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ABSTRACT

The Easterlin Paradox*

The Easterlin Paradox states that at a point in time happiness varies directly with income, both among and within nations, but over time the long-term growth rates of happiness and income are not significantly related. The principal reason for the contradiction is social comparison. At a point in time those with higher income are happier because they are comparing their income to that of others who are less fortunate, and conversely for those with lower income. Over time, however, as incomes rise throughout the population, the incomes of one's comparison group rise along with one's own income and vitiates the otherwise positive effect of own-income growth on happiness. Critics of the Paradox mistakenly present the positive relation of happiness to income in cross-section data or in short-term time fluctuations as contradicting the nil relation of long-term trends.

JEL Classification: I31, D60, O10, O5

Keywords: Easterlin Paradox, economic growth, income, happiness, life satisfaction, subjective well-being, long-term, short-term, trends, fluctuations, transition countries, less developed countries, developed countries

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THE EASTERLIN PARADOX

Introduction

The Easterlin Paradox states that at a point in time happiness varies directly with income, both among and within nations, but over time happiness does not trend upward in correspondence with income growth. The Paradox was formulated in 1974 by Richard A. Easterlin, the first economist to study happiness data, in an article entitled "Does Economic Growth Improve the Human Lot: Some Empirical Evidence" (Easterlin 1974). Because of data constraints, the initial time-series evidence was limited to the United States. The Paradox has since been shown to exist in an ever-expanding body of data that now includes countries worldwide – developed, transition, and less developed (Easterlin 1995, 2010, 2015, 2017; Easterlin et al. 2010). The paradox is the contradiction between observations on the relation of happiness to income at a point in time (cross-section data) and evidence on happiness and income over time (time-series data).

Data on people's happiness are obtained in nationally representative surveys in which questions are asked like "Taking all things together, how would you say things are these days – would you say you are very happy, pretty happy, or not too happy?" This type of question about overall happiness has been included in surveys all over the world and is still a standard query in the U.S. General Social Survey, which dates from 1972. Currently, similar questions with a larger number of response options are more often used. Thus, the World Values Survey (WVS) asks: "All things considered, how satisfied are you with your life as a whole these days?," with integer response options from 1(=Dissatisfied) to 10 (=Satisfied). The Gallup World Poll (GWP), which started in 2005, uses a "Best-Worst" question (termed here "Best Possible Life") in which

people rate their lives on a ladder with rungs numbered from zero to 10, where zero, at the bottom of the ladder, equals, in their view, the worst possible life, and 10, the top rung, equals the best.[1]

All of these questions, in which people are asked to evaluate their lives as a whole, yield quite similar results regarding things like the change in happiness over time, happiness differences among groups in the population such as rich or poor, and statistical relationships between happiness and a wide array of variables. Hence, these measures are typically used interchangeably as indicators of happiness. In the empirical analysis below, we use both the WVS and GWP questions; in the text we refer to them jointly as measures of "happiness."

In what follows "income" always means *real* income, what money will buy. At the national level, it is typically approximated by per capita Gross Domestic Product (GDP, the economy's total output of goods and services) because of the ready worldwide availability of reasonably comparable GDP statistics. Per capita GDP here will always mean *real* GDP per capita, a country's average *quantity* of goods and services per person.

We focus on the relation between happiness and income (GDP) at the national not individual level. This is partially due to the availability of internationally comparable data,[2] but more importantly due to the nature of the question we address. The original question – does economic growth improve the human lot – is societal in nature. The answer indicates whether policymakers should seek to increase GDP to improve society's overall well-being. Assuming the goal of government is to promote the collective well-being of its constituents and if GDP is

[1] The technical name for Best Possible Life is the Cantril Self-Anchoring Striving Scale (Cantril 1965). See https://news.gallup.com/poll/122453/understanding-gallup-uses-cantril-scale.aspx for further details.
[2] Individual income is difficult to accurately measure, both conceptually and empirically. Surveys in developed countries suffer from missing responses on income questions (Rubin 1987) and in less developed countries, incomes are volatile and a large proportion of consumption derives from production for home consumption (Strauss and Thomas 1995).

taken as the measure of well-being, as many contemporary economists imply, then policymakers need look no further. But if GDP is not accepted as the be-all and end-all of well-being, then policymakers need better measures. Indeed, in light of the Easterlin Paradox and other contributions (from environmental economics for instance), there now exists a movement to go beyond GDP to measure social progress, as with measures of happiness.[3]

Concept

It is the *trends* in happiness and income – the long-run tendencies – that are not related. In the short run, happiness and income typically go up and down together. The Great Recession of 2007-09 provides a recent example of the short-run relationship. As American incomes hit the skids, happiness plunged to the lowest level ever recorded (O'Connor 2017). Then, with the economy's subsequent recovery, happiness improved (Deaton 2011; Graham, Chattopadhyay, and Picon 2010). Countries in Europe and Latin America for which happiness data are available on a yearly basis display similar concurrent short-run movements in happiness and income (Easterlin et al. 2010).

We can see the difference between the short- and long-run relationships of happiness and income in Figure 1. Note that the peaks and troughs ('p's and 't's) in both happiness and income occur simultaneously – in the short-run, happiness and income fluctuate together. As income goes up and down, happiness follows suit (the solid lines). But if we fit a trend line to each series to identify the long-run tendency (the broken lines), it turns out that the upward trend in income is not matched by a corresponding uptrend in happiness. The fluctuations in income are

[3] The movement has many contributions (e.g., Kubiszewski et al. 2013; Fleurbaey 2009) but is perhaps best exemplified by Stiglitz et al. (2009). Easterlin (2019a) argues happiness serves as a better summary measure of society's well-being and guide to public policy than GDP.

occurring around a rising trend line; those in happiness, around a level trend line. The fluctuations in happiness and income – the short run movements – are positively related, whereas the trends – the long run tendencies – are not. In Figure 1 the trend of income is upward, but that of happiness is flat.[4]

Grasping this distinction between the short- and long-run relationships – between the positive correlation of fluctuations and the nil association of trends – is crucial to understanding the Paradox. For example, a knowledgeable economist writes, "The silliness of the notion that rising GDP does not increase happiness at all is even easier to see when you remember that a recession, when GDP declines just a little, makes people very unhappy" (Coyle 2014, 113). Here, the positive correlation between the short-run fluctuations is used in an attempt to disprove the nil relation between long-run trends. This is a common mistake, but not one that all economists make. Bartolini and Sarracino (2014) empirically test the theoretical difference between fluctuations and trends, and find the relation between happiness and GDP declines in magnitude as the time-horizon increases. In the long-run, a period they consider to be of at least 15 years, they find no significant relation between GDP and happiness.

Another misconception is that the Paradox says that happiness is constant over the long run. But the Paradox is not about happiness alone; it is about the relationship of happiness to income. Countries can have rising, constant, or falling trends in happiness.[5] *The crux of the Paradox is this: There is no positive correlation between the happiness trends and those in income.* Steeper uptrends in a country's income are not accompanied by greater growth in happiness. Some new evidence of this follows.

[4] That does not mean that the trends in happiness need be flat to support the Easterlin Paradox, a point which we return to below.

[5] The authors of a recent paper further discuss this point, concluding that reliable tests of the Paradox must allow for trends in happiness (Kaiser and Vendrik 2019).

Evidence

An ever-expanding body of evidence of the Paradox has been presented in articles by Easterlin and his collaborators in publications listed in the References. We present here some new findings based on the latest available data, extending up to 2019, just before the corona virus pandemic.

Data.–We analyze two bodies of data, The first is the combined World and European Values Surveys (WVS/EVS) which provide the longest time series available – intermittent observations from 1981 to 2019 for a gradually expanding group of countries (EVS 2015, 2020; Haerpfer et al., 2020; Inglehart et al., 2018).[6] The present analysis is based on WVS/EVS data for 67 countries with populations over a million and time series ranging from a minimum of 12 years to a maximum of 39, with an average of 27. The number of observations per country ranges from 3 to 9, with a mean slightly over 5 (see Appendix Table A1).

Some Eastern European countries included in our data present a problem. All of the countries transitioning from socialism to capitalism invariably experienced an initial severe economic contraction, usually in the 1990s, followed by a long slow recovery.[7] (See Figure 2, which shows for each country GDP per capita before and after the post-transition economic trough.) Unfortunately, the happiness data for many of these countries do not encompass the period of economic collapse. This is demonstrated by the countries in Figure 2a where the start

[6] Although the life satisfaction question is basically the same in all of the WVS and EVS surveys, there are some small changes that affect comparability over time. These differences are detailed in Appendix B and the data adjusted to improve comparability, but with little effect on the results.

[7] Impacts of this collapse differ from those of other economic crises. More than a recession, with the collapse of socialism individuals lost guaranteed jobs, healthcare, and education. It took about a 25 percent increase in GDP for happiness to return to its previous level (Easterlin 2009).

of the life satisfaction data, indicated by the short vertical line passing through each country's GDP series, occurs near the end of or after the period of GDP contraction. In contrast, for the transition countries in Figure 2b, the data cover most or all of the economic contraction at the start of the transition.

For the countries in Figure 2a the empirical analysis here of the happiness-GDP relation is necessarily limited to the period of economic expansion. This means that for these countries we are, in effect, estimating the positive relationship shown in Figure 1 by the solid line 't' to 'p' movements in the last expansion, not the broken line trends. Because of this we present two estimates of the happiness-GDP relation, one including all 67 countries, and the other confined to 54 countries for which the estimated relationship is based on trend data only. Clearly, it is this second regression that provides the proper test of the Paradox. Bartolini and Sarracino (2014) similarly exclude Eastern European countries from their analysis.

The second data set is the Gallup World Poll (GWP) which has been conducted annually from 2005 to 2019 (Gallup 2020). As with the WVS/EVS, the country coverage has varied, gradually expanding over time. Our GWP data set covers 123 countries with populations greater than one million and time series observations spanning 12 to 15 years (see Appendix Table A2). Note that in both the WVS/EVS and GWP data sets we exclude countries with time series less than 12 years in length in order to reduce the likelihood of including time series so short that our estimate is basically the short-run rather than long-run relation of happiness to income. Because the GWP surveys start in 2005, the series for *all* transition countries cover only the expansion period and omit completely the transformative-1990s collapse.[8] As with the WVS/EVS data, we therefore present two estimates of the happiness-income relationship, one including the transition

[8] While the financial crisis of 2008 represents an important contraction, the recovery (expansion) from the 1990s collapse is typically much more substantial (cf. fn. 7).

countries (n=123) and one excluding them and hence based only on data for countries with trend estimates (n=96). It is the second regression that provides a test of the Paradox.

Table 1 presents summary statistics for our two bodies of data. The advantage of the Gallup data is that it covers considerably more countries, almost all of them less-developed (lines 1 and 5); the disadvantage of the Gallup data is that the time series are considerably shorter, making trend estimates more problematic (lines 4 and 8).

In panel A of Table 1 the "expansion only" transition countries have higher growth rates of both happiness and GDP than the "full-cycle" transition countries (cols. 1 and 2). This is because *trend* estimates are averages of rates in both the contraction and expansion periods; hence, the rates of change in expansion periods only are higher than the trend rate of change.

Method.–The nature of the empirical analysis can be illustrated via Figure 1. Imagine the broken line trends shown in the chart are those experienced by country A. We can picture a second figure, that for country B, with somewhat different broken line trends for happiness and income, and a third, country C with its particular trends, and so on.

The empirical analysis addresses this question: if we compare countries with regard to their broken-line trends, do we find that sharper uptrends in income are typically accompanied by greater uptrends in happiness, i.e., is more rapid economic growth associated with a larger increase in happiness? Or do we find the nil relation suggested by the Paradox?

As is clear from Figure 1, in order to estimate trends, we want the longest time series available. If our time series are short, e.g., just covering very recent years, then we are liable to be finding the short-run relationship, say, the solid line trough to peak ("t" to "p") positive relation in the last expansion shown in Figure 1.

Our procedure, therefore, is first to estimate for each country the broken-line time-series trends in happiness and GDP per capita. For happiness, we estimate the average absolute change per year, as given by the slope of an OLS regression line fitted to a country's time-series observations. For constant dollar GDP per capita we calculate the average percentage change per year (compound annual growth rate) from the observations at the start and end of each country's happiness time series. Based on the trend estimates of happiness and GDP per capita for all countries, we then calculate a regression to see whether the trend in happiness is significantly greater when the growth rate of GDP per capita is higher. We present three regressions for each data set. One using the restricted set of countries for which the estimated relationship is based on trend data only; second, the full sample of countries; and third, the full sample of countries but adding interaction terms to the regression in order to allow happiness in each group of countries to have its own constant and relation to growth. Interaction terms allow us to use the largest samples possible and to assess the statistical significance of the estimated relations across country groups.

Findings.—If the empirical analysis is confined to countries with trend estimates of happiness and income, there is no significant relation between the trend in income and that in happiness (Tables 2 and 3, col. 1). The Paradox holds – economic growth does not make people happier. This is evident in both the WVS/EVS data (54 countries, mean time series duration, 28.0 years), and the much shorter but more comprehensive GWP series (96 countries, 14.0 years mean duration). The regression coefficients are slightly positive in each data set, but their economic significance is low (cf. Beja 2014). At the magnitude of the coefficients in the tables, if the GDP of a country were increased by one percentage point, it would take 1000 years to raise happiness

by one point according to the WVS/EVS coefficient (Table 2, column 1), and 500 years, by the GWP coefficient (Table 3, column 1).

The regression outcome is altered if one includes the transition countries whose happiness data are confined to the period of economic recovery, and thus reflect the short-run positive happiness-income relation. These "expansion only" countries (ETCs) change the regression estimate, because they have, on average, considerably higher growth rates of both income and happiness than the countries with trend estimates (see Table 1). Consequently, in a plot of the change in happiness against that in GDP per capita, the "expansion only" countries tilt the regression line upward and a significant positive coefficient results (Tables 2 and 3, column 2; see Easterlin 2017, section 4.2, for a fuller discussion). A recent valuable empirical test of the Easterlin Paradox is generally supportive except for Eastern European countries (Kaiser and Vendrik 2019). But the data for these countries cover only the period 2004-2015, and, as the authors recognize, longer time series are needed for a proper test. This finding underscores the need to confine the analysis to countries with trend estimates.

The upward tilt that occurs when including the ETCs is not because they exhibit a positive relation between happiness and GDP. As mentioned, it is because they have both greater income growth and greater happiness growth than the countries with trend estimates. In fact, the ETCs' own income-happiness relation is not statistically different from the relation in the developed countries, as shown by the insignificant Growth X ETC interaction term in Table 2, column 3 (each of the country groups do not have statistically different income-happiness relations). Instead, there is a positive and significant coefficient for the Expansion Only Countries in column 3. This coefficient is interpreted as a common trend in happiness that exists independently of GDP growth (referred to as an autonomous trend by Kaiser and Vendrik

(2019)). Adding the constant (-0.001) to the large ETC coefficient (0.136), the sum indicates life satisfaction increased in the ETCs by approximately 0.135 points per year (independently from GDP), which is much higher than the corresponding trends in the developed countries (-0.001, equal to the constant), full-cycle transition countries (0.050 + -0.001), and less developed countries (0.035 + -0.001). The Gallup results in Table 3, column 3, provide qualitatively similar results, a large constant on Transition Countries, though the constant is not statistically significant.

As the length of the time series included in the regression analysis is shortened, the short-run relation is more likely to dominate. The Gallup data so far discussed include countries with time series of at least 12 years duration. If the criterion for including a time series is reduced to a length of 10 years, a significant positive happiness-income relation emerges even when all transition countries are omitted (compare columns 1 and 4 of Table 3). This is consistent with the conclusion of Bartolini and Sarracino (2014), that the happiness-income paradox disappears as the time series length is shortened, in effect, as the short-run positive relation comes to dominate the results. But whether the happiness-income relation is significant or not, the magnitude remains small. Based on the largest magnitude across all estimations, it would still take 100 years for a one percentage point increase in the growth rate to raise happiness by one point (based on a coefficient of 0.01 from Table 3, column 3, calculated as the sum of the main effect and the interaction term in the TCs).

In sum, when the basic data are (correctly) confined to the *trends* in happiness and income, the evidence supports the conclusion of the Paradox – a more rapid uptrend in GDP per capita is not accompanied by more rapid growth of happiness.

Interpretation

The starting point for understanding the Paradox is the discovery by psychologists Amos Tversky and Daniel Kahneman that when people evaluate a particular circumstance they have in mind a *reference level*, an internal benchmark against which they judge the situation (Tversky and Kahneman 1991). In many cases this benchmark is established by social comparison, that is, by the situation of others (cf. Clark et al 2008b, Senik 2009). For example, is a man whose height is 5 feet 9 inches a *tall* man? The answer depends on one's reference level for height. In India, where the average height of men is 5 feet 6 inches, he is likely to be considered tall, because Indians are comparing him to an internal benchmark established by those around them. But in the United States, where the average height of men is 5 feet 10 inches, he would not be so regarded. Americans' reference level for height is greater than that of Indians, because the "others" – the persons with whom their internal comparisons are being made – are, on average, considerably taller than those with whom Indians are making comparisons.

Similarly, how a person feels about a given amount of personal income – whether it is a lot or a little – depends on how that income compares with others' incomes, that is how it measures up relative to one's internal reference level for income. So, this benchmark enters the analysis along with income, as a determinant of one's happiness. At a point in time, those with high incomes are happier than average, because most of the people with whom they compare themselves are worse off. In other words, the incomes of the more affluent are above their income reference levels. Conversely, those with low incomes tend to be less happy, because most of those with whom they compare themselves are doing better. The incomes of the less affluent are below their income reference levels. Higher happiness goes with higher income; lower happiness, with lower income. At a point in time, happiness and income are positively

related – *the positive cross-section relation of the Paradox.* This positive cross-section relationship – the rich being happier than the poor – turns up in the data year after year, since the same types of point-of-time comparison are continually being made by rich, poor, and everyone in between.[8]

Over time, as the economy's total output increases, the incomes of people move up more or less together, so the incomes of "others" – people's internal income reference levels – increase for both the more and less affluent as well as those in the middle. The more affluent have higher incomes, but so do those with whom they are comparing themselves. The same is true of the less affluent. For everyone, the positive effect on happiness of the growth in one's own income is being undercut by the growth in one's benchmark income. As a result, happiness, on average, remains unchanged – *the nil time series relationship of the Paradox.*

Of course, if one person's income increases substantially more than others, her or his happiness will increase. This is evidenced by lottery wins where big gains are found to increase happiness (Oswald and Winkelmann 2019) . But if everyone won the lottery, no one would be happier, because then income reference levels would increase as everyone's income rose. Of course, it's impossible for everyone to win the lottery.[9]

There remains the question why happiness declines in a recession when GDP is falling. Income is, on average, decreasing for everyone, so if social comparison were at work, people should not feel less happy because others are also in the same situation.

The answer to this conundrum is that in a recession income reference levels are no longer determined by social comparison but by comparison with one's pre-recession peak income. This shift in the benchmark level is forced on people by the contractual debts accumulated when

[9] For recent empirical evidence of the importance of social comparison in influencing happiness, see Wu (2020).

income was rising. Declining income makes it harder and harder to meet their previous consumption standards and debt obligations. The reference level for income now becomes one's previous high income before the recession hit, the income making it possible to meet comfortably one's financial obligations. True, others are in the same boat, but that does not help meet one's monthly mortgage or rent payments. As income falls, the shortfall from one's previous peak – one's current benchmark income –increases and happiness declines. After rock bottom, incomes move up, the burden of debt gradually diminishes, and happiness is slowly restored.

Recent statistical research by Jan Emmanuel DeNeve and his collaborators demonstrates that the Paradox operates in economic expansions but not contractions (De Neve et al. 2018). When income goes up, happiness stays the same because of social comparison. But when income goes down, happiness decreases because the former peak income becomes the benchmark. As recovery kicks in and incomes turn upward, happiness starts to return to its pre-recession level.

In short, when incomes increase, social comparison determines the reference level, but when incomes decrease, comparison with one's previous personal best – one's peak income, takes over because of the growing burden of debt repayments. This, of course, is a simplified picture; in reality the switch between the two types of comparison is not instantaneous. Both when income is rising and when income is falling there is a gradual transition from one determinant of the benchmark income to the other.

Since the initial formulation of the Paradox over 40 years ago many explanations have been discussed in the literature. Two of the most prominent papers that attempt to explain the Paradox are generally consistent (Easterlin 2001; Clark, Frijters, and Shields 2008). For more recent studies, see (Bartolini and Sarracino 2014; Becchetti, Pelloni, and Rossetti 2008; Beja

2014; De Neve et al. 2018). For the substantial literature suggesting that happiness depends on relative income, see (Clark, Frijters, and Shields 2008) and references therein.

Criticisms of the Paradox

There are three statistical relationships between happiness and GDP per capita. Cross-section data display a positive association, and time-series statistics show a positive short-run relationship, but a nil association for the long-run trends. It is the third, the trend relationship, on which the Paradox is based; critics of the Paradox mistakenly draw on the first two relationships to refute the third.

Those who see the cross-section association as disproving the Paradox tend to argue as follows. If, at a point in time, richer countries are happier, then the richer countries must have experienced at some time in the past an increase in happiness in conjunction with rising per capita income (Arrow and Dasgupta 2007; Bok 2010; Guriev and Zhuravskaya 2009). Cross-section evidence is also cited in this vein in the Stiglitz-Sen-Fitoussi Report (2009).

There are several problems with this argument. First of all, if economic growth raised happiness of high income countries at some time in the past, then one would expect to find evidence of this effect in current time series for less-developed countries. Yet, as the data above demonstrate, there is no systematic relationship in these countries between growth of GDP per capita and happiness.[10] Second, the argument assumes that the positive cross-section association reflects a causal relationship running from per capita GDP to happiness. The possibility that

[10] The modern-day cross-section relation between income and happiness results from high income countries implementing earlier the insights from social science (Easterlin 2019b). This implementation does not depend on income. For instance, Germany initiated social insurance in the 1880s when it had real GDP per capita of less than $4000 (in 2011 dollars) (Bolt et al. 2018; Lindert 2004); Costa Rica also implemented social policy at a similarly low level of real GDP per capita, approximately $3000 in the 1940s (Bolt et al. 2018; Riley 2008). See also the head start hypothesis in (Easterlin 2013a).

some other factor(s) such as public policy might be at work is not even considered (cf. Easterlin, 2013). Finally, the essential meaning of "paradox" is the *contradiction* between the first and second clauses of the statement – in this case, between the cross-section and time-series results. That scholars would cite the cross-section results as disproving the time-series findings is to ignore the very meaning of "paradox." If there were no positive relation in the cross section, there would be no contradiction and no paradox! The cross section does not disprove the time series, any more than the time series disproves the cross section. The challenge is to reconcile these seemingly contradictory findings, as is done here in the preceding section.

A variant of the foregoing critique is based on a plot of happiness against income where the happiness-income relationship is curvilinear, as in Figure 3. This is because income in this case is plotted on an arithmetic, rather than logarithmic, scale. In the curvilinear case, when incomes are low, greater happiness coincides with higher income. Eventually, however, as income reaches relatively high levels, happiness levels off. In this case the Paradox does exist but kicks in only after a country reaches some reasonably high level of GDP per capita – the so-called threshold. Above the threshold, there is no further boost in happiness as income goes up. This view is popular among advocates of economic growth who point to diagrams like Figure 3 as demonstrating that in lower income countries economic growth does raise happiness; it is only in higher income countries that the Paradox holds. Consistent with this comparison among nations, cross-section data for persons within a country paint a picture similar to Figure 3. In an analysis of recent United States statistics Kahneman and Deaton (2010) set the threshold at $75,000.

According to Figure 3, a low-income country whose income is growing over time should follow the upward sloping segment of the curve depicting increasing happiness – the segment of

the curve to the left of the broken line. The empirical findings presented earlier indicate that is not the case.[11] A further illustration is provided by the actual experience of three countries which in recent times start from low income levels but have had growth rates of GDP per capita that are among the highest ever experienced – China 1990-2015, Japan 1958-1987, and India 1995-2019.

In none of these countries did happiness increase as suggested by Figure 3. In all three, despite unprecedented growth, happiness was flat or even declining (Figure 4). Similarly, there is no time-series evidence of a happiness threshold at an individual income level of $75,000 or any other value (Easterlin 2005). Contrary to the cross-section data, the time-series evidence demonstrates that the Paradox holds for both rich and poor, whether countries or groups of individuals within countries. Social comparison is at work everywhere. As incomes rise, even from very low levels, so too do people's notions of what constitutes the good life. The result is no improvement in happiness, even though material conditions have noticeably improved.

Some analysts think the Paradox implies that public policy can do little to help low-income countries. That is wrong. The Paradox tells us that economic growth in itself will not make people happier.[12] But economic and social policies can. Rather than a primary focus on raising GDP, the emphasis should be on employment and the social safety net (Easterlin 2013b). There is no better example than the case of China in the 1990s. Even though GDP per capita increased dramatically, happiness declined as employment went south and the social safety net unraveled. Once the government took up policies to improve employment and the safety net, happiness turned upward (Easterlin, Wang, and Wang 2017). Further evidence comes from

[11] In the full samples of less-developed countries discussed earlier, the income-happiness relation does not statistically differ between the developed and less-developed countries (as demonstrated by the insignificant interaction terms in Tables 2 and 3, Column 3).

[12] Indeed, some authors accept that economic growth taken alone does not improve happiness but ask instead whether there are special circumstances in which growth does improve happiness (Mikucka, Sarracino, and Dubrow 2017; Sarracino, O'Connor, and Ono 2019; Sarracino and O'Connor 2021).

Japan. In the 1980s Japan's economy grew rapidly and happiness was relatively stable, while in the 1990s-2000s economic growth slowed and happiness began to improve. This improvement, the authors of a recent study argue, is due to an expansion of the social saftey net (Sarracino, O'Connor, and Ono 2019).

As mentioned above, studies presenting time-series evidence to disprove the Paradox typically rely on series that are too short to test the Paradox (for a fuller discussion, see Easterlin 2017). Consider Figure 1, for example. If we have data covering only the very last trough-to-peak expansion, we will find happiness and income to be positively related – the two series are moving up together (the solid lines). To test the Paradox, however, we want much longer time series – the longer, the better – so that we can estimate the trends in happiness and income (the broken lines).

The work of Stevenson and Wolfers (2008), subsequently updated with the collaboration of Sacks (Sacks, Stevenson, and Wolfers 2012) provides an example of confusing the short- and long-term movements.

In the most recent article, they rely on two data sets – the WVS and the Eurobarometer. In regard to the WVS, the authors analyze data from the first four waves. Inexplicably, they chose not to include data from wave five, although those data were available to them four years before the article's publication. Including wave five would have added five to seven years to the length of the series they were studying. By omitting wave five, they end up with most countries' series about a decade long and with a statistical result dominated by the positive association due to short-term fluctuations.

Their Eurobarometer analysis repeats this story. The Eurobarometer is a semi-annual survey that started in the early 1970s with about nine European countries. Over time, the country

coverage has gradually expanded. Although the data for some countries now span as much as 30 years or more, the authors subdivide the series for all countries into 10-year segments. As with the exclusion of wave five of the WVS, the outcome is a much briefer time series and a result chiefly reflecting the positive short-run association (though in this case one that is not even statistically significant).

In sum, in their treatment of the data in both the WVS and Eurobarometer studies, the authors made decisions that went in the wrong direction, shortening the series and ending with the positive association between the fluctuations in happiness and GDP.

Conclusion

The major implication of the Easterlin Paradox is that economic growth does not in itself increase happiness in the long-term. This is because of the prevalence of social comparison in people's evaluations of their income. As economic growth raises incomes generally, the positive effect on happiness of growth in one's own income is undercut by the growth in the incomes of one's comparison group. Happiness can be increased, however, even at fairly low levels of GDP per capita, by policies promoting full employment and a strong social safety net (Easterlin 2013b, 2021).

REFERENCES

Arrow, Kenneth J., and Partha S. Dasgupta. 2007. "Conspicuous Consumption, Inconspicuous Leisure." *Economic Journal* 119: F497–516. https://doi.org/10.1111/j.1468-0297.2009.02318.x.

Bartolini, Stefano, and Francesco Sarracino. 2014. "Happy for How Long? How Social Capital and Economic Growth Relate to Happiness over Time." *Ecological Economics* 108: 242–56. https://doi.org/10.1016/j.ecolecon.2014.10.004.

Becchetti, Leonardo, Alessandra Pelloni, and Fiammetta Rossetti. 2008. "Relational Goods, Sociability, and Happiness." *Kyklos* 61 (3): 343–63.

Beja, Edsel L. 2014. "Income Growth and Happiness: Reassessment of the Easterlin Paradox." *International Review of Economics* 61 (4): 329–46. https://doi.org/10.1007/s12232-014-0211-y.

Bok, Derek. 2010. *The Politics of Happiness: What Government Can Learn from the New Research on Well-Being*. Princeton: Princeton University Press.

Bolt, Jutta, Robert Inklaar, Herman de Jong, and Jan Luiten van Zanden. 2018. "Maddison Project Database, Version 2018." https://www.rug.nl/ggdc/historicaldevelopment/maddison/research.

Cantril, Hadley. 1965. *The Pattern of Human Concerns*. New Brunswick NJ: Rutgers University Press.

Clark, Andrew E., Paul Frijters, and Michael A. Shields. 2008. "Relative Income, Happiness, and Utility: An Explanation for the Easterlin Paradox and Other Puzzles." *Journal of Economic Literature* 46 (1): 95–144. https://doi.org/10.1257/jel.46.1.95.

Coyle, Diane. 2014. *GDP: A Brief but Affectionate History.* Princeton: Princeton University Press.

Deaton, Angus. 2011. "The Financial Crisis and the Well-Being of Americans." *Oxford Economic Papers* 64 (1): 1–26. https://doi.org/10.1093/oep/gpr051.

Easterlin, Richard A. 1974. "Does Economic Growth Improve the Human Lot? Some Empirical Evidence." In *Nations and Households in Economic Growth*, edited by P. David and W. Melvin, 89–125. Palo Alto, CA.: Stanford University Press.

———. 1995. "Will Raising the Incomes of All Increase the Happiness of All ?" *Journal of Economic Behavior and Organization* 27 (1): 35–47.

———. 2001. "Income and Happiness, towards a Unified Theory." *Economic Journal* 111: 465–84.

———. 2005. "Diminishing Marginal Utility of Income? Caveat Emptor." *Social Indicators Research* 70 (3): 243–55. http://www.jstor.org/stable/27522165.

———. 2009. "Lost in Transition: Life Satisfaction on the Road to Capitalism." *Journal of Economic Behavior and Organization* 71 (2): 130–45. https://doi.org/10.1016/j.jebo.2009.04.003.

———. 2010. *Happiness, Growth, and the Life Cycle.* New York: Oxford University Press.

———. 2013a. "Cross-Sections Are History." *Population and Development Review* 38 (SUPPL.1): 302–8. https://doi.org/10.1111/j.1728-4457.2013.00565.x.

———. 2013b. "Happiness, Growth, and Public Policy." *Economic Inquiry* 51 (1): 1–15. https://doi.org/10.1111/j.1465-7295.2012.00505.x.

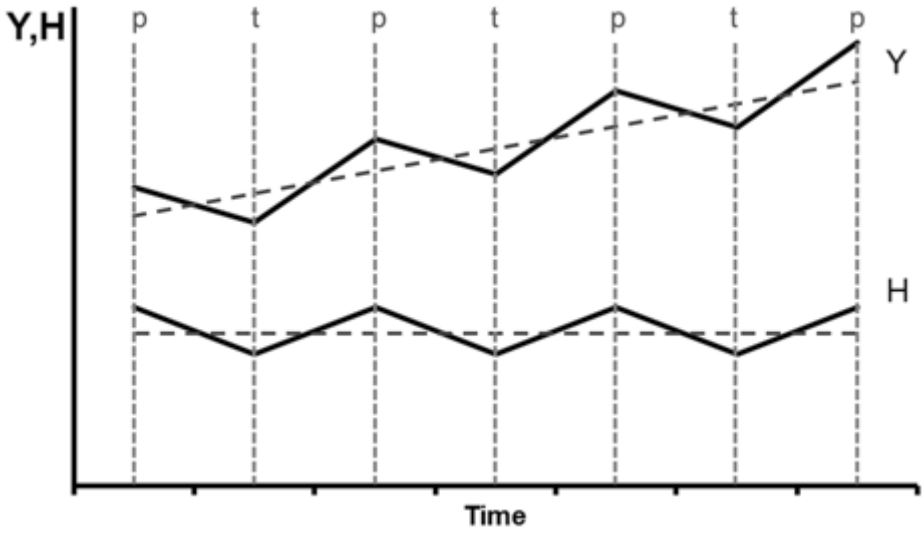
———. 2015. "Happiness and Economic Growth: The Evidence." In *Global Handbook of Quality of Life: Exploration of Well-Being of Nations and Continents*, edited by Wolfgan Glatzer, Laura Camfield, Valerie Moller, and Mariano Rojas, 283–99. New York: Springer

US.
———. 2017. “Paradox Lost?” *Review of Behavioral Economics* 4 (4): 311–39. https://doi.org/10.1561/105.00000068.
———. 2019a. “Foreword: Happiness or GDP?” In *The Economics of Happiness: How the Easterlin Paradox Transformed Our Understanding of Well-Being and Progress*, edited by Mariano Rojas, v–viii. Switzerland: Springer Nature.
———. 2019b. “Three Revolutions of the Modern Era.” *Comparative Economic Studies*. https://doi.org/10.1057/s41294-019-00098-9.
———. 2021. *An Economist’s Lessons on Happiness: Farewell Dismal Science!* New York: Springer US.
Easterlin, Richard A., Laura Angelescu McVey, Malgorzata Switek, Onnicha Sawangfa, and Jacqueline Smith Zweig. 2010. “The Happiness-Income Paradox Revisited.” *Proceedings of the National Academy of Sciences of the United States of America* 107 (52): 22463–68. https://doi.org/10.1073/pnas.1015962107.
Easterlin, Richard A., F. Wang, and Shun Wang. 2017. “Growth and Happiness in China, 1990-2015.” In *World Happiness Report*, edited by John F. Helliwell, Richard Layard, and Jeffrey D. Sachs, 48–83. New York.
EVS (2015): European Values Study Longitudinal Data File 1981-2008 (EVS 1981-2008). GESIS Data Archive, Cologne. ZA4804 Data file Version 3.0.0, doi:10.4232/1.12253
EVS (2020): European Values Study 2017: Integrated Dataset (EVS 2017). GESIS Data Archive, Cologne. ZA7500 Data file Version 3.0.0, doi:10.4232/1.13511
Feenstra, Robert C., Robert Inklaar, and Marcel P. Timmer. 2015. “The Next Generation of the Penn World.” *American Economic Review* 105 (10): 3150–82. www.ggdc.net/pwt.
Fleurbaey, Marc. 2009. “Beyond GDP: The Quest for a Measure of Social Welfare.” *Journal of Economic Literature* 47 (4): 1029–75. https://doi.org/10.1257/jel.47.4.1029.
Gallup. 2020. “Gallup World Poll, The_Gallup_032720.Dta.” Washington DC: Gallup.
Graham, Carol, Soumya Chattopadhyay, and Mario Picon. 2010. “Adapting to Adversity: Happiness and the 2009 Economic Crisis in the United States.” *Social Research* 77 (2): 715–48.
Guriev, Sergei, and Ekaterina Zhuravskaya. 2009. “(Un)Happiness in Transition.” *Journal of Economic Perspectives* 23 (2): 143–68.
Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano J., M. Lagos, P. Norris, E. Ponarin & B. Puranen et al. (eds.). 2020. World Values Survey: Round Seven – Country-Pooled Datafile. Madrid, Spain & Vienna, Austria: JD Systems Institute & WVSA Secretariat [Version: http://www.worldvaluessurvey.org/WVSDocumentationWV7.jsp].
Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen et al. (eds.). 2018. World Values Survey
Kahneman, Daniel, and Angus Deaton. 2010. “High Income Improves Evaluation of Life but Not Emotional Well-Being.” *Proceedings of the National Academy of Sciences of the United States of America* 107 (38): 16489–93. https://doi.org/10.1073/pnas.1011492107.
Kaiser, Caspar, and Maarten C. M. Vendrik. 2019. “Different Versions of the Easterlin Paradox: New Evidence for European Countries.” In *The Economics of Happiness: How the Easterlin Paradox Transformed Our Understanding of Well-Being and Progress*, edited by Mariano Rojas, 27–56. Switzerland: Springer Nature.
Kubiszewski, Ida, Robert Costanza, Carol Franco, Philip Lawn, John Talberth, Tim Jackson, and Camille Aylmer. 2013. “Beyond GDP: Measuring and Achieving Global Genuine

Progress." *Ecological Economics* 93: 57–68. https://doi.org/10.1016/j.ecolecon.2013.04.019.
Lindert, Peter. 2004. *Growhing Public: Volumne 1., The Story, Social Spending and Economic Growth since the 18th Century*. Cambridge, UK: Cambridge University Press.
Mikucka, Malgorzata, Francesco Sarracino, and Joshua K Dubrow. 2017. "When Does Economic Growth Improve Life Satisfaction? Multilevel Analysis of the Roles of Social Trust and Income Inequality in 46 Countries , 1981 – 2012." *World Development* 93: 447–59. https://doi.org/10.1016/j.worlddev.2017.01.002.
Neve, Jan-Emmanuel De, George Ward, Femke De Keulenaer, Bert Van Landeghem, Georgios Kavetsos, and Michael I Norton. 2018. "The Asymmetric Experience of Positive and Negative Economic Growth: Global Evidence Using Subjective Well-Being Data." *Review of Economics and Statistics*. https://doi.org/10.1162/REST_a_00697.
O'Connor, Kelsey J. 2017. "Who Suffered Most From the Great Recession? Happiness in the United States." *RSF: The Russell Sage Foundation Journal of the Social Sciences*. https://doi.org/10.7758/RSF.2017.3.3.04.
Oswald, Andrew J., and Rainer Winkelmann. 2019. "Lottery Wins and Satisfaction: Overturning Brickman in Modern Longitudinal Data on Germany." In *The Economics of Happiness: How the Easterlin Paradox Transformed Our Understanding of Well-Being and Progress*, 57–84. Switzerland: Springer Nature.
Riley, James C. 2008. *Low Income, Social Growth, And Good Health*. Berkeley, CA: University of California Press.
Rubin, Donald B. 1987. *Multiple Imputation for Nonresponse in Surveys*. Hoboken, NJ: Wiley.
Sacks, Daniel W., Betsey Stevenson, and Justin Wolfers. 2012. "Subjective Well-Being, Income, Economic Development, and Growth." In *...and the Pursuit of Happiness: Well-Being and the Role of Government*, edited by Philip Booth, 59–97. London: The Institute of Economic Affairs.
Sarracino, Francesco, and Kelsey J. O'Connor. 2021. "Economic Growth and Well-Being beyond the Easterlin Paradox." In *A Modern Guide to the Economics of Happiness*, edited by Luigino Bruni, Alessandra Smerilli, and Dalila De Rosa. Edward Elgar.
Sarracino, Francesco, Kelsey J. O'Connor, and Hiroshi Ono. 2019. "Making Economic Growth and Well-Being Compatible: Evidence from Japan." 93010. Munich Personal RePEc Archive. https://mpra.ub.uni-muenchen.de/93010/.
Senik, Claudia. 2009. "Direct Evidence on Income Comparisons and Their Welfare Effects." *Journal of Economic Behavior and Organization* 72 (1): 408–24. https://doi.org/10.1016/j.jebo.2009.04.019.
Stevenson, Betsey, and Justin Wolfers. 2008. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox." *Brookings Papers on Economic Activity* 2008 (1): 1–87. https://doi.org/10.1353/eca.0.0001.
Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. 2009. "Report by the Commission on the Measurement of Economic Performance and Social Progress." Paris. http://www.stiglitzsen-fitoussi.fr/en/index.htm.
Strauss, John, and Duncan Thomas. 1995. "Human Resources: Empirical Modeling of Household and Family Decisions." In *Handbook of Development Economics*, edited by Jere Behrman and T.N. Srinivasan, 3:1883–2023. Elsevier B.V. https://doi.org/10.1016/S1573-4471(05)80006-3.
Tversky, Amos, and Daniel Kahneman. 1991. "Loss Aversion in Riskless Choice: A Reference-

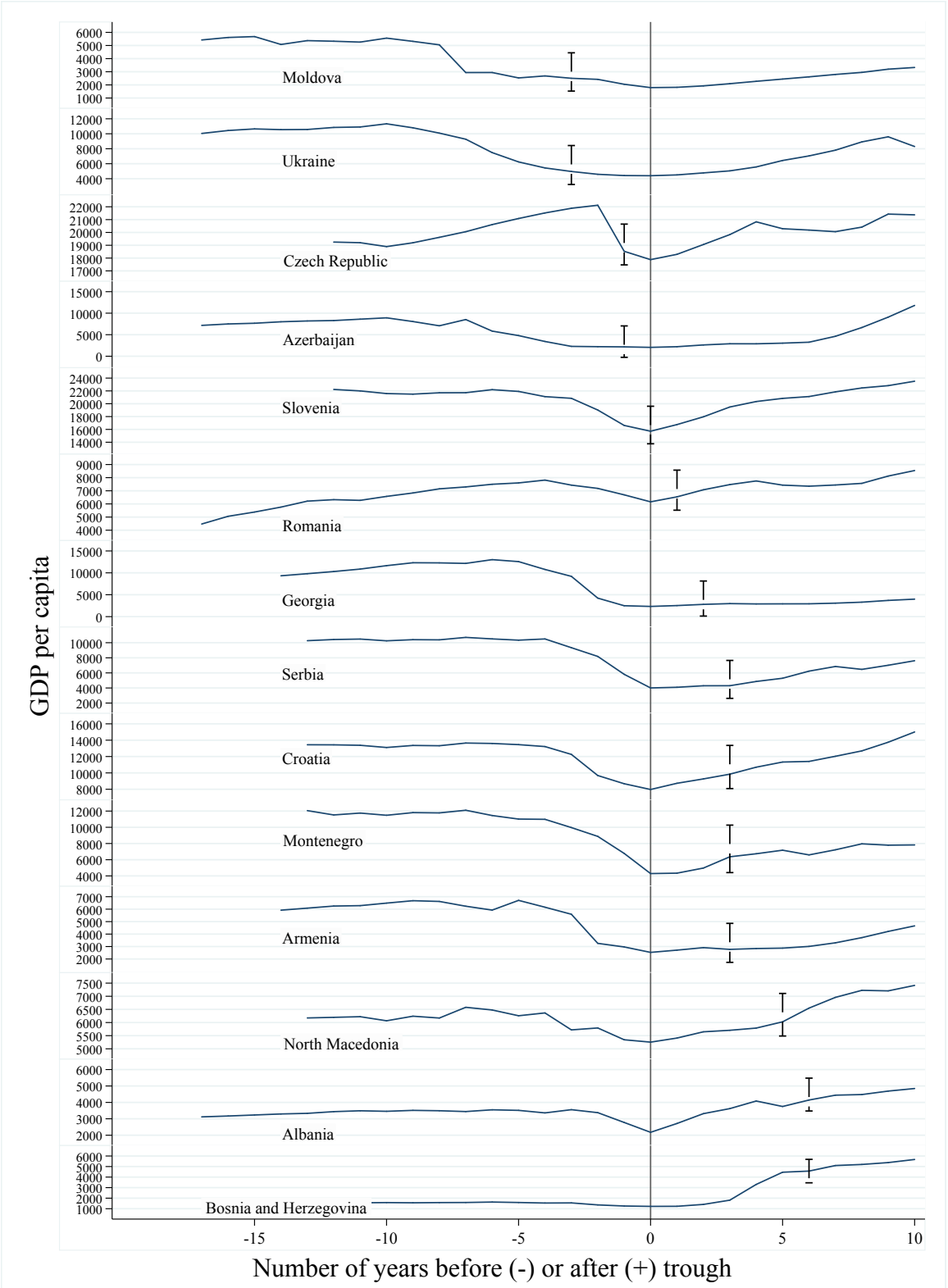
Dependent Model." *Quarterly Journal of Economics* 106 (4): 1039–61. http://www.jstor.org/stable/2937956.
Veenhoven, Ruut. 2020. "Distributional Findings on Happines in Japan." World Database of Happiness. Rotterdam: Erasmus University Rotterdam. 2020. https://worlddatabaseofhappiness.eur.nl.
World Bank. 2020. "World Development Indicators." 2020.
Wu, Fengyu. 2020. *An Examination of the Effects of Consumption Expenditures on Life Satisfaction in Australia*. *Journal of Happiness Studies*. Springer Netherlands. https://doi.org/10.1007/s10902-019-00161-3.

Fig. 1 Short-term fluctuations and long-term trends in happiness (H) and income (Y): An illustration



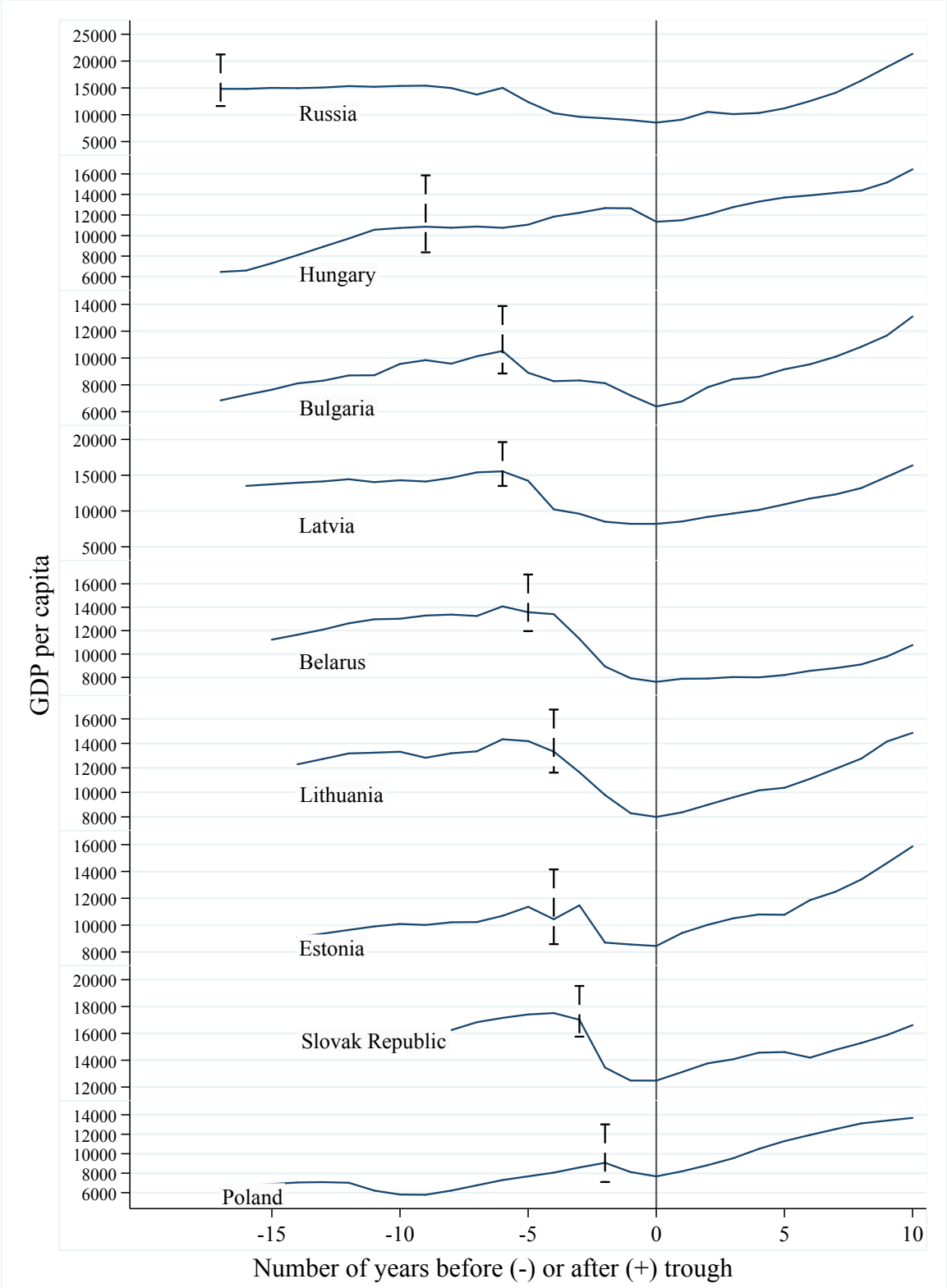
In the short-run happiness (H) and income (Y) go up and down together (solid lines), but in the long-run the trend in happiness does not correspond to the trend in income (broken lines).
Source: author illustration

Fig 2a. GDP Per Capita in Eastern European Transition Countries
Before and After First Post-Transition Trough
(Period covered by life satisfaction data is to right of short broken line)



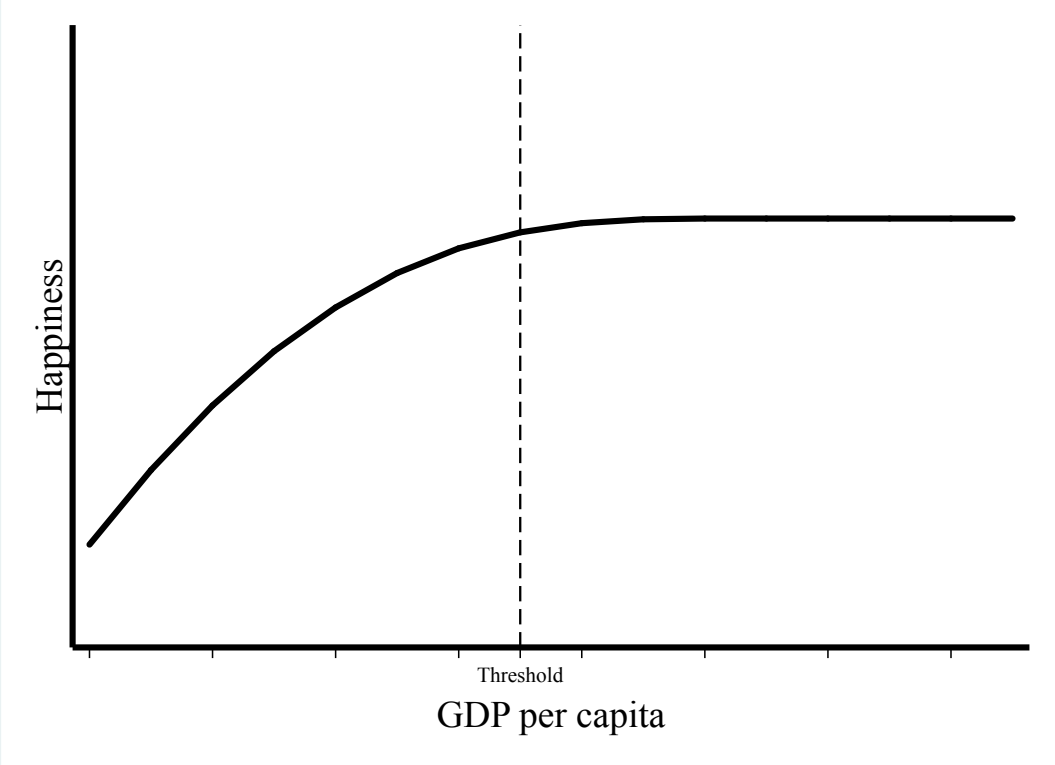
Source: Author calculations, based on the data (Bolt et al. 2018; EVS 2015, 2020; Feenstra, Inklaar, and Timmer, 2015; Haerpfer et al., 2020; Inglehart et al., 2018; World Bank, 2020).

Fig 2b. GDP Per Capita in Eastern European Transition Countries
Before and After First Post-Transition Trough
(Period covered by life satisfaction data is to right of short broken line)



Source: Author calculations, based on the data (Bolt et al. 2018; EVS 2015, 2020; Feenstra, Inklaar, and Timmer, 2015; Haerpfer et al., 2020; Inglehart et al., 2018; World Bank, 2020).

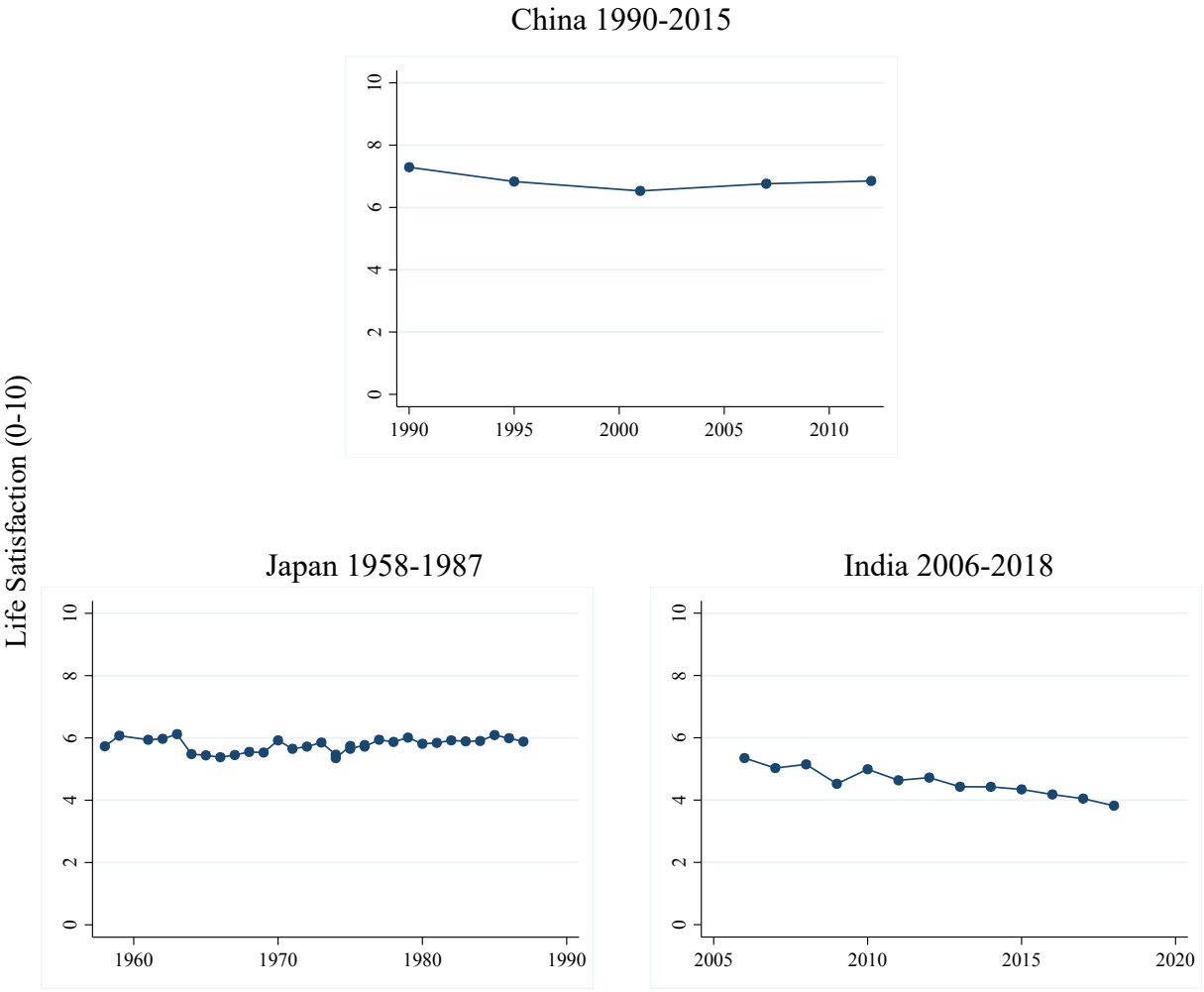
Fig. 3. Regression Line Fitted to International Cross Section of Happiness and Real GDP per Capita



Among low income countries (left side of threshold) those with higher GDP per capita tend to be happier; among high income countries (right side of threshold) there is little difference in happiness as GDP per capita gets bigger.

Source: author illustration

Fig. 4 Happiness in Three Formerly Poor Countries during Subsequent Periods of Very Rapid Economic Growth



Despite very rapid economic growth in the period shown, happiness in all three countries was flat or declining.

Note: The response scale for Japan is 1-4 but was converted to 0-10 for comparable presentation.

Sources: China – World Values Survey; Japan – (Veenhoven 2020); India – Gallup World Poll.

Table 1. Mean Trend Growth Rate per Year of GDP per Capita and Subjective Well-Being by Country Group

		(1) Transition Countries	(2)	(3)	(4)
		Expansion only	Full cycle	Less-developed	Developed
Panel A. WVS/EVS Data, 1981-2019					
(1)	Number of countries	13	10	21	23
	Mean growth rate per year				
(2)	GDP per capita	5.112	2.891	4.232	2.319
(3)	Life Satisfaction (1-10 scale)	0.092	0.036	0.024	0.002
(4)	Mean time span, life satisfaction (yrs)	21.9	29.3	23.8	31.4
Panel B. Gallup World Poll Data, 2005-2019					
(5)	Number of countries	27	-	71	25
	Mean growth rate per year				
(6)	GDP per capita	4.534	-	3.187	1.714
(7)	Best Possible Life (0-10 scale)	0.054	-	0.006	-0.008
(8)	Mean time span, Best Possible Life (yrs)	13.9	-	13.8	14.5

Source: Appendix A

Table 2. Regressions of long-run change in life satisfaction on growth of GDP per capita, WVS/EVS Data 1981-2019

	(1)	(2)	(3)
	Excl. Expansion-only countries	All Countries	
	LSat. Ch.	LSat. Ch.	LSat. Ch.
GDP pc Growth	0.001	0.005*	0.001
	(0.002)	(0.003)	(0.003)
Expansion Only Country			0.136**
			(0.058)
Transition Countries			0.050***
			(0.017)
Less Developed			0.035**
			(0.016)
Growth X ETC			-0.010
			(0.009)
Growth X TC			-0.006
			(0.005)
Growth X LDC			-0.004
			(0.004)
Constant	0.014**	0.013	-0.001
	(0.007)	(0.011)	(0.006)
Observations	54	67	67
R-Squared	0.001	0.043	0.497

Robust standard errors in parantheses

* p<0.10 ** p<0.05 *** p<0.01

The regressions use average annual changes in life satisfaction (calculated as described in the text) and compound annual growth rates of GDP per capita. Expansion-only countries (ETCs) are a subset of Eastern European transition countries (see Figure 2a).

Table 3. Regressions of medium-run change in Best Possible Life on growth of GDP per capita
Gallup World Poll Data 2005-2019 – Two GWP Samples

	Minimum time-series duration: 12 years			Minimum time-series duration: 10 years		
	(1)	(2)	(3)	(4)	(5)	(6)
	Excl. Transition Countries	All countries		Excl. Transition Countries	All countries	
	BPL Ch.	BPL Ch.	BPL Ch.	BPL Ch.	BPL Ch.	BPL Ch.
GDP pc Growth	0.002	0.006**	0.007	0.005*	0.007***	0.007
	(0.003)	(0.003)	(0.007)	(0.003)	(0.003)	(0.007)
Transition Countries			0.028			0.055
			(0.034)			(0.043)
Less Developed			0.021			0.010
			(0.020)			(0.019)
Growth X TC			0.003			-0.004
			(0.009)			(0.012)
Growth X LDC			-0.005			-0.002
			(0.008)			(0.008)
Constant	-0.004	-0.006	-0.020	-0.012	-0.010	-0.020
	(0.010)	(0.009)	(0.014)	(0.010)	(0.009)	(0.014)
Observations	96	123	123	104	132	132
R-Squared	0.010	0.057	0.177	0.046	0.076	0.129

Robust standard errors in parantheses
* p<0.10 ** p<0.05 *** p<0.01

The two Gallup World Poll samples include (1) the countries for which there are at least three observations over a period of twelve or more years (columns 1-3); and (2) the countries for which there are at least three observations over a period of ten or more years (columns 4-6). The regressions use average annual changes in Best Possible Life (calculated as described in the text) and compound annual growth rates of GDP per capita.

Appendix A. Basic data for regressions

Table A1. Basic WVS/EVS data for regressions

					Rate of change per year[a]		
Country and Group	**ISO3**	**# of obs.**	**Period**	**Time Span (yrs)**	**Life Sat**	**Adj. Life Sat.**	**GDPpc**
Developed Countries							
Australia	AUS	5	1981 - 2018	38	-0.018	-0.013	2.064
Austria	AUT	4	1990 - 2018	29	-0.002	-0.005	2.705
Belgium	BEL	4	1981 - 2009	29	0.009	0.011	2.195
Canada	CAN	4	1982 - 2006	25	-0.004	0.013	2.224
Denmark	DNK	5	1981 - 2017	37	-0.005	-0.005	2.296
Finland	FIN	7	1981 - 2017	37	0.000	0.000	2.167
France	FRA	6	1981 - 2018	38	0.015	0.017	1.729
Germany	DEU	9	1981 - 2018	38	0.012	0.015	2.539
Great Britain	GBR	7	1981 - 2018	38	0.002	0.002	2.167
Greece	GRC	4	1999 - 2019	21	-0.003	-0.009	0.770
Hong Kong	HKG	3	2005 - 2018	14	0.024	0.024	2.077
Ireland	IRL	4	1981 - 2008	28	0.002	0.005	4.769
Italy	ITA	6	1981 - 2018	38	0.011	0.012	1.939
Japan	JPN	7	1981 - 2019	39	0.009	0.016	2.003
Netherlands	NLD	7	1981 - 2017	37	0.001	0.004	2.179
New Zealand	NZL	3	1998 - 2011	14	-0.005	-0.020	1.633
Norway	NOR	6	1982 - 2018	37	0.008	0.008	2.480
Portugal	PRT	3	1990 - 2008	19	-0.014	-0.014	3.552
Spain	ESP	9	1981 - 2017	37	0.019	0.019	2.851
Sweden	SWE	9	1981 - 2017	37	-0.013	-0.010	2.280
Switzerland	CHE	5	1989 - 2017	29	-0.014	-0.020	1.943
Taiwan	TWN	4	1994 - 2019	26	0.020	0.012	2.931
United States	USA	8	1981 - 2017	37	-0.013	-0.004	1.848
Mean (23 countries)		**5.6**	**1985 - 2016**	**31.4**	**0.002**	**0.003**	**2.319**
Full-cycle Transition Countries							
Belarus	BLR	6	1990 - 2018	29	0.065	0.060	0.952
Bulgaria	BGR	6	1991 - 2017	27	0.051	0.044	2.505
China	CHN	6	1990 - 2018	29	0.004	0.006	6.238
Estonia	EST	6	1990 - 2018	29	0.056	0.051	4.125
Hungary	HUN	7	1982 - 2018	37	0.005	0.006	2.763
Latvia	LVA	4	1990 - 2008	19	0.047	0.042	1.471
Lithuania	LTU	5	1990 - 2018	29	0.048	0.041	3.220
Poland	POL	8	1989 - 2017	29	0.036	0.036	4.164
Russia	RUS	8	1981 - 2017	37	0.005	0.006	1.298
Slovak Republic	SVK	6	1990 - 2017	28	0.040	0.037	2.177
Mean (10 countries)		**6.2**	**1988 - 2017**	**29.3**	**0.036**	**0.033**	**2.891**

Table A1 Continued. Basic WVS/EVS data for regressions

					Rate of change per year[a]		
Country and Group	**ISO3**	**# of obs.**	**Period**	**Time Span (yrs)**	**Life Sat**	**Adj. Life Sat.**	**GDPpc**
Less-Developed Countries							
Argentina	ARG	7	1984 - 2017	34	0.027	0.034	4.040
Bangladesh	BGD	3	1996 - 2018	23	0.067	0.057	4.322
Brazil	BRA	5	1991 - 2018	28	0.016	0.020	3.068
Chile	CHL	6	1990 - 2018	29	-0.009	-0.006	4.312
Colombia	COL	4	1997 - 2018	22	-0.003	-0.012	2.620
Egypt	EGY	4	2001 - 2018	18	0.011	0.000	4.701
India	IND	3	1990 - 2012	23	-0.006	0.000	6.094
Indonesia	IDN	3	2001 - 2018	18	0.039	0.029	6.523
Iraq	IRQ	4	2004 - 2018	15	-0.006	-0.016	9.663
Jordan	JOR	4	2001 - 2018	18	0.054	0.044	4.850
Malaysia	MYS	3	2006 - 2018	13	0.013	0.013	3.854
Mexico	MEX	7	1981 - 2018	38	0.018	0.026	0.913
Nigeria	NGA	5	1990 - 2018	29	-0.035	-0.032	6.026
Pakistan	PAK	3	2001 - 2018	18	0.175	0.163	4.060
Peru	PER	5	1996 - 2018	23	0.059	0.049	4.248
Philippines	PHL	4	1996 - 2019	24	0.031	0.021	2.558
South Africa	ZAF	6	1982 - 2013	32	0.006	0.017	0.956
South Korea	KOR	6	1982 - 2018	37	0.027	0.037	5.723
Thailand	THA	3	2007 - 2018	12	-0.053	-0.053	4.176
Turkey	TUR	7	1990 - 2018	29	0.030	0.032	3.476
Uruguay	URY	3	1996 - 2011	16	0.036	0.022	2.681
Mean (21 countries)		**4.5**	**1994 - 2017**	**23.8**	**0.024**	**0.021**	**4.232**
Expansion-Only Transition Countries							
Albania	ALB	4	1998 - 2018	21	0.125	0.098	5.519
Armenia	ARM	4	1997 - 2018	22	0.093	0.072	6.519
Azerbaijan	AZE	3	1997 - 2018	22	0.053	0.031	9.617
Bosnia and Herzegovina	BIH	4	1998 - 2019	22	0.095	0.069	5.141
Croatia	HRV	4	1996 - 2017	22	0.060	0.038	4.411
Czech Republic	CZE	5	1991 - 2017	27	0.032	0.024	2.594
Georgia	GEO	5	1996 - 2018	23	0.077	0.060	6.870
Moldova	MDA	4	1996 - 2008	13	0.222	0.186	2.060
North Macedonia	MKD	4	1998 - 2019	22	0.095	0.069	4.405
Romania	ROU	7	1993 - 2018	26	0.090	0.084	5.763
Serbia	SRB	6	1996 - 2018	23	0.058	0.040	5.980
Slovenia	SVN	7	1992 - 2017	26	0.053	0.047	3.129
Ukraine	UKR	5	1996 - 2011	16	0.143	0.126	4.445
Mean (13 countries)		**4.8**	**1996 - 2017**	**21.9**	**0.092**	**0.073**	**5.112**
Grand Mean Excl. ETCs (54 countries)		**5.3**	**1989 - 2016**	**28.0**	**0.017**	**0.015**	**3.169**
Grand Mean (67 countries)		**5.2**	**1991 - 2016**	**26.9**	**0.031**	**0.026**	**3.546**

a. The rate of change for life satisfaction is calculated as the coefficient on year (since 1980; also known as a linear trend) in regressions of life satisfaction on year, by country. The adjusted rate of change is calculated using a modified regression to address measurement issues (described in Appendix B). The GDPpc rate of change is calculated using the standard formula for compound annual growth rates.

Note: GDP per capita for Great Britain uses the United Kingdom figures. Russia 1981 uses the life satisfaction data from Tambov Oblast (Easterlin 2009). The observations in India from waves 4 and 5 are excluded because they only used part of the life satisfaction scales (1, 3, 5, and 7).

Source: EVS/WVS data files: WVS_Longitudinal_1981_2016_stata_v20180912; WVS_Longitudinal_1981_2016_stata_v20180912.dta; EVS_WVS_Cross-National_Wave_7_joint_core_stata_v1_4.dta; ZA7546_v1-0-0.dta (EVS 2015, 2020; Haerpfer et al., 2020; Inglehart et al., 2018), GDP per capita: based on the World Development Indicators (World Bank 2020), then extended forward and backward as needed using real GDP per capita growth rates from Maddison (Bolt et al. 2018) and Penn World Tables (Feenstra, Inklaar, and Timmer 2015).

Table A2. Basic Gallup World Poll data for regressions

				Rate of change per year[a]	
Country and Group	**ISO3**	**Period**	**Time Span (yrs)**	**Best Poss. Life**	**GDPpc**
Developed Countries					
Australia	AUS	2005 - 2019	15	-0.008	1.471
Austria	AUT	2006 - 2019	14	-0.001	2.147
Belgium	BEL	2005 - 2019	15	-0.028	1.911
Canada	CAN	2005 - 2019	15	-0.023	0.659
Denmark	DNK	2005 - 2019	15	-0.027	2.381
Finland	FIN	2006 - 2019	14	0.019	1.394
France	FRA	2005 - 2019	15	-0.021	1.634
Germany	DEU	2005 - 2019	15	0.048	2.432
Greece	GRC	2005 - 2019	15	-0.062	-0.262
Hong Kong	HKG	2006 - 2019	14	0.012	1.689
Ireland	IRL	2006 - 2019	14	-0.017	4.353
Israel	ISR	2006 - 2018	13	-0.002	2.365
Italy	ITA	2005 - 2019	15	-0.036	1.404
Japan	JPN	2005 - 2019	15	-0.031	0.997
Netherlands	NLD	2005 - 2019	15	-0.007	1.648
New Zealand	NZL	2006 - 2019	14	-0.008	2.408
Norway	NOR	2006 - 2019	14	-0.003	0.495
Portugal	PRT	2006 - 2019	14	0.041	0.616
Singapore	SGP	2006 - 2019	14	-0.016	2.506
Spain	ESP	2005 - 2019	15	-0.049	1.758
Sweden	SWE	2005 - 2019	15	-0.002	1.974
Switzerland	CHE	2006 - 2019	14	0.003	2.231
Taiwan	TWN	2006 - 2019	14	0.047	2.412
United Kingdom	GBR	2005 - 2019	15	0.009	1.206
United States	USA	2006 - 2019	14	-0.036	1.028
Mean (25 Countries)		**2005 - 2019**	**14.5**	**-0.008**	**1.714**
Transition Countries					
Albania	ALB	2007 - 2019	13	-0.043	4.900
Armenia	ARM	2006 - 2019	14	0.035	4.797
Azerbaijan	AZE	2006 - 2019	14	0.060	6.533
Belarus	BLR	2006 - 2019	14	-0.002	3.114
Bosnia and Herzegovina	BIH	2007 - 2019	13	0.084	3.899
Bulgaria	BGR	2007 - 2019	13	0.136	4.278
China	CHN	2006 - 2019	14	0.050	6.036
Croatia	HRV	2007 - 2019	13	-0.020	2.129
Czech Republic	CZE	2005 - 2018	14	0.041	3.274
Estonia	EST	2006 - 2019	14	0.058	3.913
Georgia	GEO	2006 - 2019	14	0.075	7.286
Hungary	HUN	2005 - 2019	15	0.083	3.397
Kazakhstan	KAZ	2006 - 2019	14	0.038	5.294
Kyrgyzstan	KGZ	2006 - 2019	14	0.060	5.102
Latvia	LVA	2006 - 2019	14	0.116	4.448
Lithuania	LTU	2006 - 2019	14	0.047	5.104
Moldova	MDA	2006 - 2019	14	0.044	6.283
North Macedonia	MKD	2007 - 2019	13	0.079	3.837
Poland	POL	2005 - 2019	15	0.040	5.140
Romania	ROU	2005 - 2019	15	0.089	7.224
Russia	RUS	2006 - 2018	13	0.055	3.310
Serbia	SRB	2007 - 2019	13	0.133	3.442
Slovak Republic	SVK	2006 - 2019	14	0.064	3.588
Slovenia	SVN	2006 - 2019	14	0.038	1.965
Tajikistan	TJK	2006 - 2019	14	0.087	5.860
Turkmenistan	TKM	2009 - 2018	10	-0.133	6.844
Ukraine	UKR	2006 - 2019	14	-0.070	2.201
Uzbekistan	UZB	2006 - 2019	14	0.093	6.062
Mean (28 Countries)		**2006 - 2019**	**13.7**	**0.048**	**4.616**

Table A2 Continued. Basic Gallup World Poll data for regressions

				Rate of change per year[a]	
Country and Group	**BOL**	**Period**	**Time Span (yrs)**	**Best Poss. Life**	**GDPpc**
Less-Developed Countries					
Algeria	DZA	2010 - 2019	10	-0.071	-0.496
Argentina	ARG	2006 - 2019	14	-0.009	1.006
Bahrain	BHR	2009 - 2019	11	0.141	-0.259
Bangladesh	BGD	2006 - 2019	14	-0.008	7.253
Benin	BEN	2006 - 2019	14	0.146	1.309
Bolivia	BOL	2006 - 2018	13	0.026	3.738
Botswana	BWA	2006 - 2019	14	-0.116	1.826
Brazil	BRA	2005 - 2019	15	-0.026	3.485
Burkina Faso	BFA	2006 - 2019	14	0.063	2.634
Burundi	BDI	2008 - 2018	11	-0.013	1.353
Cambodia	KHM	2006 - 2019	14	0.070	5.115
Cameroon	CMR	2006 - 2019	14	0.074	1.698
Central African Republic	CAF	2007 - 2017	11	-0.099	-1.771
Chad	TCD	2006 - 2019	14	0.035	-0.683
Chile	CHL	2006 - 2018	13	0.051	3.852
Colombia	COL	2006 - 2019	14	0.005	3.735
Congo, Rep.	COG	2008 - 2019	12	0.134	1.664
Costa Rica	CRI	2006 - 2019	14	-0.014	3.290
Cote d'Ivoire	CIV	2009 - 2019	11	0.159	4.733
Dominican Republic	DOM	2006 - 2019	14	0.051	4.361
Ecuador	ECU	2006 - 2019	14	0.064	2.023
Egypt	EGY	2005 - 2019	15	-0.077	5.426
El Salvador	SLV	2006 - 2019	14	0.057	2.182
Ghana	GHA	2006 - 2019	14	0.004	4.688
Guatemala	GTM	2006 - 2019	14	0.022	2.712
Haiti	HTI	2006 - 2018	13	-0.032	0.258
Honduras	HND	2006 - 2019	14	0.030	2.180
India	IND	2006 - 2018	13	-0.109	6.925
Indonesia	IDN	2006 - 2019	14	0.016	7.354
Iran	IRN	2005 - 2017	13	-0.057	1.149
Iraq	IRQ	2008 - 2019	12	-0.017	8.429
Jamaica	JAM	2006 - 2017	12	-0.038	0.956
Jordan	JOR	2005 - 2019	15	-0.091	4.100
Kenya	KEN	2006 - 2019	14	0.027	3.699
Kuwait	KWT	2006 - 2019	14	-0.032	-5.214
Laos	LAO	2006 - 2019	14	-0.018	7.118
Lebanon	LBN	2005 - 2018	14	0.016	1.133
Liberia	LBR	2007 - 2019	13	0.032	0.805
Madagascar	MDG	2006 - 2019	14	-0.016	2.256
Malawi	MWI	2006 - 2019	14	-0.085	0.200
Malaysia	MYS	2006 - 2019	14	-0.028	3.785
Mali	MLI	2006 - 2019	14	0.056	4.038

Table A2 Continued. Basic Gallup World Poll data for regressions

				Rate of change per year[a]	
Country and Group	**MOZ**	**Period**	**Time Span (yrs)**	**Best Poss. Life**	**GDPpc**
Mauritania	MRT	2007 - 2019	13	-0.010	0.574
Mexico	MEX	2005 - 2019	15	-0.020	2.100
Mongolia	MNG	2007 - 2019	13	0.081	5.879
Morocco	MAR	2010 - 2019	10	0.044	3.214
Mozambique	MOZ	2006 - 2019	14	-0.006	1.790
Namibia	NAM	2007 - 2019	13	-0.027	3.158
Nepal	NPL	2006 - 2019	14	0.051	5.686
Nicaragua	NIC	2006 - 2019	14	0.115	2.312
Niger	NER	2006 - 2019	14	0.057	2.202
Nigeria	NGA	2006 - 2019	14	0.011	1.534
Pakistan	PAK	2005 - 2018	14	0.025	4.087
Palestine	PSE	2006 - 2018	13	0.024	2.152
Panama	PAN	2006 - 2019	14	-0.049	4.734
Paraguay	PRY	2006 - 2019	14	0.037	4.013
Peru	PER	2006 - 2019	14	0.059	4.036
Philippines	PHL	2006 - 2019	14	0.102	5.288
Rwanda	RWA	2006 - 2019	14	-0.085	5.459
Saudi Arabia	SAU	2005 - 2019	15	-0.044	2.425
Senegal	SEN	2006 - 2019	14	0.043	2.248
Sierra Leone	SLE	2006 - 2019	14	0.056	3.217
South Africa	ZAF	2006 - 2019	14	-0.034	0.775
South Korea	KOR	2006 - 2019	14	0.021	2.563
Sri Lanka	LKA	2006 - 2019	14	0.004	6.607
Tanzania	TZA	2006 - 2019	14	-0.057	4.224
Thailand	THA	2006 - 2019	14	0.026	4.335
Togo	TGO	2006 - 2019	14	0.107	2.753
Trinidad and Tobago	TTO	2006 - 2017	12	0.003	5.398
Tunisia	TUN	2009 - 2019	11	-0.067	0.823
Turkey	TUR	2005 - 2019	15	0.008	5.444
Uganda	UGA	2006 - 2019	14	0.007	2.614
United Arab Emirates	ARE	2006 - 2019	14	-0.018	-2.374
Uruguay	URY	2006 - 2018	13	0.058	5.570
Venezuela	VEN	2005 - 2017	13	-0.182	-1.980
Vietnam	VNM	2006 - 2019	14	-0.016	6.675
Yemen	YEM	2007 - 2017	11	-0.135	-6.159
Zambia	ZMB	2006 - 2019	14	-0.075	6.150
Zimbabwe	ZWE	2006 - 2019	14	-0.036	4.111
Mean (79 Countries)		**2006 - 2019**	**13**	**0.005**	**2.882**
Grand Mean (Dur: 12 yrs+ : 123 Countries)		**2006 - 2019**	**14.0**	**0.014**	**3.183**
Grand Mean (Dur: 10 yrs+ : 132 Countries)		**2006 - 2019**	**13.7**	**0.012**	**3.029**

a. The rate of change for Best Possible Life is calculated as the coefficient on year (since 2005; also known as a linear trend) in regressions of Best Possible Life on year, by country. The GDP per capita rate of change is calculated using the standard formula for compound annual growth rates.
Source: Best Possible Life (Gallup 2020). GDP per capita: based on the World Development Indicators (World Bank 2020), then extended forward and backward as needed using real GDP per capita growth rates from Maddison (Bolt et al. 2018) and Penn World Tables (Feenstra, Inklaar, and Timmer 2015).

Appendix B. Changes affecting life satisfaction responses over time in the WVS / EVS Data

There are differences over time and between the WVS and EVS in the measurement of life satisfaction that impair comparability over time (presented in Table B1). In two surveys (out of a total of 12) a question on financial satisfaction precedes that on life satisfaction, a sequence that tends to depress life satisfaction responses (Easterlin 2010, 113). Also, in four surveys the range of response options appears to be greater than usual. The response options typically range from "Dissatisfied" to "Satisfied". In three surveys, however, the range is from "Completely dissatisfied" to "Completely satisfied", and in one, "Very dissatisfied" to "Very satisfied". As a general matter, the bulk of respondents tend toward the positive end of the response scale. If the top end option seems more extreme, as in these four surveys, some respondents tend to be deflected toward a lower response option.

Table B1. Life Satisfaction Response Options and Type of Preceding Question. World Values Survey (WVS) and European Values Survey (EVS) 1981 - 2014

Survey	Years	Card or Read Out	Response Options - Anchors (1/10)	Preceding Question
WVS1	1981 - 1984	Card	Dissatisfied / Satisfied	Happiness
EVS1	1981 - 1984	Card	Dissatisfied / Satisfied	Happiness
EVS2	1990 - 1993	Card	Dissatisfied / Satisfied	Freedom of Choice
WVS2	1990 - 1994	Card	Dissatisfied / Satisfied	Freedom of Choice
WVS3	1995 - 1998	Card	Dissatisfied / Satisfied	Financial satisfaction
EVS3	1999 - 2001	Card and Read Out	Very dissatisfied / Very satisfied	Freedom of Choice
WVS4	1999 - 2004	Card	Dissatisfied / Satisfied	Financial satisfaction
WVS5	2005 - 2009	Card and verbal description	Completely dissatisfied / completely satisfied	Important for children's learning
EVS4	2008 - 2010	Card	Dissatisfied / Satisfied	Freedom of Choice
WVS6	2010 - 2014	Card and verbal description	Completely dissatisfied / completely satisfied	Important for children's learning
EVS5	2017-2018	Card	Dissatisfied / Satisfied	Freedom of Choice
WVS7	2017-2020	Card	Completely Dissatisfied / Completely Satisfied	Freedom of Choice

To calculate the change in life satisfaction over time free from these measurement issues, we performed the following procedure. The countries were pooled and then life satisfaction was regressed on country dummy variables, year (since 1980), an interaction between country dummies and year, and two measurement dummies. The measurement dummies capture the change in life satisfaction associated with the two changes just mentioned. The first takes the value of one in the two surveys where financial satisfaction preceded life satisfaction. The second takes the value of one in the four surveys with more extreme response options. Then, the average annual change in life satisfaction (free from measurement issues) for a particular country is calculated as the coefficient on year plus the country-specific interaction term on year.

Measurement issues indeed affected the changes in life satisfaction over time. Both the adjusted and unadjusted average annual changes in life satisfaction are presented in Table B2. In both sets of transition countries, the adjusted annual change in life satisfaction is lower, the same is true in the less developed countries, while in the developed countries, the adjusted changes are slightly higher.

Table B2. Unadjusted and Adjusted Average Annual Change in Life Satisfaction by Country Group

Mean growth rate per year	(1)	(2)	(3)	(4)
	Transition Countries		Less-developed	Developed
Life Satisfaction (1-10 scale)	Expansion only	Full cycle		
Unadjusted	0.092	0.036	0.024	0.002
Adjusted	0.073	0.033	0.021	0.003

Source: Appendix A

The regression on which the adjusted series is based is presented in Table B3. The coefficients on measurement dummies turn out to be significant and in the expected direction. The effect of financial satisfaction preceding life satisfaction is to reduce the life satisfaction response, on average, by almost half a point on a 1-10 scale, a result quite similar to that found by Deaton (2011, 9) when political

questions precede that on best possible life. A more extreme range of response options reduces the life satisfaction response by nearly 0.3 points.

Table B3. Regression of life satisfaction on question dummies, country dummies, trend, and trend by country. WVS/EVS data 1981-2019

		Coef.	S.E.			Coef.	S.E.
Standard Question		omitted					
Preceded by Fin Sat.		-0.477***	(0.103)				
Extreme Resp. Options		-0.277***	(0.080)				
Omitted (Albania)	Constant	2.522***	(0.267)				
	Trend	0.098***	(0.006)				
Argentina	Constant	4.026***	(0.257)	Japan	Constant	3.938***	(0.257)
	Trend	-0.064***	(0.008)		Trend	-0.081***	(0.008)
Armenia	Constant	0.308***	(0.052)	Jordan	Constant	2.619***	(0.126)
	Trend	-0.026***	(0.001)		Trend	-0.054***	(0.005)
Australia	Constant	5.593***	(0.245)	Latvia	Constant	2.047***	(0.196)
	Trend	-0.111***	(0.007)		Trend	-0.056***	(0.005)
Austria	Constant	5.542***	(0.236)	Lithuania	Constant	2.164***	(0.186)
	Trend	-0.103***	(0.005)		Trend	-0.057***	(0.004)
Azerbaijan	Constant	2.669***	(0.033)	Malaysia	Constant	4.211***	(0.221)
	Trend	-0.067***	(0.001)		Trend	-0.085***	(0.006)
Bangladesh	Constant	2.471***	(0.126)	Mexico	Constant	4.967***	(0.260)
	Trend	-0.041***	(0.005)		Trend	-0.072***	(0.008)
Belarus	Constant	1.191***	(0.192)	Moldova	Constant	-3.284***	(0.080)
	Trend	-0.038***	(0.005)		Trend	0.089***	(0.003)
Belgium	Constant	4.831***	(0.266)	Netherlands	Constant	5.240***	(0.264)
	Trend	-0.087***	(0.006)		Trend	-0.094***	(0.007)
Bosnia and Herzegovina	Constant	1.827***	(0.014)	New Zealand	Constant	6.250***	(0.132)
	Trend	-0.029***	(0.000)		Trend	-0.118***	(0.005)
Brazil	Constant	4.540***	(0.245)	Nigeria	Constant	5.221***	(0.222)
	Trend	-0.078***	(0.007)		Trend	-0.130***	(0.007)
Bulgaria	Constant	1.575***	(0.181)	North Macedonia	Constant	1.432***	(0.014)
	Trend	-0.054***	(0.004)		Trend	-0.029***	(0.000)
Canada	Constant	5.164***	(0.315)	Norway	Constant	5.239***	(0.239)
	Trend	-0.085***	(0.010)		Trend	-0.090***	(0.006)
Chile	Constant	5.142***	(0.226)	Pakistan	Constant	-2.058***	(0.131)
	Trend	-0.104***	(0.007)		Trend	0.065***	(0.005)
China	Constant	4.504***	(0.225)	Peru	Constant	2.981***	(0.126)
	Trend	-0.092***	(0.007)		Trend	-0.049***	(0.005)
Colombia	Constant	6.575***	(0.130)	Philippines	Constant	4.145***	(0.126)
	Trend	-0.110***	(0.005)		Trend	-0.077***	(0.005)
Croatia	Constant	3.128***	(0.089)	Poland	Constant	3.329***	(0.233)
	Trend	-0.060***	(0.002)		Trend	-0.061***	(0.006)
Czech Republic	Constant	3.857***	(0.184)	Portugal	Constant	4.944***	(0.250)
	Trend	-0.074***	(0.004)		Trend	-0.112***	(0.006)
Denmark	Constant	5.844***	(0.256)	Romania	Constant	0.847***	(0.185)
	Trend	-0.103***	(0.006)		Trend	-0.014***	(0.005)
Egypt	Constant	3.258***	(0.126)	Russia	Constant	3.325***	(0.237)
	Trend	-0.098***	(0.005)		Trend	-0.092***	(0.006)
Estonia	Constant	2.115***	(0.192)	Serbia	Constant	2.463***	(0.072)
	Trend	-0.047***	(0.005)		Trend	-0.058***	(0.002)
Finland	Constant	5.431***	(0.234)	Slovak Republic	Constant	3.072***	(0.222)
	Trend	-0.098***	(0.006)		Trend	-0.061***	(0.005)
France	Constant	4.000***	(0.257)	Slovenia	Constant	3.200***	(0.178)
	Trend	-0.081***	(0.006)		Trend	-0.051***	(0.004)
Georgia	Constant	0.809***	(0.076)	South Africa	Constant	3.597***	(0.278)
	Trend	-0.038***	(0.002)		Trend	-0.081***	(0.008)
Germany	Constant	4.474***	(0.247)	South Korea	Constant	2.867***	(0.282)
	Trend	-0.083***	(0.006)		Trend	-0.061***	(0.008)
Great Britain	Constant	5.136***	(0.237)	Spain	Constant	4.115***	(0.228)
	Trend	-0.096***	(0.006)		Trend	-0.078***	(0.006)
Greece	Constant	4.676***	(0.209)	Sweden	Constant	5.685***	(0.253)
	Trend	-0.107***	(0.005)		Trend	-0.108***	(0.006)
Hong Kong	Constant	3.374***	(0.221)	Switzerland	Constant	6.393***	(0.196)
	Trend	-0.074***	(0.006)		Trend	-0.118***	(0.005)
Hungary	Constant	3.715***	(0.239)	Taiwan	Constant	4.135***	(0.133)
	Trend	-0.092***	(0.006)		Trend	-0.086***	(0.005)
India	Constant	4.314***	(0.254)	Thailand	Constant	7.147***	(0.221)
	Trend	-0.098***	(0.008)		Trend	-0.151***	(0.006)
Indonesia	Constant	3.838***	(0.127)	Turkey	Constant	3.089***	(0.232)
	Trend	-0.068***	(0.005)		Trend	-0.066***	(0.006)
Iraq	Constant	3.472***	(0.126)	Ukraine	Constant	-1.295***	(0.084)
	Trend	-0.114***	(0.005)		Trend	0.028***	(0.003)
Ireland	Constant	5.330***	(0.268)	United States	Constant	5.374***	(0.270)
	Trend	-0.093***	(0.007)		Trend	-0.102***	(0.008)
Italy	Constant	4.284***	(0.255)	Uruguay	Constant	4.442***	(0.130)
	Trend	-0.086***	(0.006)		Trend	-0.076***	(0.005)

Source: Author calculations, based on the data (Bolt et al. 2018; EVS 2015, 2020; Feenstra, Inklaar, and Timmer, 2015; Gallup, 2020; Haerpfer et al., 2020; Inglehart et al., 2018; World Bank, 2020).