself to the persistent high unemployment that emerged during the great depression of the early 1990s. Long-term unemployment covered a major part of the total unemployment in Finland. For this reason, it is possible that the social stigma associated with experiencing unemployment personally may have gradually decreased away over time. Also, psychological studies indicate that individuals tend to shift back towards

TABLE I

Ordered logit results for happiness and life satisfaction

	Happiness, ordered logit (4 categories)	Life satisfaction, ordered logit (10 categories)	Happiness, generalized ordered logit (3 categories)	
			Equation 1	Equation 2
Unemployed	−0.165	−0.371	−0.807	0.183
	(1.18)	(3.86)***	(2.15)**	(0.71)
Low_Income	−0.475	−0.531	−0.317	−0.502
	(5.76)***	(6.93)***	(0.63)	(7.29)***
Year = 1996	0.498	0.216	0.959	0.335
	(8.66)***	(4.39)***	(6.81)***	(7.24)***
Year = 2000	0.440	0.352	0.564	0.412
	(6.45)***	(5.18)***	(4.79)***	(6.80)***
Observations	2172	2172	2172	
Pseudo R^2	0.056	0.029	0.075	

Notes: All models include the unreported individual-level control variables as described in Appendix (A). Absolute values of robust *z*-statistics in parentheses (adjusted for clustering by year). * significant at 10%; ** significant at 5%; *** significant at 1%.

their baseline levels of life satisfaction after unemployment has lasted for some time (Lucas et al., 2004). Despite these considerations, it is possible that unemployment still affects happiness negatively through low income. On the other hand, the results for life satisfaction are somewhat different from the ones for happiness. Thus, the results seem to cast some doubt on studies that take the position that happiness and life satisfaction measure the same underlying thing.[10]

Interestingly, by excluding the Low_Income variable from the model for happiness, we obtain the coefficient of −0.20 for the Unemployed variable with *t*-statistics of −1.98 (not reported in Table I). This result points out that unemployment leads to decline in happiness even in Finland, because it is associated with a decline in the income level. However, it is important to note that almost all earlier studies on the connection between unemployment and happiness include a measure of income among the explanatory variables for the happiness equation and argue that unemployment *per se* (beyond its effect on income) is bad for the level of happiness.

The amount of variance accounted for by the models is very close to what has been found in the literature that has used similar models with cross-section data sets to explain the levels of happiness and life satisfaction for other countries. For instance, Blanchflower and Oswald (2004) discover for the UK and the US that more or less the same explanatory variables that we

have used in our models for happiness and satisfaction are able to explain around 1–5% of the total variation seen in responses to these questions. Thus, in this respect, Finland is not an exception.

3.2. *Robustness of the Results*

Can the results be driven by restrictive assumptions of the estimated model? We have used an ordered logit model. This model estimates the coefficients of the explanatory variables, and category-specific threshold or cut-off values. (The categories are the happiness scores.) They jointly determine the chosen category, i.e., the level of happiness. The cumulative probability of having score j or lower is $\Pr(y \leq j) = F(\alpha_j - x\beta)$ where y is the survey answer, F cumulative logistic distribution, α_j the cut-off value between scores j and $j-1$, x the explanatory variables and β the slope parameters. The odds that the score is less than or equal to j versus greater than j is the ratio of the probabilities, $[\Pr(y \leq j)/\Pr(y > j)]$. In the logit model it holds, in particular, that the logarithm of the odds can be written in a simple form $\ln[\Pr(y \leq j)/\Pr(y > j)] = \beta_j - x\beta$. This model assumes that the coefficients β are the same for all categories. Therefore, the model rests on the so-called parallel regression assumption. For example, being unemployed has the same effect on the odds of having happiness level 1 vs. level 2, and on the odds of having happiness level 3 vs. level 4.

An alternative model that relaxes this assumption and allows unemployment (and other variables) to have a different impact on the odds at various happiness levels is the generalized ordered logit model (e.g., Long and Freese, 2003). The parameters are allowed to vary across categories, so the logarithm of the odds is $\ln[\Pr(y \leq j)/\Pr(y > j)] = \alpha_j - x\beta_j$. In the case of happiness, there are four different ordered alternatives, so that there are three sets of slope coefficients in the generalized model. It turned out that there were so few observations at the lowest happiness level that some of the coefficients could not be estimated. Therefore, we aggregate the happiness scores 1 and 2, which have relatively few observations, into one group, so that we have two sets of slopes to estimate.

In the generalized ordered logit estimates unemployment has a significant negative effect in Equation 1 that determines the choice between the combined categories 1 and 2 and category 3 (Table I). However, it is insignificant in Equation 2, which determines the choice between categories 3 and 4. In contrast, low income has an insignificant effect in the first equation, whereas it is negative and significant in the second one. Interestingly, it seems that when people are very happy, unemployment does not reduce their happiness,

whereas the moderately happy are likely to become less happy. One interpretation of this result is that there is a subsistence level in happiness that is more or less the same for all human beings. Individuals become really unhappy if their level of happiness slips below that bottom threshold. This is most likely to happen for those persons who are already unhappy, when a miserable event such as unemployment strikes them. This interpretation of our results is in line with the theoretical framework advocated by Cummins (2000) on "subjective well-being homeostasis" in which people have a "set point" for the level of their subjective well-being (see also Lucas et al., 2004). Low income, in turn, does not decrease the happiness of those who are already unhappy, but tends to decrease the happiness of the happiest people. In this sense, money matters more for the happiest.

In Table II we present the marginal effects of being unemployed on the probabilities of happiness scores from ordered logit and generalized ordered logit models. Since unemployment is a binary variable, the marginal effect on happiness score *j* is calculated as the difference of the probability of *j* for the unemployed and the non-unemployed, evaluated at the means of the other variables. In addition, the table presents the marginal effects of having a low income. For comparability, the ordered logit results are also based on a three-category model, the coefficients of which are not reported, since the results were similar to those presented in Table I for 4-group classification. The confidence intervals have been calculated with bootstrapping (resampling of the errors with 100 replications, using independent samples each year). The figures confirm our findings from Table I. Unemployment has an insignificant marginal effect on happiness in ordered logit, but in generalized ordered logit the marginal effect on the probability of the combined groups 1&2 is positive and that on group 3 negative. The marginal effect on the highest happiness group is insignificant. Low income, in turn, has, in ordered logit estimation, a significant and positive marginal effect on the probabilities of groups 1&2 and 3, and a negative effect on the probability of group 4. In generalized ordered logit the marginal effect on the lowest group (1&2) is not significant.

Proceeding in the same way to analyse life satisfaction, we aggregate scores 1, 2, 3, and 4 into one group and estimate a generalized ordered logit with six sets of coefficients. The results (not reported) show that even there at the lowest satisfaction scores unemployment reduces satisfaction more clearly, whereas at the highest scores the effect is not significant.

When interpreting these results we have to keep in mind that the dependent variable is censored, i.e., happiness and life satisfaction cannot fall below the lowest score. This reduces the possibility of finding significant

TABLE II

Marginal effects of Unemployed and Low_Income on happiness

	Marginal effect of unemployment	95% bootstrap confidence interval		
		Normal	Percentage	Bias corrected
Ordered logit				
Pr(happiness = 1 or 2)	0.011	(−0.021, 0.043)	(−0.019, 0.042)	(−0.019, 0.042)
Pr(happiness = 3)	0.014	(−0.019, 0.047)	(−0.032, 0.036)	(−0.032, 0.036)
Pr(happiness = 4)	−0.025	(−0.089, 0.039)	(−0.081, 0.051)	(−0.081, 0.051)
Generalized ordered logit				
Pr(happiness = 1 or 2)	0.038	(0.007, 0.069)**	(0.016, 0.075)**	(0.016, 0.080)**
Pr(happiness = 3)	−0.071	(−0.149, 0.007)	(−0.148, −0.002)**	(−0.148, −0.002)**
Pr(happiness = 4)	0.033	(−0.042, 0.108)	(−0.040, 0.101)	(−0.040, 0.101)
Ordered logit				
Pr(happiness = 1 or 2)	0.036	(0.018, 0.053**	(0.020, 0.055)**	(0.018, 0.051)**
Pr(happiness = 3)	0.041	(0.022, 0.059)	(0.025, 0.060)**	(0.024, 0.060)**
Pr(happiness = 4)	−0.076	(−0.110, −0.043)**	(−0.108, −0.047)**	(−0.108, −0.041)**
Generalized ordered logit				
Pr(happiness = 1 or 2)	0.012	(−0.003, 0.027)	(−0.001, 0.030)	(−0.0003, 0.031)
Pr(happiness = 3)	0.071	(0.024, 0.117)**	(0.022, 0.116)**	(0.021, 0.112)**
Pr(happiness = 4)	−0.082	(−0.127, −0.037)**	(−0.125, –0.032)**	(−0.120, –0.030)**

Notes: All models include the unreported individual-level control variables as described in Appendix A. ** 95% confidence interval does not include zero. ''Normal'', ''Percentage'', and ''Bias corrected'' refer to alternative ways of calculating bootstrap standard errors.

effects of unemployment on subjective well-being. Despite this, we find significant effects in the generalized ordered logit estimation.

4. CONCLUSIONS

This paper explored the connection between unemployment and subjective well-being in Finland by using cross section data from World Values Surveys for the years 1990, 1996 and 2000. There was an unprecedented increase in the national unemployment rate during the early 1990s. Interestingly, this dramatic change in the overall labour market conditions did not produce a drop in the mean level of Finns' subjective well-being. The basic results show that personally experiencing unemployment reduces life satisfaction, but unemployment and happiness are not related (conditional on income).

However, the result that unemployment and happiness are unrelated derives, at least partly, from the restrictions imposed in ordered logit estimation. Generalized ordered logit estimation, where the parallel regression assumption is lifted, shows that unemployment has a significant negative effect on moving from low happiness levels to higher ones, where at high happiness levels it has an insignificant effect. Therefore, unemployment contributes to the inequality of subjective well-being among individuals. All in all, the results demonstrate that unemployment may not always matter for happiness, but when investigating the issue one should go beyond the average effects.

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APPENDIX A

Definition of Variables

Variable	Definition/measurement
Dependent variables	
Happiness	Happiness is measured with alternatives 4 (very happy), 3 (rather happy), 2 (rather unhappy), and 1 (very unhappy)

Variable	Definition/measurement
Life satisfaction	Life satisfaction is measured on a scale of 1–10 (a higher value means that a person is currently more satisfied with her/his life)
Explanatory variables	
Unemployment	
Unemployed	Person is currently unemployed = 1, otherwise = 0
Income	
Low_Income	An indicator for persons whose income is within the lowest three income deciles = 1, otherwise = 0
Personal background characteristics	
Female	1 = female, 0 = male
Age	Age of a person
Age^2	Age squared
Basic education	Person has comprehensive education only = 1, otherwise = 0
University education	Person has university degree = 1, otherwise = 0
Human relationships	
Married	Person is married = 1, otherwise = 0
Widowed	Person is widowed = 1, otherwise = 0
Divorced	Person is divorced = 1, otherwise = 0
Children	The number of children as a continuous variable
Religiousness:	
Church	Person goes to church at least once a month (excluding weddings, funerals and christenings) = 1, otherwise = 0
God	An answer to question: "How important is God in your life?", on a scale of 1–10
Labour market attachment	
Part-time	Person has part-time work = 1, otherwise 0
Entrepreneur	Person is an entrepreneur = 1, otherwise 0
Retired	Person is retired = 1, otherwise = 0
Student	Person is a student = 1, otherwise = 0
Housewife	Person is a housewife = 1, otherwise = 0
Manager	Person is a manager = 1, otherwise 0
Main earner	Person is the main earner in the household = 1, otherwise 0

NOTES

[1] Frey and Stutzer (2002) and Layard (2005) provide surveys of the literature on happiness.

[2] It is difficult to establish causal relationship between unemployment and the level of subjective well-being by using cross-section data sources that have commonly been used in this strand of research.

[3] The mean values of happiness for the years 1991, 1996 and 2000 are 3.1, 3.2 and 3.2, respectively, and the means of life satisfaction 7.7, 7.8 and 7.9, respectively. The coefficients of the year dummies for the years 1996 and 2000 that are reported in Table I confirm this temporal pattern.

[4] The countries in the study by Di Tella et al. (2001) do not include Finland.

[5] One interpretation of this finding is that there is a trade-off between unemployment and inflation in people's utility (see Di Tella et al., 2001) and at the same time with the rise in unemployment, the inflation rate has fallen. The annual increases in the Finnish consumer price index in 1990, 1996 and 2000 were 6.1%, 0.6% and 3.4%, respectively. However, since we have only three time series observations we cannot test this trade-off.

[6] The income measures are different for different years of the World Values Surveys. In 2000 net income was asked, whereas in 1990 and 1996 gross income is reported. In addition, for these particular years respondents are asked for either annual or monthly income by using income groups and it is not possible to separate answers on annual income from the ones on monthly income in order to construct a continuous variable for income.

[7] The results on the control variables are reported in a working paper version (Böckerman and Ilmakunnas, 2005).

[8] Broadening the reference group to include, in addition, those working in paid work for less than 30 h did not change the results.

[9] This very same standard happiness question with four possible alternatives has been used in a number of earlier empirical studies on subjective well-being that have established the stylised fact according to which unemployment leads to a substantial decline in happiness. We have considered the possibility that the satisfaction question is more sensitive owing to the fact it is measured on a scale of 1–10 in contrast to happiness that is measured on a scale of 1–4. In particular, we have estimated the life satisfaction equation by aggregating groups 1–4 in which there are only a few responses, but the basic results reported in the paper remained the same.

[10] Blanchflower and Oswald (2004), among others, advocate the position that the happiness equation and the life satisfaction equation have the same structure.

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