Commentary: The units of utility

Comment to Clarck, A.E. and Oswald, A.J. 'A simple statistical method for measuring how life-events affect happiness'

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When making choices we compare the expected utility of alternatives, at least when we try to choose rationally. Comparison is easier when the utility of different things can be expressed in a common unit. Economists use monetary value for this purpose. This unit is quite helpful for comparing goods and services that have a market price, such as houses and bicycles. It is less helpful in assessing the relative value of things like fresh air and true love, since these matters are not traded for money. For this reason economists sometimes try to estimate 'shadow prices'. This is of course a tricky business. Estimates are easily flawed by ideological preposition and like 'shadow cabinets' in British politics, proposed shadow prices often serve only to promulgate propaganda.

In this context Clark and Oswald propose estimating shadow prices on the basis of observed effects on happiness. This idea has been advanced in the past, f.e. by VanPraag and Plug (1973), but now as the study of happiness matures, it becomes more practicable.

Merits

A strong point of this approach is that it is based on an equivalent of market behavior. Common preference, as revealed in the market, is substituted by average enjoyment as revealed in surveys. This makes estimates of shadow prices less vulnerable to wishful thinking. Another advantage is that the happiness criterion is widely applicable and thus allows for a similar estimation of shadow prices for quite different things.

The method is particularly suited in cases where a money price for non-market goods is required, such as an indemnify settlement for the death of a child. It can also be applied in social policy, for instance when the costs of a school crossing patrols is balanced against the suffering of children run over. An accessory advantage of the method is that it presents differences in happiness in an understandable way. For some people at least, an amount of $ 10.000 says more than half a point on a 10-step happiness scale.

Limitations

Still the proposed method has some limitations, some of these can be dealt with, and some are inherent to the approach.

Measure of happiness

In this demonstrative analysis happiness is measured using the General-Health-Questionnaire shown on appendix A. A look at the response scales shows that this questionnaire taps *perceived change* in wellbeing, rather than the recent *state* of wellbeing. Response options on the happiness

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item (l) range from 'more so than usual' to 'much less than usual'. This way of putting the question is not ideal. What we want to know is how happy people really feel, not whether they think they feel better than 'usual', whatever that may be. Such estimates with an indistinct past are also easily distorted by stereotypes and may make the unemployed seem more miserable than they really feel. Using more appropriate data easily solves this problem. A list of suitable questions is available at the World Database of Happiness, Catalog of Happiness Queries.

Capturing change in happiness
The application in this paper draws on cross-sectional data. The shadow prices in table 1 are derived from regression coefficients and reflect the difference in happiness at the same point in time. These differences do not necessarily reflect causal effects. The rich may be happier than the poor because money buys happiness, but it is also possible that happiness boosts earning power. Such dual causality can also be involved in the differences in happiness between the employed and the unemployed and between married and divorced persons. When estimating the shadow price of loosing ones job or getting a divorce, we need data about average *change in happiness* following such events. These data are available in the study at hand, but not used. The analysis is performed on pooled waves and not by comparing wave-to-wave change. The authors admit this shortcoming but play it down, saying that this is a mere technical problem and suggesting that the effect of happiness is relatively small. However, these effects seem quite substantial (Veenhoven 1989), taking them into account could half the shadow prices in table 1.

   If we do compare over time, we meet with several problems of panel analysis. One of these problems is that a change in happiness does not always set in right after a 'happy making' event. For example in the case of divorce, we see mostly a gradual decline in happiness in the years before the split and a slight recovery when it is settled. Unemployment is mostly not a surprise either. This requires that both the after-effect of events are considered, and the costs of anticipation. This brings us to a third problem, the problem of incorporating duration of effects. Some events have a short-lived effect on happiness, for instance the burning down of one's house. Other events affect happiness lastingly, such as the death of one's spouse. The 'simple statistical method' proposed here assumes that all afflictions last equally long and expresses the shadow price in one yearly amount. Real compensation would typically require diminishing payment. This is just one aspect of the duration problem. Another aspect is that some events also affect longevity and thereby change the time one feels happy or unhappy. Marriage adds not only to happiness but also to longevity, so the extra happiness is enjoyed longer. This duration effect is not captured by this method and hence the impact of marriage is underestimated. Likewise it could overestimate the yields of promotion at work. If the Peter Principle holds, promotion boost happiness only in the beginning but ends up in failure, which sometimes leads into premature death. Still promoted people could appear to be somewhat happier on average, since the dead is not polled.
It is not impossible to adapt the model to reflect these points, though availability of data will set some restrictions. However such an adjusted model is likely to yield different results.

Comparability across time and culture
A last problem is in the variability of the relationship between income and happiness. This relationship is typically small in affluent nations such as Britain, which gives rise to the high shadow prices shown in table 2. If the effect of income on happiness declines even more, the shadow prices will inflate in proportion, falsely suggesting that the costs of unemployment and divorce increased. Likewise a growth of the difference in happiness between rich and poor

(Thatcher back in power) would seem to reduce the costs of unemployment and divorce. For the same reason shadow prices differ across nations. This makes sense in some cases; for instance the compensation for unemployment will be lower in India than in Britain. Yet, though bereavement is about equally traumatic in all western nations, the shadow price of widowhood will be lower in the USA than in Sweden, because happiness depends more on income in the former country than in the latter. Likewise shadow prices will differ across sub-cultures. Since the effect of income on happiness is typically greater among materialists, one can expect a lower shadow price for employment among MBA-students than among hippies, which is again counter-intuitive.

All in all, the method applies only to a certain place, at a certain time and in a certain social milieu. Though this is better than nothing, it is less than we would want.

Alternative: expressing utility in happy life-years
Expressing happiness in money equivalents may be helpful in some cases, but mostly we do better by considering happiness as such. Not only do we evade the above problem of hedonic 'exchange rates'; we also keep closer to the problem, that is, estimating the final utility of behavioral alternatives.

When trying to quantify effects of events on happiness we can simply note the average yield or loss in percents of the actual scale range. For instance, we can say that marriage boosts happiness by 10% and that bereavement reduces it by 25%. Effects can also be expressed in changes in school marks on the common range from 1 (bad) to 10 (excellent). While this may do for the general public, expert demand can be served with more sophisticated statistics.

As noted above, we should not only consider how much happiness changes, but also how long people are affected by that change, given the effects on length of life. We can deal with that problem by applying a unit commonly used in epidemiology. The adverse effects of bad sanitation of infectious disease are often expressed in life of years lost. This measure is also used for quantifying the severity of social problems. For instance Wilkinson (1996) claims that a high degree of income inequality inequality reduces the life expectancy of the poor considerably. His unit of utility is 'life-years'.

Recently this method has been extended by including the quality of the years lived. The unit is then 'quality adjusted life-years', abbreviated QALY's. One variant of this approach is the number of years lived without illness. This is called 'disability adjusted life-years' or Daly's. In the same vein I have proposed measuring utility by the number of years lived happily (Veenhoven 1996). This could be called 'happiness adjusted life years' and shortened to HALY's.

Happy life-years can be computed by combining registration data on length of life with survey data on appreciation of life. A simple method is to express happiness on a range 0-1 and then to weight each year by the average.

$$HALY = H_1 + H_2 + \ldots . . H_l$$

where H is average 0-1 happiness in a year, 1 is the first year considered and l the last.

Expressing the impact of events in HALY's has several advantages. First of all we bypass the above-mentioned problems of shadow prices. Temporal effects are systematically included and HALY's are well comparable across place, time and culture. Further this unit nicely combines intensity and duration of happiness and evades the problem of shortsighted hedonism.

This measure is also well applicable at the nation level. We can then determine what kind of policies produce the happiest life-years on the average, in other words what 'rules' are most conductive to the 'greatest happiness of the greatest number'. Data on average happiness in nations are available in the World Database of Happiness (2002). Last but not least, this unit is easily understood and appeals to a common notion of the good life.

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