

Income, aging, health and wellbeing around the world: Evidence from the Gallup World Poll

By Angus Deaton

Commentary by Amitabh Chandra and Heidi Williams*

Many questions in economics are motivated by the question of what circumstances or public policies make individuals better or worse off. Traditionally, economists have relied on revealed preference arguments to motivate the idea that these questions can be answered by studying data on people's observed choices. Dating back at least to the work of Richard Easterlin (1974), an alternative and complementary literature has developed which focuses on studying data on subjective self-reports of individuals' well-being – for example, questions which are roughly of the form: “Would you say you are very happy, happy but not very happy, unhappy but not very unhappy, or very unhappy?”

Building on Easterlin's seminal work in this area, a large literature has developed which uses these types of “happiness” measures to study a variety of questions – ranging from whether divorcing couples become happier after their marriage dissolves (Gardner and Oswald 2005) to whether the narrowing of the gender gap (broadly construed) has led to increases in happiness among women (Stevenson and Wolfers 2007). But arguably the main focus of this economics of happiness literature has been on the question which Easterlin initially addressed – namely, on studying the relationship between income and happiness. In what is thought to be the first analysis of this relationship, Easterlin (1974) noted that although average GDP per capita rose between 1975 and 1997 in the US, mean reported happiness remained relatively flat.

In an insightful and thoughtful paper, Angus Deaton brings fresh perspective to the economics of happiness literature. Deaton's analysis is based on the newly available Gallup World Poll data which covers a large number of countries and includes data which is nationally representative for persons aged 15 and older; the latter feature is arguably an important improvement from previously used data sources, which often only sample urban and literate populations. Deaton uses this data to re-examine the Easterlin puzzle as well as many of the other classic questions in the economics of happiness literature. Importantly, despite noting a powerful association between life satisfaction and income, he notes that the association between health satisfaction and health (measured as life expectancy and HIV prevalence) is tenuous. Deaton concludes that these small correlations between subjective measures and real health outcomes should temper our proclivity to conclude that subjective well-being measures are reliable indicators of population health.

Are subjective well-being measures useful summary measures of social welfare?

Deaton examines the cross-country relationship between average life satisfaction

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and life expectancy (Table 2), and finds that life expectancy and changes in life expectancy play limited roles in explaining international cross-sectional variations in average reported life satisfaction. Income displays a persistent and robust role in predicting life satisfaction, and it does not appear to be a statistical surrogate for life-expectancy. Deaton notes that measures of infant mortality, child mortality, and HIV prevalence explain little of the variation in reported life satisfaction. When he examines the analogous relationship between average health satisfaction (rather than life satisfaction) and life expectancy (Table 3), he finds that life expectancy and changes in it play a limited role in explaining international variations in average reported health satisfaction.

Deaton correctly notes that these results are at odds with the view that subjective health should be at least partially correlated with core measures of objective health. His results raise questions about whether subjective well-being measures can serve as useful summary indicators of human welfare in international comparisons. Similar questions were raised by Betsey Stevenson and Justin Wolfers (2007) who noted that by many objective measures of well-being (for example, real wages, educational attainment, and control over fertility) the lives of women in the US have improved dramatically over the past 35 years. Yet, measures of subjective well-being indicate that women's happiness has declined over that period both in absolute terms and relative to male happiness. The authors document this stylized fact in a wide variety of datasets, and show that the trend holds across demographic groups – for both working and stay-at-home moms, for both married and divorced women, for both young and old women, and across the education distribution. These findings raise questions about the legitimacy of using subjective well-being measures to assess the impacts of broad-scale social changes.

Examining links between measures of subjective well-being and “real” outcomes

Di Tella and MacCulloch (2006) review the literature on what subjective measures of well-being are actually measuring and argue that elicitation of happiness almost surely provide a measure of true internal utility at the individual level. The authors acknowledge that there is clearly some noise in measurement, but their interpretation is that the signal-to-noise ratio in the available data is sufficiently high to make empirical research productive. As evidence, they cite cross-sectional and panel studies, which suggest that unemployed individuals tend to report low happiness scores (Clark and Oswald 1994; Winkelmann and Winkelmann 1998), suggesting that happiness surveys are capturing something meaningful about “true” utility.

Others who have noted the value of subjective measures of health include Blanchflower and Oswald (forthcoming), who use cross-country data and provide evidence that “happier” countries report systematically lower levels of (albeit, self-reported) hypertension, or high blood pressure. As noted by the authors, objective hypertension measures would be valuable for this analysis but are not available for all countries in their sample. A natural and useful extension of this type of analysis would be to ask whether changes in “real” health measures affect changes in measures of subjective well-being. For example, one can imagine using micro-level empirical data to directly test the hypothesis that changes in life expectancy affect measures of subjective well-being. Variation in life expectancy may be usefully generated by within-person differences generated when individuals learn the results of medical diagnostic tests – for

example, genetic tests which give information on an individual's probability of being diagnosed with breast cancer. Clearly, there would be two components to such an exercise—first to measure the short-run response on subjective health, and also to measure the longer-run response. This latter reaction may, in theory, be smaller than the former if individuals adapt to changes in objective health status over time.

If the results of such micro-level empirical studies provide evidence that changes in health translate into changes in subjective well-being, one could then explore potential explanations which could reconcile these micro-level estimates with the types of macro-level evidence provided by Deaton – which suggested little if any relationship between changes in life expectancy and measures of subjective well-being. Finding an association in micro-analysis that is not present in the macro-analysis could be reconciled through a model which included some form of country level differences in health temperament, reference-dependent preferences, or sample-selection. The first theory would suggest that there is an idiosyncratic, country-specific, 'fixed effect' in how subjective health is reported. The presence of such an effect could, in principal, mask a macro relationship between subjective and objective health. Of course, if these idiosyncratic differences in temperament were truly fixed, the lack of a macro-level association between subjective and objective health would reemerge if the regression was estimated in changes (something that would be possible with panel data). An alternative theory, as discussed by Di Tella and MacCulloch (2006), is that many researchers – beginning with Easterlin himself in his original 1974 article – have suggested that subjective well-being measures may be capturing some form of reference-dependent preferences (which in a cross-section would be statistically indistinguishable from country fixed effects in temperament). In the context of studying the relationship between income and self-reported measures of subjective well-being, several recent studies have suggested that individuals' self-reported well-being may depend on their consumption or income relative to some reference group (see, for example, Clark 2003 and Luttmer 2005). Analogously in the context of life expectancy instead of income, if individuals' utility was modeled as a function of their life expectancy relatively to the life expectancy of some reference group, it is possible that a positive correlation between life expectancy and reported well-being at the individual level could be consistent with there being no or even a negative correlation at the aggregate level. A negative correlation between life expectancy and reported well-being at the aggregate level could arise if decreases in life expectancy associated (for example) with HIV decreased average life expectancy, but the actual individuals affected by HIV who themselves have lower life expectancy are less likely to be captured by surveys than are non-HIV affected individuals. This hypothesis is arguably ruled out by the sampling scheme of the Gallup data, which promises representative samples. But to the extent to which sicker individuals are less likely to complete these surveys, or are more likely to be hospitalized, it is not difficult to see that sample-selection is a third theory which may offer an explanation for the observed facts.

In the absence of additional empirical evidence that changes in objective measures of well-being (such as life expectancy) are correlated with changes in subjective measures of well-being, we agree with Deaton that it seems difficult to argue that these subjective measures of well-being can serve as useful summary measures of social welfare which can be used to guide policy. For example, if one policy was found to raise subjective measures of well-being but leave infant mortality unchanged, and an

alternative policy was found to reduce infant mortality rates but leave subjective measures of well-being unchanged, one would need to take a stance on which measure should be given more weight in a social welfare function. It seems difficult to argue that subjective well-being measures should be valued over “real” measures such as infant mortality, at least in the absence of much more empirical evidence on these questions.

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