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Happiness adaptation to income and to status in an individual panel☆

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ABSTRACT

We study adaptation to income and to status using individual panel data on the happiness of 7812 people living in Germany from 1984 to 2000. Specifically, we estimate a "happiness equation" defined over several lags of income and status and compare the long-run effects. We can (cannot) reject the hypothesis of no adaptation to income (status) during the four years following an income (status) change. In the short-run (current year) a one standard deviation increase in status and 52 percent of one standard deviation in income are associated with similar increases in happiness. However 65 percent of the current year's impact of income on happiness is lost over the following four years whereas the impact of status remains intact, if anything growing over time. We also present different estimates of adaptation across sub-groups. For example, we find that those on the right (left) of the political spectrum adapt to status (income) but not to income (status). We can reject equal relative adaptation (to income versus status) for these two sub-groups.

1. Introduction

In a seminal paper, Easterlin (1974) showed that an indicator of well-being for the post-war period in the US remained flat in spite of the considerable rise in income. In the cross-section for any particular year, however, income and happiness exhibit the expected positive association. One explanation that has been proposed for this "paradox" is the hypothesis that people only care about their relative position or "status". A second explanation is that people adapt to their income over time. In this case the cross-sectional evidence can be explained by relative position effects to which individuals do not adapt.[2] The narrow purpose of the present paper is to provide the first test of adaptation to status relative to adaptation to income.

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2 In this spirit, Easterlin (2003) has argued that a better theory of well-being involves adaptation to income but not to events in the non-pecuniary domain. The growth-without-happiness paradox has been replicated in other countries and other periods by economists (e.g., Blanchflower and Oswald, 2004), psychologists (e.g., Diener and Oishi, 2000), political scientists (e.g., Inglehart and Klingemann, 2000) and sociologists (e.g., Veenhoven, 1993).

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As explained above, these theories are both part of an explanation to the Easterlin paradox (if there is adaptation to income but not to status).

Our paper employs the approach developed in the small happiness literature that has emerged in economics following Easterlin's paper.[3] Using individual-level panel data on happiness from households living in Germany between 1984 and 2000, we provide evidence on three behavioral hypotheses, namely adaptation, status effects and loss aversion. In particular, we compare the extent of adaptation to income with the extent of adaptation to status. Our main objective is to provide evidence on the relative sizes of the (short and long-run) effects of being on higher income compared to enjoying higher status. We also compare the effects across sub-samples of people with different ideological inclination, of different gender and with different employment status. Finally, we compare how losses versus gains affect happiness and provide one way to quantify them (in terms of current income).

One finding of our paper is that there is significant adaptation to income. We can reject the hypothesis that people do not adapt to income in the four years following an income shock. The size of adaptation is sufficiently large that no significant income effects on happiness remain after the fourth year. The adaptation effects we investigate are consistent with the model of Pollak (1970), Wathieu (2004), Rayo and Becker (2005), inter alia. A classic paper in psychology, Brickman et al. (1978), showed that individuals who had won between $50,000 and $1,000,000 at the lottery the previous year reported comparable life satisfaction levels as those that did not.[4] Frederick and Loewenstein (1999) and Diener and Biswas-Diener (2002) present reviews of the evidence available, gathered largely in the psychology field. In the economics literature, Clark (1999) uses two waves of the British Household Panel to look at the relationship between workers' job satisfaction and their current and past labour income. Gardner and Oswald (2007) use data on a panel of individuals who receive windfalls (by winning a lottery or receiving an inheritance) and Di Tella et al. (2003) estimate the effect of income lags in a panel of 12 OECD countries.[5] The papers that are closest to our analysis are van Praag and Ferrer-i-Carbonell (2004, 2008) who study adaptation to income in the German panel using an alternative approach. For a literature review, see Clark et al. (2008b) and Di Tella and MacCulloch (2006). Layard (2005) discusses several policy implications. Our explanation is also related to the important work of van Praag and Kapteyn (1973) showing that income aspirations rise in proportion to income (sometimes called "preference drift"). Indeed, van de Stadt et al. (1985) find that the hypothesis of one-for-one changes in income aspirations and income cannot be rejected (see also van Praag and Ferrer-i-Carbonell, 2004 and Stutzer, 2004). Easterlin (2003) argues that family aspirations do not change as marital status and family size change but that material aspirations increase commensurately with household wealth.

Our paper also identifies significant status effects in a within-person analysis. We use the Treiman Standard International Occupation Prestige Score, a measure of the status attached to each job depending on the skills it requires, which has the advantage of having been designed by researchers in another context (see, for example, the description in Hoffmann, 2003). Controlling for changes in income, individuals declare themselves to be happier when they obtain a job that is deemed more prestigious. A one standard deviation increase in status is associated with a similar rise in happiness as an increase of 52 percent of one standard deviation in income during the first year. The evidence cannot reject the hypothesis that there is no adaptation to changes in status in the four years following a status shock. Using long-run (five year) averages, a one standard deviation increase in status is associated with a similar rise in happiness as an increase of 285 percent of a standard deviation in income. The short and long-run happiness effects of different kinds of labor and life events like unemployment, layoffs, marriage and divorce have been studied using happiness data from the German Socio-economic Panel by Lucas et al. (2004) and Clark et al. (2008). The effect of disabilities on long-run happiness is the focus of Wu (2001) and Oswald and Powdthavee (2008). Life satisfaction and financial satisfaction data have both been used to study the short and long-run effects of different kinds of events by van Praag and Ferrer-i-Carbonell (2008). Frey and Stutzer (2006) argue that people may mis-predict the extent to which they adapt to different kinds of goods and activities. Riis et al. (2005) provide some evidence in the context of renal patients receiving dialysis treatment. Helliwell (2003) and Blanchflower (2009) discuss international evidence.

Our estimates of status effects complement the findings in the growing literature testing if people care about their income relative to that of others, as in the models of interdependent preferences (where utility varies inversely with the average income of others) by Duesenberry (1949), Parducci (1968), Hamermesh (1975), Pollak (1976), Frank (1985) and Cole et al. (1992), inter alia. Empirical evidence on the effect of relative position using well-being data is presented in Clark and Oswald (1996), Blanchflower and Oswald (2004) and Brown et al. (2008).[6] Senik (2004) studies the information content of reference group income. An interesting study by Luttmer (2005) involves a panel of almost 9000 individuals in the United States. He matches individual data on happiness and income with a measure of neighbor's income, given by the average earnings in the locality in which individuals live (which contain 150,000 inhabitants, on average). He then observes that similar decreases in

[3] See Frey and Stutzer (2002) and Senik (2005) for reviews and Hamermesh (2001) for an example of a related approach focused on job satisfaction that can also be considered a measure of well-being, albeit on a particular domain. An important precursor of the happiness literature is work on the individual welfare function of income (see, for example, van Praag and Kapteyn, 1973).

[4] This is also sometimes called the "hedonic treadmill" hypothesis or the "setpoint" model (see Costa et al., 1987). Easterlin (2003) stresses that the evidence, which is based on small samples, is consistent only with incomplete adaptation.

[5] See also Clark (1999), Grund and Sliwka (2003) and Burchardt (2005) for further well-being evidence on adaptation to income. On the stability of happiness, see Lykken and Tellegen (1996).

[6] There is a large literature on the link between social hierarchy and primate health, reviewed in Sapolsky (2005).