



# Income–happiness paradox in Australia: Testing the theories of adaptation and social comparison<sup>☆</sup>

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## ABSTRACT

This paper investigates whether the theories of adaptation and social comparison can explain the income–happiness puzzle (Easterlin Paradox) in Australia. Alternative specifications of happiness model that incorporate adaption, comparison incomes and other relevant variables are estimated using the panel data from the five waves (2001–2005) of the Household Income and Labour Dynamics in Australia (HILDA) surveys. The statistical tests provide no support for the adaptation effect on happiness. However, we find strong support for the theory of social comparison as an explanation for the happiness paradox. An increase in peer group income hurts the poor more than the rich, suggesting that a redistribution of income is likely to enhance the overall wellbeing of society. A sensitivity analysis is conducted to check the robustness of results.

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## 1. Introduction

Economic theory suggests that a higher income allows an insatiable consumer to reach a higher indifference curve and achieve a greater level of utility. However, the existing empirical studies of the relationship between utility (self reported happiness) and income report paradoxical results. At a point of time, people with higher levels of income are happier than those with lower income. Over the time, happiness does not increase when a country's income increases. The point of time statement is based on the cross-sectional comparison of average happiness and income within and between countries; the time series statement relates happiness with economic growth in a country. Easterlin (1974) is the first to report this paradox based on his analysis of happiness data from the yearly surveys for the United States. He reports that the rich people are happier than the poor within the US in a given year. Yet since World War II, the happiness responses are flat in the face of considerable increases in real average income.

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This happiness paradox, popularly known as the “Easterlin paradox,” is not specifically a US phenomenon. A similar picture is observed in a number of other developed countries including France, Germany, Japan and the United Kingdom at different periods of time (Easterlin, 1995; Inglehart and Klingemann, 2000; Blanchflower and Oswald, 2004; Clark et al., 2008; Easterlin and Angelescu, 2009). In Japan, despite a five-fold increase in real per capita income between 1958 and 1987, mean subjective wellbeing (happiness) has not budged.

In Australia, the mean values of individual real income and happiness scores obtained from the Household Income and Labour Dynamics in Australia (HILDA) surveys reveal that while the level of income has grown, reported happiness has fallen slightly during the period 2001–2005 (Table 1 and Fig. 1). The aim of this paper is to explain this observed income–happiness puzzle.<sup>1</sup>

To date, there appears to have been no attempt to explain the income–happiness paradox in Australia. The existing Australian studies of happiness are concerned with the effects of income, wealth and other relevant variables such as education, unemployment and age on well-being and ill-being using survey data for one or few years. For instance, Headley and Wooden (2004) used HILDA survey data for 2002 to investigate the determinant of well-being and ill-being in Australia. The well-being of an individual is measured in terms of two separate variables, life satisfaction and financial satisfaction, whereas ill-being is measured in terms of mental health and financial stress. The study reveals that the effect of wealth on life and financial

<sup>1</sup> The terms ‘Easterlin paradox’, ‘happiness paradox’ and ‘income-happiness puzzle’ are used interchangeably throughout this paper.

**Table 1**

Income and happiness in Australia.

Source: Authors' calculations based on data for 8530 individuals from the Household Income and Labour Dynamics in Australia (HILDA) surveys, 2001–2005.

Year	Average real income	Average happiness score
2001	\$24,202	7.99
2002	\$25,241	7.91
2003	\$25,218	7.98
2004	\$25,926	7.95
2005	\$27,185	7.89

satisfactions is stronger than that of income. Both income and wealth reduce financial stress.<sup>2</sup> The mental health is affected only by wealth whereas financial stress is affected by income as well as wealth. Females are found to be happier than their male counterparts. Dockery (2003) investigated the self reported levels of happiness of young Australians during the school-to-work transition years based on data from the Longitudinal Surveys of Australian Youths, 1967–2002. The study reveals that young people in unemployment are less happy than those in either study or employment. The youths coming from the sole-parent households are associated with low levels of happiness, whereas those coming from the wealthier background are associated with greater levels of happiness. In a recent study based on unbalanced data from the first three waves (2001–2003) of HILDA, Carroll (2007) reveals that unemployment has a detrimental effect on life satisfaction. In order to compensate for the effects of unemployment on unemployment men would need to be given an additional Aus\$42,000 while women would need to be given AUS\$86,300.

We provide an empirical testing of the Easterlin paradox observed in Australia during the period of 2001–2005. The literature on happiness puts forth three theories to explain the paradox: income adaptation, social comparison and aspiration. Since the data on aspiration are not available in the Australian surveys, this paper performs empirical testing of the first two theories to explain the happiness paradox. More precisely, we specify happiness models which incorporate social comparison and adaptation incomes along with current income and many control variables such as age, gender, education, marital status, employment status and work hours. The models are estimated with panel data for 8530 individuals from the five waves (2001–2005) of the Household Income and Labour Dynamics in Australia (HILDA) surveys. In these surveys the individuals are asked to report their happiness (life satisfaction) on a scale from 0 to 10—a standard procedure adopted in most international happiness surveys. The 0 value on the scale is labelled as 'totally dissatisfied' and 10 is labelled as 'totally satisfied'. These self-reported happiness scores can be treated either as a latent variable (where comparability is assumed to be at the ordinal level) or as a cardinal variable. Most economists treat self-reported satisfaction as an ordinal concept whereas the majority of psychologists and sociologists consider it to be cardinally measurable. In our model specifications, we shall treat self-reported satisfaction as a latent variable. However, we also perform the same regressions using the cardinality assumption to check the sensitivity of results.

The paper is organised as follows. We begin in Section 2 with a brief discussion of alternative theories that are used to explain happiness–income puzzle observed in developed countries. The details of happiness model and estimation details are provided in Section 3. The HILDA survey data and variables are described in Section 4. Section 5 discusses the empirical results and Section 6 presents a sensitivity analysis to check the robustness of results. A brief discussion on the impact of the structure of Australian economy on the income–happiness nexus is presented in Section 7, and Section 8 concludes the study.

**Fig. 1.** Income and happiness in Australia.

## 2. The Easterlin paradox: alternative theories and international evidence

As mentioned above, three theories, namely, adaptation, social comparison and inspiration, are put forward as the possible explanations for the Easterlin paradox. Income adaptation suggests that an increase in income will temporarily increase people's happiness, but as time goes by the effect wears off as people adapt or get used to their new income level. If there is complete adaptation to previous income level, income growth will not be accompanied by a higher level of happiness. The theory of aspiration, on the other hand, suggests that growing incomes lead to higher aspirations (expectations), which have a depressing effect on happiness. An increase in current income leads to a temporary increase in happiness but as time goes by the effect wears out as we revise the amount of income that we aspire to. Thus, the reference point for aspiration theory is the forward income; for adaptation, the backward income serves as a reference point (Clark et al., 2008). Testing of these two theories requires time series observations on individual income. These theories cannot be tested simultaneously if the time series is short.

The theory of social comparison suggests that people do not assess their life in isolation from all others. Rather they compare their income and achievements with those around them, called the peer group (or reference group). If the income of an individual is constant, then an increase in the income of his peer group will have a depressing effect on him reducing his life satisfaction. This is so because rising peer group income reduces the relative position of the individual. Thus, it is one's relative income rather than one's absolute income, which determines life satisfaction.<sup>3</sup> Easterlin (1995) argues that if economic growth raises the income of all such that their relative positions remain unchanged, the level of happiness in the society should remain stationary.

A number of studies have tested these theories using sample survey data largely from the developed world. One of the most regularly cited studies of adaptation is that of Brickman et al. (1978) which shows that recent lottery winners derived less pleasure than controls in a variety of ordinary events and were not in general happier than controls due to adaptation. In other words, winners get used to new standard of living. Further studies on adaptation have produced mixed results. Di Tella et al. (2007) use panel data on the happiness of 7812 individuals living in Germany from 1984 to 2000 and report that two-thirds of the initial affect of income on happiness is lost after 4 years. Jørgensen and Herby (2004) generate much weaker conclusions on income adaptation when performing happiness regressions based on the European Community Household Panel (ECHP) survey data for Union member nations covering the period 1994–2001. These weaker results may be because these authors have looked at adaptation only within 1 year, which, if adaptation occurs over several years, will fail to pick up the true extent to which people adapt to changes in income. At the macro level, Di Tella et al. (2003) show that the happiness effect

<sup>2</sup> Note that the data on wealth were collected only in the second wave of HILDA.

<sup>3</sup> The literature on the effect of relative income on utility can be dated back to Veblen (1899) and then Duesenberry (1949).

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