The poor, the rich and the happy: Exploring the link between income and subjective well-being

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ABSTRACT

The relationship between income and subjective well-being (SWB) is investigated using eight waves of the British Household Panel Survey and an estimation strategy that allows us to relax some assumptions typically made in the literature. First, we use a random effects generalised ordered probit model to investigate whether income effects are heterogeneous across SWB categories, and, second, we discretise (absolute and relative) income variables to allow for the income effects to vary across income groups. We find that higher absolute income increases SWB but up to a certain level, while low income is significantly correlated with low scores in the SWB ladder. Our results are consistent with the Easterlin Paradox that has been reported in the literature. We find that high-income groups are less likely to belong in the highest SWB level, which could be partly explained by the fact that the relative income status (rather than the absolute one) is more important in determining (the highest level of) SWB.

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1. Introduction

A large and growing empirical literature in economics is focused on understanding the determinants of individual well-being using happiness or subjective well-being[1],[2] (SWB) functions (for recent reviews see Frey and Stutzer, 2002, 2005; Di Tella and MacCulloch, 2006; Clark et al., 2008). Since the early stages, the relationship that attracted the attention of economists was the one between income and happiness, which also bore important policy implications. The level of consumption associated with a positive level of income is often taken as one of the main components in the utility function and measures of individual and national income have been taken as proxies for the health of individual and societal growth over time (see a critic overview of these concepts in England (1998) and for a more general and macroeconomic standpoint see Boskin, 2000; Nordhaus, 2000).

In a similar fashion we continue to address the same relationship between income and happiness by combining two different strands of the current literature. On one hand, comparison and adaptation effects are incorporated into the analysis, by including self-perceived financial situation, while controlling for absolute income (and accounting for potential problems of endogeneity). On the other hand, we explore income heterogeneity in SWB across outcome categories and income groups, to test, among other things, whether the effects typically found in the literature (i.e., slightly positive effects on happiness) are insensitive to individual's income level.

The paper is structured as follows. Section 2 presents the background and previous literature, while it introduces in greater detail the contributions of the current paper. Section 3 presents the econometric methodology and Section 4 the data used in the analysis and the transformation of the variables. Section 5 presents the estimation results and Section 6 discussed them, while Section 7 concludes with a summary of the findings and thoughts for further research.

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[1] As is common in the literature, the terms happiness and subjective well-being are used interchangeably.

[2] The latent SWB is typically measured as a categorical variable derived directly from questions such as: "How dissatisfied or satisfied are you with your life overall", with a number of possible outcomes ranging from 'not satisfied' to 'completely satisfied'.

2. Background and motivation

The discussion behind the income–happiness relation is, to a large extent, driven by the so-called 'Easterlin Paradox' (Easterlin, 1974, 1995), which lies in the fact that within a country, at a given time, those with higher incomes are, on average, happier, while over time and in the long run, despite increases in income in developed countries, the average level of happiness has not increased significantly.[3] In, Easterlin's words, raising the income of all does not increase the happiness of all (Easterlin, 1995). Similar findings have been observed even more recently by Blanchflower and Oswald (2004) for the UK and the USA. Attempts to understand the Easterlin Paradox have put forward hypotheses related to hedonic adaptation, aspiration, comparison effects and time-use shift as very important determinants of well being that should be included in the SWB regression.

Hedonic adaptation implies that perceived well-being can adapt to material goods over time at the same rate as income increase, thus, even if additional material goods provide initial pleasure, their effects wear out over time. Hence, people get used to their consumption and income levels (Scitovsky, 1976; Easterlin, 1974, 1995). Similarly, aspiration or expectation effects relate to the fact that over the years the positive effects of increased income disappear as individuals adjust their aspirations accordingly (Easterlin, 2001; Stutzer, 2004; van Praag and Ferrer-i-Carbonell, 2004). Comparison effects suggest that in evaluating their financial situation, individuals compare themselves to their peers; as a result absolute income increases could be virtually cancelled out by comparison effects (van de Stadt et al., 1985; Clark and Oswald, 1996; McBride, 2001; Ferrer-i-Carbonell, 2005; Vendrik and Geert, 2007). Therefore, it might be the difference between one's earnings and his/her peers (relative income) that can explain SWB more precisely, rather than comparisons of absolute income. In general, relative income is evaluated as the average income of a reference group, defined exogenously by the researchers based on several criteria (e.g. region, age, education and gender), while whom individuals really compare themselves to remains unknown. Thus, a subjective element in defining relative income is introduced, as the researcher has to speculate about one's reference group.

Finally, Kahneman and his colleagues put forward another interesting interpretation related to time-use shifts. Rises in income often shift an individual's time-use towards activities associated with a deterioration in SWB. The activities in which wealthier people spend relatively more of their time are associated, on average, with slightly higher tension and stress (Kahneman et al., 2006).[4]

Moving away from the Easterlin paradox, a part of the literature is devoted in exploring how income affects happiness among different groups suggesting that the slope of the happiness–income relationship might vary (Frijters et al., 2004a; Lelkes, 2006; Clark et al., 2005). Clark et al. (2005) investigate slope heterogeneity using a latent class approach. Identifying the optimal number of latent groups and the probability of belonging to each latent class for each individual, they estimate the parameters of interest for each latent class, where significantly different marginal effects of income on SWB were found for each class. Furthermore, in two working papers, Boes and Winkelmann (2004, 2006) allow the coefficient of income to vary across the response categories and find that lower SWB levels are positively affected by income while a negative effect is reported for the highest SWB levels suggesting that "income buys happiness up to a certain level" (Boes and Winkelmann, 2004, p. 2).

Recent studies based on longitudinal samples, allow for unobserved individual heterogeneity by including individual nuisance parameters (such as personality traits and reference scale bias), arguing for a positive relation between income and happiness (Kahneman et al., 2006). Winkelmann and Winkelmann (1998) used a fixed effects logit model collapsing the SWB categories into a binary indicator of 'unhappy' and 'happy' people. Similarly, Ferrer-i-Carbonell and Frijters (2004), keeping then the ordinal nature of the SWB variables, estimate a fixed effects ordered logit model, while Ferrer-i-Carbonell (2005) made use of a random effects ordered probit model allowing for some correlation between the individual characteristics and the observable variables.

Furthermore, a number of studies have been able to utilise exogenous variations in income to more firmly establish the causal and positive link between income and happiness (Ravallion and Lokshin, 2002; Frijters et al., 2004a,b; Senik, 2004; Gardner and Oswald, 2007; Kahneman et al., 2006). Gardner and Oswald (2007) compare individuals who won at the lottery with two control groups using a longitudinal data of British people and found that the unexpected increase in income had a positive effect on their mental health. Frijters et al. (2004a,b) found that 35–40% of the increase in SWB in East Germans is due to the exogenous increase in real household income after the reunification of the country in 1991.

As argued in Section 1, the objective of this paper is to combine the literature on comparison, adaptation and expectation effects (used to explain the Easterlin Paradox) with the investigation of heterogeneity in SWB across for the British population, using the British Household Panel Survey (BHPS). The novelty of our approach lies in the methodology used that allows us to test for the importance of income on SWB in UK by relaxing several assumptions implicitly made when modelling the relationship between SWB and income.

First, apart from absolute income, we include in our estimations an original concept of 'relative income' based on the respondent's perceived financial status, which we assume to be a synthetic indicator that includes adaptation and comparison effects. As previously mentioned, happiness studies assess relative or comparison income effects on happiness by assigning a reference group to every individual, where these reference groups are defined in terms of age, education and possibly region and are common across the sample (see for example Ferrer-i-Carbonell, 2005). Arguably the choice of the reference group is arbitrary. There are other unobserved factors that influence what the individuals would consider as their reference group rendering impossible to evaluate the criteria used to build these reference groups. We argue that respondents are the best judges of their own situation and that in the absence of information about each individual's reference group, a subjective assessment of financial status (or situation) by each respondent might incorporate more efficiently how individuals evaluate their household income relative to their "true" reference group. In sum, rather than imposing the common criteria for the choice of reference group, we allow respondents' perception of their financial situation to be the indicator of their relative income. Moreover, subjective perception of financial situation includes an evaluation of the respondent's current income with respect to his past circumstances and aspirations. Our notion of relative income is linked to the theoretically and empirically well-grounded concept

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[3] The most common examples are that of U.S.A. and Japan. During the period 1972–1991 US real GDP per capita more than doubled, yet levels of happiness remained constant. Similarly, Japan experienced a constant and stable economic growth, from the end of 1950s to the end of 1990s, with GDP per capita increasing fivefolds, while there was no increase in the long run level in SWB. Almost the same conclusions hold for countries in Europe (Clark et al., 2008).

[4] Time-shifts towards less enjoyable activities are explained by the failure in anticipating the effect of some activities on life satisfaction which is called focusing illusion by Kahneman et al. (2006). A focusing illusion occurs when people concentrate on the influence of any single factor on their global well being and exaggerate its importance relative to factors contributing to moment-to-moment happiness.