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CHILD AND YOUTH WELL-BEING IN THE UNITED STATES,  
1975–1998: SOME FINDINGS FROM A NEW INDEX<sup>1</sup>

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**ABSTRACT.** This paper addresses the following questions: Overall, on average, how did child and youth well-being in the United States of America change in the last quarter of the 20th century? Did it improve or deteriorate? By how much? In which domains or areas of social life? For specific age groups? For particular race/ethnic groups? And did race/ethnic groups disparities increase or decrease? To address these questions, some 28 national-level time series of social indicators in seven quality-of-life domains – material well-being, social relationships (with family and peers), health, safety/behavioral concerns, productive activity (educational attainments), place in community (participation in schooling or work institutions), and emotional/spiritual well-being – are reviewed. Twenty-five of these time series date back to 1975 or earlier, while three are based on indicators that commenced in the 1980s. The 25 time series that date back to 1975 are indexed by percentage change from the base year 1975 – that is, subsequent annual observations are computed as percentages of the base year values. Similarly, all 28 time series that are available by 1985 also are indexed separately with 1985 as the base year. This is followed by the construction of seven domain-specific summary well-being indices in which each of the component time series in each of seven well-being domains are equally weighted. The seven component indices then are combined into two equally-weighted summary indices of child and youth well-being – the first of which is based on the 25 social indicator time series that date back to 1975 and the second of which is based on the 28 time series that date back to 1985. We also examine the impact of averaging the well-being indicators across the individual time series rather than across the seven quality of life domains. For this, we calculate corresponding base year 1975 and 1985 summary well-being indices that average equally across the individual component series. Basic findings about trends in child and youth well-being in the United States in the last quarter of the 20th century are shown to depend on both the base year and the formula by which the summary indices are calculated. Findings about child and youth well-being also are dependent upon the specific indicators and domains used in the composition of the summary indices. Using our general indices as metrics by which to measure change, we reach several conclusions. First, using 1975 as a base year – overall conditions of life for children and youths in the United States deteriorated fairly steadily for a number of years in the 1980s and reached low points in the early-1990s. From 1993, they then began an upturn that continued



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through 1998 towards, but still slightly below, 1975 levels. In other words, while some domains and conditions of life for children/youths improved by 1998 as compared to 1975, others deteriorated. Averaging across all of the domains of life and conditions included in our summary indices, the basic finding is that the overall quality of life of children/youths in the United States was not better in 1998 than in 1975. Using 1985 as a base year, the trend in overall well-being for children/youths shows a similar pattern of decline through the early-1990s followed by an improvement through 1998 to levels slightly above those of the 1985 base year. In other words, compared to 1985 base levels, average conditions of well-being for children/youths in the United States had slightly improved by the late-1990s. Additional findings are discussed pertaining to trends over time in each of the seven domains of well-being, trends within infancy, childhood, and adolescence/teenage age groupings, and trends in race/ethnic-group-specific comparisons and disparities.

Every generation of adults is concerned about the conditions of its children and youths (Moore, 1999). From the stagflation and socially turbulent days of the 1970s through the decline of the rust belt industries and transition to the information age in the 1980s to the relatively prosperous *e*-economy and multicultural years of the late-1990s, Americans have fretted over the material circumstances of the nation's children, their health and safety, their educational progress, and their moral development. Are their fears and concerns warranted? How do we know whether circumstances of life for children in the United States are bad and getting worse, or good and improving? On what basis can the public and its leaders form opinions and draw conclusions?

Since the 1960s, researchers in social indicators/quality-of-life measurement have argued that well-measured and consistently collected social indicators provide a way to monitor the condition of groups in society, including children and families, today and over time (Land, 2000). The information thus provided can be strategic in forming the ways we think about important issues in our personal lives and the life of the nation. Indicators of child and youth well-being, in particular, are used by child advocacy groups, policy makers, researchers, the media, and service providers to serve a number of purposes. In three instances:

- to describe the condition of children,
- to monitor or track child outcomes, and
- to set goals,

the use of indicators is well within the long-established ‘public enlightenment’ function of social indicators. And while there are notable gaps and inadequacies in existing child and family well-being indicators in the United States (Ben-Arieh, 2000; Moore, 1999), there also literally are dozens of data series and indicators from which to form opinions and draw conclusions (see, e.g., Brown, 1997).

In face of this surfeit of data, we address in this paper a crucial part of the public enlightenment function, namely, the summarization question: Overall or on average, how well are children and youths in the America doing? Focusing on the last quarter of the 20th century in particular, did *overall child and youth well-being* – defined in terms of averages of social conditions encountered by children and youths – in the United States of America improve or deteriorate? Did it improve or decline in various domains or areas of social life? For specific age groups? For particular race/ethnic groups? And did race/ethnic groups disparities increase or decrease?

We address these questions by engaging in a measurement exercise. Specifically, we construct a new Index of Child and Youth Well-Being based on numerous specific indicators in seven domains of life: material well-being, social relationships (with family and peers), health, safety/behavioral concerns, productive activity (educational attainments), place in community (participation in schooling or work institutions), and emotional/spiritual well-being. In the next section, we commence with a discussion on how child and youth well-being can be conceptualized and review the methods and data we used to construct our basic Index of Child and Youth Well-Being. Subsequent sections discuss trends in this basic Index and several variations thereon. A final section summarizes the main conclusions that can be drawn from the Index, discusses its limitations, and cites ways in which it could be improved with a better system of child and family indicators. (A Note on Terminology: Throughout this article, we generally refer to ‘child and youth well-being’ and to our summary index as an ‘Index of Child and Youth Well-Being.’ Sometimes, however, for purposes of simplicity of the grammar, we use terms like ‘child well-being’ or the ‘well-being of children’ as short-hand expressions. In such cases,

the references should be understood as inclusive of child *and* youth well-being, unless the context suggests otherwise.)

#### CONCEPTS, DATA, AND METHODS OF INDEX CONSTRUCTION

##### *Conceptualization of Child and Youth Well-Being, Sources of Data, and Basic Indicators*

How should the child and youth well-being construct be conceptualized? We seek to measure the circumstances of children's lives – to assess their quality of life – and track changes therein over time. Fortunately, we do not have to reinvent the wheel here, as the subject of quality of life assessment has been studied by many social scientists during the past three decades. Recent reviews by Cummins (1996, 1997) of empirical studies of the quality of life are particularly helpful. Cummins (1996: p. 118) reviewed 27 definitions that have attempted to identify domains or subject areas of the quality of life and drew three conclusions:

- First, the term *quality of life* refers to both the objective and subjective axes of human existence.
- Second, the objective axis incorporates norm-referenced measures of well-being (i.e., measures of life circumstances on which there is a consensus among the general public that they are significant components of better or worse life circumstances). Usually, *objective measures of well-being* are based on observable facts (e.g., infant deaths) or reports on behavior (e.g., victimization of a sample survey respondent in a violent crime incident within the last year).
- Third, the subjective axis incorporates measures of *perceived or subjective well-being* based on individuals' personal values, views, and assessments of the circumstances of their lives.

The norm-referenced approach mentioned in the second point dates back to the definition put forward by Mancur Olson. As the principal author of *Toward a Social Report* published on the last day of the administration of President Lyndon B. Johnson, Olson wrote: 'A social indicator is a statistic of direct normative interest which facilitates concise, comprehensive and balanced judgements about the

condition of major aspects of a society' (U.S. Department of Health, Education, and Welfare 1969: p. 97). The perceived or subjective well-being approach to quality of life measurement was initially explored in great methodological detail by Andrews and Withey (1976) and Campbell et al. (1976).

Both of the latter works also applied the two major approaches to quality of life measurement that have dominated the research literature. These are the measurement of assessments of life quality by individuals (a) as a single, unitary entity or (b) as being composed of discrete 'domains' or areas of life. The former approach is tapped by the prototypical single, sample survey question 'How do you feel about your life as a whole?' with responses typically obtained on a Likert rating scale of life satisfaction/dissatisfaction. The latter approach is typified by sample survey questions requesting satisfaction/dissatisfaction responses concerning a number of domain or subject area aspects of life such as work, income, family, friends, etc.

The literature reviews by Cummins (1996, 1997) of 27 subjective well-being studies offering definitions of the quality of life that identify specific domains suggests that there is a relatively small number of domains that comprise most of the subject areas that have been studied. Specifically, Cummins found that about 68 percent of the 173 different domain names and 83 percent of the total reported data found in the studies reviewed can be grouped into the following seven domains of life:

- *material well-being* (e.g., command over material and financial resources and consumption);
- *health* (e.g., health functioning, personal health);
- *safety* (e.g., security from violence, personal control);
- *productive activity* (e.g., employment, job, work, schooling);
- *place in community* (e.g., socioeconomic (education and job) status, community involvement, self-esteem, and empowerment);
- *intimacy* (e.g., relationships with family and friends); and
- *emotional well-being* (e.g., mental health, morale, spiritual well-being).

Cummins (1996) states that the weight of the empirical literature indicates that all of these seven dimensions are very relevant to subjective well-being. Therefore, indices of the quality of life, whether based on objective or subjective data, should attempt to tap into as many of these domains as possible. Of course, it is the case that these seven domains of well-being are derived from subjective assessments in focus groups, case studies, clinical studies, and sample surveys that cannot, by definition, be replicated in studies of the quality of life that utilize objective data. Nonetheless, as recommended in a recent comprehensive review of numerous quality-of-life indices (Hagerty et al., 2001), the domains identified by Cummins (1996) can and should be used to guide the selection and classification of indices of the quality of life that are based on objective data, as will be illustrated for the case of child and youth well-being below.

There are, however, some considerable challenges to the application of these domain areas to the measurement of the quality of life, and changes therein, of children and youths in the United States. To begin with, most extant studies of subjective well-being have included as participants (in focus groups and respondents in sample surveys) only individuals who are 18 years and older. This then raises the question of how applicable the domains of quality of life identified in existing empirical studies are to the quality of life of children and youths. Fortunately, the samples used in existing studies of subjective well-being have been quite diverse – ranging from general samples of adult populations to college students to various clinical populations. This variety of sampling frames suggests that the seven domains identified by Cummins have at least a fair level of robustness and applicability across different populations.

In addition, comparisons can be made with a few recent studies of subjective well-being that have focused on children and adolescent samples. For instance, Gilman et al. (2000) found that the following domains of life related to general life satisfaction in a sample of American adolescents enrolled in grades 9–12 (ordered from greatest to lowest association with general life satisfaction): family (relationships), self (image), living environment (material well-being), friends (relationships), and school. While the survey

questionnaires used by Gilman et al. do not contain questions on all of the domains identified by Cummins (1996) and cited above, it nonetheless is the case that several of these domains have similar content.

In brief, we proceed on the presumption that the seven domains of well-being identified above are applicable – with some adaptations – to the measurement of the quality of life of children and youths. It is clear, for instance, that the main ‘productive activity’ of most children up to age 18 is schooling or education rather than work. It also is evident that the principal way in which the command of children and youths over economic and material resources is measured in national data sources through the income status of their parents or guardians.

Even with conceptual adaptations of this kind, the number of data sources available for the operationalization and measurement of child and youth well-being in the United States are limited. Basic demographic data on family structures and incomes for households with children under age 18 present are available on an annual basis from the Annual Demographic Supplements to the March Current Population Surveys. Additional annual data on selected mortality and other vital statistics also are available from the sample surveys and vital statistics compiled by the National Center for Health Statistics. In addition, there are three data sources based on replications of annual sample surveys that were developed in response to the Social Indicators Movement of the 1960s and that date back to the mid-1970s:

- the National Crime Victimization Survey (NCVS), which provides data on violent crime victimization from sample household members down to age 12 as well as data on the perceived ages of offenders as reported by victims in sample households;
- the High School Senior Survey – which evolved into the Monitoring the Future (MTF) Study as it also began surveying samples of 8th and 10th graders in 1991 – provides data on illicit drug use (including cigarettes, alcohol, marijuana, cocaine, and heroin); and

- the National Assessment of Educational Progress (NAEP), which provides reading and mathematics test scores that are comparable over time from samples of children/youths at ages 9, 13, and 17.

Since 1997, about 20 national time series of child and youth well-being from these various data sources have been compiled as *Key National Indicators of Child Well-Being* and published annually by the Federal Interagency Forum on Child and Family Statistics (1999, 2000). The purpose of the annual Federal Forum reports is to provide the American public with a broad annual review of data on child and youth well-being and to monitor changes in the key indicators over time. The key indicators were chosen on the basis of five criteria (Federal Interagency Forum on Child and Family Statistics, 1999: p. viii); they must be:

- *Easy to understand* by broad audiences;
- *Objectively based* on substantial research connecting them to child well-being and based on reliable data;
- *Balanced* so that no single area of children's lives dominates the reports;
- *Measured regularly* so that they can be updated and show trends over time; and
- *Representative* of large segments of the population, rather than one particular group.

A related data source that contains a larger set of indicators for selected years is the series of annual volumes, *Trends in the Well-Being of America's Children & Youth*, compiled by staff members at Child Trends, Inc. and the Urban Institute and published by the U.S. Department of Health and Human Services (2000).

Using the *Key National Indicators . . .* and *Trends . . .* data sources accessing and/or computing additional data to place all of the time series on an annual basis, we have compiled some 28 basic indicators of child and youth well-being which are identified in Table I. They are grouped in Table I as much as possible according to the domains of well-being identified by Cummins (1996) reviewed above.<sup>2</sup> In some cases, we have identified some of the basic indicator series as jointly indicative of two domains of well-being. Note that the indicators listed in Table I generally refer to broad age groups



TABLE I

## Twenty-Eight National Indicators of Child Well-Being in the United States

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<i>Material Well-Being Domain:</i>	1. Poverty Rate – All Families with Children
	2. Secure Parental Employment Rate
	3. Median Annual Income – All Families with Children
<i>Material Well-Being* and Health Domains:</i>	4. Rate of Children with Health Insurance Coverage
<i>Material Well-Being and Social Relationships* Domains:</i>	1. Rate of Children in Families Headed by a Single Parent
	2. Rate of Children Who Have Moved Within the Last Year
<i>Health Domain:</i>	1. Infant Mortality Rate
	2. Low Birth Weight Rate
	3. Mortality Rate, Ages 1–19
	4. Rate of Children with Very Good or Excellent Health (as reported by their parents)
	5. Rate of Children with Activity Limitations (as reported by their parents)
	6. Rate of Overweight Children and Adolescents, Ages 6–17
<i>Health and Safety/Behavioral Concerns* Domains:</i>	1. Teenage Birth Rate, Ages 10–17
<i>Safety/Behavioral Concerns Domain:</i>	2. Rate of Violent Crime Victimization, Ages 12–17
	3. Rate of Violent Crime Offenders, Ages 12–17
	4. Rate of Cigarette Smoking, Grade 12
	5. Rate of Alcoholic Drinking, Grade 12
	6. Rate of Illicit Drug Use, Grade 12
<i>Productivity (Educational Attainments) Domain:</i>	1. Reading Test Scores, Average of Ages 9, 13, 17
	2. Mathematics Test Scores, Average of Ages 9, 13, 17
<i>Place in Community* and Educational Attainments Domains:</i>	1. Rate of Preschool Enrollment, Ages 3–4

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TABLE I  
Continued

	2. Rate of Persons Who Have Received a High School Diploma, Ages 18–24
	3. Rate of Youths Not Working and Not in School, Ages 16–19
	4. Rate of Persons Who Have Received a Bachelor's Degree, Ages 25–29
	5. Rate of Voting in Presidential Elections, Ages 18–20
<i>Emotional/Spiritual Well-Being</i>	1. Suicide Rate, Ages 10–19
	2. Rate of Weekly Religious Attendance, Grade 12
	3. Percent who Report Religion as Being Very Important, Grade 12

Note 1: A few basic indicators can be assigned to two domains. For these, the \* denotes the domain-specific index to which the indicators are assigned for computation purposes. Explanations for the domain assignments are given in the text.

Note 2: Unless otherwise noted, indicators refer to children ages 0–17.

across the entire infant to youth age ranges. But many are available for specific age groups, such as children and teenagers, as will be seen below when temporal trends in the indicators are described. This also facilitates the construction and comparison of summary indicators of trends by age categories, as also is described later herein.

Of the 28 indicator series identified in Table I, 25 are available at least back to the mid-1970s, while 3 (health insurance coverage, subjective health assessments, and reports of activity limitations) begin only in the mid-1980s. Furthermore, most of the series in Table I are reported annually. The exceptions are the reading and test scores (from the National Assessment of Educational Progress), the obesity prevalence rates (from the National Health and Nutrition Examination Surveys (NHANES)), and the voting in presidential election years percentages (which necessarily occur on four-year cycles). The NAEP test scores originally began on a five-year cycle in 1975, changed to a two-year cycle in 1985, and then changed

to a four-year cycle in 1999. Since these time series change quite smoothly, however, they quite easily can be interpolated to an annual basis. The obesity data from the NHANES studies were collected in cycles spanning the years 1971–1974, 1976–1980, and 1988–1994. To fit with the annual spacing of the other time series in Table I, these data also have been interpolated for the intervening years. And, similarly, the voting percentages were interpolated to an annual basis from the four-year cycles of presidential elections.

All of the indicator series, with the exception of the test scores, are reported in either of two forms. Many of the series are based on data on the prevalence of some identifiable characteristic or property. These are reported as *prevalence rates* (usually computed as the percentage of persons or the number per 1000 with a given characteristic, e.g., good or excellent health, per year). However, some of the series are based on numbers of events that occur in a year. These are reported as *incidence rates* (usually computed as the number of events of some type, e.g., infant deaths, per population unit exposed to the risk of the incident, e.g., per 1000 births, per year).

With respect to the seven domains of the quality of life identified by Cummins (1996) and summarized above, it can be seen that the child and youth well-being indicator series identified in Table I are most adequate with respect to the first five domains: material well-being, health, safety/behavioral concerns, productive activity/educational attainments (as measured by National Assessment of Educational Progress test scores), and place in community (as measured by indicators of participation in school and work organizations). Only two indicators in Table I, the rate of children in families headed by a single parent and the rate of children who have moved residences in the last year, can be construed as tapping the intimacy domain identified by Cummins. In fact, these two indicators can be construed only as imperfect measures (more commentary on this below) of the ‘relationships with family’ and ‘relationships with peers’ parts of Cummins’ intimacy domain, respectively. Thus, we henceforth will refer to these indicators as measures of a *social relationships* domain.

In addition, the single-parent indicator also measures, in part, the ability of families to command material resources. Hence, we separately identify the rate of children in families headed by a single

parent as measuring both of these domains. Similarly, we separately identify the rate of children with health insurance coverage as measuring both the material well-being and health domains and the teenage birth rates as indicative of both the health and behavioral concerns domains. We also separately identify four of the schooling/work indicators as indicative of both the productive activity (educational attainments) and place in community domains. Thus, a few basic indicators can be assigned to two domains. However, as noted in Table I for purposes of index calculations, they are included in only one domain. Explanations for the domain assignments are given later in the text.

Another limitation of the list of indicators in Table I is that there are none that directly measure the emotional and spiritual well-being domain. Rather, we are limited to indirect indicators – suicide rates and Monitoring the Future study questions on religious attendance and the importance of religion. Suicide is viewed in the mental health literature as indicative of extreme emotional stress (American Psychiatric Association, 1994). Thus, an increase in suicide rates in the late childhood/adolescence and teenage years may be indicative of a greater prevalence of persons in these age groups who are suffering from very high levels of stress and, inversely, low levels of emotional well-being. Similarly, the rate of weekly attendance at religious ceremonies from the MTF study is, at best, an indirect indicator of spiritual well-being. However, the indicator identified in Table I pertains to teenagers who are enrolled in grade 12 and hence are about 17 years of age. It may thus be presumed that there is at least some volitional component of the religious attendance indicator. Accordingly, fluctuations up and down in the religious attendance time series may be indicative of trends in the spiritual well-being of American teenagers, especially when used in combination with responses to the MTF question on the importance of religion in the lives of 12th graders.

Note, finally, that only two of the 28 indicators in Table I are based on subjective well-being responses (the very good/excellent health and activity limitations indicators), and these are based on survey responses from parents of the children rather than the children themselves. In sum, while the selection of indicators identified in Table I is guided by the recent statement on key domains of the

quality of life by Cummins (1996), it also is highly constrained by available national data series, is almost exclusively based on objective indicators, and has relatively poor indicators to measure the intimacy and emotional well-being domains. Some implications of these measurement gaps will be discussed in the Discussion and Conclusions section of the paper.

#### *Methods of Index Construction*

After describing levels and trends in each of the individual indicator series cited in Table I in the next section of the paper, we will report on our efforts to construct summary indices of well-being therefrom. In its broadest sense, an index number is a measure of the magnitude of a variable at one point (say, a specific year that is termed the *current year*) relative to its value at another point (called the *reference base* or *base year*). The index number problem occurs when the magnitude of the variable under consideration is nonobservable (Jazairi, 1983). In economics, where index numbers are widely used, this is the case, for example, when the variable to be compared over time is the general price level, or its reciprocal, the purchasing power of money.

In the present case, the variable to be compared over time is the overall well-being of children in the United States – defined in terms of *averages of social conditions encountered by children and youths*. As noted, for example, by Ruist (1978), the index number problem arises in measuring the general price level due to the fact that there are multiple prices to be compared. In the case of overall child and youth well-being, there are multiple indicators of well-being to be compared. Over any given historical period, the prices of some economic goods will have risen and some will have fallen. Similarly, over any period of years, some indicators of child and youth well-being likely will have risen and some will have fallen.

In the case of the general price level, the problem that arises is how to combine the relative changes in the prices of various goods into a single number that can meaningfully be interpreted as a measure of the relative change in the general price level of economic goods. In the case of child and youth well-being, the problem similarly is how to combine the relative changes in many

rates of behaviors pertaining to child and youth well-being into a single number that can meaningfully be interpreted as a measure of the relative change over time in a fairly comprehensive selection of social conditions encountered by children and youths. A key point is that in any given year no single consumer is likely to purchase all of the items that comprise the market basket of goods used in constructing the Consumer Price Index. On the other hand, fluctuations over time in the Consumer Price Index signal changes in general price levels that generally are encountered by consumers, and most consumers are interested in how the general price level is changing. Similarly, in any given year no single child encounters all of the social conditions that enter into the overall Index of Child and Youth Well-Being that is developed in this paper. Fluctuations over time in the Index of Child and Youth Well-Being can be taken, however, as signaling changes in the overall context of social conditions encountered by children and youths. And many policy makers, officials, adults, and parents (and some children and youths as well) are interested in how the general level of social conditions faced by children and youths in a recent year, such as 1998, compares to the corresponding level in a previous year, such as 1985.

The statistical theory of index numbers deals with the development and assessment of functional forms or aggregation functions for the construction of indices. Because efforts to construct summary indices of child and youth well-being are in their infancy, there is virtue in the application of the simplest possible aggregation function. We therefore have applied index formulas of the following type:

$$\begin{aligned} & \textit{Index of Child and Youth Well-Being in Year } t \\ & = (1/N) \sum_i \{100 + [(R_{it}/R_{ir}) \times 100]\}, \quad (1) \end{aligned}$$

where  $N$  denotes the number of basic indicators on which the index is based,  $R_{it}$  denotes the  $i^{\text{th}}$  child and youth well-being indicator rate in the year  $t > r$ ,  $R_{ir}$  denotes the  $i^{\text{th}}$  rate in the *reference or base year*  $r$ ,  $R_{it}$  and  $R_{ir}$  are called *rate relatives*, and the summation is taken over  $N$  indicator rates.<sup>3</sup> In Equation (1),  $R_{it} = R_{it} - R_{ir}$  denotes the numerical value of the *finite-difference* or *change* in indicator  $i$  from the base year  $r$  to year  $t$ . Therefore, by standard rules of

differential calculus (see, e.g., Chiang, 1974: p. 307), each change rate ratio  $R_{it}/R_{ir}$  is a finite approximation to the time derivative of the logarithm of the rate  $R_i$ , with the accuracy of the approximation deteriorating as time increases from the base year.

Each change rate ratio in Equation (1) is multiplied by 100 in order to measure the percentage change in the rate from the base year value. Values of the change ratios years subsequent to the base year then either are greater (equal or lesser) than 100, indicating an improvement (no change or a deterioration) in the time series relative to its base year value. These values in subsequent years then are added to, or subtracted from, the base year index of 100. Mean values of all percentage change rate ratios then are computed. In index number terminology (Jazairi, 1983: p. 56), the formula in Equation (1) is a *mean of percentage change rate ratios index*, is additive, and applies equal weights to all component rates.<sup>4</sup>

In the analyses described below, we apply Equation (1) in two ways. First, we group the basic child and youth well-being indicators cited in Table I by the domain categories in the table and apply Equation (1) to each indicator series within the well-being domains.<sup>5</sup> Then we calculate the arithmetic average of the domain-specific well-being indices to obtain an overall summary child and youth well-being index. We term this the *equally-weighted domain-specific average index*. Second, in order to ascertain the effects of the groupings by well-being domains, we also apply Equation (1) to calculate an *equally-weighted components-specific average index*. This second approach to index construction gives more weight to those domains for which we have a larger number of well-being indicator series.

## RESULTS

### *Times Series Graphs of Basic Well-Being Indicators*

Before reporting the results of our index construction efforts, we first review the levels and trends over time in the 28 child and youth well-being indicator series cited in Table I. Commencing with the component indicators of the ‘material well-being’ domain, Figure 1 reports the trends, 1975 to 1998, of two of these indicators, namely,

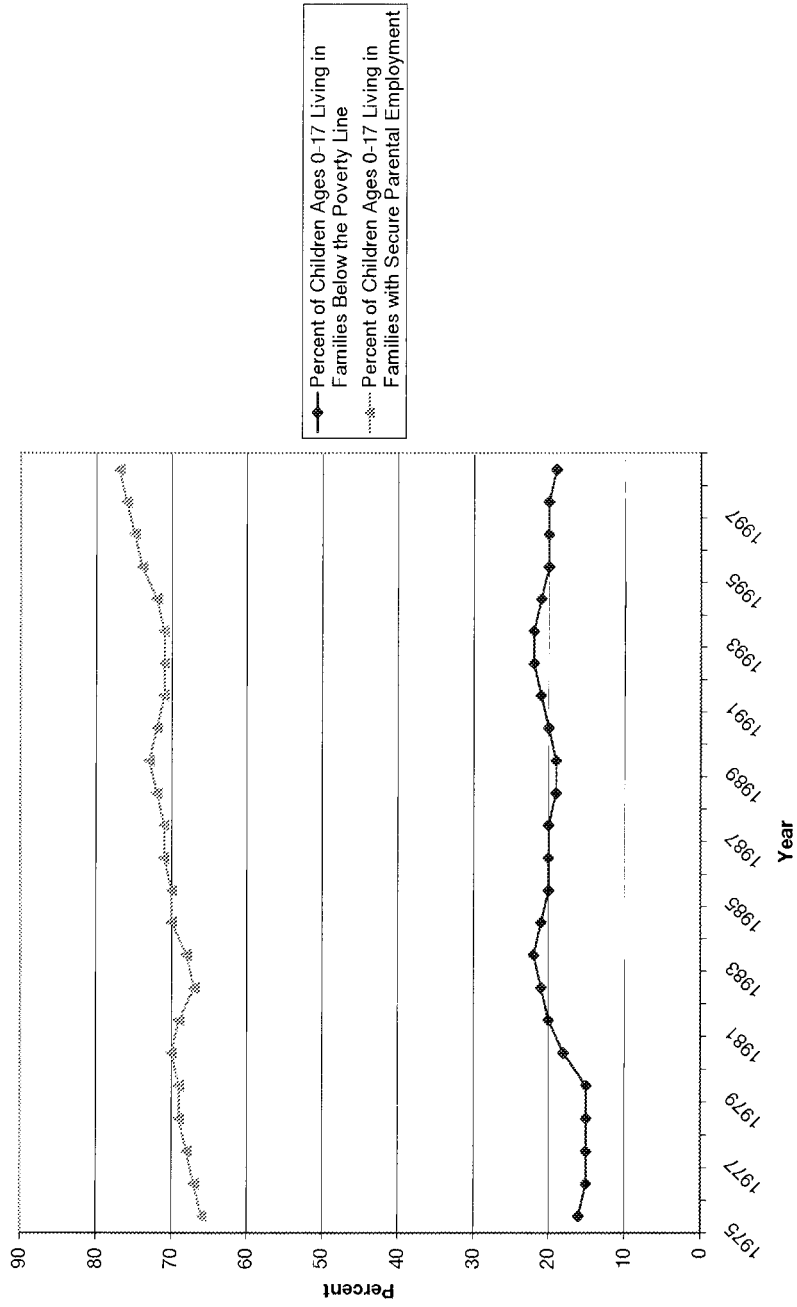


Figure 1. Poverty and Secure Parental Employment Rates, 1975–1998.



the poverty prevalence rate and the secure parental employment rate.<sup>6</sup> The former is measured as the percent of children ages 0–17 living in families whose incomes in a given year fall below the official poverty line calculated for each family type by the Census Bureau. The latter is defined as the percent of children ages 0–17 living in families with at least one parent employed full time all year. Clearly, children living in families below the poverty line and with parents who do not have stable jobs from which to earn income have limited command over material resources and may, indeed, be severely deprived in terms of basic necessities of food, housing, and clothing (see, e.g., Bianchi, 1999; Duncan and Brooks-Gunn, 1997). In brief, the relevance of each of these indicators to the material well-being of children is clear.

With respect to levels and trends in Figure 1, it can be seen that the child poverty prevalence rate was at its lowest levels (in the 15 to 16 percent range) in the 1970s, rose above 20 percent with economic recession and changing family structures in the 1970s and 1980s (towards more single parent-headed families; see Figures 2 and 5 below), declined to about 19 percent with the economic expansion of the late-1980s, rose again with the recession of the early-1990s, and began declining to 20 percent or below again with the long economic expansion period of the mid-to-late-1990s. However, it is significant that the rate of children living in families below the poverty line in the late-1990s has yet to match the low points of the 1970s. The secure parental employment rate shows an over time pattern that is the inverse of the poverty rate, namely, falling during economic recessions and rising during expansions. Noteworthy in Figure 1 is the long-term rise in the rate of secure parental employment as the economy has restructured across the three decades to more than 75 percent in recent years.

Figure 2 shows the corresponding poverty prevalence rates for single parent families with children, a subpopulation at particular risk of having incomes below the poverty line.<sup>7</sup> This is verified in Figure 2 by rates that generally are higher than those in Figure 1. It also can be seen that the trends stated above for the overall poverty rate in Figure 1 generally apply to the three subpopulations identified in Figure 2. The exception is that female-headed single-parent families were less likely to have incomes below the poverty line

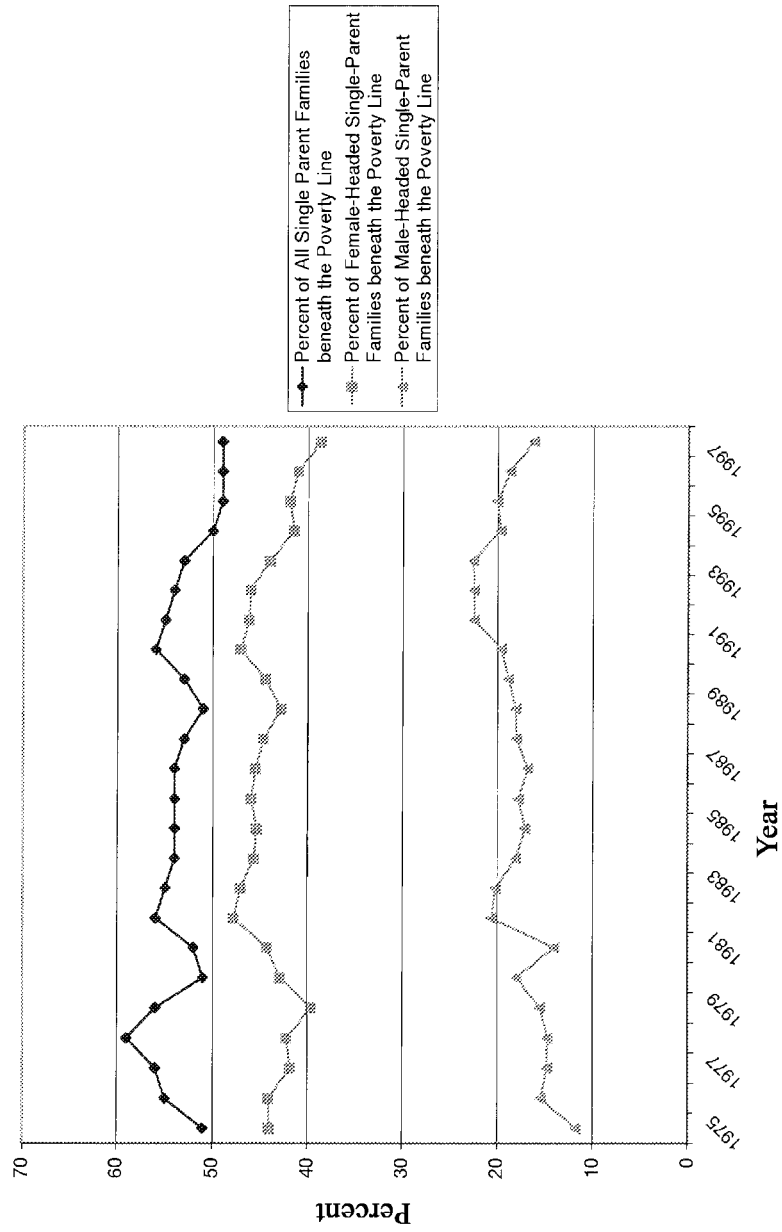


Figure 2. Poverty Rates for Single-Parent Families with Children, 1975–1998.

in the late-1990s than was the case in the 1970s. This may be due to a change over the decades in the composition of the population of female heads of families with children to include more females with higher educational attainments who are more likely to be employed in jobs with higher incomes and, therefore, at lower risk of poverty.<sup>8</sup>

Figure 3 displays levels and trends in another basic indicator of child material well-being – median annual family income of families with related children under the age of 18 (in constant 1998 dollars), both overall for all families with children and for female- and male-headed families. As in the case of the poverty and secure parental employment indicator series, these time series show downturns corresponding to economic recessions in the late-1970s/early-1980s and in the early-1990s and an upturn in the mid-to-late-1990s. Overall, the trend over the 23 years shown in the figure is up from about \$46 600 in 1975 to about \$57 000 in the most recent years.

Figure 4 reports levels and trends in indicators that have bearings on both the material well-being of children as well as their health, namely, prevalence rates of children living in families with health insurance – in total and with private and public sources of the insurance.<sup>9</sup> These indicators are based on questions that were added to the March Current Population Surveys beginning in 1987; thus, the length of the series in the figure (1987 to 1998) is shorter than those displayed previously. With respect to levels and trends, it can be seen that the overall health insurance rate has varied little (between 87 and 85 percent) over the 12 years shown in the figure. However, the impact of the restructuring of family welfare in 1996 from the old Aid to Families with Dependent Children (AFDC) to the Temporary Assistance to Needy Families (TANF) in 1996 shows up in the drop in the percent of families with public health insurance in the late-1990s (see also Chavkin, Romero and Wise, 2000).

As final indicators of circumstances that bear on material well-being as well as on the social relationships domain of the quality of life, the graphs in Figure 5 exhibit levels and trends in prevalence rates for children ages 0–17:

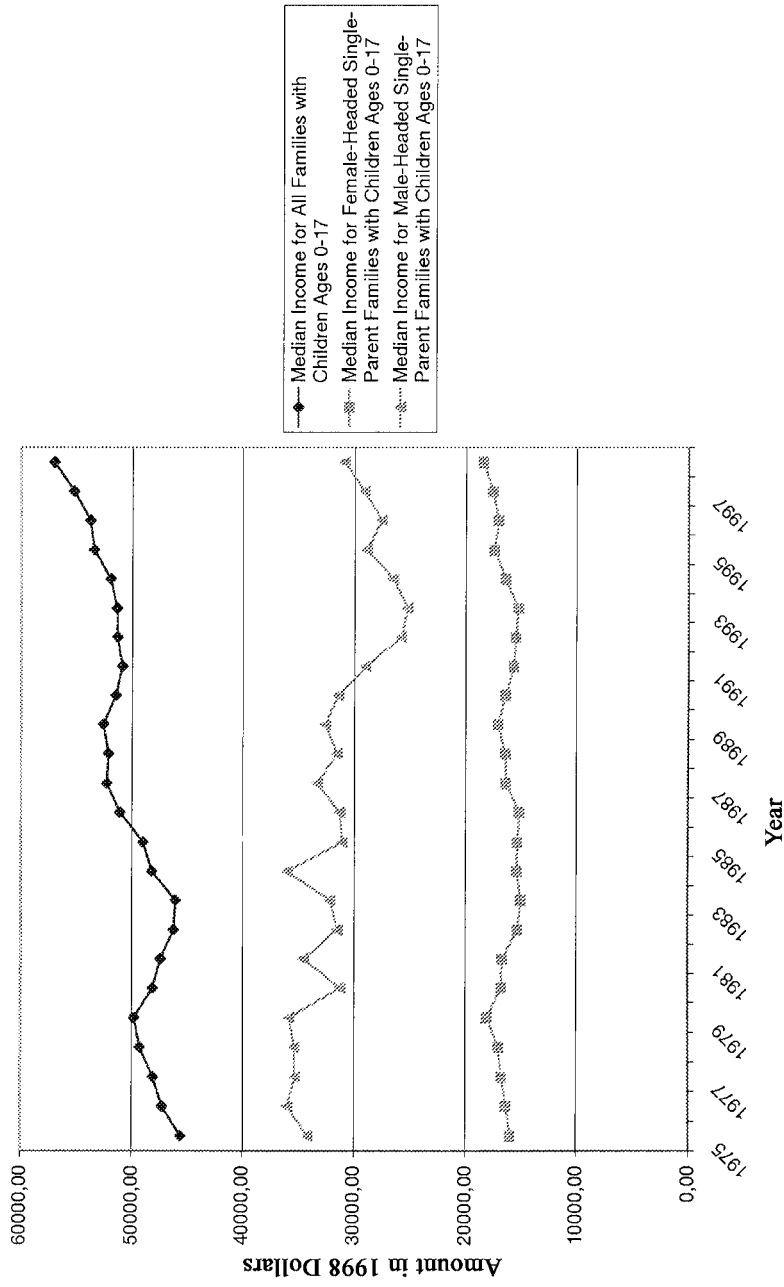


Figure 3. Median Family Income in Families with Children in 1998 Dollars, 1975-1998.

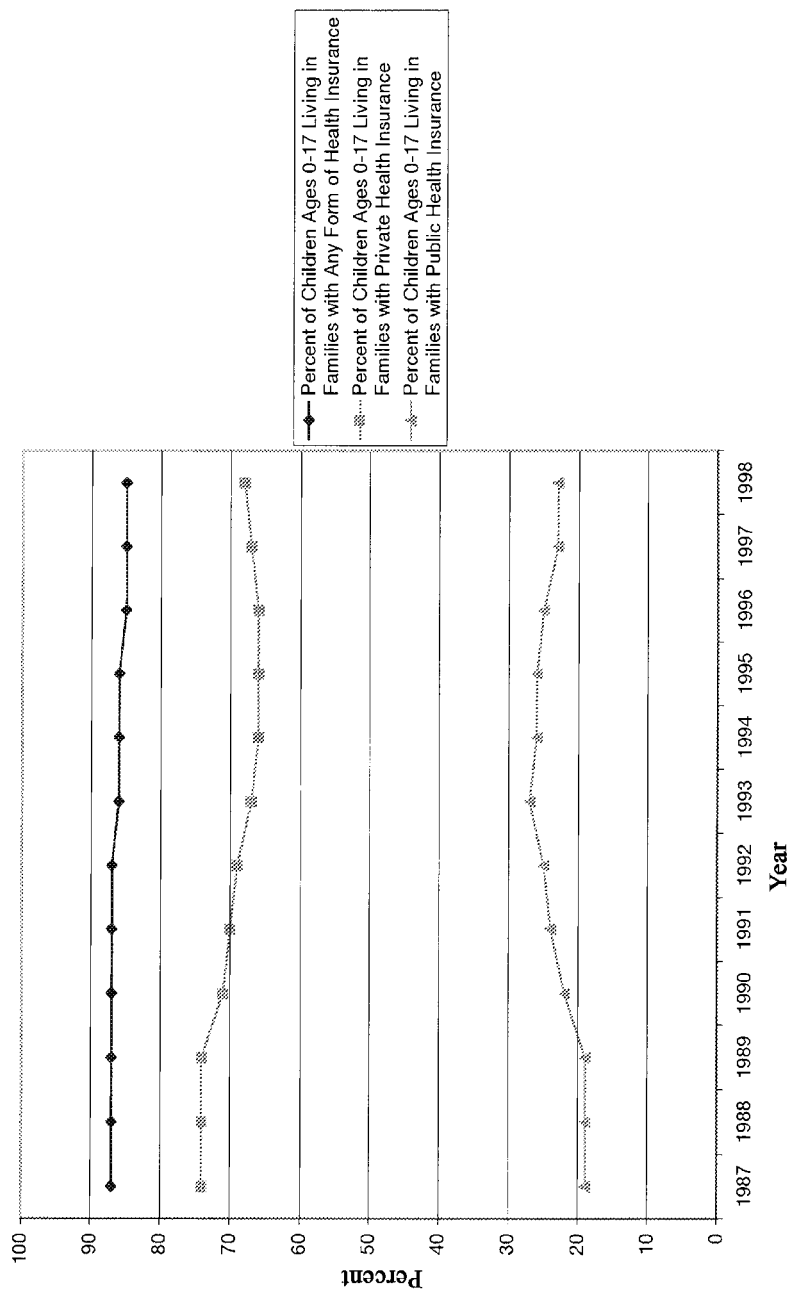


Figure 4. Rates of Children Living in Families with Health Insurance, 1987–1998.

- living in single-parent families for the years 1975 to 1998, both overall and for children in female-headed and male-headed single-parent households, and
- children who have moved residences in the past year (residential mobility), for the years 1975–1998.

We include the overall single-parent time series in our summary indices of child and youth well-being for two reasons. First, as noted in the discussion of Figure 2 above, children in single-parent families are at greater risk (than two-parent families) of poverty (see also Bianchi, 1999; Hernandez, 1997). Second, much social science research has found that children in single-parent families are less likely, on average, to have full, open, and pleasant connections and associations with members of both sides of their biological parents than are children in families with both parents present.<sup>10</sup> They thus are likely to experience a loss with respect to the ‘intimacy’ or ‘social relationships’ quality of life domain identified by Cummins (1996) as reviewed above. In our efforts to construct domain-specific and overall child and youth well-being indicators later, we accordingly treat the single-parent prevalence rate as an indicator of trends in the ‘social relationships’ domain of well-being.

Some research also has found that, due to the economic hardships, especially of female custodial parents whose incomes decline after separations or divorce, family disruptions often are associated with residential relocations (London, 2000). These, in turn, are negatively associated with the maintenance of stable peer relationships (McLanahan and Sandefur, 1994). As an indicator of the extent to which the peer relationships of children and youths may be affected by changes in residential locations overall (i.e., not just due to divorce or separation of parents), Figure 5 thus also reports the overall residential mobility series.

To provide information about trends in children living in single-parent families overall as well as in different types, we report in Figure 5 both the overall single-parent prevalence rate as well as the separate female- and male-headed household rates. It can be seen that the trends in the three prevalence rates for single-parenthood in Figure 5 generally are consistent over time.<sup>11</sup> The overall single-parent prevalence rate starts at about 16 percent in 1975, rises to a

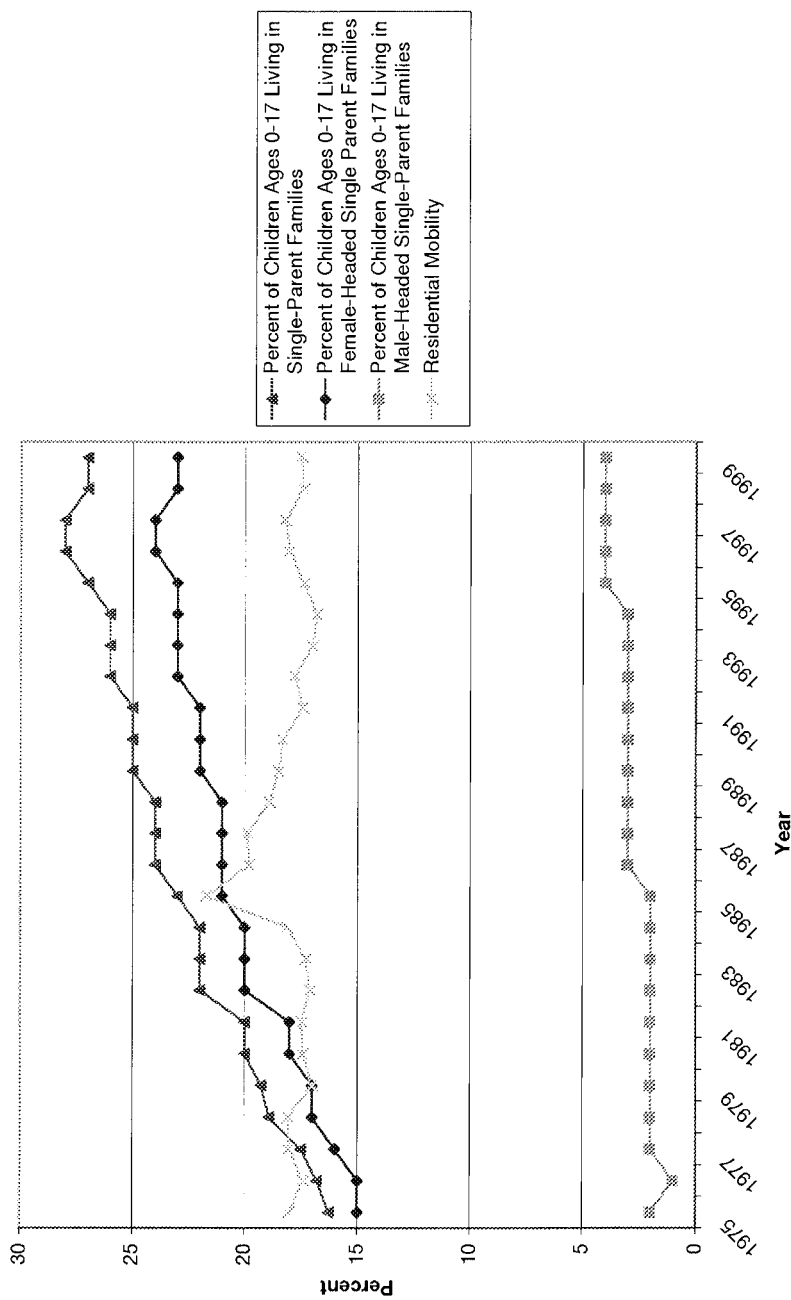


Figure 5. Percent of All Children Ages 0–17 Living in Single-Parent Families and Residential Mobility, 1975–1999.

peak of 28 percent in 1995 and 1996, and shows a slight drop in 1997 and 1998. Clearly, however, the overall conclusion from Figure 5 is that single-parenthood has been at much higher levels – with the implications of this for increased child poverty risk and decreases in family relationships – in the last decade or so than was the case in the 1970s. However, the dramatic increases of this indicator series experienced from 1975 through about 1985 appear to have slowed in the 1990s, with even slight reverses in recent years.

By comparison, the general trend shown by the residential mobility indicator time series in Figure 5 is flatter – with significant peaks in the mid-1980s and mid-to-late-1990s – than that of the series on children living in single-parent families. In brief, the trend in the single-parent time series generally has been up, especially in the 1975–1986 time period, thus leading in many cases to residential relocations. The single-parent series also shows periods of increases in the mid-1980s and mid-1990s that appear to be associated with peaks in the residential relocations series. But there evidently has been a decreasing relocation trend among children living in two-parent families in such a way that the overall residential relocation trend from 1975 to 1998 was relatively flat.

Social capital theories (see, e.g., Coleman, 1988; McNeal, 1999) may be relevant to the interpretation of these trends. These theories have articulated the pathways by which parental involvement and peer ties affect children's academic, social, and economic achievements. From such a theoretical perspective, the implications of the indicator time series in Figure 5 are that children's social capital in the United States has declined in recent decades more through decreased non-custodial parental contact than through disruptions of peer relationships.

Moving on to the 'health' domain indicators identified in Table I, Figure 6 shows the levels and trends in six child health series for the years 1975 to 1998. Infant mortality rates (the number of deaths before age one per 1000 live births) are given in the figure. In addition, mortality (incidence) rates per 100 000 population units are reported for ages 1–4, 5–9, 10–14, and 15–19.<sup>12</sup> Generally, these mortality indicator series show downward trends across the years for the first four of these age groups. In the case of the oldest age group, ages 15–19, the biggest drop occurred in the early-1980s followed



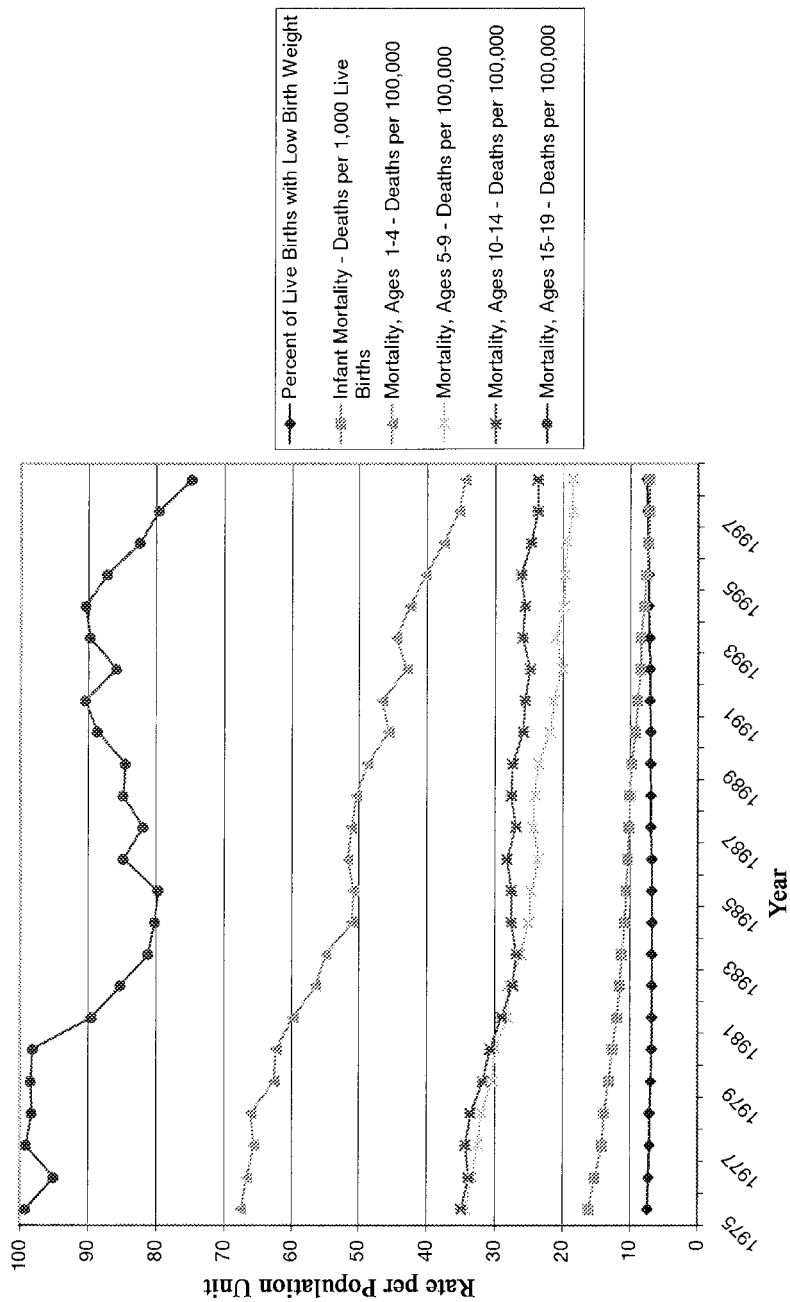


Figure 6. Mortality and Low Birth Weight Rates, 1975-1998.

by increases through the mid-1990s and then another decline in the late-1990s.

The sixth indicator series in Figure 6, the percent of live births with low birth weight (infants weighing less than 2500 grams at birth), is a measure that is indicative of the prevalence of premature births. While the scale of the figure is not sufficiently refined to show this, there has been a tendency since the mid-1980s for an increase in this series to be correlated with decreases in the infant mortality rate series. Thus, the infant mortality rate series in the U.S. may now be in a range such that declines in this series are due to the presence of hospital care technology that rescues and saves from early death some of the premature, low birthweight babies that would have died in earlier decades (Buehler et al., 1987; Hack et al., 1995).<sup>13</sup> Another reason for the increase in low birthweight infants over this period is that the number of twin, triplet, and higher-order multiple births has increased (Federal Interagency Forum on Child and Family Statistics, 1999: p. 25). Twins and other multiple births are much more likely than singleton infants to be of low birthweight (Martin and Taffel, 1995).

Two subjective health prevalence indicators – the percent of children ages 0–17 with very good or excellent health and the percent of children ages 0–17 with activity limitations (both as reported by their parents) – are displayed in Figure 7. These indicators are based on questions that were added to the National Health Interview Survey beginning in 1984; thus, the length of the series in the figure (1984 to 1998) is shorter than most of the others displayed previously. Both of these basic indicator series show slight changes over the years – with the percent of children with very good/excellent health increasing from 78 in 1984 to 81 in 1998. This increasing trend is counterbalanced somewhat, however, by an increase in the percent of children with activity limitations, from 5 percent in 1984 to 6.5 percent in 1998.

Figure 8 reports prevalence rates and trends therein for overweight children (ages 6–11) and adolescents (ages 12–17).<sup>14</sup> Overweight prevalence among children and adolescents has become an important social concern in recent years because persons who are overweight in childhood and adolescence are at greater risk of being overweight as adults, and adults who are overweight are at higher

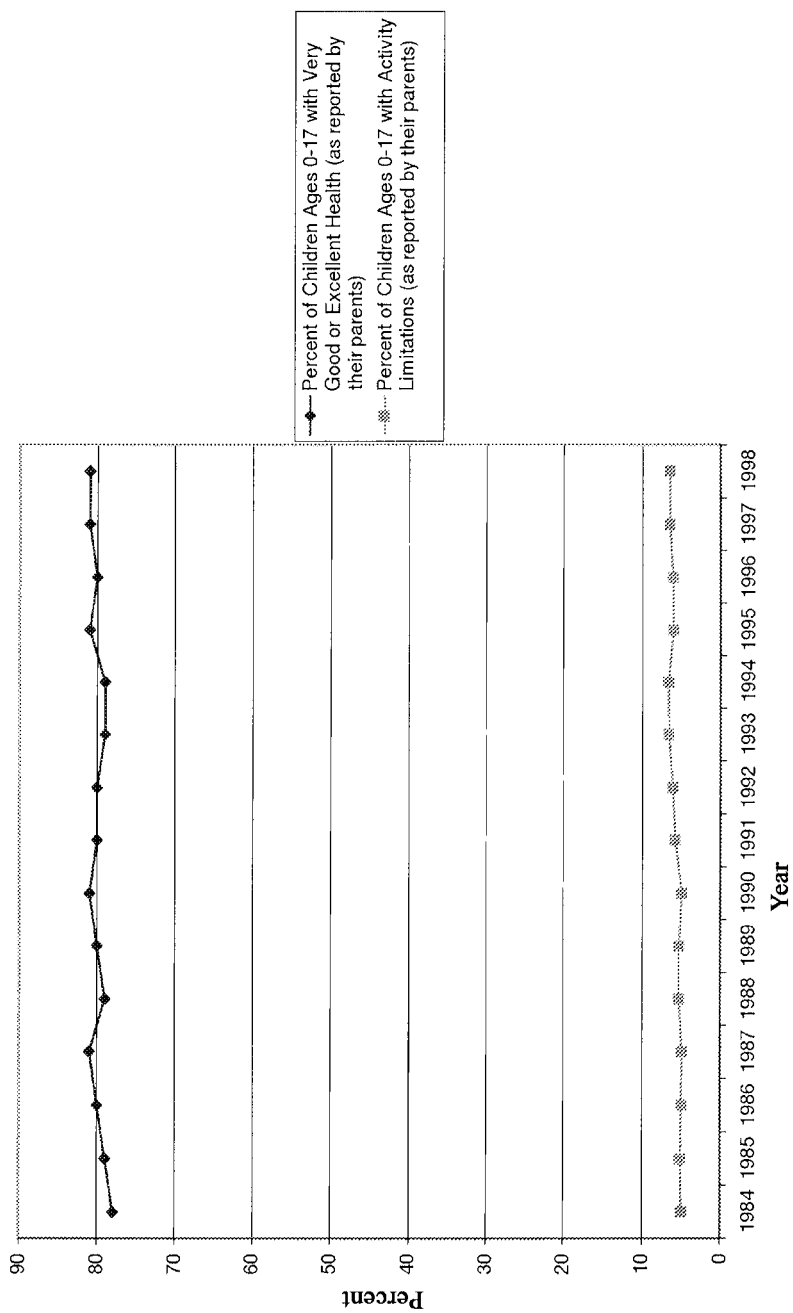


Figure 7. Subjective Health Indicators, 1984–1998.

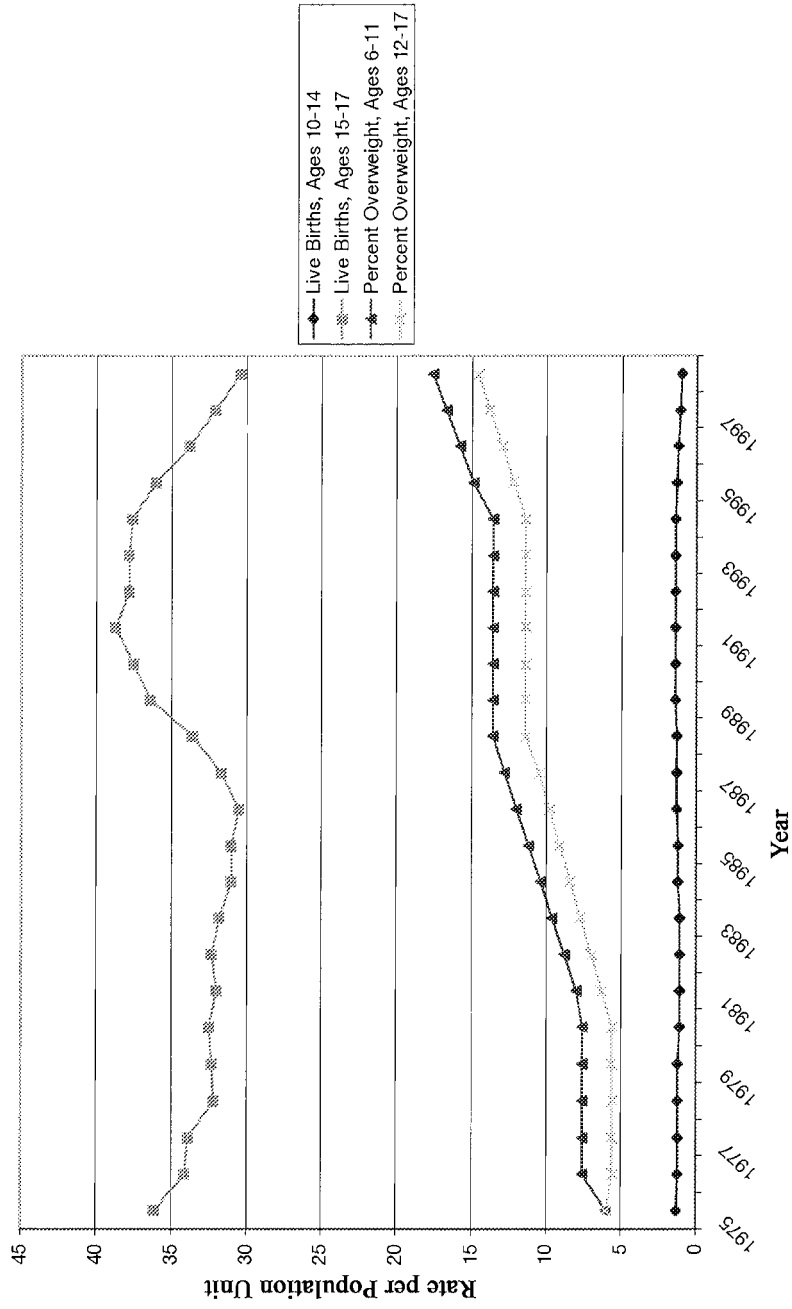


Figure 8. Teenage Birth Rates and Overweight Percentages, 1975–1998.

risk of numerous health problems. Among these are hypertension, coronary heart disease, gallbladder disease, Type II (noninsulin-dependent) diabetes, and some cancers (Troiano et al., 1995). The graphs for the overweight series in Figure 8 show that both overweight time series have generally increased over the years 1975 to 1998. The overweight series for children has nearly tripled in value – from 6 percent in 1975 to 17.6 percent in 1998. The corresponding values for adolescents range from 6 percent in 1975 to a projected 14.6 percent in 1998.

Figure 8 also reports incidence rates for two additional basic indicator series that, as noted in Table I, tap into both the health and the behavior concerns domains for the years 1975 to 1998 – incidence rates for births to teenagers ages 10–14 and 15–17. Births to teenagers have relevance to health concerns for both the infants and their young mothers (Klerman, 1993). But they also are indicative of non-normative, and sometimes rebellious, behavior patterns, and thus also are indicative of teenage behaviors about which there is much public concern. With respect to our efforts to construct domain-specific indices reported below, however, we group the two teenage birth rate time series into the safety/behavioral concerns domain. The reason for this grouping is that the over-time behavior patterns of teenage birth rate series are more similar to those of the other safety/behavioral indicators than they are to the health indicators. It can be seen, in particular, from Figure 8 that the most dramatic changes in the teenage birth rate time series occur for the 15–17 age group.<sup>15</sup> This series shows a substantial upturn from the mid-1980s to the mid-1990s followed by a decrease in recent years. Indeed, the ages 15–17 birth rate in 1998 (32.1) is lower than that of 1975 (36.1). While at much lower levels, the time series for the 10–14 age group shows the same over time pattern.

Considering next the ‘safety/behavioral concerns’ domain indicators identified in Table I, Figure 9 displays levels and trends for the years 1975 to 1998 in two prevalence rate indicator time series of the physical safety of children. The first is the rate per 1000 population unit of children/youths ages 12–17 who are victims of violent crimes. The second is the rate per 1000 children in this age group who are offenders (as perceived and estimated by victims in the National Crime Victimization Survey). It can be seen that the

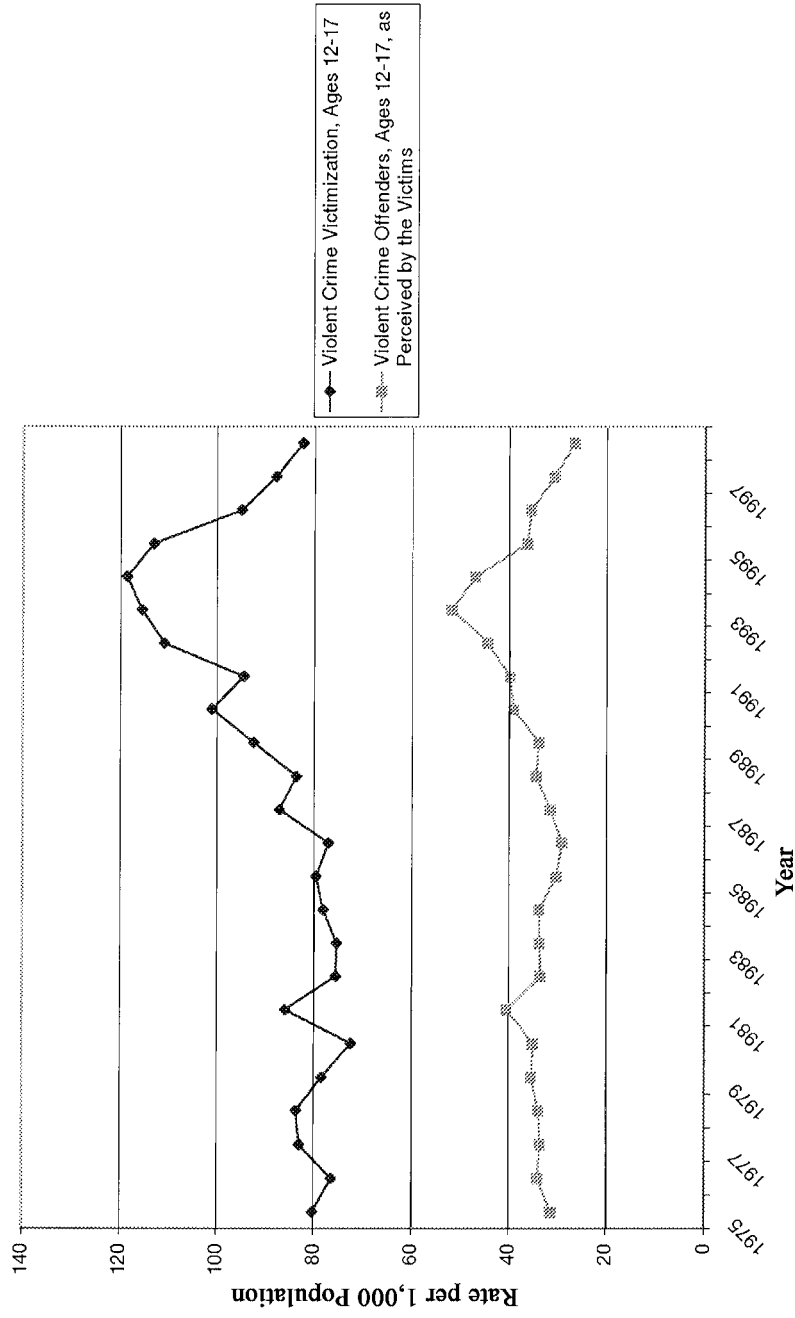


Figure 9. Violent Crime Victimization and Offender Rates, 1975-1998.

victimization rate generally runs over twice as high as the offender rate, which is consistent with a number of violent events experienced by children in these ages wherein the offender is of an older age. In terms of levels and trends, both time series show substantial stability from 1975 through the mid-1980s followed by a rise to peak levels in the late-1980s-to-mid-1990s and declines in the most recent years.

Complementing the violent crime safety indicators in Figure 9, Figure 10 shows prevalence levels (percent of sample survey respondents) and trends in self-reported teenage illicit cigarette smoking, alcohol drinking, and psychoactive drug (e.g., marijuana, cocaine, heroin) use in the previous 30 days at the time of the survey. Trends are displayed in the figure for children enrolled in all three grades – 8th, 10th, and 12th – included in the Monitoring the Future study. For the 8th and 10th graders, MTF data collection began in 1991, whereas the 12th grade data dates back to 1975. We include the graphs for the lower grades in Figure 10, however, so that it can be seen that the trends in the 1990s are highly correlated across all three grades. Thus, even though we include only the 12th grade data in our summary well-being indices, they capture the major trends in the other two age groups as well. In terms of the levels and trends shown in Figure 10, it can be seen that the smoking, drinking, and drug use prevalence rates generally were at their highest levels in the late-1970s and early-1980s. This was followed by declines to about 1992 and then increases to the late-1990s. The last two years show some leveling and/or declines in these rates.

Consider next the ‘productive activity’ (educational attainments) domain of indicators in Table I. We use this terminology, because, as noted above, the primary productive activity (the domain label used by Cummins (1996, 1997)) circumstance of children’s lives is schooling rather than work. In particular, Figure 11 focuses on indicators of children’s achievements with respect to their schooling activities. It displays levels and trends in average test scores in the reading and mathematics tests administered as part of the continuing National Assessment of Educational Progress series for children ages 9, 13, and 17 (we noted earlier the years for which the time series in Figure 11 are interpolated). In general, these time series show more consistent increases since the mid-1980s at all three ages in the average test scores for the mathematics tests than for the

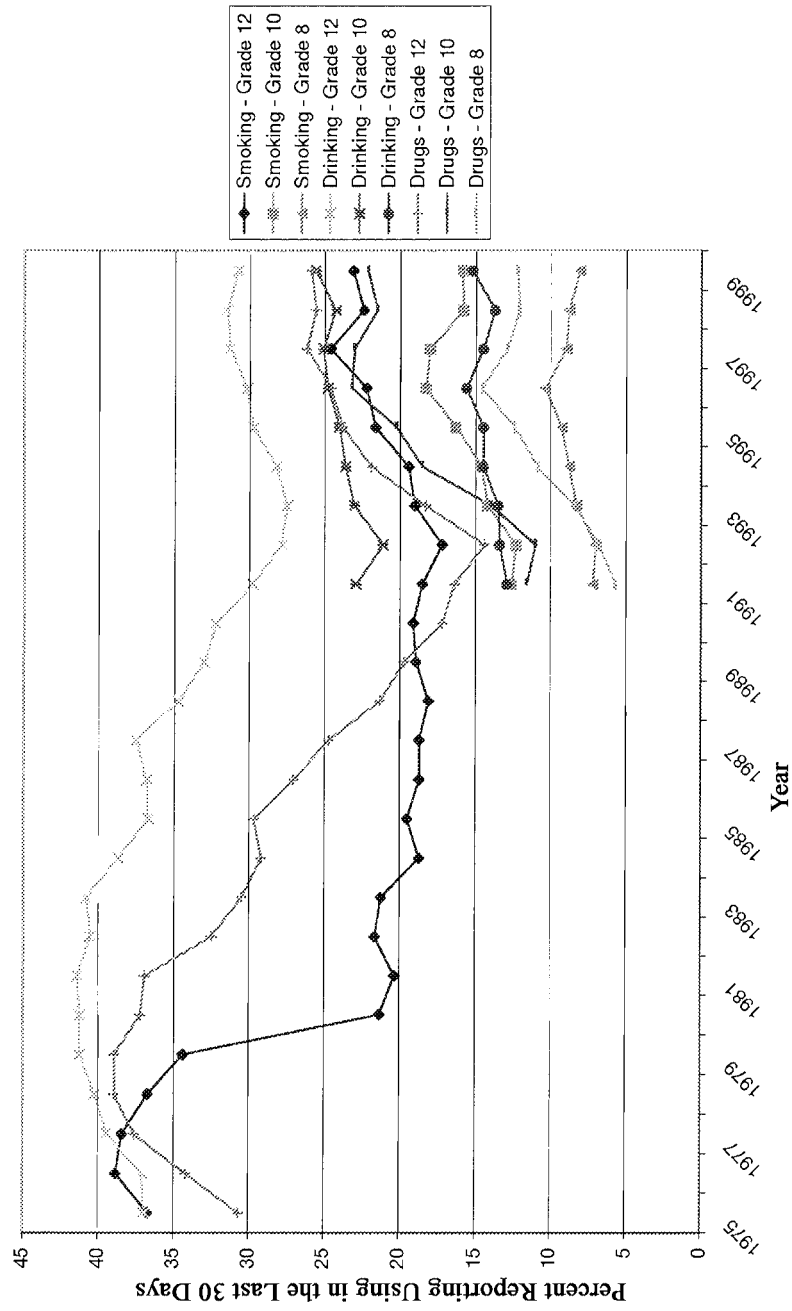


Figure 10. Teenage Illicit Smoking, Drinking, and Drug Use, 1975 (or 1991) to 1999.



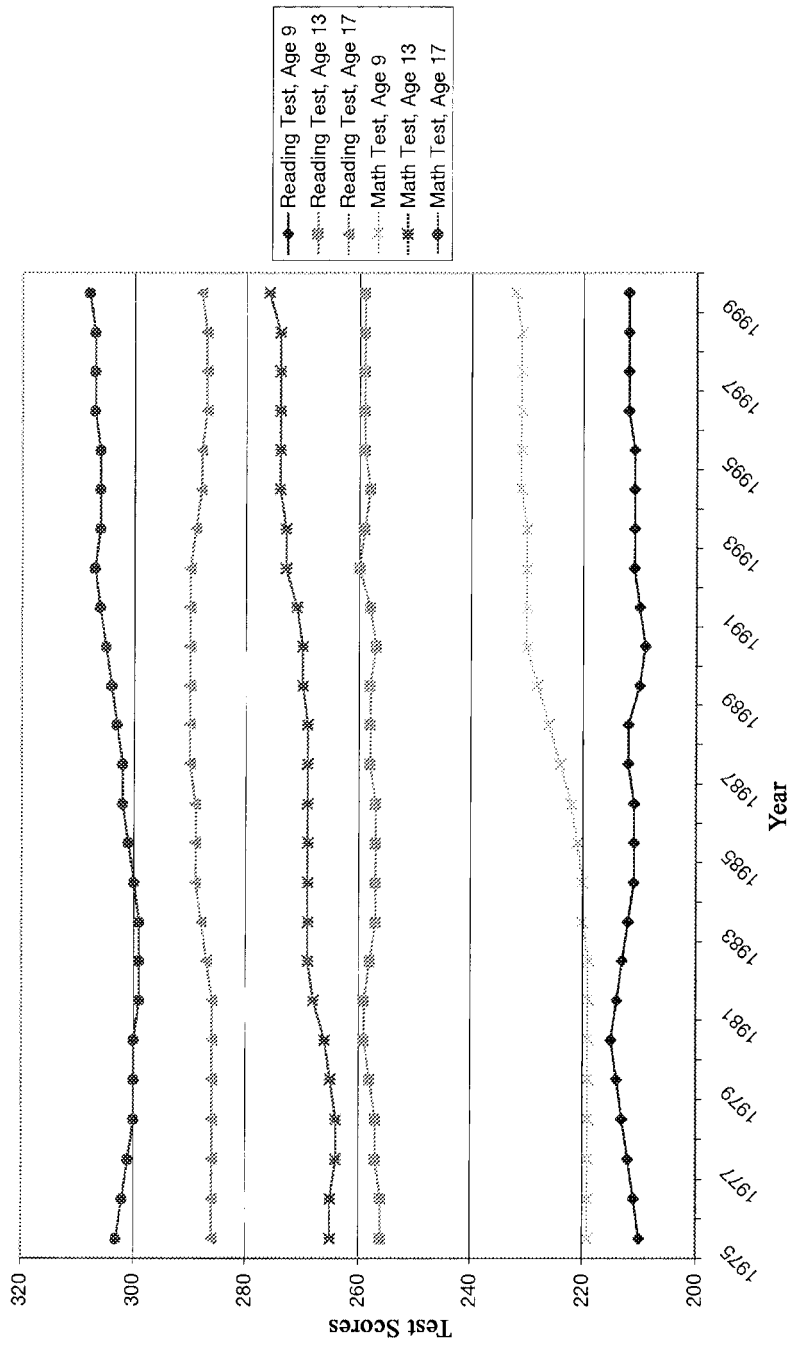


Figure 11. National Assessment of Educational Test Scores for Reading and Mathematics Skills (with Interpolated Values for Missing Years), 1975–1999.

reading tests. The latter scores either are stable or slightly declining (ages 9 and 17) or show very small increases (age 13) since 1985.

In Figure 12 we group the graphs of levels and trends in five basic indicator series that are indicative of attachments of children to such productive activities as schooling and work and to participation in the electoral process through voting in Presidential elections. These series also are indicative of Cummins' (1996, 1997) concept of a 'place in community' domain related to socioeconomic status as well as indicators of participation in the activities of one's local community. In fact, for purposes of construction of the domain-specific and summary well-being indices reported later, we group these five indicators into a 'place in community' domain set. Figure 12 specifically shows levels and trends from 1975 to 1998 in prevalence rates of enrollments or attainments in four categories: (1) the percent of children ages 3–4 enrolled in preschool; (2) the percent of youths ages 18–24 who have received a high school diploma or its equivalent; (3) the percent of young adults ages 25–29 who have received a bachelor's degree; and (4) the percent of youths ages 16–19, who are not enrolled in school and not employed and thus detached from either of the educational or work institutions. Figure 12 also contains a prevalence rate time series defined by the percent of youths, ages 18 to 20, who report voting in Presidential elections.<sup>16</sup>

With respect to levels and trends of the time series shown in Figure 12, it can be seen the percent of children enrolled in preschool has generally trended upward over the entire period, with particularly dramatic increases in the mid-to-late-1990s. The percent of young adults who have received a bachelor's degree by ages 25 to 29 also has trended upward in recent years. But this series also shows an initial downturn in the late-1970s and early-1980s. The other two schooling/work-related time series are more stable over the years. Nonetheless, the percent of 18 to 24 year olds who have received a high school diploma is higher in 1998 than in the first several years of the time series. And the percent of youths ages 16 to 19 who are not working and not enrolled in school, show a slight decline in the 1990s. By comparison, the time series on the percent of 18 to 20 years olds who voted in Presidential elections shows a general decline from 1975 to 1996 – with, however, a clear

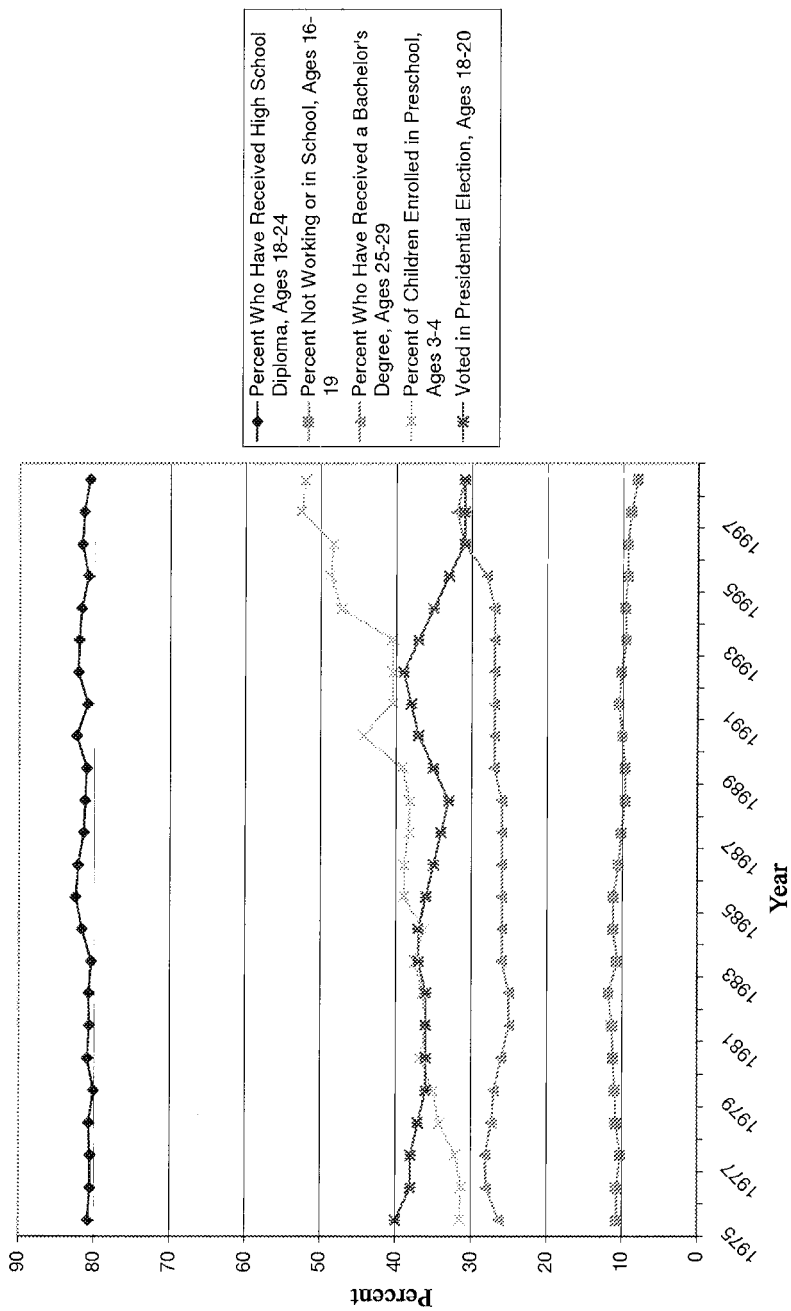


Figure 12. Enrollment, Schooling Attainment Rates, and Voting, 1975-1998.

upturn (to a level comparable to the 1976 percentage) associated with the 1992 election. Evidently, a tightly contested popular Presidential election can raise the level of electoral participation among 18 to 20 years olds substantially.

Finally, Figure 13 shows levels and trends in the four indicator series we have for the 'emotional and spiritual well-being' quality-of-life domain. These are the suicide rates for ages 10–14 and 15–19, measured by incident rates per 100 000 population<sup>17</sup> and the prevalence rates (percents) of religious attendance at grade 12 and of students in grade 12 who report that religion plays a very important role in their lives from the Monitoring the Future study. It can be seen that both suicide rates move upward at a slow pace from 1975 to the mid-1980s. Beginning in 1984, both series then exhibit more rapid increases, with the increase in the younger age group lasting only a couple of years while the suicide rate for the ages 15 to 19 group increases until 1988. The latter series then remains near 11 per 100 000 until 1995, whereupon it declines through 1998.

By comparison, the percentage of 12th grade students who report weekly attendance at religious ceremonies in the MTF study generally declines from the 39 to 42 percent level in the period 1975–1981 to about 30 percent in 1991. Since 1991, this series has stayed in the 31 to 32 percent range. The companion indicator on the importance of religion in the lives of 12th graders shows more stability – it stays around 30 percent through the mid-1980s, drops towards the 25 percent level in the late-1980s, and then increases to the 30 percent level or slightly above in the mid-to-late-1990s. Two points are noteworthy. First, the greater declines observed from 1975 to the late-1980s in the percent of 12th graders attending religious ceremonies weekly than in the percent reporting that religion is very important in their lives is consistent with an 'individualization' trend in American religious observance in the last quarter of the 20th century (Roof and McKinney, 1987). Second, note the slight inverse correlation between the decrease in the religious importance time series below the 30 percent level in the mid-1980s through the early-1990s with the increases in the suicide rate for teenagers aged 15 to 19 in the same period. This suggests that these series share a commonality.

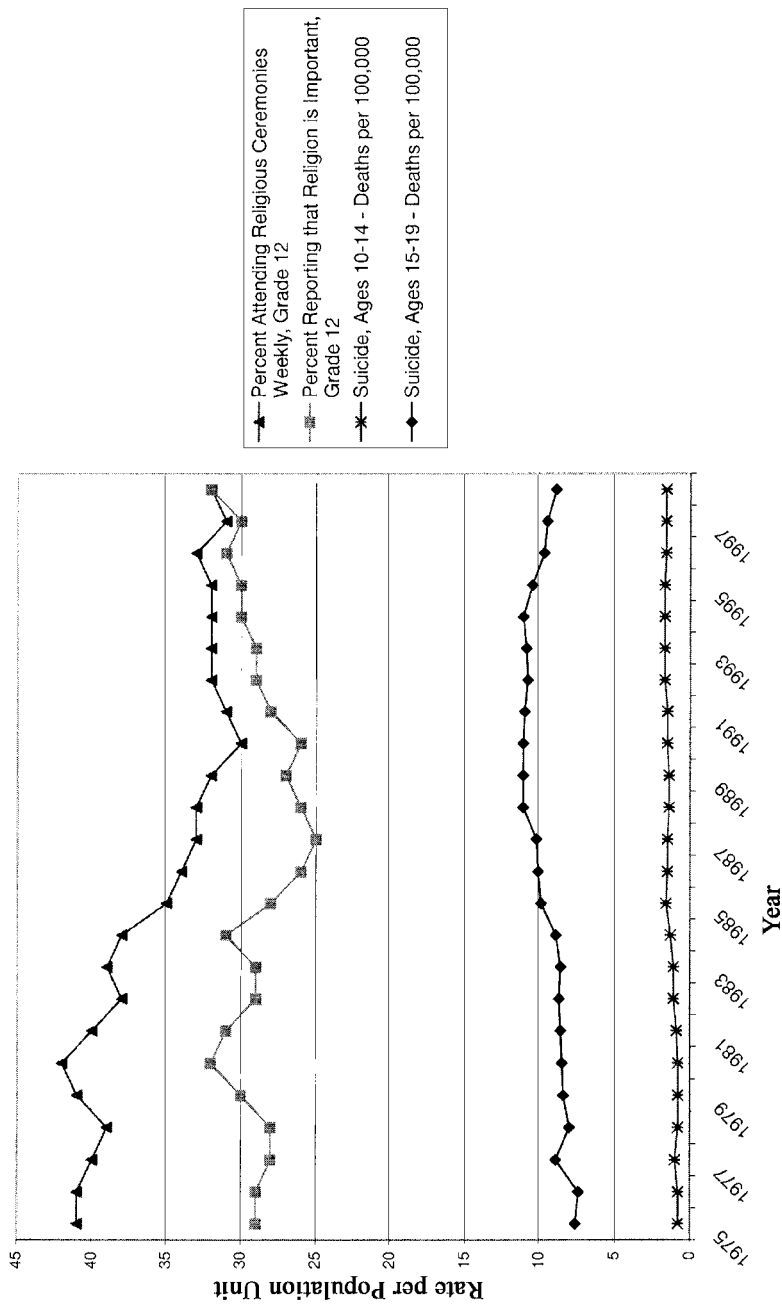


Figure 13. Religious Attendance, Beliefs, and Suicide Rates, 1975-1998.

*Basic Summary Well-Being Indices and Best-Practice Computations*

We applied the mean of change rate ratios index construction formula of Equation (1) to the 28 basic indicators of child and youth well-being identified in Table I, for which we have just reviewed levels and trends over time. Since 25 of the 28 time series date back to 1975, we used 1975 as one base year for application of Equation (1). And since all 28 basic indicator time series are available by the mid-1980s, we used 1985 as a second base year. To compute the indices, we used 100 as the reference point for each base year and measure the values of the indices for subsequent years as a percentage value of this base year value. Thus, an index value that is greater than 100 for a subsequent year indicates improvement compared to 1975 (or 1985) and a value less than 100 indicates a deterioration compared to the base year. Figures 14 and 15 display the graphs for the resulting domain-specific indices of child and youth well-being, for 1975 to 1998, and 1985 to 1998, respectively.

Consider first the seven domain-specific indices with 1975 as the base year in Figure 14. It can be seen that the emotional/spiritual well-being, social relationships, and health domains show the most deterioration among the seven indices over the 23 years from 1975 to 1998. The social relationships index falls rapidly from 1975 to 1985. The social relationships index then remains at about 70 percent of its 1975 base value through the mid-1990s, whereupon it shows a slight dip and then an increase. The emotional/spiritual well-being index stays within 10 percent of its 1975 level until 1985. It then declines by 1990 to about 70 percent of the base 1975 level, followed by a rise to near the 90 percent level in the late-1990s. By comparison, the health domain index increases to levels above the 1975 base year until the mid-1980s. It then falls below the 1975 level and stays there through 1998. While several of the components of the health domain index show improvements compared to 1975, the percent overweight component begin a period of deterioration in the early-1980s and early-1990s. This is a major factor in the declines observed in the health index.

Another domain-specific index in Figure 14 that had a difficult time rising above the 1975 base year values is the material well-

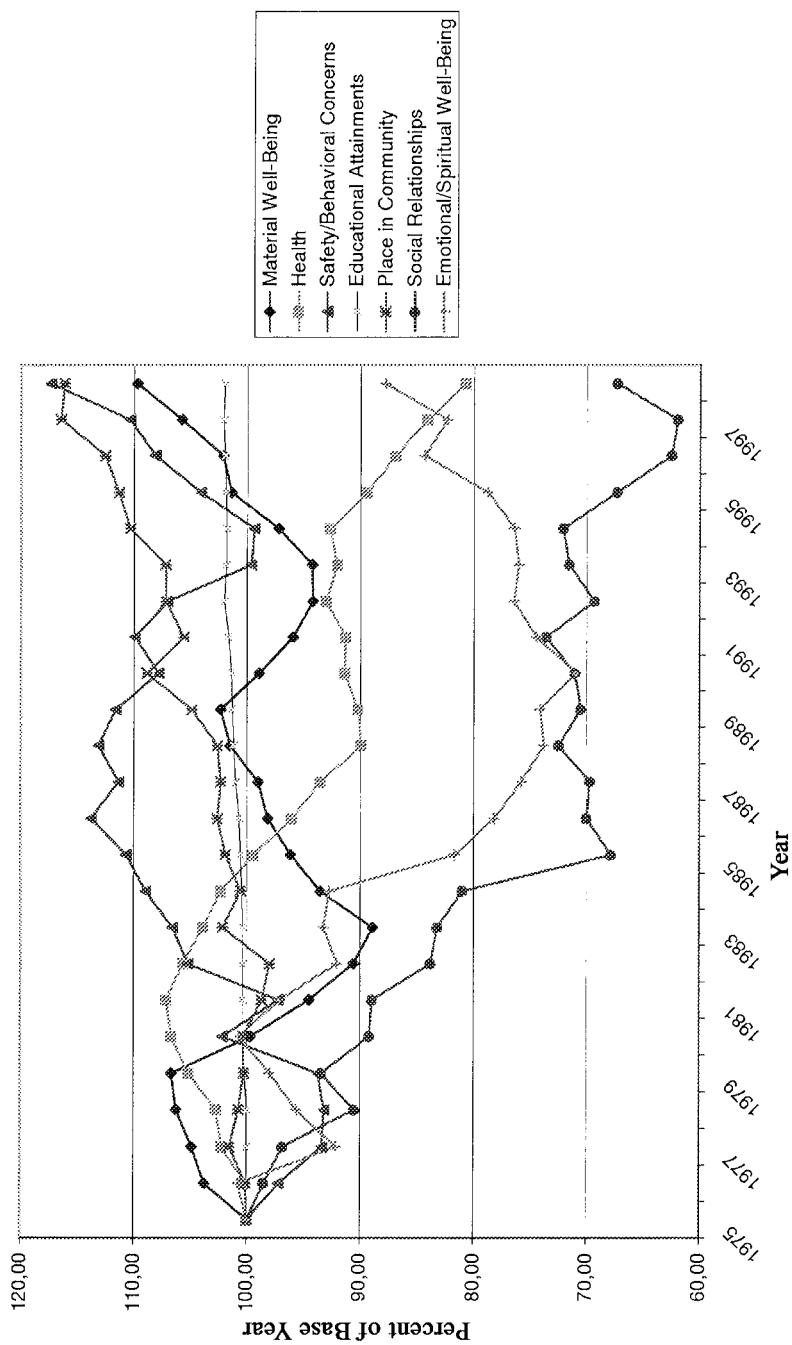


Figure 14. Domain-Specific Indices of Child and Youth Well-Being, 1975–1998.

being index. It falls to its lowest levels in the early-1980s and early-1990s associated with economic recessions. It does, however, increase by 1997 and 1998 to the 105 to 110 percent level (compared with the 1975 base year value). A fifth domain index in Figure 14 that shows substantial waves of increases and declines over the years is safety/behavioral concerns. This index declines to below 100 percent (of base year 1975 levels) in the late-1970s as well as in the early-1990s. The latter low point corresponds to a decline that began in the late-1980s. The series then begins to increase again only in the late-1990s.

One of the other three domain indices of Figure 14 – place in community (attachments to school, work, and political institutions) – shows a pattern of stability around the 1975 level until the late-1980s followed by relatively steady increases to 1998. By comparison, the index of productive activity (educational attainments), is the most stable of all of the domain indices in Figure 14. Average test scores in the 1990s were just slightly higher than their 1975 base year values.

What happens to inferences about changes in domain-specific child and youth well-being if the base year is changed? Figure 15, which shows the domain-specific summary indices with 1985 as the base year, provides the information to address this question. In general, the seven indices in Figure 15 show trends similar to those observed for Figure 14. When 1985 levels of the component indicator time series are used as base year values, however, only one domain-specific index – health – has values in the late-1990s that are below its 1985 level. Again, this is due to the increasing prevalence of overweight children and adolescents which pulls down an otherwise improving health domain.

What do these domain-specific trends imply for changes in overall child and youth well-being from the 1970s to the 1990s? Figure 16, which shows graphs of two overall summary well-being indices with 1975 as the base year, addresses this question. One of the indices in Figure 16 – the *equally-weighted domain-specific average index* – is computed by applying the rate ratios formula of Equation (1) a second time to average the seven domain-specific indices of child and youth well-being illustrated in Figure 14. The second index in Figure 16, the *equally-weighted component time*



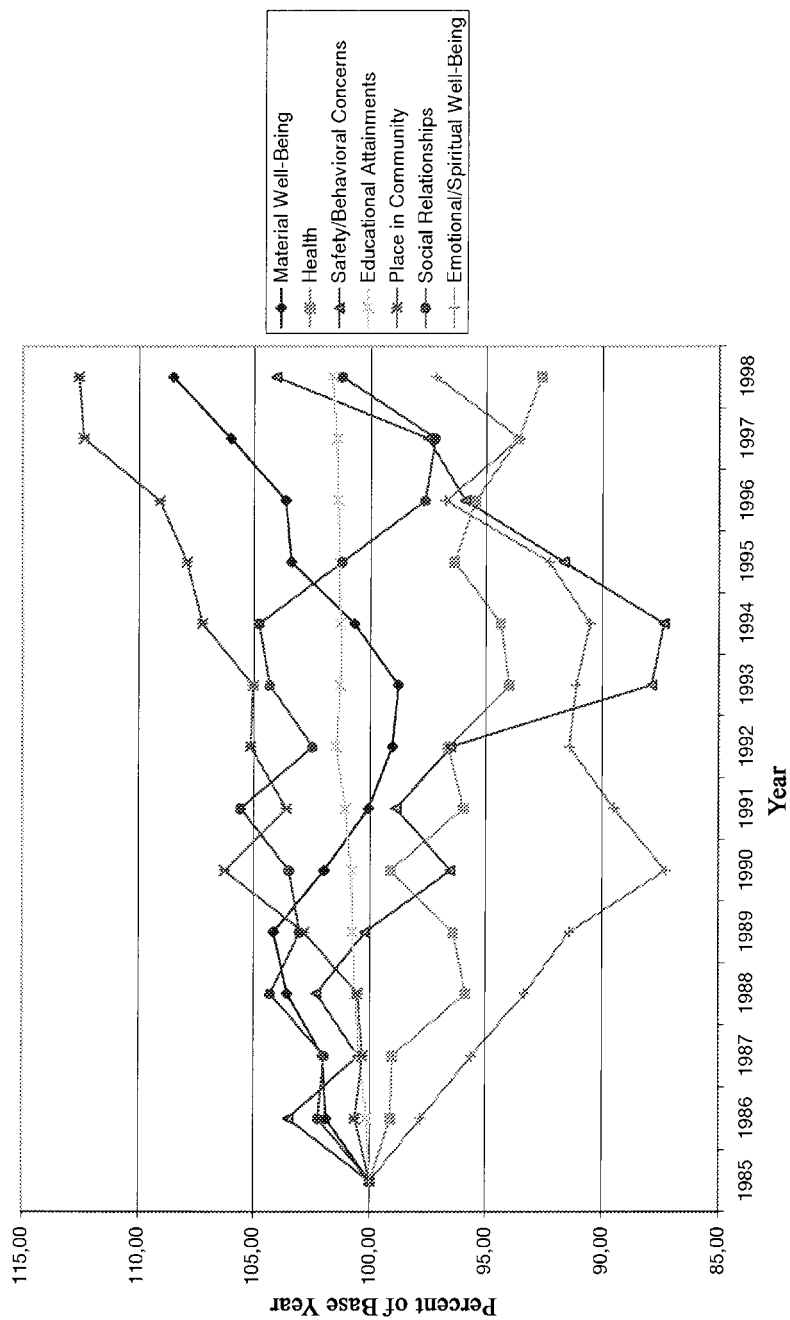


Figure 15. Domain-Specific Indices of Child and Youth Well-Being, 1985–1998.

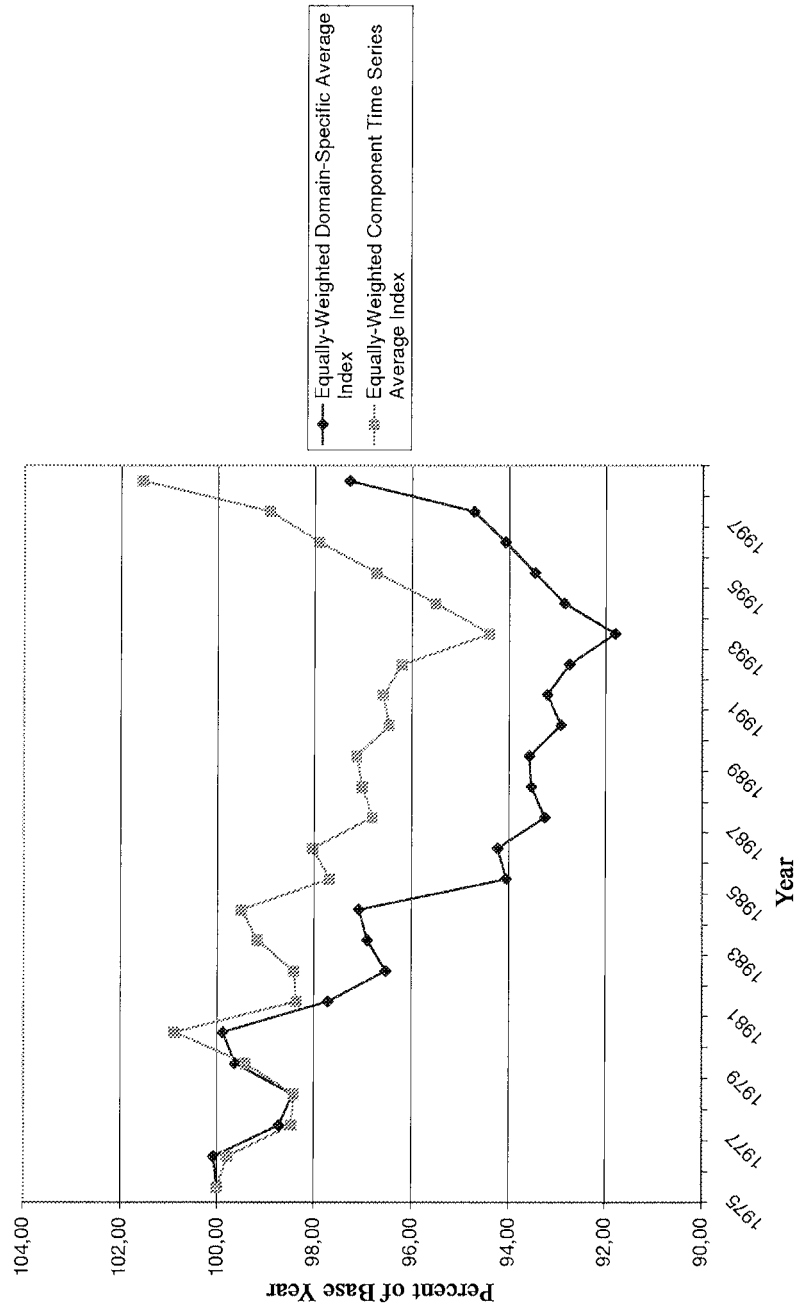


Figure 16. Summary Indices of Child and Youth Well-Being, 1975–1998.

*series average index*, applies Equation (1) directly to all 25 basic indicator time series that date back to 1975. The first index weights the seven domain-specific indices equally, while the second weights the 25 component time series equally. Thus, the second index gives more weight to those domains for which we have more component time series, whereas the former treats the seven domains equally. A comparison of the two indices helps to ascertain the effects of the domain groupings on the overall summary well-being indices. Quality-of-life researchers (see, e.g., Hagerty et al., 2001) generally prefer to interpret domain-specific indices – arguing that they yield a more balanced representation of well-being.

It can be seen from Figure 16 that the two 1975 base year summary indices show broadly similar overtime trends but diverging levels beginning in the mid-1980s. Using the equally-weighted component time series index, there is a slight decline in the value of the index in the late-1970s followed by a recovery to 1975 levels by 1980. The index then fluctuates but generally declines through the 1980s and early-1990s, reaching a low point of just above 94 percent of 1975 levels in 1993. The index then climbs steadily to near 102 percent of 1975 levels in 1998. By comparison, the behavior of the equally-weighted domain-specific index is similar up to 1981. It then falls more or less steadily in value through the 1980s and early-1990s. This index also reaches its lowest levels in 1992–1994 and then shows increases through 1998 to a level of about 97 percent of its 1975 base.

It also is noteworthy in Figure 16 that the increases in the two summary well-being indices in the late-1990s are considerably above the levels observed as late as 1993. In part, this is due to the downturn of the material well-being and safety/behavioral domain-specific components in the late-1980s and early-1990s, as noted above. But the rapid increases in the overall summary well-being indices over the years 1993 to 1998 shown in Figure 16 also are due to the fact that the trends in the mid-to-late-1990s in 6 of the 7 domain-specific indices (and most of their component time series) have been in concert and pointed upward – for the first time in the 23 years since 1975.

Again, we can ask what effect, if any, the choice of base year for computing the summary indices has on conclusions about trends

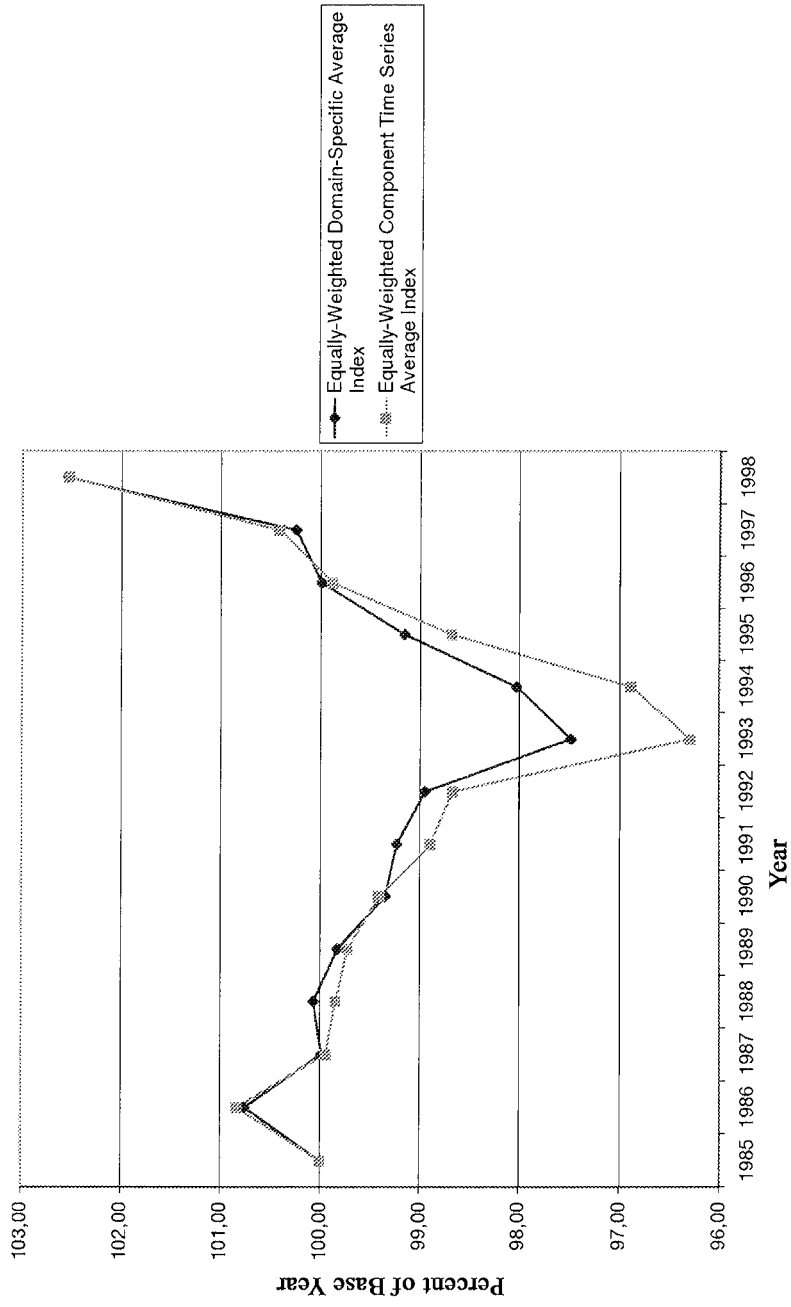


Figure 17. Summary Indices of Child and Youth Well-Being, 1985–1998.

over time? Figure 17, which shows the two summary well-being indices with the 1985 base year, addresses this question. It can be seen that, over most years of this time period, the domain-average index yields values somewhat higher than the component-average index. On the whole, however, the overtime pattern displayed in Figure 17 is consistent with that from Figure 16, namely, a plateau in the mid-1980s followed by a decline in the late-1980s-to-early-1990s and then a sustained rise since 1993. In the most recent years, the two summary indices suggest that overall child and youth well-being in the late-1990s has increased to just above – by 2 to 3 percent – the 1985 base year levels.

In brief, based on the domain-average summary child and youth well-being indices reported above, it can be inferred that, on average and overall, the quality of life of children/youths in the United States has been stable or declined slightly compared to 1975 and has increased very slightly compared to 1985. In addition, there have been some important periodic downturns associated with economic recessions and with a wave of behavioral problems in the late-1980s and early-1990s.

In the absence of a suitable ‘gold standard’ or yardstick for scale values of the overall summary well-being index, however, it is difficult to assess the meaning of these numerical values with respect to possibilities for improvements in child and youth well-being in the United States. One possible yardstick is summarized in Table II, which reports our efforts to compute a *best practice* numerical value for our domain-average summary well-being index using 1975 as the base year. This best practice value is computed by using as a yardstick for each component indicator rate either: (a) the best value of this indicator ever recorded historically in the United States or (b) the best value observed internationally in any other country for which there are comparable indicators and for which the performance of the United States is inferior.<sup>18</sup> Accordingly, the first column of Table II identifies the component indicators, the second identifies the best practice standard for the United States, and the third gives corresponding international best practice values (when these are available). At the bottom of the table, we then report the numerical values of both the domain-specific indices and the overall

TABLE II

Historically-Based United States and International Comparative Best Practice for Child Well-Being Indicators

Indicator	United States historical best values	International best values
<i>Material Well-Being</i>		
1. Poverty	15, 1976–1979	3.5, Sweden 1995
2. Secure Employ	77, 1998	
3. Health Insurance	87, 1987, 1992	100, Australia 1996
4. Median Income	\$57 022, 1998	
<i>Health</i>		
1. Very Good Health	81, 1987, 1990, 1995–1996	
2. Activity Limitation	4.9, 1987, 1990	
3. LBW	5, Health 2000 Target	2.9, Iceland 1992
4. Infant Mort	7.2, 1998	3.5, Sweden 1996
5. Mort, 1–19	37.28, 1998	18.73, Sweden, 1995
6. Obesity, 6–17	5.6, 1976–1980	
<i>Safety/Behavioral Concerns</i>		
1. Victim	72.5, 1980	
2. Crime	26.5, 1998	
3. Smoke	6, Healthy People 2000 Target (12–17)	9, Isreal 1993–1994 (age 15)
4. Drink	12.6, Healthy People 2000 Target (12–17)	
5. Drugs	3.2, Healthy People 2000 Target (12–17)*	0, Romania 1999 (age 16)*
6. Birth, 10–17	15.75, 1997–1998	3.9, Japan 1997 (ages 15–19)
<i>Educational Attainments</i>		
1. Read, 9–17	282, US Regional Score, 1996–1998	
4. Math, 9–17	275, US Regional Score, 1996	

TABLE II  
Continued

Indicator	United States historical best values	International best values	
<i>Place In Community</i>			
1. Preschool	52.6, 1997	82.4, Belgium 1998	
2. High School	82.4, 1985	98.3, Japan, 1995	
3. No Work or Schl	8, 1998		
4. College	32, 1999	34.9, Australia, 1995	
5. Voting	48, 1972	55.1, Germany 1979 (ages 18–21)	
<i>Emotional/Spiritual Well-Being</i>			
1. Suicide, 10–19	4.1, 1976	1.7, Greece 1996 (ages 15–24)	
2. Spiritual Attitude, Gr 12	32, 1998		
3. Church Attendance, Gr 12	42, 1980		
<i>Social Relationships</i>			
1. Single Parent	7, 1950	4.5, Japan 1980	
2. Residential Mobility	16.8, 1994		
Implied Best Practice (using 1975 as base year)			
<b>International (except when unavailable)</b>		<b>United States</b>	
<i>Domain Specific Indices</i>		<i>Domain Specific Indices</i>	
Material	133.69	Material	111.98
Health	152.37	Health	131.38
Safety/Behavioral	159.36	Safety/Behavioral	152.12
Education	102.88	Education	102.88
Place in Community	155.79	Place in Community	127.17
Emotional/Spiritual	124.10	Emotional/Spiritual	105.05
Social Relationships	139.28	Social Relationships	131.46
<i>Summary Index</i>	138.21	<i>Summary Index</i>	123.15

\*For Marijuana.

summary child and youth well-being index, based upon both sets of best practice indicators.

It can be seen in Table II that the numerical value of the domestic domain-average best practice summary index is about 123. To interpret this numerical value, recall that the domain-average summary Index of Child and Youth Well-Being in the late-1990s (Figure 16) was at about 97 percent of its 1975 value, indicating a deterioration of about 3 percent compared to 1975. By contrast, the domestic best practice value of the Index in Table II implies that – if the U.S. had been at or near its best historically observed values on the component indicators of the seven domains of child and youth well-being – the Index could have improved by about 23 percent compared to 1975 levels. The numerical value of the corresponding international best practice summary index in Table II is 138.21. Again, this implies that, if the U.S. had achieved levels on the component social indicators comparable to the best values observed internationally in the late-1990s, then the Index of Child and Youth Well-Being would have improved by about 38 percent compared to 1975 levels. From this perspective on the overall domain-average summary well-being index charted in Figure 16, it can be inferred that while the social conditions of children and youths in the United States were rapidly improving in the late-1990s as compared to the mid-1970s, there, nonetheless, are large improvements that yet can be made. Of course, it should be noted that no single nation-state has numerical values on *all* of the component indicators that are at the international best practice level. Thus, by using the international best practice value of our summary index in Table II as a comparative standard by which to judge the recent performance of the United States with respect to conditions of life for its children and youths, we are indeed employing a very tough evaluative standard.

#### *Age-Specific/Developmental Summary Well-Being Indices*

To further probe the meaning of the levels and trends in our summary child and youth well-being indices, it is helpful to disaggregate, as best as we can, the component indicators of our overall summary indices of child and youth well-being according to the ages-of-children-and-youths to which they refer. Of the 25



TABLE III  
Age Group Summary Index Components

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*Infancy/Preschool*

1. Poverty, Ages 0–5
2. Health Insurance, Ages 0–5\*
3. Infant Mortality
4. Low Birth Weight
5. Mortality, Ages 1–4
6. Preschool Attendance, Ages 3–4

*Childhood*

1. Poverty, Ages 6–17
2. Health Insurance, Ages 6–11\*
3. Mortality, Ages 5–9
4. Overweight, Ages 6–11
5. Reading, Age 9
6. Math, Age 9

*Adolescence/Teenage Years*

1. Poverty, Ages 6–17
  2. Health Insurance, Ages 12–17\*
  3. Mortality, Ages 10–14
  4. Mortality, Ages 15–19
  5. Overweight, Ages 12–17
  6. Births, Ages 10–14
  7. Births, Ages 15–17
  8. Crime Offenders
  9. Crime Victimization
  10. Drinking, Grade 12
  11. Drugs, Grade 12
  12. Smoking, Grade 12
  13. Reading, Age 13
  14. Math, Age 13
  15. Reading, Age 17
  16. Math, Age 17
  17. Not Working or in School, Ages 16–19
-

TABLE III

Continued

18.	Suicides, Ages 10–14
19.	Suicides, Ages 15–19
20.	Religious Attendance, Grade 12
21.	Religion Important, Grade 12

\*The health insurance time series enter into the calculation of the age-group indices beginning in 1987, the first year these series are available.

basic social indicator time series in Table I that date back to 1975, a moderate number are available for specific age groups. Table III reports our allocation of these series into three age-specific/developmental categories: infancy/preschool (ages < 6), childhood (ages 6–11), and adolescence/teenage years (ages 12–19).<sup>19</sup> Of these three categories in Table III, the adolescence/teenager grouping has the largest number of indicators – 21 – and domains of well-being represented – 5. The infancy/preschool and childhood groupings each have 6 indicators from 3 domains of well-being.

For a summary index of well-being for the adolescence/teenage groups, we include the violent crime indicator time series from the NCVS for ages 12–17 (Figure 9) and the high school seniors (ages 17–18) time series data on smoking, drinking, and illicit drug use time series from the MTF study (Figure 10). The age ranges of these violent crime and illicit drug use time series are concentrated in certain areas of the adolescence/teenage grouping. However, trends over time in violent crime victimization and offending and illicit substance use tend to be correlated across the teenage years, as can be seen in Figure 10 for substance use among 8th, 10th, and 12th graders. Unfortunately, only the time series for the 12th graders dates back to 1975. In the case of the violent crime time series, the age range of the data does not include the first two and the last two years of the ages 10–19 category. Again, however, it no doubt is the case that trends in the violent crime indicator series for the ages 12–

17 group are quite highly correlated with trends at both ends of the ages 10–19 grouping.

Figure 18 displays the resulting age-specific summary indicators of child and youth well-being. Do they yield meaningful information about levels and trends over time? Focusing first on the infancy/preschool index, it can be seen in Figure 18 that this index shows fairly steady increases in the entire period from 1975 to 1998. It does, however, have a slight acceleration above the overall time trend in the late-1970s and a slight deceleration below the overall trend line in the early-1990s. After 1993, the infancy/preschool index then resumes increasing in the most recent years, reaching a level about 25 percent above the 1975 base year values by 1998. This last period of increases in the infancy/preschool index is associated with decreases in poverty and mortality rates for these ages in the mid-to-late-1990s as well as increases in preschool attendance.

By comparison, the childhood and adolescence/teenage indices in Figure 18 exhibit a plateau near their 1975 levels through about 1980. Both indices then show declines to 1985. After 1985, the childhood/preteen index shows a plateau through about 1993–1994. By comparison, the adolescence/teenage index declines at a slow rate through 1993–1994. After 1994, the two indices diverge, with the adolescence/teenage index showing increases to levels near the 1975 base values by 1998, while the childhood index declines to about 80 percent of the 1975 base year. The declines in the childhood and adolescence/teenage indices are very much influenced by the increases in the prevalence of overweight children and youths noted in Figure 8 above. In the most recent period, the adolescence/teenage group has a sufficient number of indicators that are improving so that its overall summary index increases in the 1993–1998 period. But this is not the case for the childhood index, for which we have only 6 indicator series and for which the overweight increases pull the overall index downward.

On the whole, the trends displayed in the age-specific summary indicators of well-being in Figure 18 are meaningful and consistent with the trends noted earlier in the corresponding component social indicator series. In particular, they point to the following themes as the primary age-specific patterns of change in well-being over the past three decades:

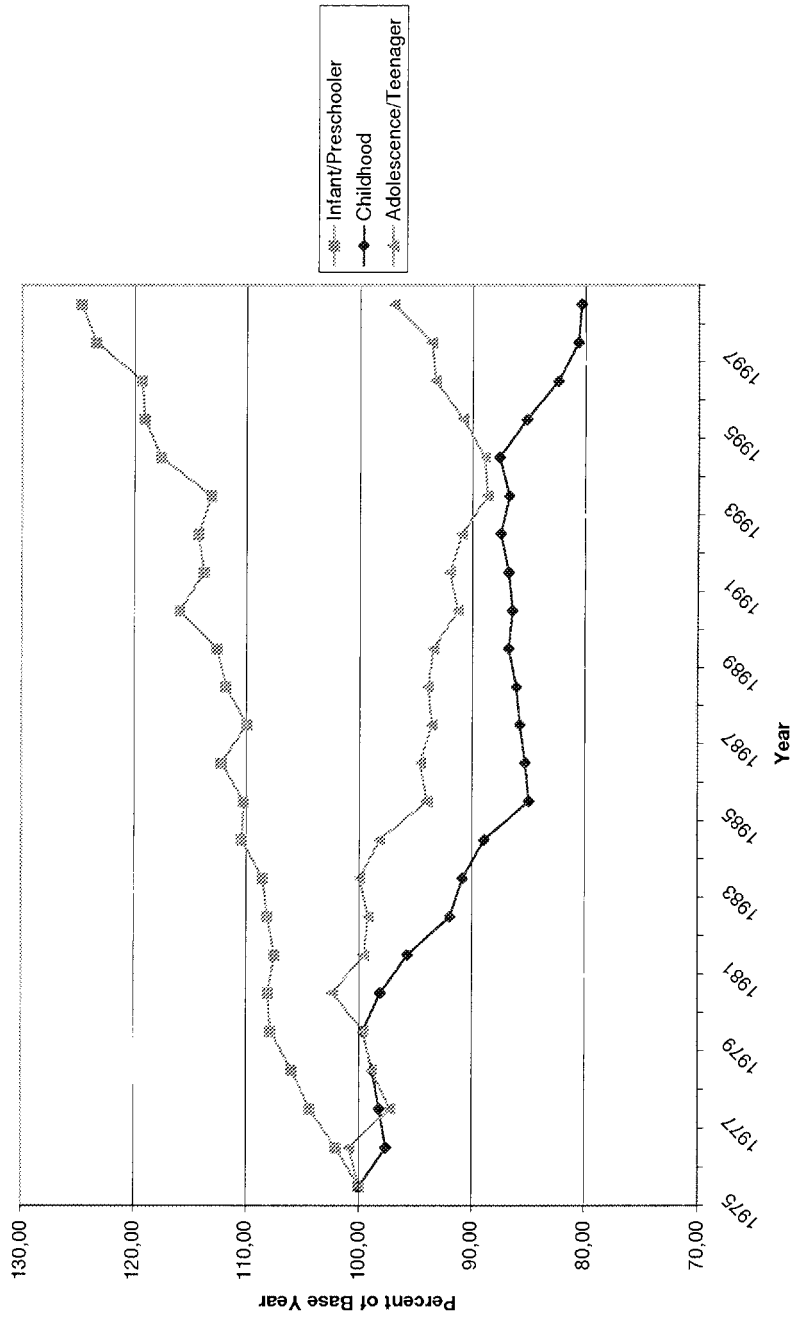


Figure 18. Age-Specific Summary Indicators of Child and Youth Well-Being, 1975–1998.

- a deceleration in the 1980s in the rate of improvement of the circumstances of lives of infant/preschool children followed by a resumption of improvements in the mid-to-late-1990s; and
- a deterioration in the circumstances of the lives of school-aged children, adolescents and teenagers in the period from the mid-1980s to the mid-1990s followed by a evident improvements for the latter, but not the former, group since 1994.

Clearly, it would be desirable to have a better and larger selection of age-specific indicators from which to form the summary indices in Figure 18, especially for the two younger age groups.

#### *Race/Ethnic Group-Specific Indices and Disparity Indices*

As another means for disaggregating our overall domain-specific and summary indices of child and youth well-being, we now examine the effects of classification by membership in three major race/ethnic groups as recorded in the census, vital statistics, and sample survey data sources from which our basic indicator have been compiled: whites, blacks, and Hispanics.<sup>20</sup> As the United States has become an increasingly multiracial and multiethnic society in recent decades, major concerns about child and youth well-being have focused both on improvements in the circumstances of children's lives within specific race/ethnic groups and on levels of disparity among these groups. In brief, parents, members of public interest groups, policymakers, and public and private agency administrators and personnel would like to see improvements in the circumstances of all children within race/ethnic groups as compared to past levels of child and youth well-being within their own groups. In addition, however, levels of disparity in well-being among race/ethnic groups also are a concern, as black and Hispanic populations historically have experienced discrimination in American society and disadvantages, on average, in life circumstances. Accordingly, growing disparities in child and youth well-being for black and Hispanic populations are a matter of public concern and for which social indicators researchers should engage in monitoring and social reporting.

Consider first the question of levels and trends in *race/ethnic-group-specific versions of our domain-specific indices of child and*

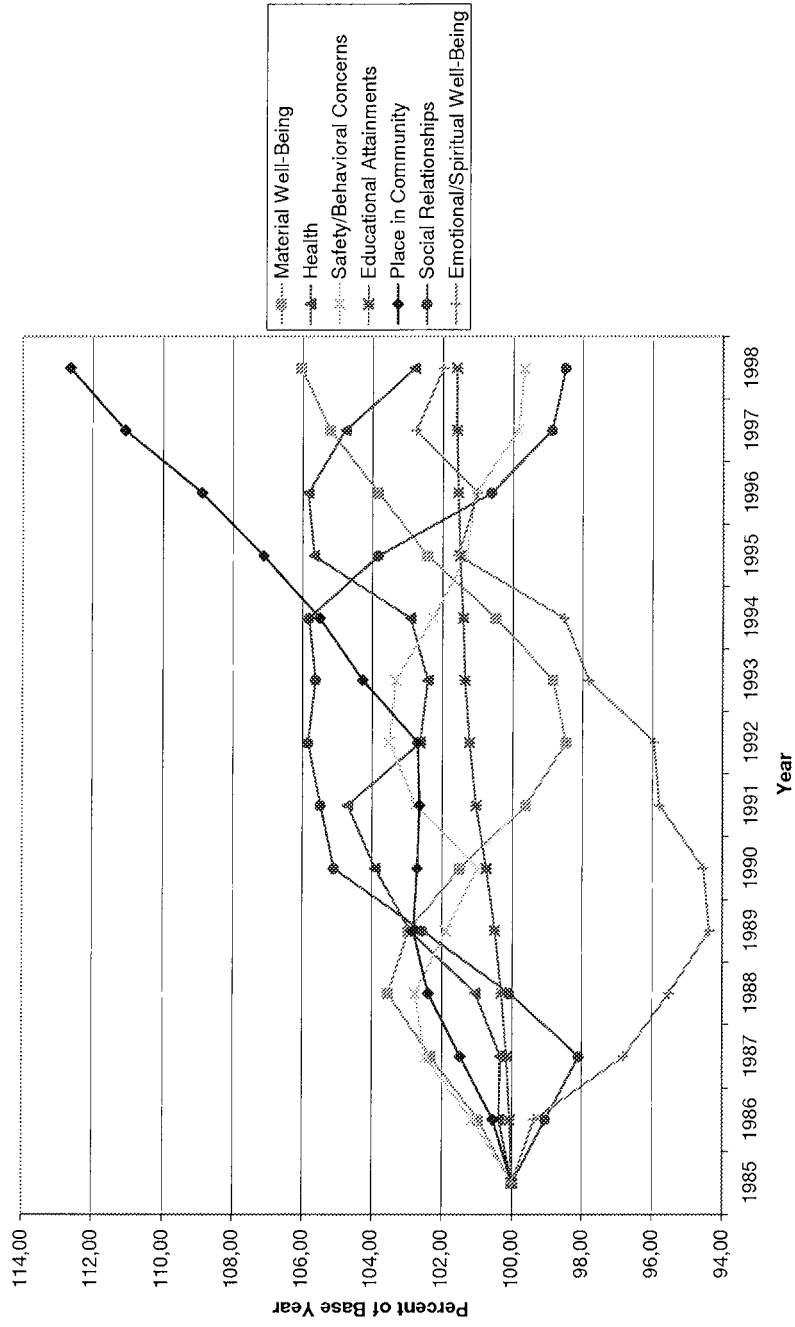


Figure 19. Domain-Specific Indices of Child and Youth Well-Being for Whites, 1985–1998.

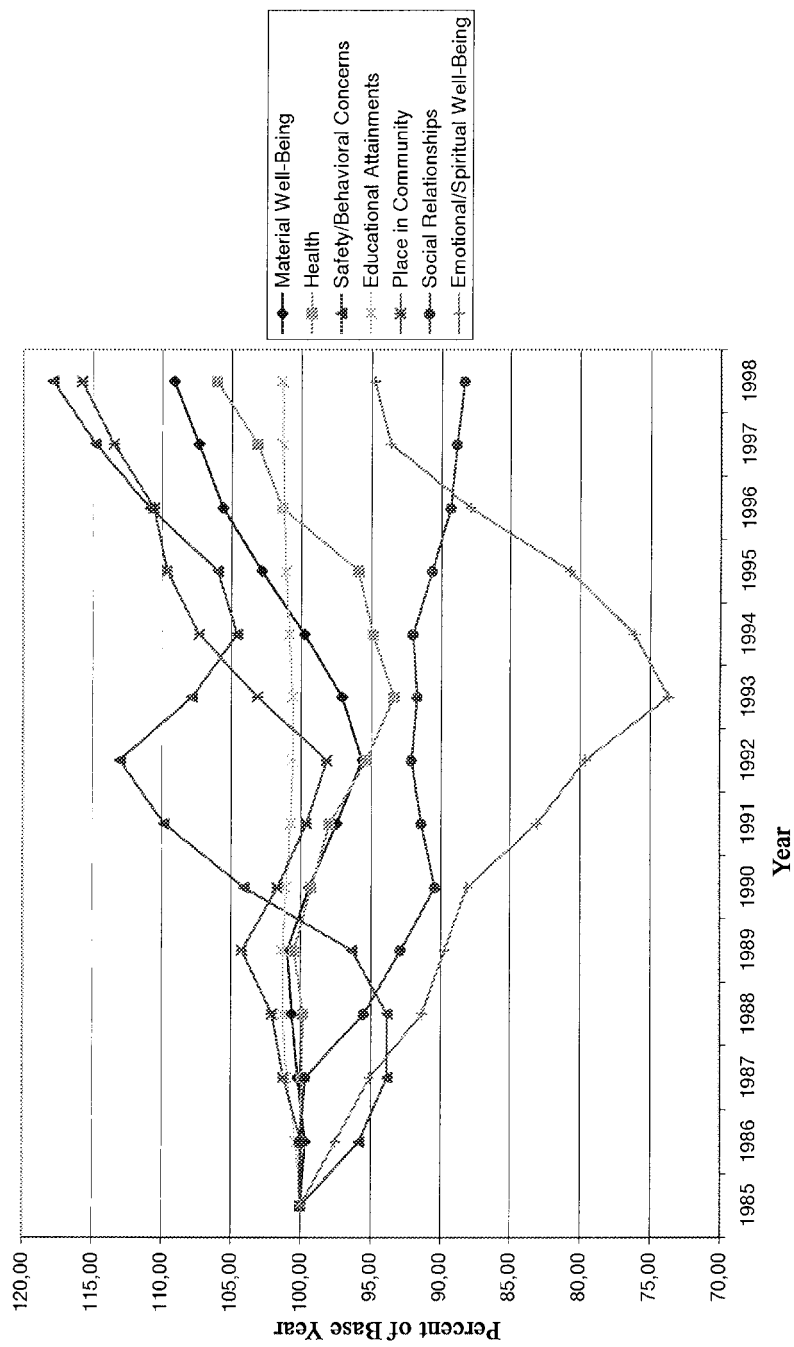


Figure 20. Domain-Specific Indices of Child and Youth Well-Being for Blacks, 1985–1998.

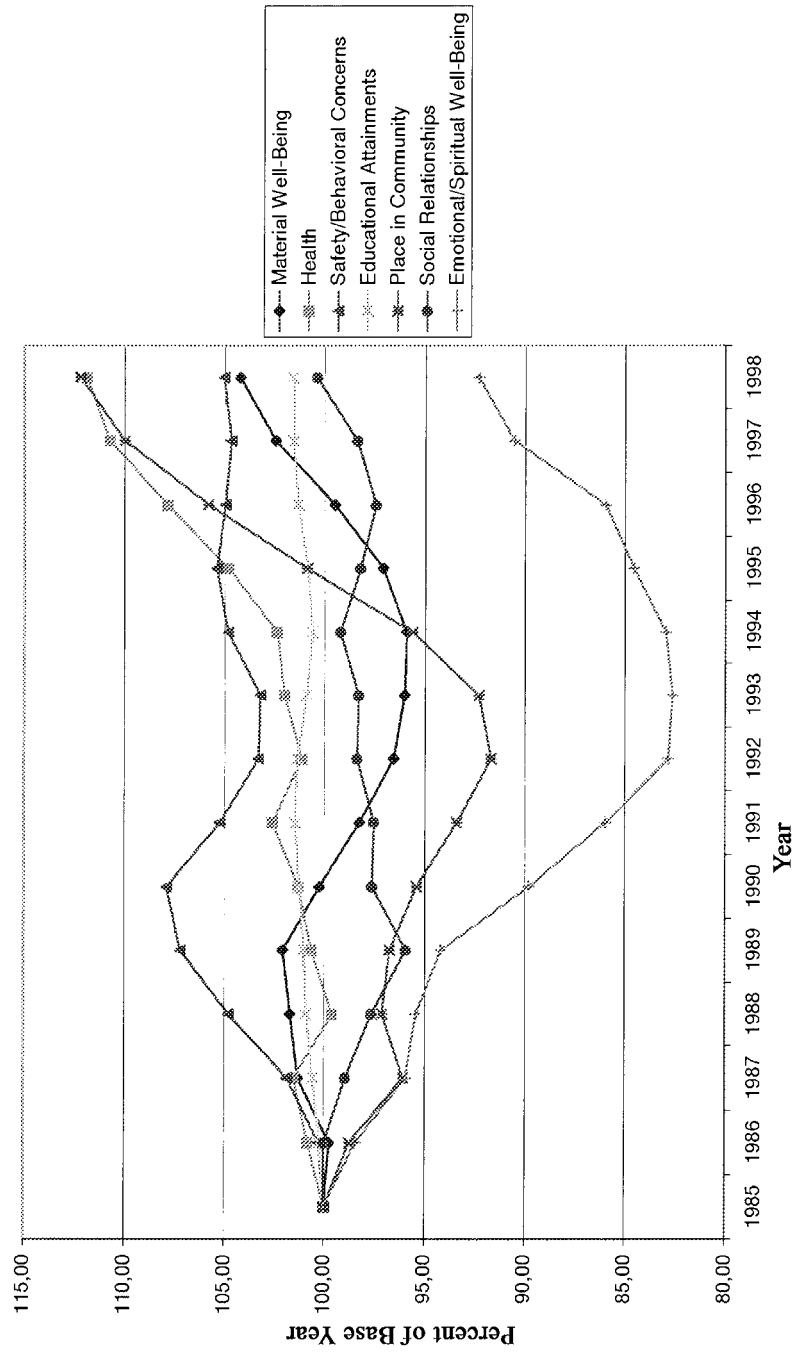


Figure 21. Domain-Specific Indices of Child and Youth Well-Being for Hispanics, 1985–1998.



*youth well-being*.<sup>21</sup> Figures 19, 20, and 21 show graphs of six of seven domain-specific indices for children who are white, black, and Hispanic, respectively. These graphs, as well as others discussed below, use 1985 as the base year for index construction, since the Hispanic classification has been commonly available in the data sources for the basic social indicators in Table I only since about 1980.

It might be expected that the *domain-specific indices for white children/youths* would show levels and trends that are similar to those of the overall domain-specific indices reported earlier, as white children are a majority of the population of children in the United States over the period analyzed. The graphs in Figure 19 show that this indeed is the case. That is, compared to levels in 1985 for white children/youths:

- the place in community and health indices show relatively consistent increases across the period, although increases in the health domain index are tempered by the upward trend in the prevalence of overweight children and youths;
- the material well-being index shows a decline in the late-1980s and early-1990s followed by a return in the late-1990s to levels above those of 1985;
- the productive activity (educational attainments) domain index is very stable and shows slight increases over time;
- the safety/behavioral concerns index shows a decline in the late-1980s, an increase in the early-1990s, and another decline to 1985 levels in the late-1990s;
- the social relationships domain index shows increases in the early-1990s followed by a decline to just below 1985 levels in the late-1990s; and
- the emotional/spiritual well-being domain index falls in the late-1980s and early-1990s and then increases to slightly above 1985 levels by the late-1990s.

The levels and trends in the *domain-specific indices for black children/youths* shown in Figure 20 are quite different.<sup>22</sup> While downturns below 1985 base year levels can be seen in several of the indices in the early-to-mid-1990s, they show that for black children:

- 5 of the 7 domain indices are above 1985 levels by the late-1990s; in particular,
- the safety/behavioral concerns, place in community, material well-being, and health indices had improved to between 7 and 20 percent above 1985 levels by 1998;
- the productive activity (educational attainments) index is slightly above 1985 levels in the late-1990s;
- the social relationships domain index fell about 10 percent below 1985 base year levels in the late-1980s and has stayed at about that level through the late-1990s; and
- the emotional/spiritual well-being index fell to about 75 percent of its 1985 level by 1993 and then recovered to about the 95 percent level by 1998.

The levels and trends in the *domain-specific indices for Hispanic children/youths* displayed in Figure 21 take on yet another pattern from 1985 to 1998. Again, while several of the domain-specific indices show substantial downturns in the late-1980s to mid-1990s, the following points are evident:

- indices for four of the domains – place in community, health, safety/behavioral concerns, and material well-being – show 4 to 10 percent improvements over 1985 base year values for Hispanic children/youths by 1998;
- the place in community index, in particular, shows rapid increases since 1992 after falling for several years;
- the productive activity (educational attainments) index shows slow changes over time and is just 2 percentage point above 1985 levels by the late-1990s; and
- the emotional/spiritual well-being domain index fell in the late-1980s and early-1990s to about 83 percent of its 1985 value by 1992–1994 and then began to rise to about 92 percent by 1998.

Averaging across these trends in the domain-specific indices, Figure 22 reports the levels and trends in *the overall race/ethnic-group-specific summary indices of child and youth well-being* for the 1985 to 1998 period. Across this entire period, it can be seen, first of all, that the summary well-being indices of the black and Hispanic groups show the impacts of the declines in the mid-1980s to early-1990s in the domain-specific indices noted above.

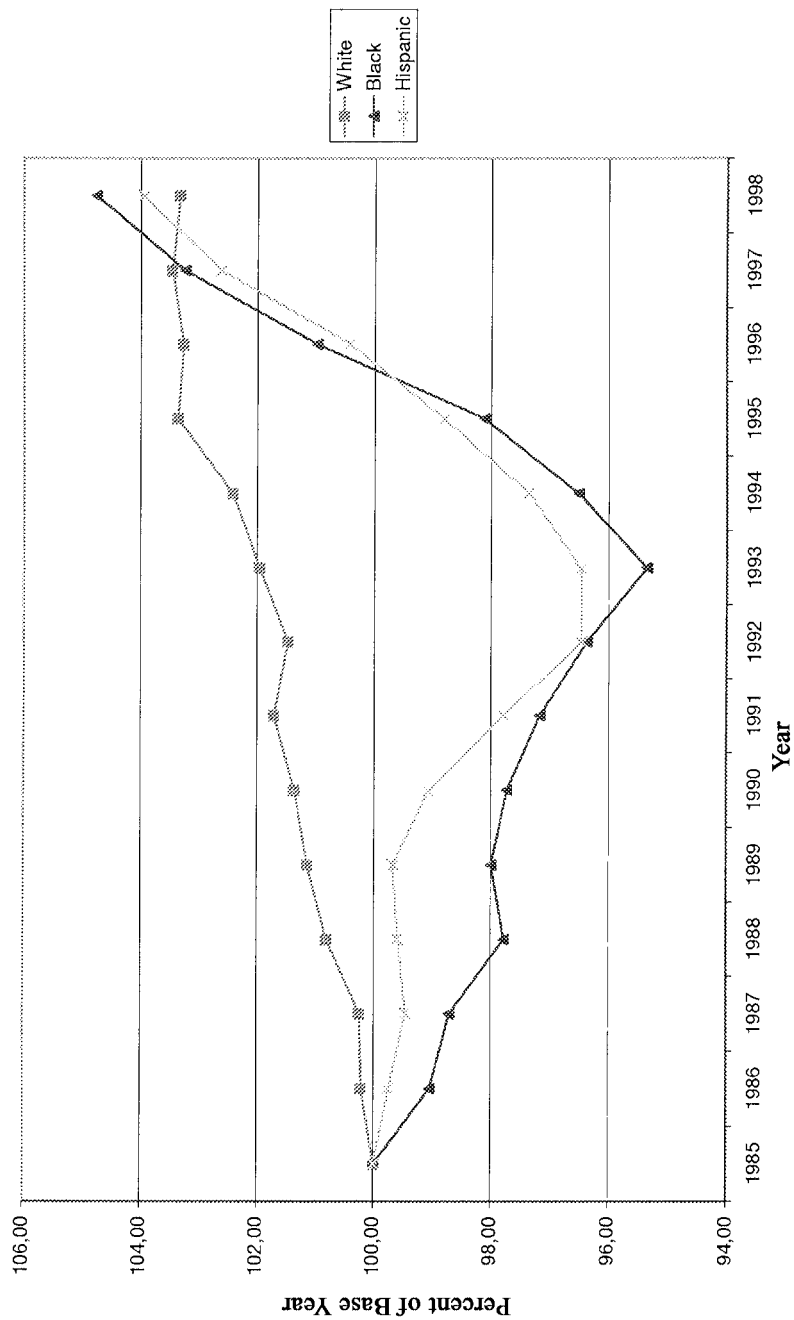


Figure 22. Race/Ethnic Group-Specific Summary Indices of Child and Youth Well-Being, 1985–1998.

Since the mid-1990s, the overall well-being indices for black and Hispanic children/youths have increased quite rapidly to about 4 to 5 percent above 1985 levels. By comparison, the overtime trend in the summary well-being index for white children/youths shows a more steady increase to about 3 percent above 1985 levels, although the index is flat for the years 1995–1998.

In brief, children from all three of the race/ethnic groups show overall increases in well-being from 1985 to the late-1990s. What about *race/ethnic-group disparities in child and youth well-being*? Have these increased or decreased over these years? Figures 23 and 24 contain graphs that provide a means for addressing this question. These figures show graphs of trends in domain-specific disparity indices for the same six domains of well-being as in Figures 20–22. For each race/ethnic group comparison with whites, these are computed by taking the disparity or gap in the levels of each social indicator series that was recorded in 1985 as defining a base of 100 percent. Absolute values of the disparities in each subsequent year then are calculated and computed as percentages of the disparity levels in the base year. The indicator-specific disparity indices for each year then are averaged across the components in each domain to arrive at the domain-specific indices reported in Figures 23 and 24.<sup>23</sup> Note that, by calculating the disparity indices in this way, the interpretation of levels reported in these figures differs from the interpretation of graphs of indices discussed above. That is, in Figures 23 and 24, a value of the domain-specific indices above (below) 100 in years subsequent to 1985 means that the *absolute value* of the disparity or gap between the groups being compared has grown (declined) relative to the size of the gap in 1985. In short, these disparity indices measure just that – absolute levels of disparity or gap in conditions of child and youth well-being between race/ethnic groups. It should *not* be inferred from the disparity indices, for example, that white children consistently have circumstances of life that are better than black or Hispanic children. In fact, there are indicators for which this is not true. For example, in the health domain in recent years, the prevalence rate for low birth weight births and the infant mortality rate for Hispanic children are lower in some years than those for white children.

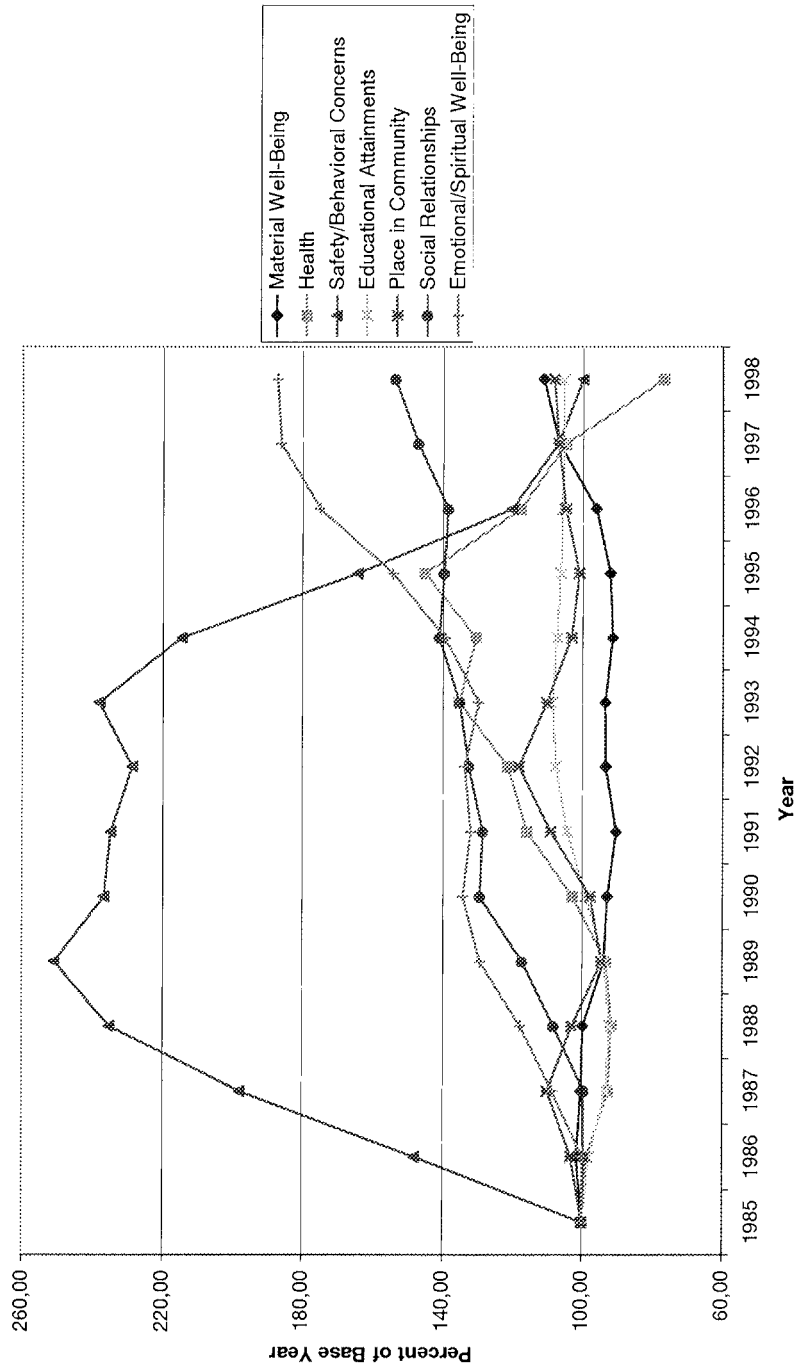


Figure 23. Domain-Specific Disparity Indices of Child and Youth Well-Being for Blacks as Compared to Whites, 1985–1998.

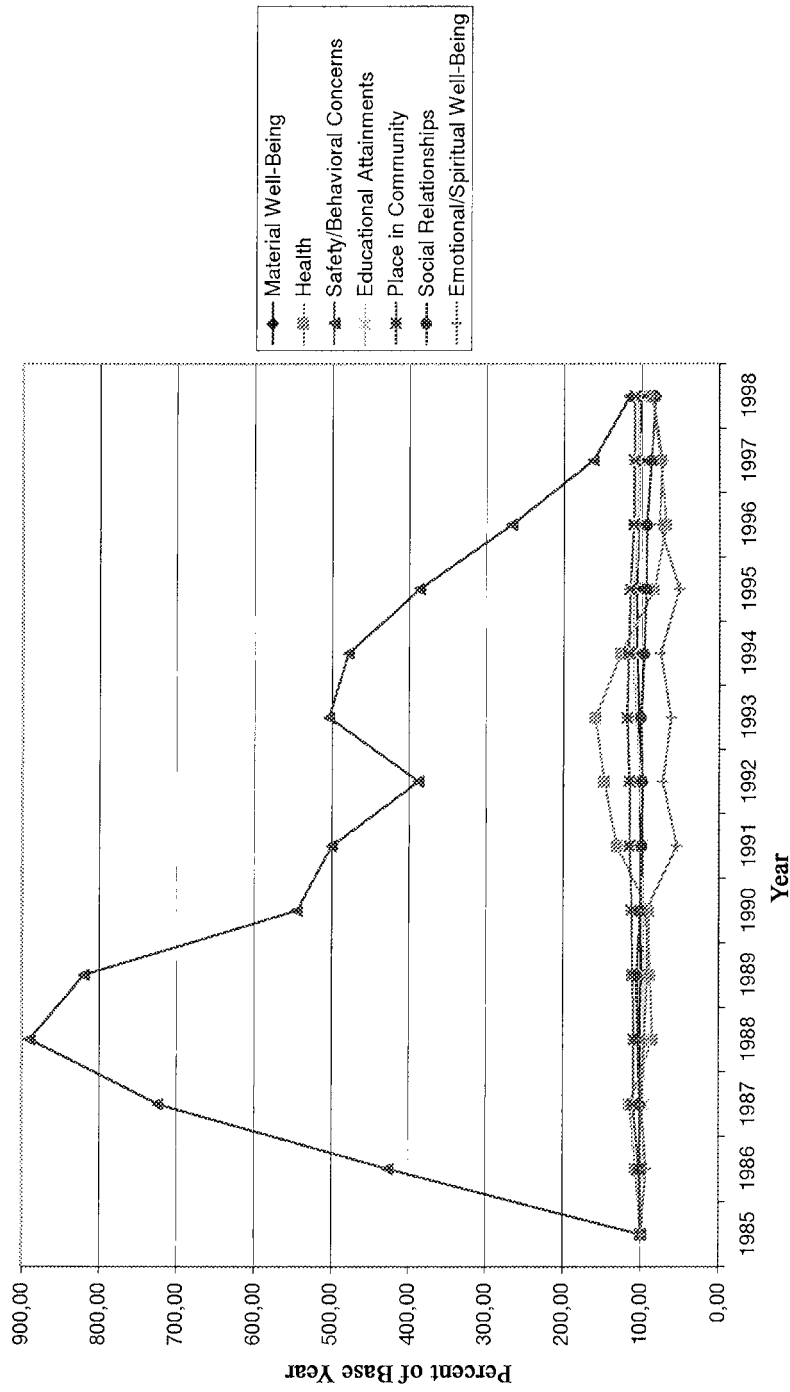


Figure 24. Domain-Specific Disparity Indices of Child and Youth Well-Being for Hispanics as Compared to Whites, 1985–1998.

Given the foregoing statement on the calculation of the disparity indices, what do the levels and trends shown in Figures 23 and 24 tell us? Examining Figure 23 first, it can be seen that the safety/behavioral concerns domain index shows a large increase in black/white disparity in the late-1980s-to-early-1990s. By the late-1990s, however, this disparity had declined to below 1985 base year values. The health domain index shows a similar, but muted, pattern of increase to a high point in the mid-1990s followed by a decline to below 1985 levels. By contrast, disparity in the social relationships domain (affected by disparities in the single-parenthood rate) increases fairly steadily across the years to about 50 percent above 1985 levels by 1998. Finally, the emotional/spiritual domain disparity shows an increase to a peak in 1990 followed by a three-year decline and then a rise to over 400 percent of the 1985 level by 1998. It should be noted that the black/white disparity index in the emotional/spiritual well-being domain is a disparity in favor of higher well-being for black children/youths – due to lower suicide rates and higher rates of religious attendance and religious importance. And this disparity remains high and/or grows over the 1985 to 1998 period for these indicators. The disparity in weekly religious attendance grows especially large – in 1985 35 percent of white 12th graders report attending religious services weekly compared to 36 percent of black 12th graders; by 1998, the corresponding percentages are 31 and 42 percent. Disparity indices for the other three domains (material well-being, educational attainments, and place in community) show some increases by the late-1990s, but generally on the order of 10 percent or less.

From Figure 24, it can be seen that the story for the domain-specific disparity indices for Hispanic children/youths as compared to their white counterparts is that most disparity indices remain relatively close to their 1985 levels across the years. The exception is that the safety/behavioral concerns domain-specific index shows a large divergence (to levels about 9 times the 1985 base year values by 1988) followed by a decline to near 1985 levels by 1998.

Averaging across these trends in the domain-specific race/ethnic disparity indices, Figure 25 reports the levels and trends in the overall race/ethnic-group-specific disparity indices of child and youth well-being for the 1985 to 1998 period. Note, first, that the

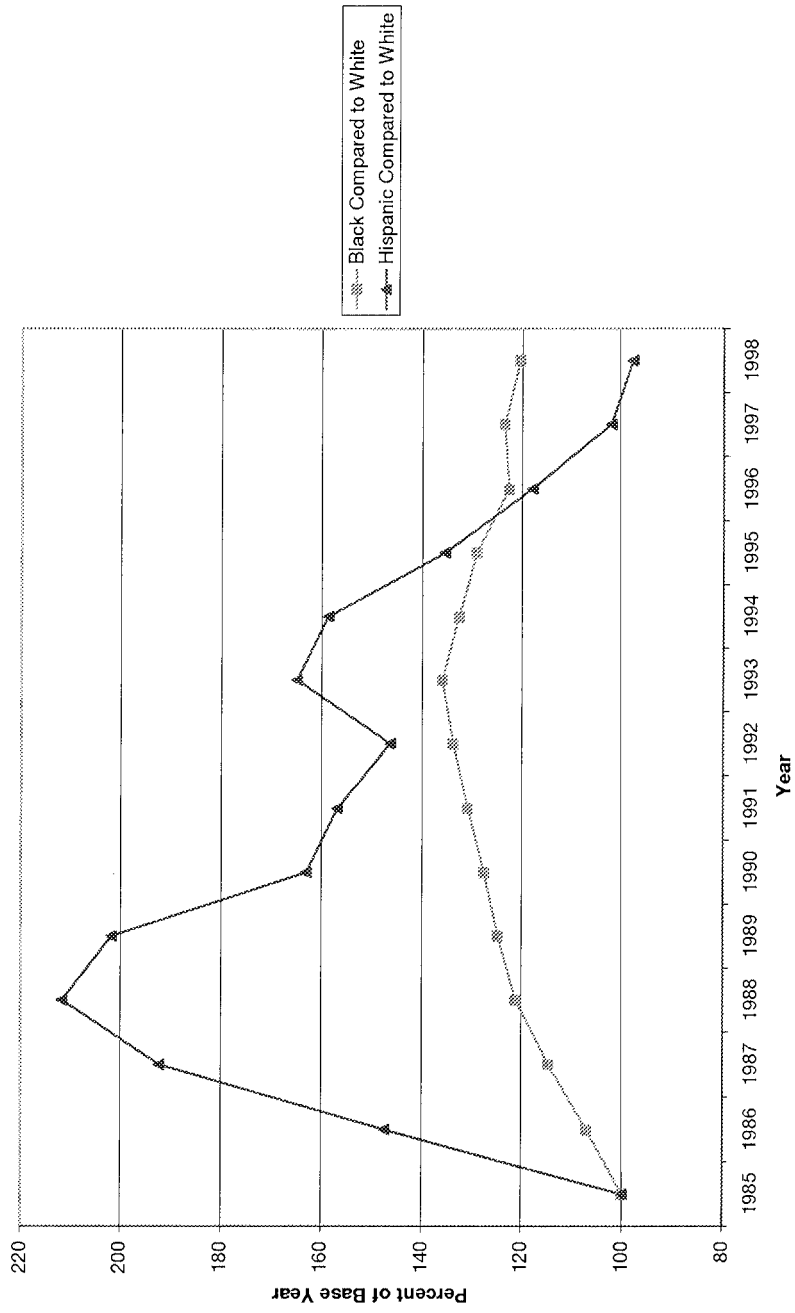


Figure 25. Race/Ethnic Group-Specific Child and Youth Well-Being Disparity Indices, 1985–1998.



overall well-being disparity index for black children compared to white children increased to more than 20 percent above the level in the base year 1985 by 1988. It then increased to about 35 percent above the base year level by 1993 followed by a decline to about 20 percent above base level by 1998. Much of the 20 percentage point difference in the overall black/white disparity in 1998 (compared to 1985 levels) is due to disparities in social relationships (wherein white children/youths have an advantage due to lower rates of living in single-parent families) and in emotional/spiritual well-being (wherein black children/youths have an advantage due to lower rates of suicide and higher rates of religious attendance and importance). By comparison, the overall well-being disparity index for Hispanic children compared to white children shows more variability over the years. This index of disparity grows to levels greater than 160 percent of 1985 base year values in the years 1988 to 1991. In the most recent years, however, the disparity index has declined – reaching levels at or below 1985 values in the two most recent years. The overall conclusion from Figure 25 is that well-being disparities for black and Hispanic children/youths relative to white children/youths increased from 1985 levels, dramatically so for Hispanics, during the late-1980s through the early-1990s. The period 1994 to 1998 saw declines of these disparities – to levels near those in 1985 for Hispanic children/youths and to about 20 percent above 1985 levels for black children/youths.

#### DISCUSSION AND CONCLUSIONS

In the foregoing sections, we have described levels and trends in some 28 separate time series of basic indicators of child and youth well-being. We also have reported on a number of aspects of our efforts to construct an Index of Child and Youth Well-Being for assessing trends in the circumstances of the lives of children and youths in the United States over the last quarter of the 20th century. What overall conclusions can be drawn from these explorations in social measurement? We think the following points are among the most important conclusions from our study:

- Conclusions about trends in child and youth well-being in the United States in the last quarter of the 20th century depend on both the base year and the formula by which the summary indices are calculated. Findings about child and youth well-being also are dependent upon the specific indicators and domains used in the composition of the summary indices.
- Using 1975 as the base year and our overall summary index as the metric for measuring changes over time, we conclude that conditions of life for children and youths in the United States deteriorated fairly steadily for a number of years in the 1980s and reached low points in the 1992 to 1994 period. They then began an upturn that continued through 1998 towards, but still below, 1975 levels. In other words, while some domains and conditions of life for children/youths improved by 1998 as compared to 1975, others deteriorated. Averaging across all of the domains of life and conditions included in our summary indices, the basic finding is that, overall, the quality of life of children/youths in the United States was not better in 1998 than in 1975.
- Using 1985 as a base year, overall quality of life for children and youths show a similar pattern of decline through the early-1990s followed by an improvement through 1998 to levels slightly above those of the 1985 base year. In other words, compared to 1985 base levels, overall conditions of well-being for children/youths in the United States had slightly improved by the late-1990s.
- Numerically, with 1975 as the base year, we estimate that overall child and youth well-being was on the order of 2 to 3 percent lower in 1998 than in 1975 when our Index is computed by averaging across the seven domains of well-being that we have studied. By comparison, when the Index is computed by averaging across the individual component time series, we estimate a slight improvement – on the order of 1 or 2 percent – in child and youth well-being for the same years. Because the latter form of the Index gives more weight to those domains of well-being for which we have more indicator time series, quality-of-life researchers generally prefer to interpret the former version. Using 1985 as the base year, we estimate

corresponding increases by 1998 of 2 to 3 percent in these two forms of the Index.

- Among the seven domains of well-being studied, the largest and most steady increases have been in the place in community domain. The improvements in this domain are due primarily to increased rates of participation in schooling and work institutions from early childhood through young adulthood.
- The material well-being and safety/behavioral concerns domains showed some improvements (compared to base year levels) by the late-1990s. But both domains have had waves of increases and decreases. In the case of material well-being, these waves were associated with economic recessions and expansions and periods of restructuring of economic institutions. In the case of the safety/behavioral concerns domain, the waves were associated with trends in youth behaviors in the areas of teenage childbearing, crime and violence, and the use of psychoactive substances (cigarettes, alcohol, illicit drugs).
- There has been a slight increase in the productive activity (educational attainments on standardized tests) domain across the years studied.
- The health domain index shows improvements in its components pertaining to infant, child, and adolescent/teenage mortality. It has been pulled down since the mid-1980s by increases in the prevalence of low birth weight births and, especially, by increases in the prevalence of overweight children and youths.
- Indices for the social relationships and emotional/spiritual well-being domains show long-term declines across the three decades studied. These indices reached historically low levels in the mid-1980s through mid-1990s but have shown some increases in recent years.
- The period from about 1993 to 1998, in particular, has been noteworthy for sustained and substantial increases in six of seven domain-specific indices of child and youth well-being – all but health (which, again, has been pulled down by the overweight prevalence indicator). This sustained upturn has been coincident with the long-term economic expansion of the mid-to-late-1990s. We also noted downturns in several

of the domain-specific indices associated with past economic recessions. This suggests that this recent sustained period of increases in several domains of child and youth well-being could well be interrupted and reversed by a new economic recession. An economic recession not only impacts negatively on the material well-being of children. It also negatively impacts the health, place in community, and safety/behavioral concerns domains. But there also are other aggregate social forces that affect trends in child and youth well-being. For instance, a substantial deterioration in the public health system and in access to health care for children could negatively impact the health domain index. And a new episode of a broad-scale youth involvement in drug use, sex/pregnancy, and violence (as in the late-1980s through the mid-1990s) no doubt would substantially depress our safety/behavioral concerns index.

- Compared to best practice values of the various indicators studied (based either on the best historically observed values for the United States or on the best contemporary values of other advanced industrial societies), there is much room for improvement. We found that – if the United States was performing at the best levels on the component indicators of the Index of Child and Youth Well-Being that it had ever achieved historically – then, in the late-1990s, the Index would have been about 23 percentage points higher than in the 1975 base year. Correspondingly, if the U.S. had achieved levels on the component indicators comparable to that of the best performance internationally, then it could have achieved a level of the Index about 38 percent higher in the late-1990s than that of the 1975 base year. These are tough yardsticks by which to assess recent conditions in child and youth well-being in the United States. But they give us an idea of how much these conditions can be improved.
- Based on our age-specific index calculations, we found increases of about 25 percent by the late-1990s (compared to 1975 values) in child well-being for the infancy/preschool years. By comparison, our childhood/preteen index of well-being shows a decline of about 10 percent (compared to 1975

levels) through much of the 1980s and 1990s. And our adolescence/teenager index of well-being shows a similar decline of 10 to 20 percent through much of the same period.

- Our overall summary indices of child and youth well-being show improvements of 4 to 5 percent by the late-1990s for the black and Hispanic race/ethnic groups compared to within-group 1985 base year levels. By comparison, white children/youths show increases of about 3 percent in overall well-being compared to their 1985 base year levels. Substantial declines in overall well-being in the mid-1980s to mid-1990s were experienced by the black and Hispanic children/youths.
- Our analyses of levels of disparity in child and youth well-being (compared to the levels that existed in the 1985 base year) suggest that disparities of Hispanic children compared to white children increased during the 1980s and early-1990s more than those of black children compared to white children. But, by 1998, the overall intergroup disparities had declined again to near 1985 base year levels for Hispanic children compared to white children. For black children compared to white children overall disparities were about 20 percent greater than 1985 levels. As noted above, much of the 20 percentage point difference in the overall black/white disparity in 1998 (compared to 1985 levels) is due to disparities in social relationships (wherein white children/youths have a well-being advantage due to lower rates of living in single-parent families) and in emotional/spiritual well-being (wherein black children/youths have a well-being advantage due to lower rates of suicide and higher rates of religious attendance and importance).

It must be emphasized that specific numerical values associated with these conclusions are dependent both on the methods of index construction and on the specific domains and component time series indicators of child and youth well-being that we have studied. For instance, suppose that we dropped the health, social relationships, and emotional/spiritual well-being domain indices from our summary Index of Child and Youth Well-Being, i.e., that we computed a summary index based only on the material well-being, safety/behavioral concerns, place in community, and educational

attainments domain indices. Then we would conclude that there was a 10 to 20 percent improvement in overall child and youth well-being by 1998 as compared to 1975. Even if we retained the health domain in the summary index, we still would conclude that overall child and youth well-being improved by 5 to 6 percent from 1975 to 1998. As noted above in the section on conceptualization of child and youth well-being, however, numerous studies of subjective well-being over the past three decades have found that all seven of the domains of well-being studied here are important in determining the overall quality of life. Therefore, we believe that a comprehensive summary index should be based on all seven of the domains with which we have worked.

Note also that the domain indices themselves are sensitive to their components. For example, as we have noted, most of the component indicators in the health domain index generally improved by the late-1990s as compared to 1975. But our summary index for the health domain decreases over this time period due to the inclusion of indicator time series on the percentage of children and youths who are overweight. Given the serious health complications associated with being overweight noted earlier, it does not seem reasonable to leave this health indicator time series out of our health domain summary index.

Due to these and related limitations of the indicators with which to measure the seven domains of well-being on which our summary Index is based, the methods of index construction that we have employed have been deliberately chosen to be as straightforward and transparent as possible. We also have utilized component time series that generally are considered among the best available indicators for assessing child and youth well-being. Accordingly, it likely is the case that the general qualitative conclusions (e.g., that there was a deterioration in the 1980s followed by an upturn in the 1990s) from our Index work, but not the specific numerical values, are relatively robust to the use of different methods of index calculation and component indicators.

Our Index work also provides a basis from which additional efforts to assess trends in child and youth well-being can be designed. In particular, the construction and analysis of our Index of Child and Youth Well-Being helps to identify major inadequa-

cies and lacunae in the current indicator system for child and youth well-being in the United States. Most obvious is the relative lack of reliable time series data with which to measure trends in the emotional well-being of children, especially adolescents and teenagers. Similarly, our Index would benefit greatly from additional indicators for the social relationships domain of well-being, that is, of the relationships of children to family and friends. And many of the conditions of child and youth well-being tapped by the component indicators of the Index (e.g., the percent of children enrolled in preschool at ages 3–4) give no indication of levels or variations in the quality of the condition measured (e.g., levels and variations in the quality of preschool programs to which young children are subjected). Social indicator analysts, social scientists and statisticians need to begin planning now for building an improved indicator system for child and youth well-being that will, in turn, facilitate improvements in our Index of Child and Youth Well-Being in years to come.

#### NOTES

<sup>1</sup> The research reported in this paper was supported by a grant from the Foundation for Child Development. We thank Don Hernandez, Vonnie McLoyd, Kristen Moore, Ruby Takanishi, and Fasaha Traylor for comments and suggestions on this project as it developed. Thanks also for comments and suggestions received from participants in the Conference on Key Indicators of Child and Youth Well-Being: Completing the Picture sponsored by Child Trends at the National Institutes of Health, Bethesda, Maryland, June 14–15, 2001.

<sup>2</sup> Detailed descriptions of the indicators and graphs of their trends over time are given in the Results section. An appendix table cites the sources for all of the data series on which the indicators are based.

<sup>3</sup> With the exception of the time series on median family income and average test scores from the NAEP, all of the basic indicators identified in Table I are measured either as prevalence rates or as incidence rates. Hence, we refer to the components of Equation (1) as rates.

<sup>4</sup> We also have experimented with the application of other formulas for index construction (e.g., a geometric rather than an arithmetic mean). In general, these other formulas show patterns of over-time changes in overall child and youth well-being that are similar to those reported in the paper from the application of Equation (1). That is, in general, alternative formulas show patterns of stable or declining child and youth well-being through the late-1980s or early-1990s

followed by increases. These patterns could, of course, be changed by the application of an unequally weighted index formula to the seven domains of well-being identified in the text. The only general guidance available on weighting from empirical studies of the quality of life (see, e.g., Haggerty et al., 2001) suggests that the emotional well-being and social relationships domains are of primary importance. Given the trends in the basic indicators described later in the paper, the application of an index formula that gives additional weight to these domains would result in greater declines in the index values through the early-1990s.

<sup>5</sup> Prior to application of Equation (1) to the component time series, each series is reflected so that an increase indicates an improvement and a decrease indicates a deterioration in the condition measured by the indicator. For instance, consider the case of the percent of children living in families with secure parental employment (see Table I). For this time series, an *increase* in the indicator series is indicative of an improvement in the material well-being circumstances of children's lives, which the indicators in the material well-being domain are intended to measure. By contrast, a *decrease* in the infant mortality rate (see Table I) is indicative of an improvement in the health circumstances of children's lives that the indicators in the health domain are intended to measure. Thus, for those time series for which a decline is indicative of an improvement in the series, we first subtract the value observed for the rate in a current year from the value in the base year. Then we compute the ratio of this difference to the value of the rate in the base year and add this ratio to 100 to obtain the percent improvement in the time series relative to the base year.

<sup>6</sup> Observed values for most of the basic social indicator time series identified in Table I are available from the base years through 1998. In a few cases, however, this is not the case. In order to compute the values of our summary indices through 1998, we therefore assumed no changes from the observed values of the most recent year available for those time series. Specifically, we used the 1997 observed values for the single parent poverty rate, the child mortality rates for ages 5–9 and 10–14, the percent of children with very good or excellent health, and the percent with activity limitations. As the observed values of these indicator time series become available, they will be used in the calculation of our summary indices rather than these estimated values. Finally, because the time series for the rate of children with health insurance coverage commences only in 1987, we did not include this indicator in the calculation of the summary indices until 1987.

<sup>7</sup> We use only the overall child poverty rate in our summary well-being indices. However, the family-structure-specific time series shown in Figure 2 are displayed in order to provide further information and to verify that trends exhibited in the population-specific time series are similar to those in the overall poverty rate series.

<sup>8</sup> Bianchi (1996) found that, by the mid-1990s, more unmarried women with dependent children were working than in previous decades. Also, since 1980 non-marital childbearing rates have increased more rapidly for non-teen women compared to that of teens, and, in the 1990s, birth rates for older women have



continued to rise whereas teen rates have been falling (Ventura, Martin, Curtin, Mathews, and Park, 2000). And research using Panel Study in Income Dynamics data indicates that older, single childbearing women are more likely to work before and after giving birth (Foster, Jones, and Hoffman, 1998).

<sup>9</sup> For purposes of our efforts to construct domain-specific summary indices, however, we include the prevalence rate of children with some form of health insurance coverage in the material well-being index, as indicated in Table I. In brief, we treat this basic indicator primarily as an index of the command a child's family has over material resources.

<sup>10</sup> There is a large research literature documenting that many nonresident fathers and their relatives have little or no contact with their children (e.g., Furstenberg and Cherlin, 1991; King, 1994; Mott, 1990; Seltzer and Brandreth, 1994).

<sup>11</sup> Again, only the overall single-parent prevalence rate time series is used in our summary indices of child and youth well-being. But the female- and male-specific rates are included in Figure 5 to provide evidence of consistency of the trends over time in these rates.

<sup>12</sup> Recall that many of the basic indicator time series identified in Table I are available in age-disaggregated form, as, for example, the mortality series exhibited in Figure 6. In the construction of our domain-specific and overall summary indices of child and youth well-being, however, we aggregate the mortality series across all ages 1 to 19 in order not to give extra weight to age-specificity for these series as compared to other series that are available only for broad age groups. Similar comments apply to other basic indicators for which age-specific data are available.

<sup>13</sup> The relationship of the availability of such medical technology to socioeconomic status has been documented by Gortmaker and Wise (1997).

<sup>14</sup> The overweight time series in Figure 8 follow the definition given in the *Trends*' volume (U.S. Department of Health and Human Services, 2000). That is, overweight is defined as a body mass index (BMI) at or above the sex- and race-specific 95th percentile BMI cutoff points calculated at six-month intervals for children ages 6 through 11 from the 1963–1965 National Health Examination Survey (NHES) and for adolescents ages 12 through 17 from the 1966–1970 NHES. Age is at time of examination at mobile examination centers in the NHES. The overweight time series in Figure 8 were linearly interpolated for intervening years from the waves of the NHANES, I (1971–1974), II (1976–1980), and III (1988–1994) and projected from the most recent wave through 1998.

<sup>15</sup> Even taking into account the fact that the scale of the graph does not show the fine detail of changes in the birth rate for the 10–14 age group, the changes are smaller than those for the ages 15–17 group.

<sup>16</sup> Since Presidential elections occur on a four-year cycle, the time series in Figure 12 is interpolated for the intervening years in order to be consistent with the annual time series format of the other indicators in our Index. For the most recent years beyond the 1996 Presidential election (1997 and 1998), we fixed the voting percentage at the level of the last observation – the 1996 election.

<sup>17</sup> The suicide deaths counted in the incident rates of Figure 13 have been subtracted out of the general mortality rates for the corresponding age groups reported above in Figure 6 so that these deaths are not counted twice.

<sup>18</sup> In order to compute numerical values of the international best practice summary index, we use the best practice U.S. values for those indicators in Table II for which comparable data cannot be found for other countries.

<sup>19</sup> We have not been able to disaggregate one indicator, the rate of children and adolescents living in families with incomes below the poverty line, by age below the ages 6 to 17 range. Therefore, in order to capture trends in the poverty rate overtime (which likely are quite similar for the childhood and adolescence/teenage categories), we include this indicator in both the childhood and adolescence/teenage groups of indicators in Table III.

<sup>20</sup> Data limitations prevent us from including two other race/ethnic groups, namely, Native Americans and Asian Americans, in the analyses reported in this section. Almost none of the basic social indicator time series used in constructing our indices are available in annual time series form for these two groups.

<sup>21</sup> The race/ethnic-group-specific domain indices of child and youth well-being are based on 26 of the 28 basic indicator series identified in Table I. Two of the basic indicators are not included due to a lack of race/ethnic specificity. One of these is a subjective health prevalence rate, the prevalence rate of children with very good or excellent health. For violent crime, we include only the offender time series, for which we have rates for blacks and whites; we use the overall rate for Hispanics.

<sup>22</sup> Graphs of the unadjusted domain-specific indices of well-being for both black and Hispanic children/youths exhibit more over-time variability than found in the graphs for white children/youths. This is consistent with the presence of more statistical variability in the data bases (often sample surveys) from these smaller populations. To reduce the year-to-year variability in these indices so that trends can be more easily deciphered, we applied three-year moving averages to the domain-specific and summary indices for black and Hispanic children/youths. The resulting smoothed time series are plotted in Figures 20, 21, and 22.

<sup>23</sup> The data for the disparity indices shown 23, 24, and 25 were smoothed by three-point moving averages (see note 18) in order to reduce erratic fluctuations and enable the analysis of trends over time. In addition, due to its exceptional year-to-year variability, we smoothed one individual component time series for these computations – the residential mobility black-white disparity series. Finally, we smoothed the disparity index for black/white religious attendance by taking a four-year moving average for the 1985 and 1998 years and a five-year average for all of the intervening years. The reason for this is that rate ratio indices are very sensitive to small values for base year rates, which are arbitrary when the choice of base years is arbitrary. In the case of religious attendance, the black/white numerical difference in 1985 is one percent. This difference seemed artificially small compared to differences in other years. Accordingly, we applied the moving average procedure indicated.

APPENDIX  
SOURCES OF DATA FOR TIME SERIES

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1. Child Poverty	US Bureau of the Census, March Current Population Survey, Current Population Reports, Consumer Income, Series P-60, Washington, DC: US Bureau of the Census. <a href="http://www.census.gov/income/histpov/hstpov03.txt">www.census.gov/income/histpov/hstpov03.txt</a> , 1975–present.
2. Secure Parental Employment	US Bureau of Labor Statistics, March Current Population Survey, Washington, DC: US Bureau of the Census. 1980–present. Special tabulation from CPS CD 1975–1979.
3. Single Parent	U.S. Bureau of the Census, Current Population Reports, Marital Status and Living Arrangements, Annual Reports.
4. Median Income	US Bureau of the Census, March Current Population Survey, Historical Income Tables – Families, Washington, DC: US Bureau of the Census. <a href="http://www.census.gov/hhes/income/histinc/f010.html">www.census.gov/hhes/income/histinc/f010.html</a> , 1975–present.
5. Health Insurance	US Bureau of the Census, Housing and Household Economic Statistics Division, unpublished tabulations from the March Current Population Surveys, Washington DC: US Bureau of the Census. Special tabulation by Federal Intragency Forum. 1987–present.
6. Subjective Health	CDC, National Center for Health Statistics, National Health Interview Survey, Hyattsville, MD: National Center for Health Statistics. 1984–present.
7. Low Birth Weight	CDC, National Center for Health Statistics, National Vital Statistics System, Report of Final Natality Statistics, Monthly Vital Statistics Reports (1975–1996), National Vital Statistics Reports (1997–present). Hyattsville, MD: NCHS. <a href="http://www.cdc.gov/nchs">www.cdc.gov/nchs</a> .
8. Infant Mortality	CDC, National Center for Health Statistics, National Vital Statistics System, Monthly Vital Statistics Report (v25–v46), National Vital Statistics Report (v47–v48). Health, United States, 1999 with Health and Aging chart-book. Hyattsville, Maryland: NCHS.

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9. Child and Adolescent Mortality	CDC, National Center for Health Statistics, National Vital Statistics System, special tabulation from Demography Center, Duke University, 1975–present.
10. Teen Births	CDC, National Center for Health Statistics, National Vital Statistics System. Monthly Vital Statistics Reports (1975–1996), National Vital Statistics Reports (1997–present). Hyattsville, MD: National Center for Health Statistics.
11. Smoking, Drinking, Drugs	The Monitoring the Future Study, Institute for Social Research, University of Michigan: Ann Arbor, MI. <a href="http://www.isr.umich.edu/src/mtf/pr98t4.htm">www.isr.umich.edu/src/mtf/pr98t4.htm</a> , (12th Graders: 1975–present, 8th and 10th Graders: 1991–present).
12. Crime Victimization	US Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey & FBI Supplementary Homicide Reports, <a href="http://www.ojp.usdoj.gov/bjs/glance/vage.htm">www.ojp.usdoj.gov/bjs/glance/vage.htm</a> , 1975–present.
13. Violent Crime	US Department of Justice, Bureau of Justice Statistics, <a href="http://www.ojp.usdoj.gov/bjs/glance/offage.htm">www.ojp.usdoj.gov/bjs/glance/offage.htm</a> , 1975–present.
14. Preschool	US Department of Education, National Center for Education Statistics, Preprimary Enrollment & Bureau of the Census, Current Population Survey, <a href="http://nces.ed.gov/pubs99/digest98/d98t046.html">http://nces.ed.gov/pubs99/digest98/d98t046.html</a> , 1975 – present, interpolated years – 76–79.
15. Math Achievement	US Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), Trends in Academic Progress. <a href="http://nces.gov/pubs99/digest98/d98t120.html">http://nces.gov/pubs99/digest98/d98t120.html</a> , 1975–present.
16. Reading Achievement	US Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Trends in Academic Progress. 1975–present, <a href="http://nces.gov/pubs99/digest98/d98t109.html">http://nces.gov/pubs99/digest98/d98t109.html</a> .

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17. High School Completion	US Bureau of the Census, October Current Population Surveys, Washington, DC: US Bureau of the Census. <a href="http://www.census.gov/population/socdemo/school/ta-5.txt">http://www.census.gov/population/socdemo/school/ta-5.txt</a> , 1975–present.
18. Not Working or in School	US Bureau of Labor Statistics, Current Population Surveys, Washington DC: US Bureau of the Census. 1985–present. Special tabulation from CPS CD, 1975–1979.
19. Bachelor's Degree	US Bureau of the Census, March Current Population Surveys, US Department of Education, National Center for Education Statistics. <a href="http://www.census.gov/population/socdemo/school/report97/ta-5.txt">www.census.gov/population/socdemo/school/report97/ta-5.txt</a> , 1975–present.
20. Obesity	National Center for Health Statistics. 1998. Health United States, 1998 with Socioeconomic Status and Health Chartbook. Hyattsville, Md: Table 71. National Health and Nutrition Examination Survey (NHANES I, 1971–1974; NHANES II, 76–80; NHANES III, 88–94).
21. Church Attendance	The Monitoring the Future Study, Institute for Social Research, University of Michigan: Ann Arbor, MI. <a href="http://www.isr.umich.edu/src/mtf/pr98t4.htm">www.isr.umich.edu/src/mtf/pr98t4.htm</a> , (12th Graders: 1975–present).
22. Suicide	CDC, National Center for Health Statistics, National Vital Statistic System. Tabulated data, Table 290. Death Rates for 72 Selected Causes, by 5 year age groups, race, and sex: United States, 1979–Present. <a href="http://www.cdc.gov/nchs/data/291a_1.pdf">http://www.cdc.gov/nchs/data/291a_1.pdf</a> . 1975–1978 – National Vital Statistics Reports.
23. Residential Mobility	US Bureau of the Census, Series P-20, Washington, DC: 1975–1998.
24. Voting	U.S. Bureau of the Census, Current Population Reports, Series P20, No. 253, 293, 322, 344, 370, 405, 414, 453, 466 and PPL24-RV, "Voting and Registration in the Election of November," report series, U.S. Government Printing Office, Washington DC.

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