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OBJECTIVE AND SUBJECTIVE INDICES

OF WELL-BEING:

Resolving the Easterlin Happiness-Income Paradox

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Abstract

Easterlin (1973) found that at any given point in time both among and within nations, measures of subjective well-being such as happiness or life satisfaction vary directly with levels of income, but over relatively long periods of time, such as 10 years or more, happiness does not increase when a country's income increases. This paradox has motivated much research and commentary over the past four-plus decades. This chapter commences with a review of the paradox and the prior research literature and commentaries. It then describes the conceptual foundations and empirical properties of the U.S. Child and Youth Well-Being Index (CWI). To assess the paradox within the context of trends in the CWI, two empirical comparisons are described. The first compares trends in a time series of overall life satisfaction responses for a continuous time series of annual national samples of U.S. high school seniors with trends in median annual family income for families with children; the second compares trends in the life satisfaction measure with trends in the CWI. It is shown that the latter trends are much more highly correlated. These empirical findings are the first to corroborate the Easterlin et al. (2010) conjecture that a focus on "... urgent personal concerns relating to such things as health and family life" incorporated into a more comprehensive well-being could produce a stronger long-term association and thus resolve the paradox.

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For the past 50 years since the publication of Bauer (1966), social indicators research has been motivated by such questions as: How are we doing with respect to not only our economic level-of-living, but more generally the quality of our lives – our well-being? Are we improving, staying about the same, or deteriorating? Compared to our past? Compared to other countries/societies? And, if improving, are the improvements shared throughout the society or only among some of us? This research has resulted in a substantial number of conceptual and empirical contributions to the measurement of social conditions via *objective social indicators/indices*, that is, statistics that have some significance for measuring the conditions of life of individuals and populations from the point of view of any independent observer (e.g., official mortality and morbidity rates)

A key development in social indicators research since the 1970s is the role of the quality-of-life/well-being concept in connecting social indicators to the study of subjective well-being (Land 2015b). In this approach, social indicators seek to measure psychological satisfaction, happiness, and life fulfillment by using survey research instruments that ascertain the subjective reality in which people live. The result is the class of *subjective well-being (SWB) indicators/indices*, which many researchers regard as ultimate well-being outcome indicators since they are based on individuals' assessments of their personal well-being. This approach led

to many methodological studies exploring the utility of various survey and analytic techniques for mapping individuals' feelings of satisfaction with numerous aspects of their experiences. These studies also examine domains of life ranging from the highly specific (health, family, etc.) to the global (life-as-a-whole). Subjective well-being indicators build on the methodological foundations established by Andrews and Withey (1976) and Campbell, Converse, and Rodgers (1976). Diener and Biswas-Diener (2008) reviewed and synthesized decades of extensive research on the psychology of happiness, and noted the distinctive functions of negative and positive affect on overall happiness assessments.

Given these objective and subjective traditions of research on social indicators, questions of the extent to which they concur or diverge have been studied and some puzzles of inconsistency have been articulated. One of these was articulated by Easterlin (1973) in his classic article "Does Money Buy Happiness?" The empirical analyses of U. S. data summarized in that article created what has come to be known as the *Easterlin Income-Happiness Paradox*.

This chapter commences with a review of the income-happiness paradox and theory relevant thereto. It then describes the conceptual foundations and empirical properties of the U.S. Child and Youth Well-Being Index (CWI). To assess the paradox within the context of trends in the CWI, two empirical comparisons are described. The first compares trends in overall life satisfaction responses for a continuous time series of annual national samples of U.S. high school seniors with trends in the median annual family income. The second compares trends in the life satisfaction measure with trends in the CWI. It is shown that the latter set of trends is much more highly correlated. These empirical findings are discussed within the body of literature on the Easterlin paradox.

The Income-Happiness Paradox

The Income-Happiness paradox is that, at any given point in time (and for short periods of time, such as two to four years), both among and within nations, society-wide average measures of subjective well-being, such as happiness, life satisfaction, or financial satisfaction, vary directly with levels of income; however, over relatively long periods of time (such as 10 years or more) these subjective well-being indicators do not increase when a country's income increases (Easterlin, McVey, Switek, Sawangfa, and Zweig 2010). This paradox has motivated much research and commentary over the past four-plus decades. Empirical evidence supporting the paradox has been gradually broadening in recent decades to include Japan and nine developed countries of Europe (Easterlin 1995), and in Easterlin et al. (2010), to 17 Latin American countries, 17 developed countries, 11 Eastern European countries transitioning from socialism to capitalism, and 9 less developed countries scattered across Asia, Latin America, and Africa, including some with quite low economic growth rates and some with the highest rates of growth ever observed.

What accounts for the Income-Happiness paradox? Explanations of the paradox generally have been developed within a neoclassical economics theoretical framework in which an individual's utility (or SWB) is specified as a function of goods or experiences consumed (Brems 1968, pp. 13-21); and since the goods or experiences generally must be purchased, they, in turn, are a function of income. Within this framework, the primary mechanisms that have been put forward to explain the paradox are hedonic adaptation/habituation and social comparison (Easterlin 2003; Clark, Frijters, and Shields 2008).

The concept of *hedonic adaptation/habituation* builds on "setpoint theory" in psychology (see, e.g., Lucas, Clark, Georgellis, and Diener 2002; Cummins, Eckersley, Pallant, van Vugt,

and Misajon 2003). This theory posits that each individual has a setpoint/level of happiness determined by genetics and personality. Life events, such as marriage, loss of a job, and serious injury or disease, may deflect a person above or below this setpoint, but in time setpoint theory posits that hedonic adaptation will return an individual to the initial level. Research (Easterlin 2003) suggests, however, that 1) individuals' setpoints may vary with stages of the life course from childhood to older ages, 2) although there may be complete hedonic adaptation with regard to income, this does not mean that there is complete adaptation with regard to all sources of happiness such as marriage or health; indeed, the evidence on health and marriage suggests that adaptation in these areas is less than complete, and that changes in these circumstances have a lasting effect on well-being, and 3) even in the material goods domain, cultural goods, such as music, literature, and art, are less subject to hedonic adaptation than "comfort" goods, like homes and cars. Suffice it to say that the foregoing hedonic adaptation research findings are indicative that individuals' utility/SWB functions are considerably more complicated than assumed in classical economic theory. *Social comparison* adds another complication in the form of comparisons of one's income relative to those of others. Both mechanisms require the incorporation of relative income terms into the utility function, for comparisons of one's current income to past income (habituation), or to others (social comparison) (Clark et al. 2008).

As Easterlin et al. (2010, p. 22467) state "Where does this leave us? If economic growth is not the main route to greater happiness, what is?" with the suggestion to focus research on "... urgent personal concerns relating to such things as health and family life." The remainder of this chapter describes some variants of this suggestion and its implications for the income-happiness paradox.

The Child and Youth Well-Being (CWI) Index

For over 15 years, the Child and Youth Well-Being Index (CWI) Project has addressed the task of extracting from the many statistical indicators (literally dozens) of what is happening to kids in the United States by calculating various summary or composite indices that are combined to address the question of whether things are getting better or worse overall. Specifically, the CWI is built on the foundations of an intersection of: 1) numerous databases of social indicator time series, many of which were initiated in the early-1970s, and 2) findings from subjective well-being studies.¹

The CWI is a composite measure of levels and trends over time in the quality of life, or well-being, of America's children and young people. It consists of several interrelated summary or composite indices of annual time series of 28 social indicators of well-being. The principal objective of the CWI is to give a sense of the overall direction of change in the well-being of children and youth in the United States as compared to base years such as 1975 and 1995.

The CWI is designed to address the following types of questions: Overall, on average, how did child and youth well-being in the United States change in the last quarter of the 20th century and into the present? Did it improve or deteriorate, and by how much? In which domains or areas of social life? For specific age groups? For particular race/ethnic groups? For each of the sexes? And did race/ethnic group and sex disparities increase or decrease?

The CWI is constructed as follows. First, annual time series data (from vital statistics and sample surveys) have been assembled on some 28 national-level Key Indicators in seven Quality-Of-Life (QOL) Domains—a complete list of the Domains and Key Indicators is given in Table 1. These seven QOL Domains have been well-established in over three decades of

¹ Some prior publications on the CWI include Land, Lamb, and Mustillo (2001), Land, Lamb, Meadows, and Taylor (2007), and the chapters in Land (2012). Annual reports of the CWI are posted on: <http://www.soc.duke.edu/~cwi/>.

empirical studies of subjective well-being, including studies of children and adolescents, by social psychologists and other social scientists. In this sense, *the CWI is an evidence-based measure of trends in averages of the social conditions encountered by children and youths in the United States.*

Insert Table 1 About Here

Annual values of each of the 28 Key Indicators then are indexed by percentage change from their initial values in a base year such as 1975.² That is, subsequent annual observations are computed as percentages of the base year. The base year is assigned a value of 100. The directions of the indicator values are oriented such that a value greater (lesser) than 100 in subsequent years means the social condition measured has improved (deteriorated). The time series of the 28 Key Indicators are grouped together into the seven QOL Domains (see Table 1) and domain-specific summary well-being indices are constructed. Within these summary indices, each indicator is equally weighted.³ The seven domain indices are then combined into the equally-weighted composite Child and Youth Well-being Index (CWI). The charts displayed in Figures 1 and 2 (reproduced from Land 2015a) respectively, show changes over time from the

² Three indicators begin in the mid-1980s and use corresponding base years.

³ The equal-weighting strategy for calculating composite indices used by the CWI is surprisingly robust and has good statistical properties. Specifically, in the context of a mathematical model of heterogeneous weighting schemes (corresponding to different values or preferences) among members of a population, Hagerty and Land (2007) proved that the equal-weighting strategy has a minimax statistical property—equal weights minimize extreme disagreements among individuals (experts, children, parents) with respect to composite indices. They also demonstrated the good performance of the equal-weighting strategy via numerical simulations.

base year 1975 to 2014 in the overall, composite Child and Youth Well-Being Index, and its QOL Domain-Specific Indices.⁴

Insert Figure 1 About Here

Figure 1 identifies a long “recession” in child and youth well-being in the years 1980-1994 followed by a rapid “recovery” in the years 1995-2002 and then a period of oscillations up and down in the years 2003-2013. In brief, just as the CWI allowed us be the first to signal that the steady increases in numerous Key Indicators in the period 1994-2002 were indicative not just of isolated trends (Land et al. 2001; 2007), but rather of an overall improvement in well-being, the CWI more recently signaled that this trend of overall improvement slowed and showed the imprint of macroeconomic expansions and contractions (Land 2012).

Insert Figure 2 About Here

Figure 2 helps us to identify the components of changes over time in child and youth well-being, specifically: two QOL Domains that show substantial improvements (safety/behavioral concerns and community engagement), two that declined and then stabilized or slightly improved (health and social relationships), two that oscillate (family economic well-being and, with longer cycles, emotional/spiritual well-being), and a domain shows a slight long-term improvement (educational attainment).

⁴ The year 1975 is the earliest year for which statistical data on 25 of the 28 Key Indicators are available. The CWI Project also uses other base years. For instance, an expanded CWI with an additional 16 Key Indicators for which national statistical time series became available in the mid-1990s uses 1995 as its base year.

Assessing the Income-Happiness Paradox via the CWI

Returning to the Income-Happiness Paradox, consider next the extent to which changes over short periods of time in an SWB indicator among children and youths varies directly with levels of income, but not over relatively long periods of time—to raise the question of whether this paradox also applies to the Child and Youth Well-Being Index.

To construct such an evaluation, we use data on trends in responses to an overall life satisfaction question asked annually of a large national sample of U.S. high school seniors (12th graders) since 1976 as part of the Monitoring the Future (MTF) project. Specifically, the MTF question, administered annually to 12th graders since 1976, is of the conventional global satisfaction with life form: "How satisfied are you with your life as a whole these days?"⁵ The answer range is a seven-point Likert rating scale: Completely Dissatisfied, Quite Dissatisfied, Somewhat Dissatisfied, Neither Satisfied or Dissatisfied, Somewhat Satisfied, Quite Satisfied, and Completely Satisfied. For comparisons with the CWI, we first combined the last two response categories to calculate the percent of the 12th graders who respond that they either are Quite or Completely Satisfied with their lives in each year from 1975 to 2013. Next, because the annual MTF data are based on samples and the annual CWI is based on averages of numerous population and statistical averages, the latter varies more smoothly from year to year. Accordingly, in order to smooth out the MTF series to show its primary temporal trends, we applied three-point moving averages to the series two times.

⁵ This is the only nationally representative continuous time series of data on responses to a subjective well-being question for the U.S. population of children and youths that dates back to 1975. Since 1991, the MTF project also has included national samples of 8th and 10th graders. In prior research (Land 2012), we have found substantial covariation over time among the 8th, 10th, and 12th grade responses. Hence, it is likely that variation over time since 1975 in the life satisfaction question responses from the 12th graders are reflective of variations in the subjective well-being of 8th and 10th graders, some of whom are younger siblings of the 12th graders, as well.

To compare temporal trends in the smoothed MTF life satisfaction responses with a measure of changes in income, we use one of the 28 Key Indicators in the CWI, namely, median family income for all families with children under age 18 (which has been adjusted to 2014 dollars). Figure 3 contains a graph of this income time series for the years 1976 to 2013 together with the corresponding graph of the smoothed MTF life satisfaction data.

Insert Figure 3 About Here

It can be seen from Figure 3 that the MTF time series has considerably more variation over time than does the median family income series. There also is visual evidence in Figure 3 that the Income-Happiness Paradox exists for these time series. That is, for some relatively short time periods—e.g., the 1990-1993 downturn in family income associated with the 1990-1991 economic recession and its aftermath and the 2008-2011 income downturn associated with the Great Recession of 2008-2009 and its aftermath—there is a corresponding downturn in the smoothed MTF life satisfaction time series followed by upturns during the subsequent years of recovery/increasing family income. There are exceptions, however; notably the downturn in the MTF life satisfaction time series for the years 1982-1988, despite increases in the income series from 1983 through 1988. By contrast, for longer time periods, this generally positive association is much weaker, indeed, for the entire time period 1976-2013, the correlation of the two time series is a modest 0.38. In brief, the Easterlin Income-Happiness Paradox appears to hold for these measures of trends in the incomes available to families with children and their SWB as measured by MTF high school senior responses.

Insert Figure 4 About Here

Consider next a corresponding comparison of trends over time in the smoothed MTF time series and the CWI plotted in Figure 4. This figure shows considerably greater similarity of both short-term and long-term trends in the CWI, which is based on objective statistical time series of social indicators, and the only continuous empirical data on trends in the subjective well-being of children in American society across the past four decades. Specifically, the correlation of the two series is 0.84, which implies that they share about 70 percent of their over-time variance, as compared to the 14 percent over-time variation shared by the family income and life satisfaction series noted in Figure 3.

Conclusion

The foregoing analyses show, first of all, that as is the case with the prior studies of data on adults on which the Easterlin Income-Happiness paradox is based, trends in a measure of income—annual levels of median family income for U.S. families with children ages 0 to 18—exhibit relatively consistent and close associations with trends in the smoothed annual Monitoring the Future overall life satisfaction rates of high school seniors for relatively short periods of time. Specifically, relatively short-term downturns in this family income measure during periods of economic recessions tend to be associated with short-term downturns in the smoothed MTF life satisfaction measure, followed by upturns in life satisfaction when the family income measure increases during a subsequent economic recovery. This implies that, in the families in which the high school seniors reside that experienced tightened budgets and expenditures during a recession and perhaps psychological stress and conflict among parents,

these effects are experienced by the seniors and evidenced in their lowered MTF life satisfaction responses, and, when the overall economy recovers and at least some of these families experience increasing incomes, this is reflected in increased life satisfaction.

In brief, the short-term association of income and levels of overall life satisfaction found in prior studies of adult populations are evident in the data on U.S. teenagers. The data also are consistent with the other part of the Income-Happiness paradox, namely, the lack of a positive association of this measure of subjective well-being with the family income increases over a long period of time.

By comparison, the MTF life satisfaction data series shows relatively strong associations with both short-term and long-term changes in the Child and Youth Well-Being Index. This is corroborative of Easterlin et al.'s (2010) conjecture that a focus on "... urgent personal concerns relating to such things as health and family life" could produce a stronger long-term association. The seven Quality-Of-Life (QOL) Domains utilized in the construction and calculation of the Child and Youth Well-Being Index begin with 1) family economic well-being, and include 2) a health domain and 3) a family and other social relationships domain, as well as domains for 4) safety/behavioral concerns, 5) connections to community institutions, 6) educational attainment, and 7) emotional well-being. The smoothed MTF life satisfaction time series shown in the figures analyzed above suggest that, while relatively short-term changes in the family economic well-being domain can affect the assessments of their overall life satisfaction (declining during economic contractions and increasing during economic recoveries), this relationship can be overridden by strong trends in the other CWI domains, such as the decline of the nuclear family institution and the rise of behavioral problems such as teenage birth rates and violent crime rates in the 1980s. The consequence is that the structure of the CWI, with its incorporation of Key

Indicators and Well-Being Domains that have been shown in numerous empirical studies to be associated with subjective well-being, yields a stronger association with the MTF life satisfaction time series than does the income indicator alone.

In general then, the findings in this study are the first to support the Easterlin et al. (2010) conjecture. Clearly, more research with other populations and other general composite indicators of well-being are needed before strong generalizations can be made. But the implications of this study for the veracity of the Easterlin et al. (2010) conjecture are quite evident and suggest that composite social indicators that incorporate trends in objective indicators of a comprehensive set of well-being domains can show relatively strong associations with both short-term and long-term changes in subjective well-being.

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Table 1. Twenty-Eight Key National Indicators of Child and Youth Well-Being.

Family Economic Well-Being Domain

- Poverty Rate (All Families with Children)
- Secure Parental Employment Rate
- Median Annual Income (All Families with Children)
- Rate of Children with Health Insurance

Health Domain

- Infant Mortality Rate
- Low Birth Weight Rate
- Mortality Rate (Ages 1-19)
- Rate of Children with Very Good or Excellent Health (as reported by parents)
- Rate of Children with Activity Limitations (as reported by parents)
- Rate of Overweight Children and Adolescents (Ages 6-19)

Safety/Behavioral Domain

- Teenage Birth Rate (Ages 10-17)
- Rate of Violent Crime Victimization (Ages 12-19)
- Rate of Violent Crime Offenders (Ages 12-17)
- Rate of Cigarette Smoking (Grade 12)
- Rate of Alcohol Drinking (Grade 12)
- Rate of Illicit Drug Use (Grade 12)

Educational Attainment Domain

- Reading Test Scores (Ages 9, 13, and 17)
- Mathematics Test Scores (Ages 9, 13, and 17)

Community Connectedness

- Rate of Persons who have Received a High School Diploma (Ages 18-24)
- Rate of Youths Not Working and Not in School (Ages 16-19)
- Rate of Pre-Kindergarten Enrollment (Ages 3-4)
- Rate of Persons who have Received a Bachelor's Degree (Ages 25-29)
- Rate of Voting in Presidential Elections (Ages 18-20)

Social Relationships Domain

- Rate of Children in Families Headed by a Single Parent
- Rate of Children who have Moved within the Last Year (Ages 1-18)

Emotional/Spiritual Well-Being Domain

- Suicide Rate (Ages 10-19)
 - Rate of Weekly Religious Attendance (Grade 12)
 - Percent who report Religion as Being Very Important (Grade 12)
-

Note: Unless otherwise noted, indicators refer to children ages 0-17 at last birthday.

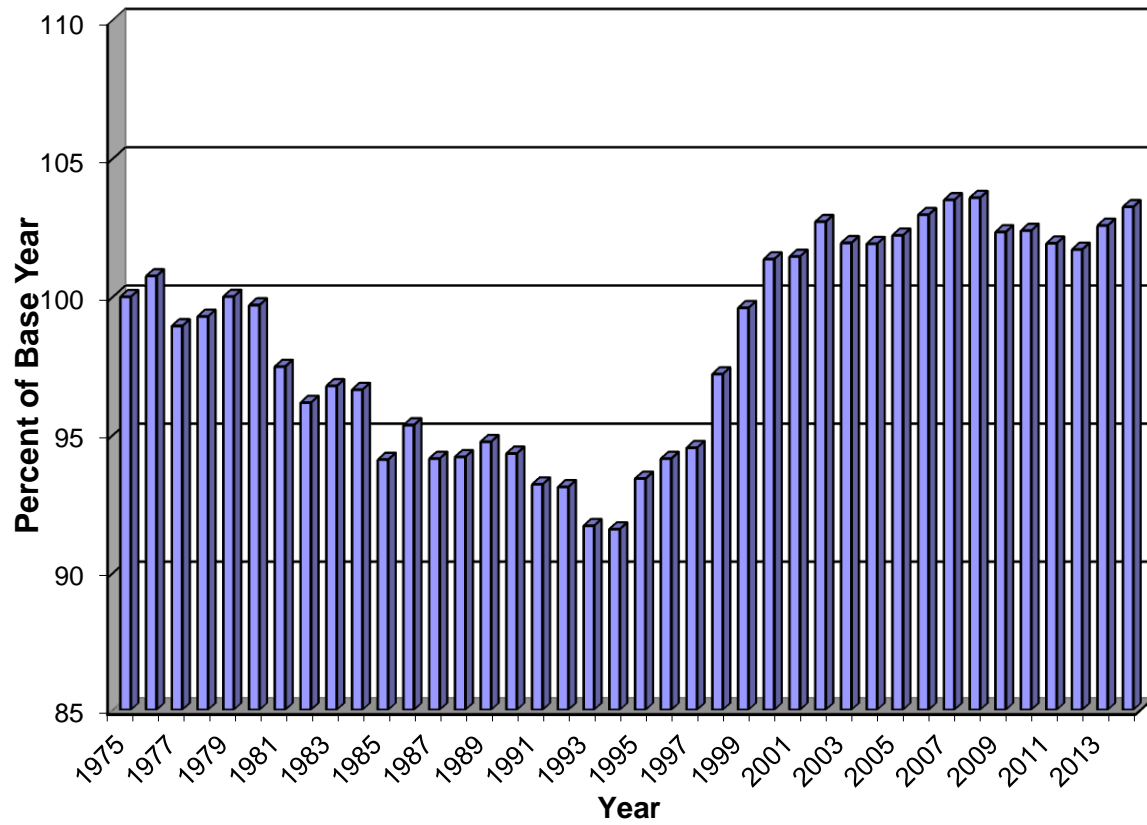


Figure 1: Child Well-Being Index, 1975-2014

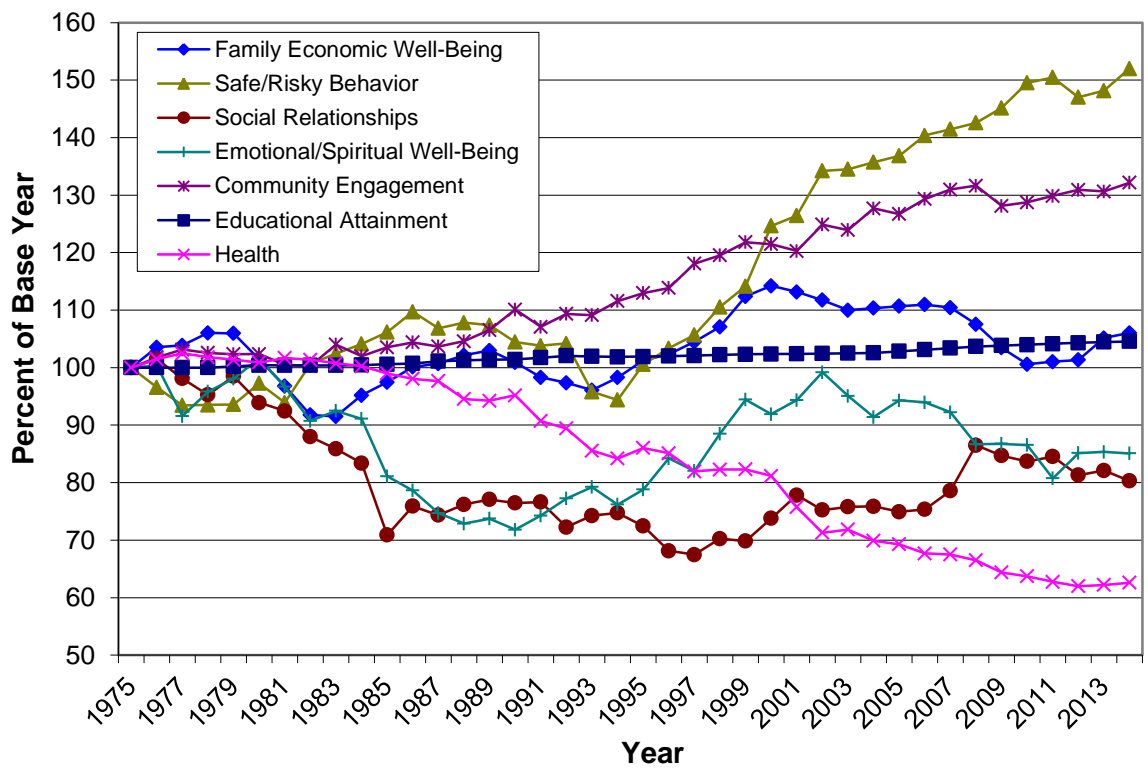


Figure 2. Domain-Specific Summary Indices, 1975-2014

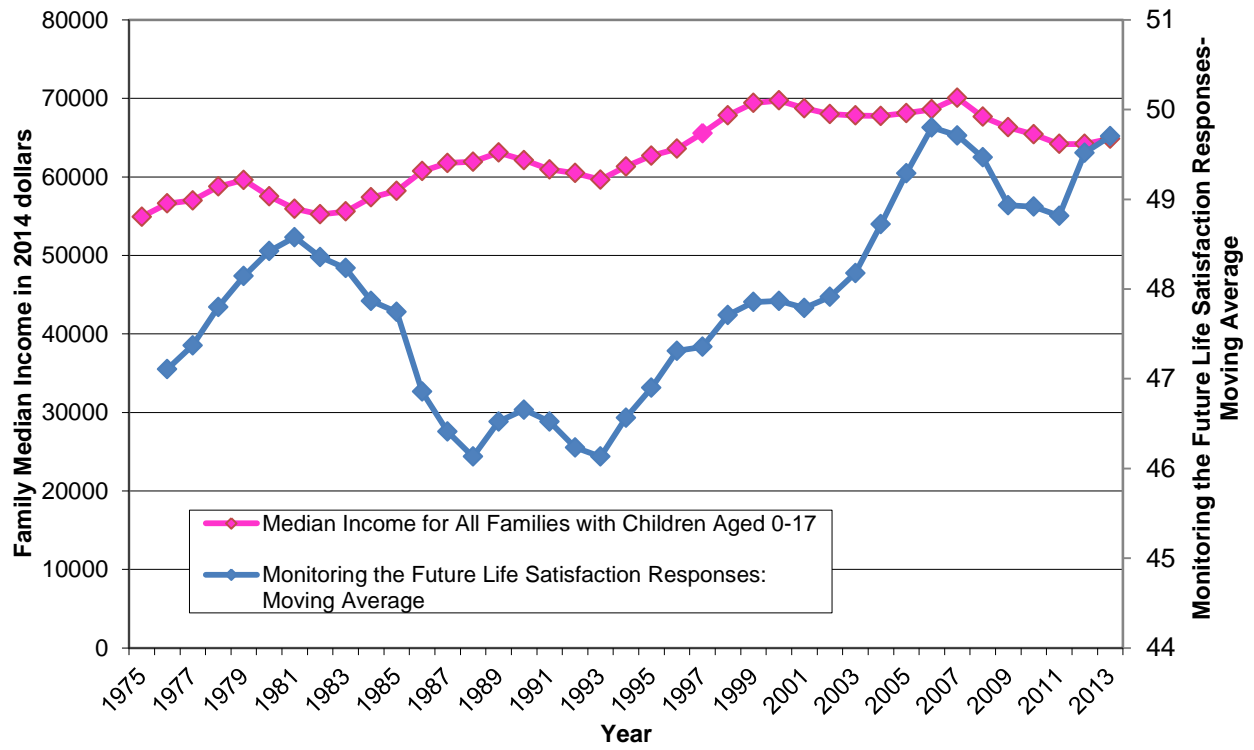


Figure 3. Income and Smoothed MTF Life Satisfaction Trend, 1976-2013

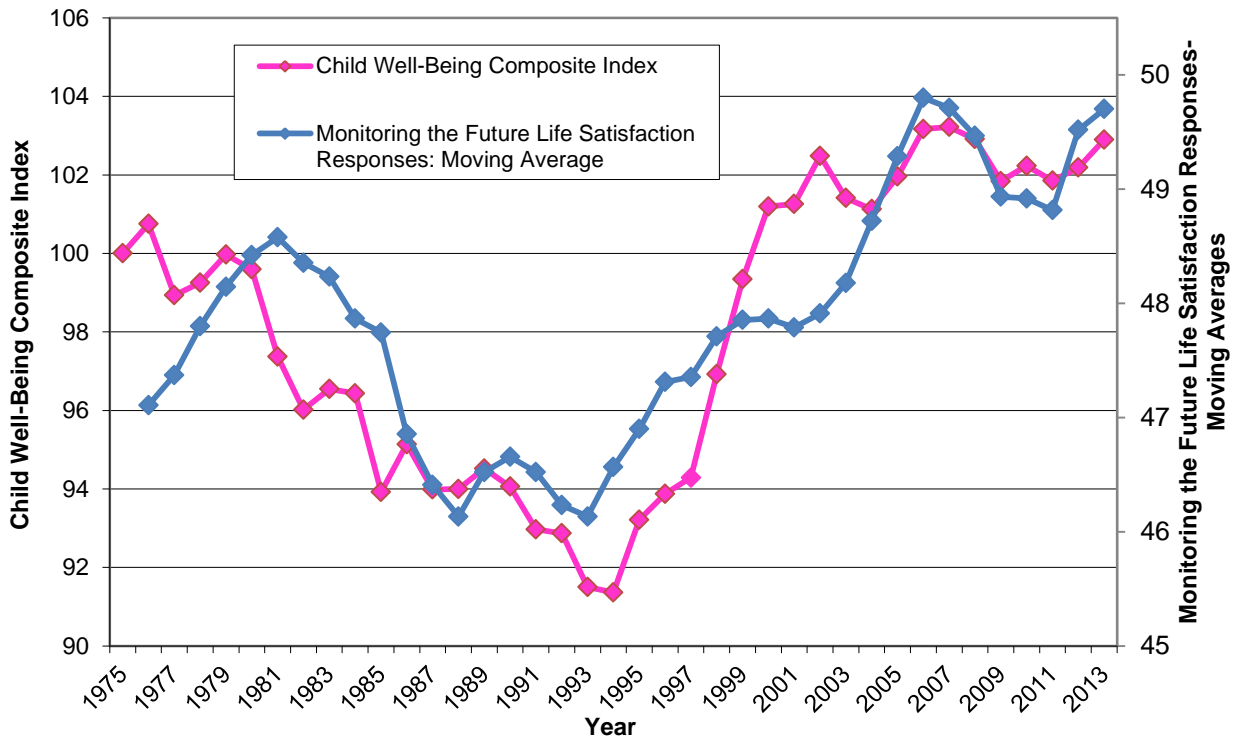


Figure 4. CWI and Smoothed MTF Life Satisfaction Trend, 1976-2013