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# IS THERE A KINK IN THE HAPPINESS LITERATURE?

Morris Altman\*

*Dean & Head, Newcastle Business School  
Professor of Behavioural & Institutional Economics  
The University of Newcastle, Australia  
Professor Emeritus, University of Saskatchewan, Canada  
Email: morris.altman@newcastle.edu.au*

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**Abstract:** *One of the early key empirical findings of the happiness literature is that at higher levels of per capita real income there appears to be diminishing returns to income at least with regards to marginal changes in 'happiness' measured by various survey instruments. Although these results have been recently challenged, these earlier findings and the results of many contemporary studies suggest that an inelastic relationship exists between real per capita income and happiness after a relatively low threshold of per capita income is reached. Applying some of the results of prospect theory I argue that even if it were true that the marginal effect of income on happiness is zero, a reduction in income would probably reduce the level of happiness, yielding a kink in the 'happiness curve'. Also, applying a target income approach to the happiness literature, one can argue that pursuing higher target income, in itself, is a means of increasing life satisfaction. These two theoretical instruments yield results consistent with some of the most recent empirical finding based on Gallup Poll Survey data. In addition, applying insights from the capabilities approach, I argue, that increasing income is a means of purchasing the capabilities to increase individual levels of happiness through the production of public goods, such as health care and education. A given marginal increase in income need not generate any increase in happiness if this income increase is highly unequally distributed in a population or is not used to purchase goods and services that contribute to increases in the level of happiness.*

## Introduction

Richard Easterlin (1974) challenged, what he argued, was the received view in economics, which had trickled down to other disciplines, that higher levels of real per capita real income should increase the level of utility or wellbeing of the affected population. Easterlin identified utility and wellbeing with happiness, which has become standard fare in the happiness literature. He argued, based on evidence, that this prediction does not hold as real per capita income increases above a certain threshold. There appeared to be diminishing returns to income at least with regards to marginal changes in 'happiness' measured by various survey instruments. Indeed, at the extreme it is argued in the happiness literature, that beyond such a threshold, increasing real per capita has no affect on the level of happiness. Although these results have been recently challenged, Easterlin's narrative has been the mainstay of the happiness literature.

Less extreme data analysis would suggests that the elasticity of happiness to relative to changes in real per capita income diminishes at higher levels of real per capital income. Can one infer from this that increasing per capita income beyond this threshold is of no value to affected individuals? Do these empirical results imply that income can be reduced amongst income cohorts and economies, without negatively

impacting the level of happiness of the affected individuals, keeping in the back burner any potential negative productivity effect of such actions? Applying some of the results of prospect theory I argue that even if it were true that the marginal effect of income on happiness is zero, a reduction in income would probably reduce the level of happiness, yielding a kink in the 'happiness-income curve'. Also, applying a target income approach to the happiness literature, one can argue that pursuing higher target income, in itself, is a means of increasing life satisfaction or happiness.

These two theoretical instruments yield results consistent with some of the most recent empirical finding based on Gallup Poll Survey data. In addition, applying insights from the capabilities approach (Nussbaum and. Sen, 1993), I argue, that increasing income is a means of purchasing the capabilities to increase individual levels of happiness through the production of social and public goods and services, such as health care and education. A given marginal increase in income need not generate any increase in happiness if this income increase is highly unequally distributed in a population or is not used to purchase goods and services that contribute to increases in the level of happiness.

## What is Happiness

Contemporary economics does not speak directly to the notion of happiness. Rather, it speaks to the notion of utility, which tends to mean satisfaction. A level of utility therefore refers to a level of satisfaction. Utility is often referenced as a dependent variable whose value is a function of one's level of consumption, for example. The null hypothesis is that the more real income there is the higher should be the level of utility. Money is able to purchase more goods and services in the present and the future that should yield higher levels of utility or satisfaction. In the happiness literature, happiness is substituted for utility or satisfaction. Hence, when utility goes up in the conventional model, so should the level of happiness. It is important to note this assumed identity between satisfaction and happiness. The happiness literature builds on this assumed relationship. But, of course, economics has, at a minimum, assumed that money does by buy utility and satisfaction if this money is controlled by the individual or is used by others (government, for example) to provide goods and services that directly benefit the individual. For the most part this relationship is not one that is clearly empirically based. It rather deduced logically from set of first principle assumption about how assumed income and wealth maximizing individuals would evaluate the impact of increases to income and wealth on their level of utility or satisfaction.

This being said, happiness has two key and different definitions within the happiness literature: life evaluation related happiness and emotional well-being (or hedonic well-being or experienced happiness). Life evaluation related happiness is most closely related to the conventional notion of happiness. This is measured based on surveying a sample population where individuals rate their level of life evaluation-happiness. The individuals rate their current life on a scale of 0 to 10, where 0 is "the worst possible life for you" and 10 is "the best possible life for you." A most common question is: "How satisfied are you with your life as a whole these days?" (Kahneman and Deaton, 2010). This is viewed as a more long term rating of one's level of measured happiness.

Emotional well-being is also measured along a 0 to 10 scale. But this is much more of a short term measure of happiness, referring to experienced happiness—how does one feel right now about one's day. This rating can be affected by events that transpire in the very short run, finding or losing a job, personal problems, or an immediate personal success. This is an important measure of happiness but it is not the one most clearly linked to the level or changes in the level of real income. For any given level of real income per person, one can expect a lot variation in the level of experienced happiness, given particular events transpiring at the time of the survey. This type of measure of happiness is not easily tied to the conventional economics approach to 'happiness', utility, or satisfaction. But this measure and related empirical evidence suggest a more inclusive understanding of what it means to be happy, going beyond the money can buy happiness narrative.

## Happiness and Economic Theory: A deconstruction

Conventional economics predicts that increases in real income to an individual should increase that individual's level of utility or wellbeing, which is often related to some measure of happiness. This follows from the assumption that, *ceteris paribus*, more is better than less. The impression one gets from the literature is that the relationship is linear and that what happens to the representative individual is expected to be replicated to all individuals in a particular society.

There are clearly two key assumptions here. First, one has the assumption of a linear and positive relationship between real income and wellbeing or happiness. Second, it is assumed that what is true on average should hold true for all or most individuals. Therefore, it assumed that if real per capita income increases on average, most people will experience a similar growth and hence should experience a similar increase in utility or wellbeing. But even if the first hypothesis hold true, if the growth of real per capita income is heavily skewed to a relatively small percentage of the population, one would not expect that the average level of utility to increase by much given the small weight attached to those members of society experiencing much the growth in real per capita income. To illustrate this point, assume a population of 100, income per capita is \$60,000, and perfect income equality. Double average per capita income to \$120,000. But assume that only 10 people capture the entire income increase. In the conventional model, average happiness might double for 10% of the population, but it won't increase for the rest.

Total average happiness increases by:

$$(100\% \times 10\% + 0\% \times 90\% = 10\%)$$

If you simply look at averages, the impression one gets is that there is a huge increase in per capita income, but happiness does not increase by much. But digging beneath the surface, the conventional economics prediction holds at the individual level. One can't analysis the income-happiness relationship without considered placing it in the context of the distribution of income.

Moreover, if happiness is in part conditional on how the public sector spends the increase in public revenue generated by the growth in per capita income, if this public revenue is not spent on projects that are pertinent to the general population, *ceteris paribus*, a given increase in per capita income will have a lesser impact on the level of utility than it might otherwise have had. For example, expenditure of health, public health insurance (which reduces anxiety over health care payments and access to health care), and investment on job maintenance (keeping unemployment rates low and job retraining) can have a large positive impact on the average level of happiness in society, *ceteris paribus*. These provide individuals with the capabilities to live a happier life.

In its theoretical 'pure' version of the relationship between the growth of real per capita income and the level of utility, wellbeing, or happiness, the conventional wisdom focuses on the individual, not the group. It is only the individual that is supposed to be positively affected by the growth of her or his per capita income. If data don't accurately reflect

what transpires at the level of the individual (and this must incorporate public expenditure effects), demonstrating that increases in real per capita income have no or little impact on wellbeing does not contravene the conventional wisdom's purported predictions on the relationship between income and happiness. Importantly, however, when this positive relationship does not hold in the average calculations this strongly suggests serious distributional and public expenditure issues that speak to most people not benefiting from measured average increases in real per capita income. Even if money can buy happiness, it does so at the level of the individual, and only if the individuals actually benefits from increases in real per capita income.

## Happiness, and the Easterlin Paradox

The basis of the so-called Easterlin Paradox is that, according to Easterlin's analysis, there is positive relationship between levels of real per capita income and happiness (self-reported measures of life evaluation related measures of happiness) within a country but not necessarily across countries.<sup>1</sup> Hence, the paradox that income buys happiness, but only within country comparisons of income groups. This type of inconsistency should not exist if money actually does buy happiness. Within a country, richer people are much happier than poorer people. Easterlin (1974, 100) finds: "... the results are clear and unequivocal. In every single survey, those in the highest status group were happier, on the average, than those in the lowest status group." Easterlin (1974, 104) concludes: "On the whole...I am inclined to interpret the data as primarily showing a causal connection running from income to happiness." However, Easterlin (1974, 106-107) finds that: "The happiness differences between rich and poor countries that one might expect on the basis of the within-country differences by economic status are not borne out by the international data." From the sample of countries examined, there is little difference in happiness, for the most part, across the poorer to richer country spectrum. The relationship is almost a linear one. Easterlin finds that this paradoxical relationship between income and happiness holds for both life evaluation related happiness and emotional well-being or experienced happiness (see also, Easterlin 1974, 118).

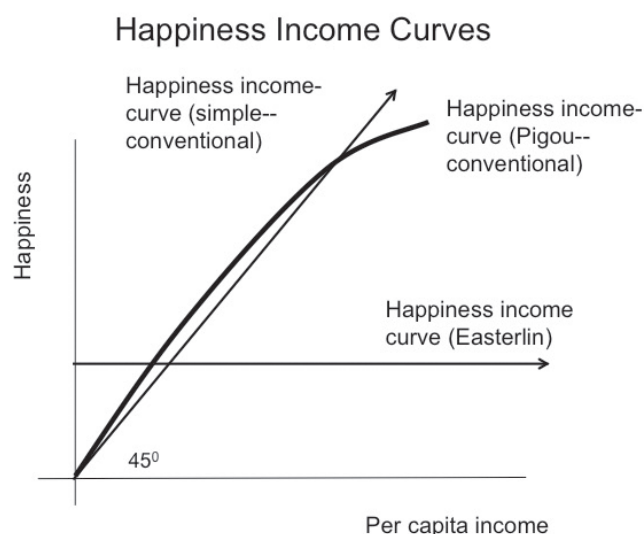
This initial empirical analysis fuelled a firestorm of research papers that appear to affirm Easterlin's initial findings. This includes time series analysis within countries for a large number of countries, which show that even with significant increases in real income per person, the level of happiness did not increase or increased hardly at all. Easterlin (1995, 44) concludes: "Today, as in the past, within a country at a given time those with higher incomes are, on average, happier. However, raising the incomes of all does not increase the happiness of all. This is because the material norms on which judgments of well-being are based increase in the same proportion as the actual income of the society." At least within countries even if real per capita income increases many-fold the level of happiness does not. Here, an implicit assumption that is made is that the distribution of income does

not change as per capita income increases. The implication here is that money can't buy happiness unless your income increases relative to other individuals. Here, one must make the assumption that you are aware when your income is increasing relative to that of other individuals.

A bottom line policy prescription following this analysis and from follow-up research is that successful efforts to increase economic growth can have no long term impact on an individual's utility or long term happiness. If the objective of policy is to improve individuals' level of happiness making a society wealthier will not do the trick. This is the case even if the benefits of growth accrue equally to all members of society. In other words, even if one controls for income distribution or public expenditure effects, increases in real income are expected to have no long term affect on individuals' and, more generally, on society's level of happiness.

Key differences between the conventional modelling and the Easterlin modelling of the relationship between real per capita income and the level of happiness is illustrated in Diagram 1. In very basic terms, in the conventional model, there is a positive and perhaps even a linear relationship between the level of per capita income and the level of happiness. Moreover, this relationship could also be specified in logarithmic terms where real per capita income is measured in log form. Here, there would be a positive and linear relationship between the rate of growth in real per capita income and the level of happiness. But it is important to note that in the early twentieth century version of the conventional model, championed by Pigou (1932), there should be diminishing returns, in terms of utility, to increases in income. The happiness-income curve should be concave especially when income is at a relatively higher level. The happiness-income relationship is non-linear and concave for wealthier members of society. In the Easterlin modelling increasing per capita income has little if any effect on the level of happiness. The happiness-income curve is horizontal—the level of happiness is inelastic to levels or changes in levels of real per capita income. But higher income people are happier than lower income people, *ceteris paribus*.

Diagram 1





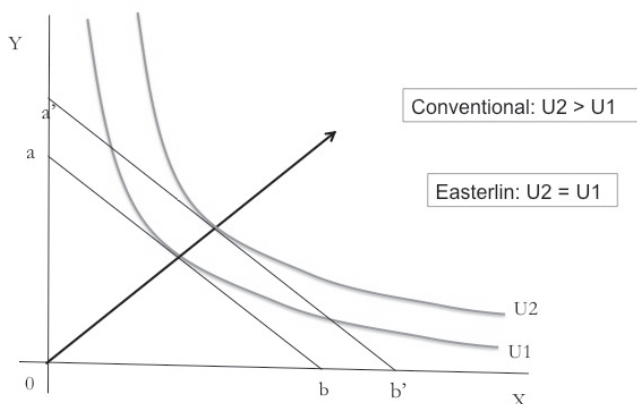
## Explaining the Easterlin Paradox

How is it possible for individuals not to be made happier with more money and all the desired goods and services this allows an individual to purchase in the present and the future? This would include health and education related goods and services. An explanatory variable in the happiness literature is the notion of adaptive preferences. Individuals are assumed to revise their preferences for real income upwards as real income increases. Easterlin (1974, 116) writes: "Economic growth causes a continuous upward pressure on consumption norms. This upward shift in standards (tastes) tends to offset the positive effect of income growth on well-being that one would expect on the basis of economic theory." Easterlin (1974, 121) elaborates: "If the view suggested here has merit, economic growth does not raise a society to some ultimate state of plenty. Rather, the growth process itself engenders ever-growing wants that lead it ever onward."

Growth affects tastes or preferences, therefore, it is assumed, neutralizing the impact of real income increases upon the level of happiness. From this perspective, a level of income that generates a particular level of utility, yields a lower level of utility once this person's income increases. Hence, to maintain the same level of utility as with the lower level of income, income must increase. The higher level of income just suffices to maintain the former level of utility. The higher income not only increases the aspirations of the individual for more income, it also serve to maintain the individual's level of utility at its pre-income increase level of utility. In the conventional model, the increase in income would simply increase this person's level of utility. These points are illustrated in Diagram 2, where in the Easterlin narrative the utility generated by the higher level of income is identical to that generated by the lower level of income (and visa versa), given the changing aspiration level of the individual.

Diagram 2

### Happiness Indifference Curves



In this narrative, the pursuit of increasing income is a meaningless exercise if the end game is to increase the

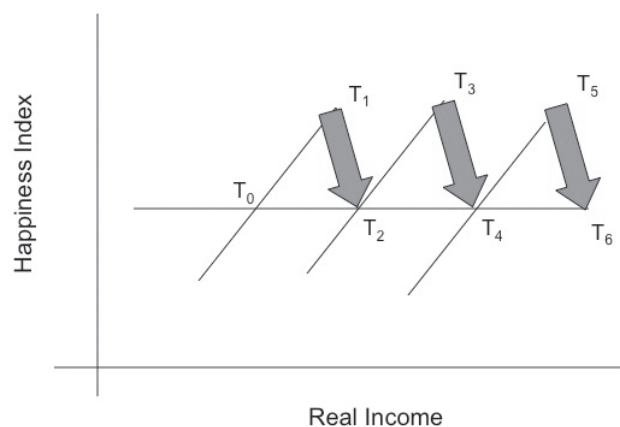
individual's level of happiness. This narrative also suggests that reducing income would adjust downward individuals' aspiration level. Poorer people would have a lower aspiration than higher aspiration higher income people. In the conventional model preferences or tastes are held constant. They are certainly not affected by economic growth or, more precisely, by increases to an individual's income.

The notion that increasing income has no long term effect on happiness is also explained through what is referred to as the hedonic treadmill. In this case, individuals' utility-happiness is a also function of your income relative to that of other individuals (Duesenberry, (1949). Increasing income yields only short term increases in happiness. An individual might pursue higher levels of income in the believe that her or his income will increase relative to others, thereby increasing this person's level of happiness. Even if this relative increase occurs initially, once others catch-up, each individual's relative income positioning returns to it's initial state, resulting in all individuals' level of happiness returning to what it was originally.

This point is illustrated in Diagram 3. As income increases, happiness goes up in the short term if relative income increase or individuals believe that their relative income has increased. But the long term, once the dust settles, happiness returns to its original state as individuals' relative income positioning returns or is perceived to return to its original state. Increasing income for all, proportionally, has no effect on the level of happiness. In this case, there need not be any change in preferences, in aspiration levels. Rather, happiness cannot increase in society as a whole by increasing income. But individuals consistently err in choice behavior, pursuing higher income in the expectation that this would increase their level of happiness. Also, in this narrative, reducing income for all, proportionately, should not reduce anyone's level of happiness.

Diagram 3

### Income, Happiness and the Hedonic Treadmill



## Implications from the Easterlin Narrative

It is important to note that the Easterlin Paradox has been challenged using more comprehensive data sets and more appropriate methodologies—although the debate persists. There appears to be a strong positive relationship between the level of happiness and real per capita income and between the level of happiness and the growth in real per capita income, within country and across countries (Deaton, 2008; Kahneman and Deaton, 2010; Weimann, Knabe and Schöb, 2015). This will be discussed in more detail below.

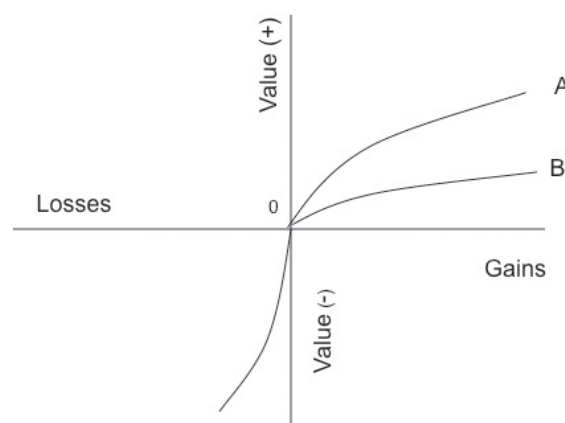
But one important question to address is: even if individuals are indifferent to higher levels of income, what might be the implications for evaluative happiness of reducing per capita income or of denying increases in per capita income? How do changes in target income affect an understanding of the persistent positive relationship increasing per capita income and the level of evaluative happiness? The latter flows from the most comprehensive research on the relationship between happiness and per capita income.

## Loss Aversion And Happiness

Applying some of the results of prospect theory one can argue that even if it is true that the marginal effect of income increases on happiness is zero, a reduction in income would probably reduce the level of happiness, yielding a kink in the 'happiness curve'. Prospect Theory (Kahneman and Tversky) suggests that marginal gains have more weight than marginal and symmetrical losses (2.1 weight associated with a loss as compared to a weight of 1 associated with an equivalent gain). This differential weight is related to the notion of loss aversion; the fact that, on average, people have a very strong aversion to losses. This is illustrated in Diagram 4, which maps out prospect theory in terms of the Kahneman and Tversky value function. Line segment A represents the gain function in the original Kahneman and Tversky value function narrative. Line segment B represents the gain function consistent with the assumption that increasing income yields no or little increases in gains for which happiness would be our proxy when dealing with the Easterlin Paradox. Gains may yield little happiness but cuts in real income may yield permanent reductions in utility. If the reference point is current income, any reduction from this point yields lower levels of happiness, unless individuals can permanently adjust their preferences and related aspirations downward to accommodate such a loss in income. This loss aversion proposition can be tested using experimental survey instruments. An important task to be asked of individuals is to rate their level of happiness if their income is reduced and if the rate of growth in their incomes is reduced, when this decrease not change their relative income position in their society.

Diagram 4

## Kahneman-Tversky Value Function

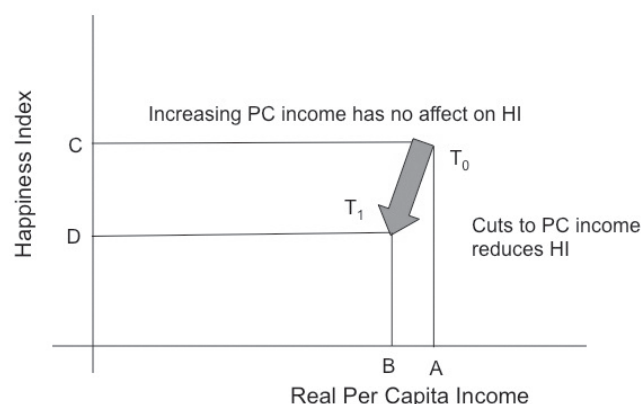


If individuals prefer to pursue higher levels of income to increase their level of happiness (they set higher target incomes) and this preference is denied through public policy, this forced inability to increase evaluative happiness can be viewed as a loss.<sup>2</sup> In this case, denying the preference to pursue increased happiness by increasing income, *ceteris paribus*, reduces the level of happiness. In this case, reducing the rate of growth of income to individuals can be regarded as a loss from the reference point of a preferred and obtainable rate of growth in income. The level of happiness shifts downward even without any decrease in per capita income, but with a forced reduction in the growth of income. Here, the pursuit of happiness involves pursuing higher level of income irrespective of how this affects one's relative positioning.

This point is illustrated in Diagram 5. The horizontal axis can be read in terms of the level or rate of growth of real per capita income. Any reduction in the level or rate of growth of real per capita income results in a predicted reduction in the level of happiness, *ceteris paribus*.

Diagram 5

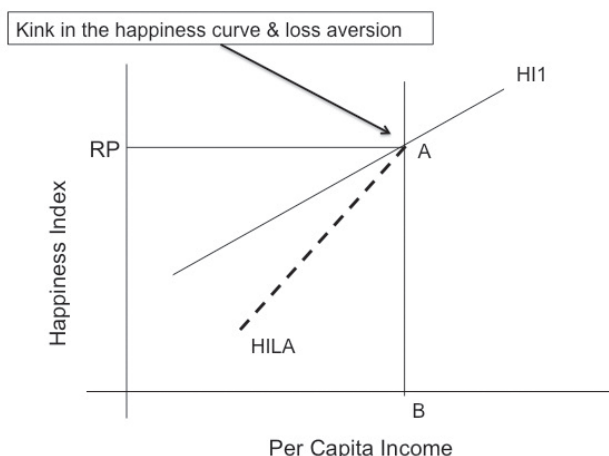
## Income Reduction and Happiness



To the extent that loss aversion theory holds true, any happiness-income function is kinked at an individual's reference point when the level of real income or its rate of growth is diminished. This point is illustrated in Diagram 6. In this Diagram, one has a happiness-income curve (solid line) that is positively sloped. The individual's reference point is A. Reducing per capita income or its rate of growth not only reduces the level of happiness along the original solid line happiness-income curve, it kinks this curve downward at the reference point (A), increasing its slope. Therefore, along the new dashed loss aversion related happiness-income curve, the level of happiness diminishes even further for any given level decrease in per capita income or decrease in its rate of growth.

**Diagram 6**

### Loss Aversion and a Kink in the Happiness Curve



In terms of public policy, the loss aversion-happiness model predicts that reductions in per capita income or in its rate of growth and impediments to increasing per capita income can be predicted to reduce the level of evaluative happiness. These results would only be exacerbated when per capita income and happiness are positively related. One would have a kink in the happiness curve at the reference point. The potential kinkiness in the happiness-income function needs to be recognized and integrated in any analysis of the relationship between happiness and income.

### Social Goods and Happiness

The extent of the elasticity of evaluative happiness to increases in real per capita income might be a product of how the marginal income increases are used. Marginal increases in income used for the provision of social goods can increase the level of happiness for the majority of the population. Or, these marginal increases in income can be used for private consumptive purposes that might result in lesser average increases in happiness or increases concentrated in the hands of a small percentage of the population (see above for further discussion on this point). The importance of social

or public goods and services (including efforts to diminish the rate of employment) to determining the level of happiness is well documented in the literature (Clark and Oswald, 1994; Helliwell, Layard, and Sachs, 2015; Deaton, 2008; Marmot 2004).

It is possible for relatively low per capita income economies to have happiness levels well above their predicted values and relatively high per capita income economies to have happiness levels well below their predictive levels contingent upon how marginal increases in income are exploited. This point can be illustrated using 'thick' utility curves in Diagram 7, wherein increases in income need not generate increased level of utility or evaluative happiness. Each thick utility curve generates the same level of utility throughout. The utility curves thin out, when a larger proportion of marginal increases to income are invested in the provision of happiness enhancing social goods and services.

This point is further illustrated in Diagram 8. Changes in variables such as health status, health care, life expectancy, unemployment pivot the happiness curve up or down, without obviating the predicted positive relationship between income and happiness. These social goods and services impact on the level of happiness that can be generated by a given level of or rate growth in real per capita income. It is possible that very high income countries can average less happiness than lower income countries, when the former are characterized by a significant enough lower provision of social goods and services. But this, once again, does not diminish a positive relationship between income and happiness, *ceteris paribus*.

**Diagram 7**

### Income & Thick Utility Curves

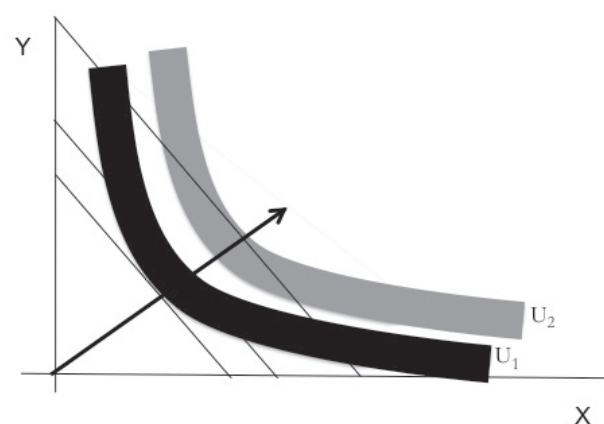
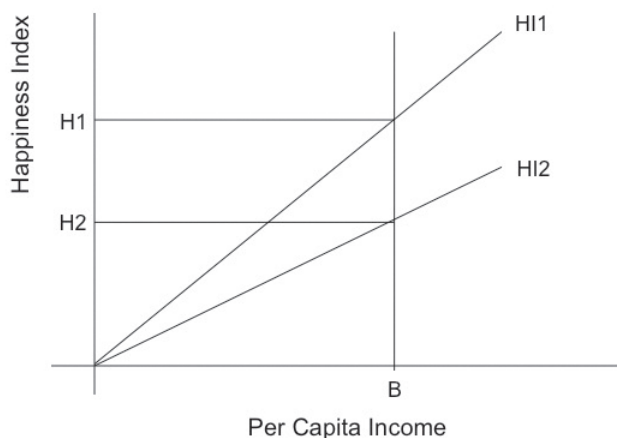


Diagram 8

## Shift Factors and Happiness



## Public Policy and Happiness

How does one deal with the human reality of desiring increasing income and the pursuit of increasing income (ever increasing levels of target income)? There are two basic options.

1. Facilitate the realization of such preferences.
2. Nudge individuals not to realize these preferences or work towards changing these preferences.

If one is situated in the Easterlin narrative, one might argue in favor of the latter. But even from this perspective, once one introduces loss aversion and a kink into the happiness-income curve, this option results in utility (happiness losses) to effected individuals. One would expect these losses to be most severe amongst the lower income cohorts of the population, if the Pigouvian assumption of diminishing returns to income holds true. In this case, there can be a significant opportunity cost to reducing the level or rate of growth in real per capita income, especially when such reductions reduce the capacity of society to produce and deliver happiness enhancing social goods and services.

The evidence is strongly in favour of the hypothesis that individuals prefer higher levels of income and are not indifferent between lower and higher levels of per capita income. This plus introducing loss aversion and a kink into the happiness-income curve, introduces even more severe opportunity costs to reducing the level or rate of growth in real per capita income,

If one respects the preferences of individuals and more specifically the preferences of individuals when they are free to choose and develop their own preferences, public policy should be designed to increase per capita income. One should also design policy that would increase the supply and capacity of individuals to demand happiness enhancing social goods and services. The alternative is impose external standards for what are optimal preferences and attempt to educate

individuals to adapt to these expert driven external standards for happiness situated at lower level of material wellbeing.

## Revision of the Evidence

The most recent analysis based on a much broader and detailed data set (Gallup Poll surveys) than used by Easterlin and others following in his footsteps, have found in favour of the traditional view that money does buy happiness. But a careful reading of these finding demonstrate the importance of intermediaries between per capita income and its growth as determinants of the level of happiness. Increasing per capita income is not the magic bullet yielding increasing happiness irrespective of institutional and social context. These critical intermediary variables were forced into the surface of the debate by Easterlin's initial finds that challenged the conventional wisdom and its very much trickle-down perspective on the relationship between income and happiness.

For example Deaton (2008, 57) found that: "life satisfaction is higher in countries with higher GDP per head. The slope is steepest among the poorest countries, where income gains are associated with the largest increases in life satisfaction, but it remains positive and substantial even among the rich countries; it is not true that there is some critical level of GDP per capita above which income has no further effect on life satisfaction."

Stevenson and Wolfers (2008, 3) conclude: "Our key result is that the estimated subjective well-being-income gradient is not only significant but also remarkably robust across countries, within countries, and over time. These comparisons between rich and poor members of the same society, between rich and poor countries, and within countries through time as they become richer or poorer all yield similar estimates of the well-being-income gradient. Our findings both put to rest the earlier claim that economic development does not raise subjective well-being and undermine the possible role played by relative income comparisons."

Deaton writing with Kahneman (Kahneman and Deaton, 2010), an earlier advocate of aspects of the Easterlin Paradox, conclude the same from an analysis of American data. They find that even in the United States, with its relatively high real per capita income in the global context, increasing real per capita income has a strong positive effect on both life evaluation related happiness and emotional well-being or experienced happiness. For the latter, it appears that happiness does not change once one reached about \$75,000 USD. But the for former, the most closely related to the conventional economic concerns about the relationship between income and income growth and utility, there is no apparent satiation threshold for the income-happiness relationship. Increasing income increases the level of happiness. Kahneman and Deaton (2010, 16491), find: "We conclude that lack of money brings both emotional misery and low life evaluation; similar results were found for anger. Beyond \$75,000 in the contemporary United States, however, higher income is neither the road to experienced happiness nor the road to the relief of unhappiness or stress, although higher income



continues to improve individuals' life evaluations." Life evaluations might become satiated at well over \$120,000 USD per year. About 65 percent of American households earned less than \$75,000 per year and about 85 percent of American earned less than \$120,000 in 2014.

The revised evidence reinforces the argument that reducing the rate of growth of income will have damaging effects on both evaluation related happiness and emotional wellbeing. This would be even more so when one introduces loss aversion into the analytical mix. The most harm would be caused to the lower income cohorts.

## Conclusion

The Easterlin Paradox is discussed and placed in the context of the broader empirical and theoretical literature. The key finding embedded in the Easterlin Paradox literature is that money can't buy happiness although richer people tend to be happier than poor folk—there is a happiness ladder I also discuss the more recent empirical finding that tend to refute critical aspects of the Easterlin Paradox.

The happiness literature is also deconstructed and placed in the context of a more sophisticated and nuanced conventional-type model wherein money buys happiness at the level of the individual or the family. This more sophisticated and nuanced approach is too-often absent from the conventional literature. This more nuanced approach speaks to the importance of the distribution of income in both a static and dynamic (growth) sense to determining the relationship of income and income growth to the level of happiness. Also, discussed is what money purchases in terms of social and public goods and services that can affect the level of happiness. A given level of or increase in income can have different effects on the level of happiness contingent upon the distribution of income and the provision of social and public goods and services that affect the level of happiness.

One of the implications of the Easterlin Paradox is that perhaps the pursuit of increasing income is misplaced given that such increases have little impact on the level of happiness. However, this ignores the significance of loss aversion to individuals' preference function and the implications of this not only for reducing per capita income but also for reducing the rate of growth in per capita income. In this modeling scenario, a kink is introduced to the happiness curve at the individual's income reference point, yielding a much more severe negative impact on happiness as a consequence of reducing income or its rate of growth.

The kinked happiness-income curve also has implications for scenarios, supported by the most recent evidence, that income does buy happiness. Efforts to reduce growth, which individuals can frame as a loss, would generate more severe losses in happiness than would the standard linear or concave happiness-income curve. This argument also relate to efforts to reduce the rate of growth in the production and provision of social and public goods and services than can increase the level of happiness. This is especially true for the lower income cohorts in society.

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## Notes

### (Endnotes)

1. For a detailed discussion of the happiness literature see for example: Antonides (2007); Clark and Oswald (1994); Clark, Frijters and Shields (2008); Clark and Senik (2011); Di Tella and MacCulloch (2008); Di Tella, MacCulloch, and Oswald (2003); Frey and Stutzer (2000); Frey and Stutzer (2002); Helliwell, Layard and Sachs, (2015); Layard (2005) Weimann, Knabe and Schöb (2015).
2. Conventional economics assumes that tastes are insatiable. The more you have, the higher your level of utility. But as Easterlin (1974) points out tastes or preferences can change with changes in income. There is clear evidence that target income increases with increasing income (see, for example, Altman, 2001, 2015). The more you have the more you want. Increasing income to meet unfulfilled wants as target income increases, should increase the level of happiness. Both the pursuit of and increases to real income increases the level of happiness. If one can't pursue and realize higher levels of income, the level of happiness diminishes. This appears to be in line with the revisionist empirical findings on the positive relationship between increasing income and the level of evaluative happiness.

