Footloose and Fancy Free? Two Decades of Single Mothers' Subjective Well-Being
Author(s): Chris M. Herbst
Reviewed work(s):
Source: *Social Service Review*, Vol. 86, No. 2 (June 2012), pp. 189-222
Published by: The University of Chicago Press
Stable URL: http://www.jstor.org/stable/10.1086/666390

Footloose and Fancy Free? Two Decades of Single Mothers' Subjective Well-Being

Chris M. Herbst
Arizona State University

The last several decades witnessed dramatic changes to US tax and transfer programs. Despite an abundance of research evaluating the effect of these work-based policy reforms on single mothers' employment and welfare behavior, little is known about mothers' subjective well-being. Using unique data from the DDB Worldwide Communications Life Style survey, this study examines several dimensions of single mothers' subjective well-being before and after the full implementation of policy reforms, finding that single mothers experience large deficits in most indicators of well-being. However, over the past few decades, these mothers witnessed absolute and relative increases in global life satisfaction, declining regrets about the past, and improvements in financial satisfaction. Nearly all of these gains occurred after implementation of the tax and transfer reforms. In contrast, results from measures of self-reported stress and anxiety suggest that single mothers' condition worsened slightly following the transition to a work-based policy regime.

During the last few decades, US tax and transfer programs shifted to reflect a work-based policy regime. Through the 1988 Family Support Act (102 Stat. 2343), states' welfare waivers in the early and mid-1990s, and the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA; 110 Stat. 2105), successive welfare reform legislation increasingly sought to encourage work and discourage welfare participation. Substantial expansions to the Earned Income Tax Credit (EITC) and child-care subsidies created powerful incentives to enter the labor force, and a series of Medicaid reforms allowed single mothers and their children to retain eligibility for health insurance after leaving welfare.

Although a vast body of research evaluates the effects of these tax and transfer programs on single mothers' work and welfare outcomes (e.g., Meyer and Rosenbaum 2001; Grogger 2003; Fang and Keane 2004;

Social Service Review (June 2012).

0037-7961/2012/8602-0001$10.00

Herbst 2008), comparatively little is known about their influence on single mothers' well-being. This study takes a novel approach, drawing data from surveys on happiness and life satisfaction to consider the evolution of mothers' subjective well-being over the last several decades. Subjective well-being can be conceptualized in numerous ways, but scholars generally agree that these measures tap both the affective (instantaneous) and cognitive (remembered) dimensions of quality of life (Diener 1984; Kahneman and Deaton 2010). Although psychologists have studied subjective well-being for decades, economists and public policy researchers are turning to these measures to understand the ways in which self-reported happiness is influenced by a range of economic and policy phenomena. Yet measures of subjective well-being represent a largely untapped resource for conducting social policy evaluations.

This topic is also of interest because work-based policy reforms are predicted to have conflicting effects on subjective well-being. Tax and transfer programs should influence mothers' health, including their self-reported happiness and life satisfaction, primarily through changes in employment and income. On the one hand, welfare reform and the EITC may discourage time-intensive well-being investments (e.g., exercise and other leisure activities) by creating strong incentives to enter the labor force. If these reforms increase disposable income, single mothers might also shift toward the consumption of health-degrading goods and services, such as fast food and sedentary activities, which may have negative implications for subjective well-being. On the other hand, policy-induced increases in income may enable individuals to consume goods and services that enhance well-being (e.g., health insurance and mental health services). It is also plausible that employment in and of itself increases subjective well-being beyond the income-related benefits of working by conferring psychological benefits in the form of increases in self-esteem and confidence. Such benefits also may reduce the stigma costs associated with long-term unemployment and program participation.

This study has two goals. It begins by painting a descriptive portrait of trends in single mothers' subjective well-being between 1986 and 2005. This provides an opportunity to assess whether mothers' well-being improved, declined, or remained stable during a period in which the US social safety net shifted to reflect a work-first policy regime. The study then attempts to determine whether the observed changes in mothers' well-being can be explained by the introduction of this new regime. To distinguish the effects of policy reforms from other factors (e.g., economic conditions), the empirical strategy is executed in two parts. First, the study examines single mothers' well-being before and after reform to identify changes. It compares these changes to changes experienced over the same period by groups of women minimally affected by the policies. Second, the study examines changes in well-being over the same period for a subsample of low-skilled single mothers, a group that is highly likely to

be influenced by welfare and other social policy reforms. It then compares results from the two models. Finally, to ensure that the results are not confounded by changes in economic conditions, the study incorporates controls for the unemployment rate and state fixed effects. The analyses draw upon novel data from the DDB Worldwide Communications Life Style survey (LSS), which dates back to the mid-1970s, when the advertising agency DDB Needham commissioned a polling firm to inquire about Americans' consumer preferences and habits. The LSS is important for the current study because it contains a standard question on global life satisfaction, as well as several questions on subjective health. These data paint a multidimensional picture of single mothers' quality of life over the past few decades.

Background

The Employment-Based Policy Context

A series of reforms to the welfare system began in 1988 with the passage of the Family Support Act (Fang and Keane 2004; Grogger and Karoly 2005; Herbst 2008). The act's centerpiece was the Job Opportunities and Basic Skills Training program, which required states to fund a mix of work supports and employment activities. Although the law did not impose direct work requirements on single-parent families, it did require states to meet modest program participation rates; for the first time, the Aid to Families with Dependent Children (AFDC) Unemployed Parent program required at least one parent in recipient families to engage in a work activity. In the early-1990s, states began experimenting with more aggressive revisions to their AFDC programs. Between January 1993 and August 1996, 43 states obtained waivers from the Secretary of Health and Human Services to implement changes to existing federal AFDC statutes. Many of the waivers approved the use of strict and broad-based work requirements. Others imposed time limits on benefit receipt and sanctions on families that failed to comply with work requirements.

These incremental changes to the welfare system culminate in PRWORA, which repealed the AFDC program and replaced it with Temporary Assistance for Needy Families (TANF). The 1996 act eliminates the legal entitlement to cash welfare by imposing a 60-month lifetime limit on benefit receipt and requiring individuals to leave welfare for work after 2 years. If TANF-receiving parents are not exempt from work requirements and not complying with them, PRWORA gives states the option to initiate sanctions that eliminate all or part of the family's welfare grant. The law also devolves program and administrative authority to the states. As a result, there is considerable geographic variation in TANF's implementation.

To ease the transition from welfare to work, PRWORA restructures

and expands the patchwork child-care subsidy system, consolidating four preexisting programs into a single Child Care and Development Fund. To be eligible for child-care assistance, families must include a member who is engaged in a state-defined work activity (e.g., employment, education, or job training), have an income below 85 percent of the state median income, and have at least one child between ages 0 and 12. Expenditures on the federal child-care subsidy system grew steadily throughout the early 1990s but exploded after the passage of PRWORA and the creation of the development fund. By 2005, states spent approximately $9.4 billion per year on child-care subsidies and served 1.7 million children per month (Child Care Bureau 2005*a*, 2005*b*).

Expansions to the EITC represent another important change to the work incentives faced by single mothers. Enacted in 1975 (89 Stat. 30, sec. 204), the credit initially provided a 10 percent wage subsidy on earnings up to $4,000. Major reforms in 1986 (100 Stat. 2107, sec. 111), 1990 (104 Stat. 1388–408, sec. 11111), and 1993 (107 Stat. 433) gradually increased the EITC's generosity by raising the subsidy rate to 34 percent for one-child families and 40 percent for multiple-child families. Expenditures on the EITC grew by a factor of 20 between 1986 and 2005, from $2 billion to $39 billion (Tax Policy Center, n.d.). Another important development is the proliferation of state earned income tax credit programs. By 2005, 17 states operated such a program, and annual foregone revenue ranged from $17 million in Vermont to $591 million in New York (Nagle and Johnson 2006).

A final policy shift came through the expansion of Medicaid, which provides medical insurance to low-income families. Prior to the mid-1980s, federal provisions closely linked eligibility for Medicaid with participation in AFDC, but a series of policy changes enabled unmarried women and their children to retain benefits after transitioning to employment. Another important change was enacted in 1990. It required states to cover all poor children born after September 1983, and the states met that benchmark in the early 2000s. Because of such expansions and others, Medicaid expenditures grew by sevenfold between 1986 and 2005, from $25 billion to $182 billion (Office of Management and Budget 2007).

Previous Research on the Effects of Tax and Transfer Reforms

Single mothers and employment.—These policy reforms led to an impressive empirical literature that attempts to explain the relative contribution of each policy change to single mothers' employment growth over the last few decades (Meyer and Rosenbaum 2001; Grogger 2003; Fang and Keane 2004; Looney 2005). A tentative conclusion from this research is that expansions to the EITC explain approximately one-third of this employment growth and that welfare reform is responsible for

another 25 percent. Offerings such as child-care subsidies and Medicaid usually are found to explain less than 10 percent of the observed employment changes. More recent work explores the ways in which social policy interacts with the business cycle. This research attempts to understand changes in single mothers' employment and welfare use following the recessions of 2001 and 2007–9 (Lerman 2005; Herbst 2008; Bitler and Hoynes 2010; Pavetti and Rosenbaum 2010). It generally finds that receipt of food stamps and other noncash benefits has become more sensitive to economic conditions since welfare reform but that participation in welfare (AFDC or TANF) is less sensitive to those conditions. It also appears that the positive employment effects of recent social policy reforms are amplified during periods of economic growth and do not fade substantially during recessions.

Single mothers and income.—A sizable body of work also focuses on the ways in which single mothers' income changed in the wake of welfare and other policy reforms. Early work from state-specific studies of recipients leaving welfare (e.g., US General Accounting Office 1999; Cancian et al. 2000; Danziger et al. 2000) and from studies using nationally representative data (e.g., Primus et al. 1999) tends to find that income among welfare leavers is lower than the income provided by the mix of earnings and welfare benefits prior to welfare exit. Other studies attempt to estimate the causal effect of specific reforms on single mothers' financial well-being (Moffitt 1999; Schoeni and Blank 2000; Grogger 2003; Bollinger, Gonzalez, and Ziliak 2009). Results from this work suggest that welfare waivers and TANF prompt small increases in single mothers' income and modest reductions in their rates of poverty; the EITC expansions led to sizable improvements in their economic well-being. Consistent with this evidence, a recent study finds sizable gains in income and reductions in poverty across most groups of single mothers (Frogner et al. 2009). Following low-income mothers between 1999 and 2005, the study indicates that these changes are particularly sizable among those consistently able to remain off welfare.

Single mothers and material well-being.—A small number of studies focus on such broad measures of material well-being as food insecurity and consumption (e.g., Falk 2000; Jencks and Winship 2002; Meyer and Sullivan 2004, 2006; Kaushal, Gao, and Waldfogel 2007; Slack et al. 2007; Frogner et al. 2009). This work generally finds small reductions in food insecurity and small increases in consumption over time. In particular, the research suggests that welfare reform did not lead to an overall increase in expenditures, but increases in work-related expenses, such as transportation, clothing, and food consumed away from home, are found for the period following welfare reform (1998 to 2003; Kaushal et al. 2007). Consistent with these results, findings from a recent study of five nonexperimental data sets indicate small improvements in some measures of material well-being after welfare reform (Slack et al. 2007).

Finally, Bruce Meyer and James Sullivan (2004) find absolute and relative gains in single mothers' consumption between 1984 and 2000; they note slightly larger increases for mothers at the bottom of the skill and consumption distributions than for those at the top. Although welfare reform's role is unclear, the authors find that relative consumption among low-skilled single mothers increased over 10 percent between 1984 and 2000.

Single mothers, health, and health behaviors.—Highly relevant to the current article is the research into welfare reform's effect on physical health and health-related behaviors. As summarized by Marianne Bitler and Hilary Hoynes (2006), this work tends to emphasize such outcomes as health insurance coverage, alcohol and drug use, and maternal and infant health. Welfare reform is found to reduce rates of health insurance coverage (e.g., Kaestner and Kaushal 2003), though at least one study finds that it does not affect Medicaid use and actually increases participation in private coverage (DeLeire, Levine, and Levy 2006). The evidence on physical health outcomes is more sparse and mixed. For example, Robert Kaestner and Elizabeth Tarlov (2006) find that welfare reform has few effects on mothers' health-related behaviors. Other studies find that it has small negative effects on infant health (Kaestner and Lee 2005) and is associated with reductions in breast feeding (Haider, Jacknowitz, and Schoeni 2003). In a comprehensive study of illicit drug use, drug-related prison admissions, and drug-related treatment admissions in the years following welfare reform, Hope Corman and colleagues (2010) find that health outcomes and behaviors improved after reform.

Single mothers and subjective well-being.—Perhaps the most relevant and most recently developed strand of research answers the call for investigation of well-being outcomes other than those assessed by the traditional economic measures (e.g., Blank 2002; Grogger and Karoly 2005). In particular, a small but growing body of work examines both long-term trends in subjective well-being and the effect of welfare reform on single mothers' subjective well-being, which is assessed by survey questions on happiness and life satisfaction (Ifcher 2011; Ifcher and Zarghamee 2011; Herbst 2012). This work finds that although single mothers are substantially less happy than other groups of women, their happiness increased in absolute and relative terms over the past few decades. In fact, John Ifcher and Homa Zarghamee (2011) report that single mothers are one of the few groups of women to experience happiness gains over time. Finally, evaluations of the 1996 welfare reform legislation find that such policy changes led to sizable improvements in single mothers' happiness (Ifcher 2011; Herbst 2012).[1]

1. A related paper by Rote and Quadagno (2011) finds that although welfare recipients were just as likely as nonrecipients to express depressive symptoms before welfare reform, welfare recipients were more likely to do so in the decade following reform.

Data and Empirical Strategy

The DDB Worldwide Communications Life Style Survey

This study uses data from the DDB Worldwide Communications Life Style survey to examine single mothers' subjective well-being. The advertising agency DDB Worldwide Communications Group (formerly DDB Needham) commissions Market Facts, a commercial polling firm, to conduct the survey on a sample of approximately 3,500 Americans. The survey has been fielded each year since 1975. The questionnaire covers a remarkably diverse set of topics, including consumer behavior, product preferences, recreational activities, and political attitudes. The LSS is important for the current study because it includes a large number of items that measure multiple domains of subjective well-being. These data, along with detailed information on respondents' demographic characteristics, employment experience, and residential location, provide a unique opportunity to study subjective well-being and to conduct policy evaluations.[2]

The LSS has several unique features that distinguish it from the General Social Survey (GSS), the primary data set used to evaluate subjective well-being in the United States. The GSS relies on a single question to measure global happiness, but the LSS contains numerous questions that allow researchers to construct a nuanced and multidimensional picture of subjective well-being.[3] As described below, the LSS covers such issues as global life satisfaction and feelings of regret about the past as well as multiple indicators of physical and mental health. In addition, the LSS has posed all well-being questions in precisely the same manner in each year since 1975, and the data collection procedures have remained stable over time. In contrast, the GSS operated as an annual survey until 1994, after which it became a biennial survey. This change coincides with the implementation of several reforms to tax and transfer programs, making it difficult to conduct policy evaluations. Finally, the LSS is administered through the mail, but the GSS is conducted in face-to-face interviews. The use of mail surveys allows DDB Worldwide to inquire about highly sensitive issues while maintaining anonymity and limiting social desirability bias (Dillman et al. 1996; De Leeuw 2005; Dillman et al. 2009).[4]

2. For an extensive introduction to and evaluation of the LSS, see Groeneman (1994) and Putnam and Yonish (1999). Data from the LSS are held in a proprietary archive, though the 1975–98 surveys are freely available on Robert Putnam's *Bowling Alone* website: http://bowlingalone.com/.

3. Subjective well-being is measured in the GSS with the following question: "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?"

4. In all surveys used to study social policy reforms aimed at disadvantaged populations, a potential concern is that the individuals most affected by the reforms are the least likely to respond to the survey. An advantage of mail-based surveys (relative to face-to-face or

The LSS has several other noteworthy characteristics. Between 1975 and 1985, the survey included only married individuals. This is problematic for a study of single mothers. For consistency in the sampling frame, the study's observation period begins in 1986. Because the LSS underwent a dramatic redesign in 2006, the observation period ends in 2005. In addition, the LSS is based on a form of quota sampling called the mail panel. The process for creating the LSS sample begins when Market Facts invites (by mail) large, representative samples to express a willingness to participate in future mail inquires on consumer habits. From this pool of several hundred thousand individuals, Market Facts then selects a demographically representative sample for the LSS. Approximately 5,000 respondents are mailed a written questionnaire, for which the response rate is consistently between 70 percent and 80 percent.

Given these complex sampling techniques, mail panels in general and the LSS specifically are the subjects of extensive validity tests (e.g., Heberlein and Baumgartner 1978; Groeneman 1994; Visser et al. 1996; Putnam and Yonish 1999; Herbst 2012). Results from these tests indicate that the distribution of demographic characteristics for respondents in the LSS is strikingly similar to that for respondents in the GSS; there also is close agreement in the trends of attitudinal variables common to both surveys and a strong correspondence in the demographic correlates of those attitudinal variables. Such results increase confidence in the validity of these data for undertaking the current analysis.[5]

The analysis sample for this study is created by pooling LSS cross-sections conducted between 1986 and 2005 and by retaining women ages 18–64, regardless of marital status and whether they have children. This enables construction of the group of primary interest (single mothers) as well as two comparison groups: single childless women and married mothers. The group of single mothers includes never-married, separated, divorced, and widowed women.[6] Families with children are coded as such if they include at least one child between the ages of 0 and 17. Although the initial estimates come from samples of women

telephone surveys) is that respondents have substantially greater control over when and the pace at which the survey is completed. Respondents who complete surveys by mail are able to review and complete the instrument at a comfortable pace and with less regard for the amount of time needed to complete it. Thus, mail participants may be less susceptible to the time pressures and cognitive limitations that influence response rates and quality in face-to-face or telephone surveys (Dillman et al. 1996; Dillman et al. 2009).

5. See Herbst (2011) for a comparison of the LSS and GSS samples on demographic and labor market characteristics. With the exception of marital status (married individuals represent a larger share of the LSS's survey sample than that for the GSS), there is a close correspondence in the distribution of sample characteristics across the two surveys.

6. Unfortunately, the marital status categorization in the LSS does not allow one to distinguish more complex family-types, including unmarried women who are cohabitating with a partner. This is a potential limitation of the study, as it seems reasonable that the well-being effects of social policy reforms may differ across cohabiting and noncohabiting women.

from all levels of education, subsamples of women with less than a bachelor's degree and with no more than a high school degree are also explored to capture individuals increasingly likely to be affected by the tax and transfer reforms.[7] The number of observations in the sample varies according to the dependent variable and comparison group used. Sample sizes using single women without children range from 9,248 to 9,281, while those based on married mothers range from 14,919 to 14,950 (n = 3,167 single mothers; n = 6,180 single women without children; n = 11,854 married mothers).

Responses to 10 statements are analyzed for insights into various dimensions of subjective well-being. For conceptual reasons, these statements are organized into two domains: life satisfaction (five items) and physical and mental health (five items). The primary outcome, global life satisfaction, is assessed with a standard measure: "I am very satisfied with the way things are going in my life these days." This is considered a global well-being measure because it captures an evaluation of quality of life over multiple life domains (e.g., work, marriage, and financial situation).[8] Also included in the life satisfaction domain is a domain-specific statement regarding financial satisfaction: "Our family income is high enough to satisfy nearly all our important desires." In the physical and mental health domain, a key outcome is measured by responses to a statement that assesses respondents' overall physical health status: "I am in very good physical condition." Also examined are a number of domain-specific health statements about respondents' quality of sleep, prevalence of headaches, and ability to relax. Respondents are asked to indicate the direction and intensity of their agreement with the statements from both domains. Possible responses range on a six-point scale of from "definitely disagree" (assigned a value of one) to "definitely agree" (assigned a value of 6).[9] The empirical analysis examines the full distribution of ordered responses as well as binary indicators that equal unity for respondents who "definitely disagree" or "definitely agree" with a given statement.

It is important to be clear about what these statements measure and whether they are likely to be valid. Daniel Kahneman, Peter Wakker, and Rakesh Sarin (1997) note that survey-based reports of happiness

7. Multiple education criteria are used because the welfare reform literature is unsettled as to the appropriate education cutoff. Some studies do not use any education cutoff (e.g., Meyer and Rosenbaum 2001; Grogger 2003; Herbst 2008); others examine women with a high school degree or less (e.g., Kaushal and Kaestner 2001); still others experiment with multiple cutoffs (e.g., Bitler, Gelbach, and Hoynes 2005; Bitler and Hoynes 2010).

8. This measure of life satisfaction is fairly close to other standard measures used in the happiness literature. For example, the Eurobarometer survey (European Commission 2010) asks respondents: "On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?"

9. The full set of possible responses includes "definitely disagree" (1), "generally disagree" (2), "moderately disagree" (3), "moderately agree" (4), "generally agree" (5), and "definitely agree" (6).

and life satisfaction capture experienced utility, or the perceived well-being generated by an experience, rather than decision utility, which takes individual choice as the sole indicator of well-being. Consistent with this study's use of multiple well-being measures, Kahneman and Alan Krueger (2006) argue that subjective well-being does not contain a "single, unifying concept that motivates all human choices and registers all relevant feelings and experiences" (4). The validity of subjective well-being measures is suggested by findings that they are highly correlated with one another (Fordyce 1988) and strongly associated with other dimensions of well-being. For example, reports of global happiness and life satisfaction are shown to be correlated with such physical attributes as smiling and laughing as well as with verbal expressions of positive emotion (Frey and Stutzer 2002; Layard 2005). Indicators of physical health, including self-reported health status and sleep quality, also appear to be correlated with subjective well-being (Diener, Lucas, and Scollon 2006). Individuals who rate themselves as happy are rated similarly by friends and family, and they tend to smile and display more positive affect during social interactions. Happy individuals are also less likely to commit suicide (Helliwell 2006; Kahneman and Krueger 2006). Reports of happiness respond to changing life events, even though basic personality traits maintain the stability of happiness (Ehrhardt, Saris, and Veenhoven 2000). Such evidence leads Ed Diener (1984) to conclude that subjective well-being measures contain "substantial amounts of valid variance" (551).

Table 1 provides summary statistics for the subjective well-being measures. Panel A presents summary information for the life satisfaction statements, and panel B summarizes the physical and mental health statements. For ease of interpretation, the figures show the proportion of women who indicate some level of agreement with each statement ("definitely agree," "generally agree," or "moderately agree"). In general, single mothers indicate that they experience larger gaps in subjective well-being than their single childless and married counterparts do. Approximately 46 percent of single mothers indicate that they are very satisfied with life; 57 percent of single childless women indicate this, as do 69 percent of married mothers. In addition, single mothers are substantially more likely than their counterparts to express regrets about the past: 80 percent agree that they would "do things differently," but this is indicated by 69 percent of single childless women and by 57 percent of married mothers. Single mothers also are less likely to feel optimistic about the future: 32 percent indicate that they "dread the future," but this is indicated by 26 percent of single childless women and by 21 percent of married mothers. Although the three groups are about equal in the proportions claiming they are in very good physical condition (50 percent), large differences emerge in other domains of physical and mental health. Problems with sleep and headaches, for

Table 1

SUMMARY STATISTICS FOR THE SUBJECTIVE WELL-BEING OUTCOMES, 1986–2005

Outcome	Single Mothers (1)	Single Childless Women (2)	Married Mothers (3)
Panel A: life satisfaction:			
"I am very satisfied with the way things are going in my life these days"	.456 (.498)	.571** (.494)	.688** (.463)
"I wish I could leave my present life and do something entirely different"	.567 (.495)	.508** (.499)	.317** (.465)
"If I had my life to live over, I would sure do things differently"	.797 (.401)	.688** (.463)	.567** (.495)
"I dread the future"	.316 (.465)	.261** (.439)	.209** (.406)
"Our family income is high enough to satisfy nearly all our important desires"	.304 (.460)	.463** (.498)	.562** (.496)
Panel B: physical and mental health:			
"I am in very good physical condition"	.499 (.500)	.521* (.499)	.504 (.499)
"I have trouble getting to sleep"	.473 (.499)	.429** (.495)	.348** (.476)
"I get more headaches than most people"	.394 (.488)	.302** (.459)	.339** (.473)
"I wish I knew how to relax"	.585 (.492)	.497** (.500)	.510** (499)
"I feel I am under a great deal of pressure most of the time"	.689 (.462)	.581** (.493)	.602** (.489)

NOTE.—Single mothers comprise the comparison group; standard deviations are presented in parentheses. The figures presented in panel A and panel B show the proportions agreeing (definitely, generally, or moderately) with the statement. For unmarried women with children, n = 3,138–48; n = 6,110–35 for unmarried women without children; n = 11,775–804 for married women with children.

* p ! .05.

** p ! .01.

example, appear to be more prevalent among single mothers than among women in the other groups. Single mothers are more likely to express an inability to relax and feelings of pressure; nearly 70 percent report that they are "under a great deal of pressure most of the time," but this is reported by about 60 percent of counterparts in each of the other groups.

Assessing the Evolution of Single Mothers' Subjective Well-Being

The story emerging from table 1 implies that levels of subjective well-being are lower among single mothers than among single childless

women and married mothers. Recent changes to tax and transfer programs may alter single mothers' well-being in ways that either mitigate or worsen these gaps. However, most of the policy reforms occurred during a period of robust growth in the US economy. Given that subjective well-being exhibits a procyclical fluctuation (e.g., Wolfers 2003), it is important for the purposes of this analysis to be able to distinguish the effect of policy reforms from that of economic conditions.

The analyses attempt to isolate the role of tax and transfer reforms by comparing changes in single mothers' subjective well-being to the changes experienced by single women without children and married women with children (the comparison groups). Although the analyses control explicitly for local labor market conditions, the comparison-group approach should appropriately account for the role of economic shocks in determining single mothers' subjective well-being. It is plausible that women in all three groups are similarly affected by changes in economic conditions but that women in the comparison groups are less likely than single mothers to be influenced by the tax and transfer reforms.[10] As Bruce Meyer and Dan Rosenbaum (2000, 2001) show, all three groups of women participate in comparable labor markets, receive similar wages, and are equally affected by fluctuations in the unemployment rate. They find that such similarities are even more prevalent among subgroups of low-skilled women. Thus, this study's empirical approach compares changes in single mothers' well-being over time to the changes experienced by the comparison groups. It also isolates a subgroup of low-skilled women in each of these three groups, comparing the subgroups on changes experienced over time.

The empirical analysis proceeds in two steps. It begins by investigating trends in subjective well-being for single mothers and the comparison groups between 1986 and 2005. As previously stated, this is intended to provide a descriptive assessment of whether and how mothers' well-being changed during the transition to a work-based social policy regime. To do so, the analyses estimate permutations of the following regression model:

10. There are concerns with both comparison groups' ability to represent the counterfactual to single mothers in an assessment of changes in subjective well-being. Although single childless women are ineligible to receive welfare (AFDC or TANF) and thus are a good comparison group for analysis of the effect of PRWORA, they are eligible for a version of the EITC. This version has a phase-in rate of 7.65 percent, and the maximum credit is substantially smaller than that available under the version for families with children. The EITC is thus less likely to influence subjective well-being among single childless women than among single mothers. Married mothers also are likely to be a valid comparison group because their rates of welfare (AFDC or TANF) participation are extremely low and they represent a nontrivial proportion of EITC recipients. In 2003, e.g., married mothers filing joint tax returns represented 23.5 percent of all EITC recipients (Tax Policy Center, n.d.). Given these concerns, a finding of consistent effects across both comparison groups should help to bolster confidence in the overall results.

$$y_{it} = \beta_0 + \beta_1 \text{single\_children}_t + \beta_2 (\text{single\_children}_t \times \text{trend}) + \beta_3(\text{comparison}_t \times \text{trend}) + \mathbf{D}_{it}'\gamma + \varepsilon_{it}, \quad (1)$$

for $i = 1, \ldots, S$; $t = 1, \ldots, N$, where i indexes individuals and t indexes years. The dependent variable, y_{it}, represents various measures of subjective well-being for the ith woman in year t. Given that the LSS well-being statements employ an ordered response scale, equation (1) is estimated using an ordered probit. The analysis also examines trends in the proportion of women at the top and bottom ends of the well-being distribution by constructing separate binary indicators that equal unity for the response categories "definitely agree" and "definitely disagree." These models are estimated using a linear probability model.

A dummy variable, single_children, equals unity if a given woman is a single mother and zero if she belongs to one of the comparison groups. The term for the single_children × trend interaction represents a linear time trend (divided by 100) for single mothers, and the term for comparison × trend represents a trend (divided by 100) specified for the comparison groups. Finally, $\mathbf{D}'$ represents a vector of exogenous family characteristics, including age, race, and ethnicity, household size, educational attainment, and census region.[11] As previously stated, versions of equation (1) are estimated using the full sample of women as well as subsamples of low-skilled women who have less than a bachelor's degree. In robustness checks, the sample is further constrained to include women with no more than a high school degree. Limiting the sample to low-skilled women is advantageous because it enables the analyses to focus on groups of single mothers who are likely to be affected by the tax and transfer reforms.

The terms β_1, β_2, and β_3 are the parameters of interest in equation (1). To conserve space, the tables only report results for β_2 and β_3. The term β_1 provides an estimate of the average subjective well-being gap between single mothers and women in each of the comparison groups over the period from 1986 to 2005. The term β_2 reports the average annual change in well-being for single mothers, and β_3 reports that for women in the comparison groups. These parameter estimates allow one to examine absolute changes in women's subjective well-being over time. To determine whether single mothers experienced relative improvements or declines in well-being, the author conducts tests of the null hypothesis of the equality of estimated trends for single mothers and the comparison groups. The p-values from these specification tests are reported alongside the trend coefficients.

11. Also included in the model are dummy variables that equal unity to account for missing information in the demographic controls. Summary statistics for all demographic variables are reported in appendix table A1.

Although the results emerging from equation (1) are useful for determining whether single mothers' subjective well-being improved during a period that witnessed dramatic shifts in tax and transfer policy, they do not convincingly link the timing of well-being changes to the implementation of policy reforms. To do so, this study takes advantage of the fact that these reforms phased in throughout the early 1990s and became fully implemented between the mid- and late 1990s. The differential timing in policy implementation enables comparison of the change that occurs in single mothers' well-being from the pre- to the postreform period with the changes that occur over the same period among their childless and married counterparts.

To implement this approach, the study divides the years from 1986 to 2005 into three periods: 1986–90, 1991–95, and 1996–2005 (Meyer and Sullivan 2004). The preceding discussion suggests that the first period (1986–90) is marked by relatively few social policy changes; this study refers to it as the prereform period. The years 1991–95 are characterized by the start of two major EITC expansions, the onset of welfare waivers, and the creation of two child-care subsidy programs. The study refers to these years as the policy phase-in period. In the final period, 1996–2005, welfare reform passed and all states implemented it, the EITC expansions completely phased in, and a new framework began for the provision of child-care assistance. This is referred to as the postreform period.[12]

Using these temporal demarcations, the empirical approach is implemented in the following manner:

$$\begin{aligned} y_{ist} = {} & \beta_0 + \beta_1(\text{single\_children}_t \times \text{prereform}_t) \\ & + \beta_2(\text{single\_children}_t \times \text{phase-in}_t) \\ & + \beta_3(\text{single\_children}_t \times \text{postreform}_t) \\ & + \text{time\_period}_t\mu + \mathbf{D}'_{ist}\gamma + \phi S_{st} + \mu_s + \varepsilon_{ist}, \end{aligned} \tag{2}$$

where y_{ist} once again represents various measures of subjective well-being for the ith woman in state s and year t; single_children is a dummy variable that equals unity if a given woman is a single mother and zero if she belongs to one of the comparison groups; prereform, phase-in, and postreform represent dummy variables for those periods (1986–90, 1991–95, and 1996–2005, respectively); time_period is a vector of period dummy variables; and $\mathbf{D}'$ is a vector of demographic controls. Note that because equation (2) omits the main effect (single_children), the co-

12. The definition of these periods is obviously somewhat arbitrary, and experiments test several alternatives. For example, one alternative extends the phase-in period to include the years 1991–97 and decreases the postreform period to 1998–2005. The results are not statistically significantly different from those reported here.

efficients β_1, β_2, and β_3 capture period-specific subjective well-being gaps between single mothers and women in each comparison group. Therefore, differences among these coefficients render the relative change over time in single mothers' subjective well-being. There are two comparisons of interest. The comparison between β_1 and β_2 shows the relative well-being change throughout the policy phase-in period; that between β_1 and β_3 shows the relative well-being change after the full implementation of the tax and transfer reforms. As with equation (1), equation (2) is estimated on the full sample of women as well as on subsamples of low-skilled women.

Although the identification strategy relies primarily on the comparison-group approach to produce unbiased estimates for each policy period, several additional steps are taken to mitigate the influence of omitted variables. A chief concern is that the strong economy throughout the 1990s could be partially responsible for the observed changes in single mothers' subjective well-being. Therefore, the average annual state-level unemployment rate (S) is included in equation (2) to control explicitly for local labor market conditions. However, there might be other unobserved time-invariant differences across states. So too, there might be time-varying shocks to all states, and these shocks might be temporally commingled with the implementation of the tax and transfer reforms. For example, states' social policy choices may reflect persistent local attitudes toward disadvantaged families or, alternatively, they could reflect evolving national views that the role of policy is to inculcate a work ethic among public assistance recipients. To guard against these and other omitted factors, the estimated models include period fixed effects (time_period) to capture period-specific unobservables affecting all states. The models also include state fixed effects (μ) to capture permanent differences that occur across states and that may influence subjective well-being.

It is important to note that this strategy does not allow the effect of individual policy reforms to emerge. The periods under investigation are marked by a large number of policy reforms implemented more or less simultaneously. Disentangling the effect of each is an extremely difficult task. It is made even more difficult by the need to account for the robust economy throughout the 1990s. The approach outlined here attempts to uncover the bundled effects of these policy reforms in a way that purges the confounding effects of macroeconomic conditions.

Estimation Results

The main results for this analysis are presented in tables 2–6. Specifically, table 2 presents trends (from eq. [1]) in responses to the global measure of life satisfaction; table 3 shows the analogous results for the remaining outcomes in the life satisfaction domain as well as those in the physical

Table 2

TRENDS IN GLOBAL LIFE SATISFACTION FOR SINGLE MOTHERS, 1986–2005

	Comparison Group					
	Single Childless Women			Married Mothers		
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: full sample:						
Single mothers × trend	.321	−.019	.323*	.600*	.039	.373**
	(.301)	(.071)	(.123)	(.283)	(.063)	(.124)
Comparison group × trend	.155	.018	.057	.036	.061	.023
	(.197)	(.063)	(.078)	(.146)	(.062)	(.037)
Equality of trends (*p*-value)	.140	.985	.060	.015	.796	.012
Panel B: low-skilled sample:						
Single mothers × trend	.550*	.041	.386**	.749**	.066	.427**
	(.272)	(.088)	(.120)	(.259)	(.082)	(.124)
Comparison group × trend	.346	.036	.045	.079	.095	.025
	(.253)	(.081)	(.091)	(.171)	(.075)	(.048)
Equality of trends (*p*-value)	.007	.506	.005	.015	.779	.003
Dependent variable	FI	DA	DD	FI	DA	DD
Estimation method	OP	OLS	OLS	OP	OLS	OLS

NOTE.—FI = full index; DA = participant response is "definitely agree"; DD = participant response is "definitely disagree"; OLS = ordinary least squares regression; OP = ordered probit. Dependent variable is response to "I am very satisfied with the way things are going in my life these days." Standard errors, shown in parentheses, are adjusted for clustering by year. The dependent variable in cols. 1 and 4 is a continuous measure ranging from 1 ("definitely disagree") to 6 ("definitely agree"). The dependent variable in cols. 2 and 5 is binary indicator for "definitely agree" with the life satisfaction statement. The dependent variable in cols. 3 and 6 is binary indicator for "definitely disagree" with the life satisfaction statement. The low-skilled subsample in panel B is composed of women with some college or less education. The specification tests are of the null hypothesis of the equality of the trend coefficients (with the *p*-value shown).

* $p < .05$.

** $p < .01$.

and mental health domain; table 4 provides a descriptive portrait of the relative change in well-being between the prereform and postreform periods; tables 5 and 6 show the regression-adjusted changes (from eq. [2]). Table 5 focuses on the global measure of life satisfaction, and table 6 considers the remaining well-being outcomes.

Trends in Single Mothers' Subjective Well-Being

The global measure of life satisfaction.—Table 2 provides a comparison of trends in responses to the global measure of life satisfaction. Columns 1–3 present results from comparisons between single mothers and single childless women; columns 4–6 present results from comparisons between single mothers and married mothers. Panel A presents estimates

of life satisfaction trends for the full sample of women; panel B presents estimates of the trends for the low-skilled subsample. The life satisfaction trends are explored first and in isolation because they stem from the most commonly studied subjective well-being measures in the happiness literature. Because those measures focus on global as opposed to domain-specific well-being, the results represent a powerful marker of overall quality of life.

The results suggest that there is robust evidence of absolute and relative gains in single mothers' self-reported global life satisfaction over the period between 1986 and 2005.[13] In panel A, similar qualitative findings emerge irrespective of the comparison group, but the results appear to be stronger in the married mothers' sample. The results for the full life-satisfaction index (cols. 1 and 4) suggest that single mothers experience an absolute upward trend in global well-being, though single childless women and married mothers experience downward trends. Estimates from the separate trend analyses at the top (cols. 2 and 5) and bottom (cols. 3 and 6) ends of the well-being distribution indicate that the improvement in single mothers' overall well-being is driven by gains among those who report that they are the least satisfied with life. Indeed, the proportion of single mothers who definitely disagree that they are very satisfied with life is estimated to decline over the study period, and the change is statistically significant; the proportion of mothers who definitely agree remains stable. In three of the six models in panel A, the specification test rejects the null hypothesis of equal trend coefficients across single mothers and the comparison groups. This suggests a relative improvement in global life satisfaction among single mothers.

Constraining the sample to low-skilled women is estimated to increase the magnitude of single mothers' time trend coefficients. Estimates for the full life satisfaction index (cols. 1 and 4 of panel B) show statistically significant absolute increases in well-being among low-skilled single mothers, and the trend coefficients are substantially larger in magnitude than those from the full sample. This pattern is an initial piece of evidence that the tax and transfer reforms are at least partially responsible for the observed improvements in perceived well-being. Once again, well-being among single childless women and married mothers is estimated to decline over the study period, though the trend coefficients are imprecisely estimated. Also mirroring the full sample results

13. Consistent with the descriptive evidence presented in table 1, the estimated subjective well-being gap between single mothers and comparison groups (β_1) is fairly large and highly statistically significant. For example, the coefficient on β_1 from the model represented in panel A, col. 1, is $-.16$ (p ! .01), and the analogous coefficient in panel A, col. 4, is $-.56$ (p ! .01). These estimates suggest that single mothers' scores on the life satisfaction measure are .16 standard deviations lower than those among their single childless counterparts and .56 standard deviations lower than those among married mothers.

Table 3

TRENDS IN AUXILIARY MEASURES OF SUBJECTIVE WELL-BEING, 1986–2005, LOW-SKILLED SAMPLE

SUBJECTIVE WELL-BEING OUTCOME	SINGLE CHILDLESS WOMEN			MARRIED MOTHERS		
	Single Mothers × Trend	Comparison Group × Trend	p	Single Mothers × Trend	Comparison Group × Trend	p
Panel A: proxies for life satisfaction:						
"I wish I could leave my present life and do something entirely different"	−.314 (.270)	.869** (.234)	.010	−.503^{+} (.276)	−.539** (.155)	.914
"If I had my life to live over, I would sure do things differently"	−.675* (.344)	.960** (.258)	.000	−.940** (.348)	.448** (.157)	.000
"I dread the future"	−1.413** (.429)	−.460 (.311)	.075	−1.500** (.500)	−1.245** (.351)	.549
"Our family income is high enough to satisfy nearly all our important desires"	1.392** (.260)	−.376 (.290)	.000	1.697** (.217)	−.480* (.221)	.000
Panel B: physical and mental health:						
"I am in very good physical condition"	−1.401** (.391)	−1.823** (.267)	.245	−1.478** (.408)	−1.745** (.291)	.454
"I have trouble getting to sleep"	2.065** (.305)	1.981** (.395)	.806	2.175** (.269)	1.927** (.228)	.404
"I get more headaches than most people"	.977* (.388)	1.201** (.222)	.625	1.028** (.398)	.507^{+} (.271)	.265
"I wish I knew how to relax"	1.260** (.344)	.436 (.271)	.072	1.149** (.366)	.864** (.210)	.450
"I feel I am under a great deal of pressure most of the time"	.156 (.440)	.280 (.295)	.792	.131 (.428)	.266 (.235)	.727

NOTE.—Standard errors, shown in parentheses, are adjusted for clustering by year. The dependent variable is a continuous measure ranging from 1 ("definitely disagree") to 6 ("definitely agree"). All models are estimated using an ordered probit. The specification tests are of the null hypothesis of the equality of the trend coefficients (with the p-value shown).

$^{+}$ p ! .10.

* p ! .05.

** p ! .01.

is the finding that the least-happy single mothers witness the largest well-being improvements over time. In four of the six models in panel B, results from the specification test reject the null hypothesis that trend coefficients will be equal across single mothers and the comparison groups. This implies once again that global life satisfaction improves among single mothers over the study period.

Auxiliary life satisfaction and physical and mental health outcomes.—Table 3 shows the analogous trend results for the remaining outcomes in the life satisfaction domain (panel A) and the full set of results in the domain for physical and mental health (panel B). The remaining life satisfaction outcomes are interesting because they cover domain-specific areas of subjective well-being. They also offer an opportunity to check the robustness of the results for global life satisfaction trends.[14] For ease of presentation, the only trend results shown are from the full, ordered outcome measures and the subsample of low-skilled women.

The picture emerging from table 3 is that low-skilled single mothers experience absolute and relative gains in the proxy measures of life satisfaction over the study period. Specifically, such women are estimated to experience reductions in regrets about the past ("If I had my life to live over, I would sure do things differently"), increases in optimism about the future ("I dread the future"), and large improvements in self-reported financial satisfaction ("Our family income is high enough to satisfy nearly all our important desires"). In most cases, well-being appears to decline among the low-skilled subsamples of single childless women and married mothers.

The story changes somewhat if physical and mental health trends are examined. Between 1986 and 2005, low-skilled single mothers experienced absolute declines in self-reported physical condition ("I am in very good physical condition"), increases in the prevalence of sleep problems ("I have trouble getting to sleep") and headaches ("I get more headaches than most people"), as well as a growing inability to relax ("I wish I knew how to relax"). However, the comparable estimates for single childless women and married mothers identify similar slippages in physical and mental health. Such results imply that the trends for single mothers reflect long-term health developments in the broader female population. Indeed, the results suggest an absolute decline in single mothers' health across four of the five indicators but a relative decline in only one domain ("I wish I know how to relax"). None of

14. The measure of global life satisfaction is strongly correlated with the remaining outcomes in the life satisfaction domain. Coefficients for the correlations among all women (single mothers, single childless women, and married mothers) in the low-skilled subsample are −.44 ("I wish I could leave my present life and do something entirely different"), −.36 ("If I had my life to live over, I would sure do things differently"), −.28 ("I dread the future"), and .47 ("Our family income is high enough to satisfy nearly all our important desires").

the estimates identifies an absolute or relative health improvement among single mothers.

In sum, these results imply that single mothers made important absolute and relative progress in the area of life satisfaction between 1986 and 2005, but they remained stagnant or fell slightly behind other groups of women in the health domain. Although most of the life satisfaction gains appear to be concentrated among low-skilled single mothers, little evidence suggests that the health reductions disproportionately affect these mothers.

Relative Changes in Single Mothers' Subjective Well-Being

To assess whether recent tax and transfer reforms are responsible for the observed trends in single mothers' subjective well-being, the analyses compare raw (unadjusted) differences between single mothers and women in each of the comparison groups across the pre- and postreform periods. For ease of presentation, these differences are calculated using only the low-skilled sample. In table 4, column 1 displays the proportions of low-skilled subsample members reporting agreement with the given statements in the prereform period. Column 2 shows differences between the prereform proportions for single mothers and those for the comparison groups. Those differences are described as the well-being gap. Columns 3 and 4 present the analogous results for the postreform period. Column 5 displays the differential change in well-being between the pre- and postreform periods (i.e., the difference between cols. 2 and 4). The figures in this column are equivalent to raw difference-in-differences estimates of the effect of tax and transfer reforms on the subjective well-being of single mothers.

In general, results from this exercise mirror the story emerging from the trend analysis: single mothers appear to make considerable gains in life satisfaction but experience little or no change in physical and mental health. For example, fully 44 percent of single mothers indicated in the prereform period that they are very satisfied with life; 55 percent of single childless women report this, as do 68 percent of married mothers. These differences translate to sizable well-being deficits: single mothers are 10–24 percentage points less likely than the comparison groups to report life satisfaction (col. 2 of table 4). However, the well-being gap declines in the postreform period; the likelihood that single mothers express life satisfaction is estimated to be 8 percentage points lower than that for single childless women and 21 percentage points lower than that for married mothers. The changing differences imply that single mothers experience a relative improvement of 2.4 percentage points in global life satisfaction between the pre- and postreform periods (col. 5). Similar improvements are found for the other life satisfaction outcomes.

Table 4

RELATIVE CHANGES IN SINGLE MOTHERS' SUBJECTIVE WELL-BEING BETWEEN 1986–90 AND 1996–2005: UNADJUSTED DIFFERENCES, LOW-SKILLED SUBSAMPLE

Outcome	1986–90 (1)	Difference (2)	1996–2005 (3)	Difference (4)	Change (5)
Panel A: life satisfaction (% agree):					
"I am very satisfied with the way things are going in my life these days":					
Single mothers	.443		.443		
Single childless women	.546	−.103	.522	−.079	.024
Married mothers	.679	−.236	.655	−.212	.024
"I wish I could leave my present life and do something entirely different":					
Single mothers	.576		.576		
Single childless women	.514	.061	.565	.011	−.050
Married mothers	.355	.220	.324	.251	.031
"If I had my life to live over, I would sure do things differently":					
Single mothers	.807		.802		
Single childless women	.692	.114	.760	.042	−.072
Married mothers	.587	.219	.608	.193	−.026
"I dread the future":					
Single mothers	.335		.298		
Single childless women	.310	.024	.299	−.001	−.025
Married mothers	.261	.073	.208	.089	.016
"Our family income is high enough to satisfy nearly all our important desires":					
Single mothers	.257		.288		
Single childless women	.432	−.174	.394	−.105	.069
Married mothers	.518	−.260	.503	−.214	.046
Panel B: physical and mental health (% agree):					
"I am in very good physical condition":					
Single mothers	.543		.463		
Single childless women	.554	−.010	.465	−.001	.009
Married mothers	.553	−.010	.433	.030	.040
"I have trouble getting to sleep":					
Single mothers	.445		.525		
Single childless women	.423	.022	.514	.011	−.011
Married mothers	.344	.101	.426	.099	−.002
"I get more headaches than most people":					
Single mothers	.378		.422		
Single childless women	.289	.088	.331	.091	.003
Married mothers	.356	.021	.363	.059	.038
"I wish I knew how to relax":					
Single mothers	.582		.627		
Single childless women	.542	.039	.537	.089	.050
Married mothers	.519	.062	.547	.079	.017
"I feel I am under a great deal of pressure most of the time":					
Single mothers	.679		.688		
Single childless women	.576	.103	.580	.107	.004
Married mothers	.591	.087	.594	.093	.006

NOTE.—The figures presented in panels A and B show the proportions agreeing ("definitely," "generally," or "moderately") with the statement. The low-skilled subsample includes women with some college or less education.

Results in panel B of table 4 once again offer mixed evidence concerning the potential effect of tax and transfer reforms on the physical and mental health of low-skilled single mothers. Low-skilled single mothers' self-reported physical health is estimated to improve between the pre- and postreform periods relative to that of their counterparts in the single childless and married mother groups. Indeed, the relative likelihood that low-skilled single mothers are in very good physical condition is estimated to increase between 1 and 4 percentage points over the study period. However, these single mothers appear to become increasingly likely to report problems with headaches. In addition, a proxy for mental stress ("I wish I knew how to relax") suggests that low-skilled single mothers experience a growing inability to relax from the pre- to the postreform period; specifically, the likelihood of mental stress (inability to relax) among low-skilled single mothers in the prereform period is estimated to be 4 percentage points higher than that among their single childless counterparts and 6 percentage points higher than that among their married counterparts. In the postreform period, the likelihood of such stress among low-skilled single mothers is estimated to be 9 percentage points higher than that among the single childless counterparts and 8 percentage points higher than that among the married counterparts. The changing differentials for this health domain imply that, over the study period, there is a 5 percentage-point change in the difference between single mothers and single childless women as well as a 2 percentage-point change in the difference between single and married mothers.

By comparing low-skilled single mothers with low-skilled single, childless women and low-skilled married mothers, the analysis attempts to isolate the effect of social policy reforms, which arguably affect only single mothers, from the effect of exogenous economic shocks, which tend to affect all three groups of women in a similar manner. However, the observed changes in well-being could occur if single mothers or women in one of the comparison groups experienced compositional changes between the pre- and postreform periods. Therefore, it is important to control for women's observable characteristics.

Regression-Adjusted Changes in Subjective Well-Being

Tables 5 and 6 present the regression-adjusted estimates of single mothers' relative well-being changes, as modeled in equation (2). Table 5 focuses on the global measure of life satisfaction. Table 6 examines the remaining outcomes in the life satisfaction domain and the full set of outcomes in the physical and mental health domain. For ease of presentation, only the full, ordered, subjective well-being outcomes are considered, and all models are estimated using an ordered probit. Coefficients can be interpreted as the standard-deviation difference be-

tween single mothers and the comparison group on the well-being outcome within the specified period (Stevenson and Wolfers 2009).[15] In results for the phase-in and postreform periods, coefficients identified with the superscript "a" (and associated standard errors) indicate that a given well-being differential is statistically significantly different (at the 10 percent level or better) from the prereform differential.[16] Those coefficients imply that single mothers' well-being changes over time relative to that of women in the comparison groups.

The global measure of life satisfaction.—In table 5, columns 1–3 use single childless women as the comparison group, and columns 4–6 use married mothers as the comparison group. For each comparison group, panel A shows results from the full sample and panel B shows those from the low-skilled subsample. Columns 1 and 4 present the baseline results. Results in columns 2 and 5 stem from a model that controls for the state-level unemployment rate. Those in columns 3 and 6 come from models that control for the unemployment rate as well as state fixed effects. Because the addition of these controls does not change the results to a statistically significant degree, the discussion focuses on the richest specification (cols. 3 and 6).

The regression-adjusted global life satisfaction estimates are qualitatively similar to the raw differences presented in table 4. Single mothers reportedly experience sizable life satisfaction deficits throughout the prereform period, and these deficits increase in magnitude if the sample is constrained to low-skilled women. On the life satisfaction index, low-skilled single mothers are estimated to score .17 standard deviations below single childless women (panel B, col. 3) and .57 standard deviations below married mothers (panel B, col. 6). Furthermore, these results suggest that the well-being differences remain largely fixed throughout the policy phase-in period; low-skilled single mothers score .16 standard deviations lower than single childless women and .50 standard deviations lower than married mothers.

Results for the postreform period suggest marked improvement in single mothers' global life satisfaction after full implementation of the tax and transfer reforms. The life-satisfaction gap between low-skilled single mothers and their single childless counterparts almost fully closes, and low-skilled single mothers make substantial progress relative to their married counterparts. Specifically, the life satisfaction gap between low-skilled single mothers and their single childless counterparts is estimated

15. The ordered probit yields coefficients derived from a latent, standard, normal well-being index, and the results are conditional on the covariates. Specification checks first standardize the well-being indexes to have a mean of zero and a standard deviation of unity. The models are then reestimated using ordinary least-squares regression. These results are virtually identical to those reported here.

16. That is, two specification tests are conducted: null hypothesis: single mother × (1986–90) − single mother × (1991–95) = 0; null hypothesis: single mother × (1986–90) − single mother × (1996–2005) = 0.

Table 5

Regression-Adjusted Relative Changes in Single Mothers' Global Life Satisfaction

	Comparison Group					
	Single Childless Women			Married Mothers		
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: full sample:						
Single mother × prereform	−.129** (.048)	−.132** (.048)	−.133** (.045)	.558** (.031)	−.558** (.030)	−.557** (.030)
Single mother × phase-in	−.160** (.048)	−.159** (.048)	−.166** (.047)	.505** (.057)	−.504** (.057)	−.509** (.056)
Single mother × postreform	−.088* (.036)	−.088* (.036)	−.089* (.035)	.460[a,]** (.025)	−.460[a,]** (.025)	−.463[a,]* (.025)
Panel B: low-skilled sample:						
Single mother × prereform	−.169** (.060)	−.170** (.059)	−.172** (.054)	−.574** (.039)	−.574** (.039)	−.573** (.039)
Single mother × phase-in	−.154** (.051)	−.153** (.051)	−.155** (.049)	−.490** (.059)	−.490** (.059)	−.496** (.059)
Single mother × postreform	−.068[a,]+ (.035)	−.068[a,]* (.035)	−.066[a,]+ (.035)	−.448[a,]** (.034)	−.448[a,]** (.034)	−.450[a,]** (.035)
Demographic covariates	Yes	Yes	Yes	Yes	Yes	Yes
State unemployment rate	No	Yes	Yes	No	Yes	Yes
State fixed effects	No	No	Yes	No	No	Yes

Note.—Dependent variable is response to "I am very satisfied with the way things are going in my life these days." Standard errors, shown in parentheses, are adjusted for clustering by year. All models are estimated using an ordered probit. Cols. 1–3 use single women without children as the comparison group; cols. 4–6 use married women with children as the comparison group. The low-skilled sample in panel B is defined to include women with some college education or less. All models include dummy variables for two periods: 1991–95 and 1996–2005. The census region dummy variables are excluded from the model in cols. 3 and 6 and are replaced by state fixed effects. Two specification tests are conducted: null hypothesis: single mother × (1986–90) − single mother × (1991–95) = 0; null hypothesis: single mother × (1986–90) − single mother × (1996–2005) = 0.

[a] The null hypothesis of the equality of the period-specific coefficients is rejected at the 10% level or better.

+ p ! .10.

* p ! .05.

** p ! .01.

to decline to .07 standard deviations; that between low-skilled single mothers and their married counterparts declines to .45 standard deviations. The coefficients marked with the superscript "a" (and associated standard errors) suggest that life satisfaction improves among single mothers between the pre- and postreform periods: the life satisfaction gap between low-skilled single mothers and their single childless counterparts is estimated to decline by approximately 60 percent; that between low-skilled single mothers and their married counterparts declines by about 22 percent.

Auxiliary life satisfaction and physical and mental health outcomes.—Table 6 shows the analogous results for the remaining outcomes in the life satisfaction domain (panel A) and the full set of results in the physical and mental health domain (panel B). For ease of presentation, the table only presents results from the analysis of the full ordered outcome measures for the subsample of low-skilled women. All models include the controls for the state-level unemployment rate and state fixed effects.

Largely positive findings also emerge for the remaining measures in the life satisfaction domain. In particular, results for the postreform period suggest that low-skilled single mothers are statistically significantly less likely than women in either comparison group to express regrets about the past ("If I had my life to live over, I would sure do things differently"). For this measure, the well-being gap between low-skilled single mothers and single childless counterparts is estimated to decline by 90 percent (from .19 to .02 standard deviations); that between low-skilled single mothers and married counterparts declines by 24 percent (from .57 to .43 standard deviations). In addition, low-skilled single mothers make progress in self-reported financial satisfaction. The financial well-being deficit between these mothers and single childless counterparts is estimated to decline by about 50 percent (from .49 to .23 standard deviations). That between low-skilled single mothers and their married counterparts declines by 25 percent (from .75 to .47 standard deviations).

Results for measures of physical and mental health are also consistent with the raw differences presented in table 4. Low-skilled single mothers are estimated to experience small but statistically nonsignificant reductions in the gap between their health and that of counterparts in each comparison group. For both sleep quality and frequency of headaches, the well-being gap between low-skilled single mothers and their married counterparts is estimated to increase between the pre- and postreform periods. However, neither change in these gaps is estimated to be statistically significant. Mental health is the one domain in which single mothers appear to lose considerable ground. It is captured by the indexes that measure the respondent's inability to relax and the self-reported feelings of pressure. In the prereform period, low-skilled single mothers scored .01 standard deviations below their single childless coun-

Table 6

Regression-Adjusted Relative Changes in Measures of Single Mothers' Subjective Well-Being, Low-Skilled Sample

Subjective Well-Being Outcome	Comparison Group	
	Single Childless Women	Married Mothers
Panel A: proxies for life satisfaction:		
"I wish I could leave my present life and do something entirely different":		
Single mother × prereform	.029 (.053)	.493** (.030)
Single mother × phase-in	−.003 (.024)	.527** (.030)
Single mother × postreform	−.083[a] (.051)	.534** (.039)
"If I had my life to live over, I would sure do things differently":		
Single mother × prereform	.190** (.073)	.568** (.057)
Single mother × phase-in	.188* (.084)	.507** (.063)
Single mother × postreform	.019[a] (.040)	.430[a,]** (.039)
"I dread the future":		
Single mother × prereform	.035 (.077)	.204** (.057)
Single mother × phase-in	.134** (.044)	.271** (.048)
Single mother × postreform	−.037 (.046)	.205** (.032)
"Our family income is high enough to satisfy nearly all our important desires":		
Single mother × prereform	−.489** (.065)	−.749** (.040)
Single mother × phase-in	−.259[a,]** (.043)	−.580[a,]** (.031)
Single mother × postreform	−.232[a,]** (.037)	−.470[a,]** (.035)
Panel B: physical and mental health:		
"I am in very good physical condition":		
Single mother × prereform	−.031 (.037)	−.069* (.031)
Single mother × phase-in	−.024 (.066)	−.049 (.079)
Single mother × postreform	.018 (.040)	−.026 (.033)
"I have trouble getting to sleep":		
Single mother × prereform	−.051 (.056)	.157** (.050)
Single mother × phase-in	.000 (.051)	.190** (.044)
Single mother × postreform	−.037 (.030)	.192** (.019)
"I get more headaches than most people":		
Single mother × prereform	.055 (.068)	.082[+] (.048)
Single mother × phase-in	.030 (.050)	.108* (.043)
Single mother × postreform	.030 (.037)	.158** (.036)
"I wish I knew how to relax":		
Single mother × prereform	−.011 (.045)	.142** (.041)
Single mother × phase-in	.167[a,]** (.039)	.196** (.031)
Single mother × postreform	.133[a,]** (.044)	.193** (.031)
"I feel I am under a great deal of pressure most of the time":		
Single mother × prereform	.130* (.066)	.316** (.051)
Single mother × phase-in	.312[a,]** (.033)	.398** (.029)
Single mother × postreform	.164** (.042)	.303** (.029)

Table 6 (*Continued*)

Subjective Well-Being Outcome	Comparison Group	
	Single Childless Women	Married Mothers
Demographic covariates	Yes	Yes
State unemployment rate	Yes	Yes
State fixed effects	Yes	Yes

Note.—Standard errors, shown in parentheses, are adjusted for clustering by year. All models are estimated using an ordered probit on the low-skilled sample (some college education or less). All models include dummy variables for the periods 1991–95 and 1996–2005 as well as state fixed effects. Two specification tests are conducted: null hypothesis: single mother × (1986–90) − single mother × (1991–95) = 0; null hypothesis: single mother × (1986–90) − single mother × (1996–2005) = 0.

[a] The null hypothesis of the equality of the period-specific coefficients is rejected at the 10% level or better.

$^{+}$ p ! .10.

* p ! .05.

** p ! .01.

terparts on the statement, "I wish I knew how to relax." Throughout the postreform period, however, these mothers scored .13 standard deviations higher than the single childless counterparts. A similar pattern emerges for the statement, "I feel I am under a great deal of pressure most of the time," though the changes over time are not as large nor as precisely estimated as those that tap the inability to relax.

Specification Checks

Several specification checks are modeled to ensure the robustness of the main results. The results are not reported in the tables, but all findings discussed here are available from the author upon request.

Recall that the main results are based on samples of women (married, unmarried, with children, and without them) who are between the ages of 18 and 64 and have less than a bachelor's degree. The first set of robustness checks runs the model on slightly different versions of the analysis sample and uses a more restrictive educational criterion: women with a high school degree or less. Doing so enables analysis of the effect of trends (eq. [1]) and time period (eq. [2]) on a group of women who are more likely than members of the main sample to receive means-tested assistance. If the main results are in fact due to recent changes in tax and transfer programs, estimates from this specification should be similar to or larger than the main results. Results from this exercise conform to this expectation. In the second set, the age criterion is adjusted to include only those women between ages 18 and 45. Given that low-skilled women in this age range are particularly likely to receive means-tested assistance, estimates from this sample should also be larger

than the main results.[17] Once again, the estimates produce evidence in favor of this pattern.[18]

Given that both sets of analyses are conducted over a 20-year period, another concern is the presence of differential changes in the characteristics of treatment and comparison group women. For example, single mothers over the last 2 decades became more likely to be classified as never-married than as divorced, separated, or widowed, and never-married women became more likely to obtain higher levels of education (Herbst 2008). If left unaccounted for, such compositional changes might confound the estimated effect of each policy reform time period. To mitigate the potential bias from unobserved compositional changes, the study estimates versions of equations (1) and (2) that include dummy variables for the cohort (i.e., year of birth).[19] In a further specification check, the cohort dummies are interacted with the term single_children and the controls for educational attainment. Together, these controls should capture the unobserved, cohort-specific determinants of subjective well-being that vary across the treatment and comparison groups. The results are robust to the inclusion of these additional controls.

The subjective well-being trends presented in tables 2 and 3 come from a linear parameterization. Modeling well-being trends in a purely linear framework may be too restrictive in analysis of a 20-year period. Therefore, the models are estimated with a quadratic in the time trend. The coefficient estimates consistently suggest that single mothers experienced declines in life satisfaction and health at a rapidly decreasing rate over time. The linear and quadratic trends are usually statistically significant for single mothers. Such findings are broadly consistent with the positive well-being changes that emerge in the postreform periods. The quadratic trends for single childless women and married mothers are usually statistically nonsignificant. This suggests that their well-being trends linearly (downward) between 1986 and 2005.

Finally, it is possible that the estimates reported in tables 5 and 6 are sensitive to the definitions used for the prereform, phase-in, and postreform periods. For example, the postreform period is defined to start in 1996, but only 24 states implemented their TANF plans in that year.

17. Placing this age restriction on the analysis sample also serves as an additional control for the effect of age on subjective well-being. Controlling for the effect is important given the large differences in age across the treatment and comparison groups. The author thanks an anonymous referee for suggesting this robustness check.

18. In a further specification check, both sample constraints (women with a high school degree or less and ages 18–45) are tested simultaneously. Results based on this sample are even stronger (i.e., single mothers reveal greater absolute and relative gains in subjective well-being) than those from the separate sample constraints.

19. A set of five dummy variables is created to indicate 10-year increments (approximately) in year of birth. The earliest cohort of sample members was born between 1922 and 1939; the latest cohort was born between 1970 and 1985. The cohorts in the intervening period are sorted in 10-year increments.

Another 26 states implemented TANF in 1997, and one state (California) did so in 1998 (Grogger and Karoly 2005). To test whether changes in the definitions of phase-in and postreform periods affect the results, an additional model defines the postreform period as starting in 1997 and another defines it as starting in 1998. Results from these models are qualitatively similar to those presented here. If anything, starting the postreform period in 1997 or 1998 tends to accentuate the positive life satisfaction results and diminish the negative physical and mental health results.

Discussion

The last several decades witnessed important changes to US tax and transfer programs. Although the specific policy tool and mode of administration differ dramatically across these reforms, each one seeks to encourage work and discourage welfare participation among single mothers. Indeed, a substantial empirical literature finds that welfare reform and the EITC, in particular, account for much of mothers' employment growth throughout the 1990s. In addition, a number of studies find increases in earnings, income, and consumption among some groups of single mothers. Nevertheless, researchers largely ignore the effect of recent policy changes on subjective well-being. This study therefore conducts a comprehensive analysis of single mothers' subjective well-being over the last several decades.

The results of this analysis can be summarized as follows. Across most domains of subjective well-being, single mothers experienced substantial well-being gaps between 1986 and 2005. The gaps are larger than those experienced by their single childless and married mother counterparts. However, single mothers make progress in closing these gaps, especially in the domain of global life satisfaction. The results suggest that most of the improvement in relative well-being comes after 1996, when welfare reform and the EITC expansions of the mid-1990s became fully implemented. Overall, the results indicate that low-skilled single mothers' global life satisfaction gap declines approximately 60 percent relative to low-skilled single, childless women and about 22 percent relative to low-skilled married mothers. These positive developments are somewhat lessened by results from measures of physical and mental health. Those estimates suggest that single mothers make no progress over the study period or experience declines relative to the comparison groups. Estimates from the three measures of physical health (self-reported physical condition, sleep quality, and prevalence of headaches) show little change from the pre- to the postreform period, but results from the measures of mental health (inability to relax and feelings of pressure) suggest that single mothers' condition worsens slightly after full implementation of the tax and transfer reforms.

Are these results consistent with the theoretical mechanisms through which tax and transfer programs are expected to influence disadvantaged mothers' subjective well-being? The passage of employment-based policies, such as welfare reform, the EITC, and child-care subsidies, is predicted to increase the opportunity costs associated with leisure time. As a result, the price of engaging in healthy behaviors, especially those demanding substantial time investments (e.g., exercise and the home production of meals), is predicted to rise. Such a rise in the time price of leisure is expected to delay healthy habits or lead to permanent behavioral changes that could reduce subjective well-being. There are, however, a number of potential employment-related benefits associated with these policy reforms. For example, increased access to high-quality health insurance options may offset some of the deleterious effects of working. Employment is also predicted to have substantial psychic and social benefits, ranging from declines in depression and anxiety to increases in self-esteem and personal control. These work-based policies also may increase well-being by reducing the stigma costs associated with long-term unemployment and program participation.

Results in this study lend some support to both sets of predictions. In particular, single mothers are found to experience relative gains across most indicators of life satisfaction and small (but inconsistent) declines in mental health. If these policy-induced changes in employment and income influence mothers' subjective well-being, improvements in life satisfaction may come at the cost of moderate increases in stress and anxiety. The most optimistic conclusion regarding single mothers' physical health is that the mid-1990s policy reforms do not appear to worsen these outcomes.

It is important to reiterate that this study examines the bundled (or overall) effects of what is essentially a policy regime change that unfolded throughout the 1990s but began to accelerate in the mid-1990s. Several catalysts may account for the relative changes in single mothers' well-being: the passage of welfare reform legislation in 1996, the EITC expansions in 1990 and 1993, steady increases in child-care subsidy expenditures throughout the 1990s, and the liberalization of Medicaid eligibility that began in the late 1980s. Sorting out which policies are primarily responsible for single mothers' quality-of-life improvements is an important avenue for future research. Indeed, individual policies may induce conflicting effects on subjective well-being that need to be differentiated.

Appendix

Table A1

Summary Statistics of the DDB Worldwide Communications Sample, 1986–2005

Variable	Single Mothers (1)	Single Childless Women (2)	Married Mothers (3)
Age (years)	35.35 (9.34)	43.64 (12.81)	35.59 (7.79)
White (%)	.603 (.489)	.786 (.409)	.852 (.354)
Black (%)	.305 (.460)	.144 (.352)	.059 (.236)
Other race or ethnicity (%)	.091 (.288)	.068 (.253)	.087 (.282)
Household size (no. persons)	3.421 (1.297)	1.744 (1.043)	4.142 (1.044)
Less than high school (%)	.098 (.298)	.062 (.242)	.051 (.220)
High school or GED (%)	.347 (.476)	.280 (.449)	.333 (.471)
Some college (%)	.406 (.491)	.342 (.474)	.342 (.474)
BA or more (%)	.147 (.354)	.313 (.463)	.272 (.445)
Employed (%)	.762 (.425)	.811 (.391)	.654 (.475)
Household income:			
!$30,000	.733 (.442)	.581 (.493)	.282 (.450)
$30,000–$49,999	.169 (.375)	.241 (.427)	.314 (.464)
$50,000–$69,999	.058 (.234)	.100 (.300)	.209 (.407)
$70,000–$99,999	.027 (.163)	.053 (.224)	.126 (.332)
≥$100,000	.010 (.101)	.023 (.152)	.066 (.248)

Note.—GED = general equivalency diploma; BA = bachelor's degree. Standard deviations are in parentheses.

Note

Chris M. Herbst is an assistant professor in the School of Public Affairs and a faculty affiliate in the School of Social Work and the Center for Population Dynamics at Arizona State University. The author gratefully acknowledges two anonymous referees for their helpful comments and suggestions.

References

Bitler, Marianne P., Jonah B. Gelbach, and Hilary W. Hoynes. 2005. "Welfare Reform and Health." *Journal of Human Resources* 40 (2): 309–34.

Bitler, Marianne P., and Hilary W. Hoynes. 2006. "Welfare Reform and Indirect Impacts on Health." Working Paper no. 12642, October. National Bureau of Economic Research, Cambridge, MA.

———. 2010. "The State of the Social Safety Net in the Post–Welfare Reform Era." *Brookings Papers on Economic Activity* (Fall), 71–127.

Blank, Rebecca M. 2002. "Evaluating Welfare Reform in the United States." *Journal of Economic Literature* 40 (4): 1105–66.

Bollinger, Christopher, Luis Gonzalez, and Ziliak, James P. 2009. "Welfare Reform and the Level and Composition of Income." 59–103 in *Welfare Reform and Its Long-Term Consequences for America's Poor*, edited by James P. Ziliak. New York: Cambridge University Press.

Cancian, Maria, Robert Haveman, Daniel R. Meyer, and Barbara Wolfe. 2000. "Before and after TANF: The Economic Well-Being of Women Leaving Welfare." Special Report 77, May. University of Wisconsin, Institute for Research on Poverty, Madison.

Child Care Bureau. 2005*a*. "Child Care and Development Fund Average Monthly Adjusted Number of Families and Children Served (FFY 2005)." Table 1 in FFY 2005 CCDF [Child Care and Development Fund] Data Tables. US Department of Health and Human Services, Administration for Children and Families, Child Care Bureau, Washington, DC. http://www.acf.hhs.gov/programs/ccb/data/ccdf_data/05acf800/table1.htm.

———. 2005*b*. "FY 2005 CCDF [Child Care and Development Fund] State Expenditures as of September 30, 2005." US Department of Health and Human Services, Administration for Children and Families, Child Care Bureau, Washington, DC. http://www.acf.hhs.gov/programs/ccb/data/expenditures/05acf696/exp_categorical.htm.

Corman, Hope, Dhaval M. Dave, Nancy E. Reichman, and Dhiman Das. 2010. "Effects of Welfare Reform on Illicit Drug Use of Adult Women." Working Paper no. 16072, June. National Bureau of Economic Research, Cambridge, MA.

Danziger, Sandra, Mary E. Corcoran, Sheldon Danziger, and Colleen M. Heflin. 2000. "Work, Income, and Material Hardship after Welfare Reform." *Journal of Consumer Affairs* 34 (1): 6–30.

De Leeuw, Edith D. 2005. "To Mix or Not to Mix Data Collection Modes in Surveys." *Journal of Official Statistics* 21 (2): 233–55.

DeLeire, Thomas, Judith A. Levine, and Helen Levy. 2006. "Is Welfare Reform Responsible for Low-Skilled Women's Declining Health Insurance Coverage in the 1990s?" *Journal of Human Resources* 41 (3): 495–528.

Diener, Ed. 1984. "Subjective Well-Being." *Psychological Bulletin* 95 (3): 542–75.

Diener, Ed, Richard E. Lucas, and Christie Napa Scollon. 2006. "Beyond the Hedonic Treadmill: Revising the Adaption Theory of Well-Being." *American Psychologist* 61 (4): 305–14.

Dillman, Don A., Glenn Phelps, Robert Tortora, Karen Swift, Julie Kohrell, Jodi Berck, and Benjamin L. Messer. 2009. "Response Rate and Measurement Differences in Mixed-Mode Surveys: Using Mail, Telephone, Interactive Voice Response (IVR) and the Internet." *Social Science Research* 38 (1): 1–18.

Dillman, Don A., Roberta L. Sangster, John Tarnai, and Todd H. Rockwood. 1996. "Understanding Differences in People's Answers to Telephone and Mail Surveys." *New Directions for Evaluation* 70 (Summer): 45–61.

Ehrhardt, J. J., W. E. Saris, and R. Veenhoven. 2000. "Stability of Life-Satisfaction over Time: Analysis of Change in Ranks in a National Population." *Journal of Happiness Studies* 1 (2): 177–205.

European Commission. 2010. "Eurobarometer 69.1, February–March 2008." GESIS Data Archive, catalog no. ZA4743, data set version 3.0.0. European Commission, Brussels. doi: 10.4232/1.10128.

Falk, Gene. 2000. "Consumption Expenditures for Families with Children." Working Paper. Congressional Research Service, Washington, DC.

Fang, Hanming, and Michael P. Keane. 2004. "Assessing the Impact of Welfare Reform on Single Mothers." *Brookings Papers on Economic Activity*, no. 1:1–95.

Fordyce, Michael W. 1988. "A Review of Research on the Happiness Measures: A Sixty Second Index of Happiness and Mental Health." *Social Indicators Research* 20 (4): 355–81.

Frey, Bruno S., and Alois Stutzer. 2002. *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being*. Princeton, NJ: Princeton University Press.

Frogner, Bianca, Robert Moffitt, and David C. Ribar. 2009. "How Families Are Doing Nine Years after Welfare Reform: 2005 Evidence from the Three-City Study." 140–71 in *Welfare Reform and Its Long-Term Consequences for America's Poor*, edited by James P. Ziliak. New York; Cambridge University Press.

Groeneman, Sid. 1994. "Multi-Purpose Household Panels and General Samples: How Similar and How Different?" Paper presented at the Annual Meeting of the American Association for Public Opinion Research, Danvers, MA, May 12–15.

Grogger, Jeffrey. 2003. "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income among Female-Headed Families." *Review of Economics and Statistics* 85 (2): 394–408.

Grogger, Jeffrey, and Lynn A. Karoly. 2005. *Welfare Reform: Effects of a Decade of Change*. Cambridge, MA: Harvard University Press.

Haider, Steven J., Alison Jacknowitz, and Robert F. Schoeni. 2003. "Welfare Work Require-

ments and Child Well-Being: Evidence from the Effects on Breast-Feeding." *Demography* 40 (3): 479–97.

Heberlein, Thomas A., and Robert Baumgartner. 1978. "Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature." *American Sociological Review* 43 (4): 447–62.

Helliwell, John F. 2006. "Well-Being and Social Capital: Does Suicide Pose a Puzzle?" *Social Indicators Research* 81 (3): 455–96.

Herbst, Chris M. 2008. "Do Social Policy Reforms Have Different Impacts on Employment and Welfare Use as Economic Conditions Change?" *Journal of Policy Analysis and Management* 27 (4): 867–94.

———. 2011. "'Paradoxical' Decline? Another Look at the Relative Reduction in Female Happiness." *Journal of Economic Psychology* 32 (5): 773–88.

———. 2012. "Welfare Reform and the Subjective Well-Being of Single Mothers." *Journal of Population Economics*, doi: 10.1007/s00148-012-0406-z.

Ifcher, John. 2011. "The Happiness of Single Mothers after Welfare Reform." *B. E. Journal of Economic Analysis and Policy: Topics* 11 (1): article 60.

Ifcher, John, and Homa Zarghamee. 2011. "Trends in the Happiness of Single Mothers: Evidence from the General Social Survey." Working Paper. Santa Clara University, Leavey School of Business, Santa Clara, CA.

Kaestner, Robert, and Neeraj Kaushal. 2003. "Welfare Reform and Health Insurance Coverage of Low-Income Families." *Journal of Health Economics* 22 (6): 959–81.

Kaestner, Robert, and Won Chan Lee. 2005. "The Effect of Welfare Reform on Prenatal Care and Birth Weight." *Health Economics* 14 (5): 497–511.

Kaestner, Robert, and Elizabeth Tarlov. 2006. "Changes in the Welfare Caseload and the Health of Low-Educated Mothers." *Journal of Policy Analysis and Management* 25 (3): 623–43.

Kahneman, Daniel, and Angus Deaton. 2010. "High Income Improves Evaluation of Life but Not Emotional Well-Being." *Proceedings of the National Academy of Sciences* 107, no. 38 (September 21): 16489–93.

Kahneman, Daniel, and Alan B. Krueger. 2006. "Developments in the Measurement of Subjective Well-Being." *Journal of Economic Perspectives* 20 (1): 3–24.

Kahneman, Daniel, Peter P. Wakker, and Rakesh Sarin. 1997. "Back to Bentham? Explorations of Experienced Utility." *Quarterly Journal of Economics* 112 (2): 375–405.

Kaushal, Neeraj, Qin Gao, and Jane Waldfogel. 2007. "Welfare Reform and Family Expenditures: How Are Single Mothers Adapting to the New Welfare and Work Regime?" *Social Service Review* 81 (3): 369–96.

Kaushal, Neeraj, and Robert Kaestner. 2001. "From Welfare to Work: Has Welfare Reform Worked?" *Journal of Policy Analysis and Management* 20 (4): 699–719.

Layard, Richard. 2005. *Happiness: Lessons from a New Science*. London: Penguin.

Lerman, Robert I. 2005. "How Did the 2001 Recession Affect Single Mothers?" Single Parents' Earnings Monitor no. 3, January. Urban Institute, Washington, DC.

Looney, Adam. 2005. "The Effects of Welfare Reform and Related Policies on Single Mothers' Welfare Use and Employment in the 1990s." Finance and Economics Discussion Series Working Paper 2005-45, January. Federal Reserve Board, Washington, DC.

Meyer, Bruce D., and Dan T. Rosenbaum. 2000. "Making Single Mothers Work: Recent Tax and Welfare Policy and Its Effects." *National Tax Journal* 53, no. 4, pt. 2: 1027–61.

———. 2001. "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers." *Quarterly Journal of Economics* 116 (3): 1063–1114.

Meyer, Bruce D., and James X. Sullivan. 2004. "The Effects of Welfare and Tax Reform: The Material Well-Being of Single Mothers in the 1980s and 1990s." *Journal of Public Economics* 88 (7): 1387–1420.

———. 2006. "Consumption, Income, and Material Well-Being after Welfare Reform." Working Paper no. 11976, January. National Bureau of Economic Research, Cambridge, MA.

Moffitt, Robert A. 1999. "The Effect of Pre-PRWORA Waivers on AFDC Caseloads and Female Earnings, Income, and Labor Force Behavior." 91–118 in *Economic Conditions and Welfare Reform*, edited by S. H. Danziger. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Nagle, Ami, and Nicholas Johnson. 2006. "A Hand Up: How State Earned Income Tax

Credits Help Working Families Escape Poverty in 2006." Report, March. Center on Budget and Policy Priorities, Washington, DC.
Office of Management and Budget. 2007. *Budget of the U.S. Government: Fiscal Year 2008.* Washington, DC: Office of Management and Budget.
Pavetti, LaDonna, and Dorothy Rosenbaum. 2010. "Creating a Safety Net That Works When the Economy Doesn't: The Role of the Food Stamp and TANF Programs." Economic Recovery Watch Report, February 25. Center on Budget and Policy Priorities, Washington, DC.
Primus, Wendell, Lynette Rawlings, Kathy Larin, and Kathryn Porter. 1999. "The Initial Impacts of Welfare Reform on the Incomes of Single-Mother Families." Report, August. Center on Budget and Policy Priorities, Washington, DC.
Putnam, Robert D., and Steven Yonish. 1999. "How Important Is Response Rate? An Evaluation of a 'Mail Panel' Survey Archive." Working Paper, Harvard University, Kennedy School of Government, Cambridge, MA.
Rote, Sunshine, and Jill Quadagno. 2011. "Depression and Alcohol Dependence among Poor Women: Before and after Welfare Reform." *Social Service Review* 85 (2): 229–45.
Schoeni, Robert F., and Rebecca M. Blank. 2000. "What Has Welfare Reform Accomplished? Impacts on Welfare Participation, Employment, Income, Poverty, and Family Structure." Working Paper no. 7627, March. National Bureau of Economic Research, Cambridge, MA.
Slack, Kristen Shook, Katherine Magnuson, Lawrence Berger, Joan Yoo, Rebekah Levine Coley, Rachel Dunifon, Amy Dworsky, Ariel Kalil, Jean Knab, Brenda J. Lohman, and Cynthia Osborne. 2007. "Family Economic Well-Being following the 1996 Welfare Reform: Trend Data from Five Non-Experimental Panel Studies." *Children and Youth Services Review* 29 (6): 698–720.
Stevenson, Betsey, and Justin Wolfers. 2009. "The Paradox of Declining Female Happiness." *American Economic Journal: Economic Policy* 1 (2): 190–225.
Tax Policy Center. n.d. "Real Federal Spending on the EITC, CTC, and Welfare, 1975–2009." Tax Facts chart. Urban Institute and Brookings Institution, Tax Policy Center, Washington, DC. http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?Docid=266 (accessed April 4, 2012).
US General Accounting Office. 1999. *Welfare Reform: Information on Former Recipients' Status.* Report GAO/HEHS-99-48, April. Washington, DC: US General Accounting Office.
Visser, Penny S., Jon A. Krosnick, Jesse Marquette, and Michael Curtin. 1996. "Mail Surveys for Election Forecasting? An Evaluation of the *Columbus Dispatch* Poll." *Public Opinion Quarterly* 60 (2): 181–227.
Winship. Scott, and Christopher Jencks. 2002. "Changes in Food Security after Welfare Reform: Can We Identify a Policy Effect?" Working Paper. University of Chicago and Northwestern University, Joint Center on Poverty Research, Chicago.
Wolfers, Justin. 2003. "Is Business Cycle Volatility Costly? Evidence from Surveys of Subjective Well-Being." *International Finance* 6 (1): 1–26.

Erratum

Because of an editing error, several estimates are incorrectly presented as positive in table 2 of Chris M. Herbst's contribution, "Footloose and Fancy Free? Two Decades of Single Mothers' Subjective Well-Being" (*Social Service Review* 86, no. 2 [June 2012]: 204). The corrected table is presented with this note, and the editors deeply regret the error.

Table 2

Trends in Global Life Satisfaction for Single Mothers, 1986–2005

	Comparison Group					
	Single Childless Women			Married Mothers		
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Panel A (full sample):						
Single mothers × trend	.321	−.019	−.323*	.600*	.039	−.373**
	(.301)	(.071)	(.123)	(.283)	(.063)	(.124)
Comparison group × trend	−.155	−.018	−.057	−.036	.061	−.023
	(.197)	(.063)	(.078)	(.146)	(.062)	(.037)
Equality of trends (*p*-value)	.140	.985	.060	.015	.796	.012
Panel B (low-skilled sample):						
Single mothers × trend	.550*	.041	−.386**	.749**	.066	−.427**
	(.272)	(.088)	(.120)	(.259)	(.082)	(.124)
Comparison group × trend	−.346	−.036	−.045	−.079	.095	−.025
	(.253)	(.081)	(.091)	(.171)	(.075)	(.048)
Equality of trends (*p*-value)	.007	.506	.005	.015	.779	.003
Dependent variable	FI	DA	DD	FI	DA	DD
Estimation method	OP	OLS	OLS	OP	OLS	OLS

Note.—FI = full index; DA = participant response is "definitely agree"; DD = participant response is "definitely disagree"; OLS = ordinary least squares regression; OP = ordered probit. Dependent variable is response to "I am very satisfied with the way things are going in my life these days." Standard errors, shown in parentheses, are adjusted for clustering by year. The dependent variable in cols. 1 and 4 is a continuous measure ranging from 1 ("definitely disagree") to 6 ("definitely agree").The dependent variable in cols. 2 and 5 is a binary indicator for "definitely agree" with the life satisfaction statement. The dependent variable in cols. 3 and 6 is a binary indicator for "definitely disagree" with the life satisfaction statement. The low-skilled subsample in panel B is composed of women with some college or less education. The specification tests are of the null hypothesis of the equality of the trend coefficients (with the *p*-value shown).
*p ! .05.
**p ! .01.