HOW WELL CAN WE TRACK COHABITATION USING THE SIPP? A CONSIDERATION OF DIRECT AND INFERRED MEASURES*

REAGAN BAUGHMAN, STACY DICKERT-CONLIN, AND SCOTT HOUSER

Cohabitation is an alternative to marriage and to living independently for an increasing number of Americans. Still, research that explores links between living arrangements and economic behavior is limited by a lack of data that explicitly identify cohabiting couples. To aid researchers in using the Survey of Income and Program Participation's (SIPP) rich data to explore cohabitation issues, we consider direct and inferred measures of cohabitation. We find, first, that the use of inferred definitions (relative to direct measures) in the SIPP is likely to yield higher cohabitation rates in the United States by incorrectly coding roommates as cohabitors. Second, the SIPP (whether by direct or inferred measures) counts a significantly larger number of cohabiting couples than the widely used Current Population Survey (CPS). Third, spells of cohabitation occur less frequently and last longer when a direct measure of cohabitation is used than when either of the two inferred measures of cohabitation is used; ours is the first article to reveal this result.

Cohabitation, or living unmarried with a partner of the opposite sex, has become an alternative to marriage and to living independently for an increasing number of Americans. The 2000 census showed that the number of cohabiting couples has increased 72% since 1990 (U.S. Bureau of the Census 2001a, 2001b). In addition, Bumpass and Sweet (1995) reported that about half the population under age 40 has lived with an unmarried partner at some point. Unfortunately, a lack of data that explicitly identify cohabiting couples limits research that explores links between household structure and economic status or behavior. The Survey of Income and Program Participation (SIPP) would be an excellent source of data for research on cohabitation because it contains detailed monthly earnings data contemporaneous with demographic details between 1984 and 2000; however, the SIPP did not explicitly identify cohabiting couples before its 1996 survey.

Our goal here is to highlight the merits of the SIPP for analyzing issues related to cohabitation while clearly describing the tradeoff to using inferred definitions of cohabitation in earlier panels of the SIPP. To that end, we consider direct and inferred measures of cohabitation in five panels of the SIPP data, and we compare our estimates of cohabitation with the more widely used Current Population Survey (CPS). We further exploit the panel nature of the SIPP to compare direct and inferred measures of the frequency and duration of cohabitation spells.

Our findings suggest, first, that inferred definitions of cohabitation in the SIPP yield higher estimates of the cohabitation rate in the United States than do direct measures. Discrepancies in coding roommates as cohabitors is the most common source of false

positives (i.e., of falsely counting respondents as cohabitors) in all the definitions. Inferred definitions, however, consistently omit reported cohabitors with low levels of education and, on average, black families. Second, the SIPP (whether by direct or inferred measures) counts a significantly larger number of cohabiting couples than the CPS. Third, spells of cohabitation occur less frequently and last longer when a direct measure of cohabitation is used than when either of the two inferred measures of cohabitation is used.

THE SIPP AND COHABITATION ISSUES

Several features make the SIPP an ideal data source for analyzing cohabitation and economic well-being. The SIPP consists of a series of eight separate nationally representative panels, two to four years long, conducted between 1984 and 2000.[1] The SIPP interviews respondents every four months for up to 48 months. Each interview gathers information about the previous four months, resulting in a continuous monthly record of changes in living arrangements, income, labor force participation, transfer program participation, and other demographics. Because cohabitation is often a short-term state (Bumpass and Sweet 1989 found that the median duration of cohabitation is 1.3 years), the panel allows researchers to observe short cohabiting relationships that are likely to be underrepresented in annual data. Monthly data also enable research on transitions into and out of cohabiting relationships. Furthermore, unlike many surveys (e.g., the CPS and the U.S. decennial census) that ask about living arrangements at the time of the interview but income in the previous year, the SIPP asks about income and living arrangements in reference to the same period. Because of the SIPP's rich details on economic well-being, the National Academy of Sciences recommended in 1995 that the SIPP replace the CPS as the official data set for calculating U.S. income and poverty statistics (Citro and Michael 1995).

One obstacle to investigating cohabitation using the SIPP is that it did not explicitly identify cohabitors before the 1996 panel. Each respondent chose from a list of possible relationships to the household head.[2] These relationships are explicit for kin or legally married spouses, but "unmarried partner" is not an option. Despite this shortcoming, researchers have used the SIPP to investigate cohabitation using a variety of inferred measures (see, for example, Bauman 1999; Brandon and Bumpass 2001; London 2000a, 2000b). This problem is not unique to the SIPP. The decennial census did not explicitly identify cohabitors until 1990, and the CPS, which is the source used by the Census Bureau to calculate published cohabitation rates, did not explicitly identify cohabitors until 1995.

If the most recent SIPP data explicitly identify cohabitors, why do we care if the previous samples do not? The primary reason is a need for consistency in measuring both family structure and economic well-being over time. For example, if policymakers include the income of a cohabitor in family income for official poverty measures, as the National Academy of Sciences has proposed, historical measures of poverty will need to be recalculated to reveal how poverty has changed over time. Several studies have shown that poverty is mismeasured over time when cohabitors are ignored (see, for example, Bauman 1999; Carlson and Danziger 1999; and Manning and Lichter 1996). Casper and Cohen (2000) and Manning (1995) addressed the consistency of household-relationship definitions for cohabitors in the CPS over time, but no prior research addressed these issues in the SIPP. In addition, using a series of repeated annual cross sections from the CPS is likely to omit short spells of cohabitation, including instances

---

1. There were full SIPP panels for 1984, 1985, 1986, 1990, 1991, 1992, 1993, and 1996. The Census Bureau also started panels in 1988 and 1989, but a lack of funding forced their early termination. The 1996 panel runs into 2000. See the *SIPP Users' Guide* (U.S. Bureau of the Census 2001c) for more details.

2. When possible, this information is self-reported by each respondent. If a self-report is not possible, a proxy may respond (U.S. Bureau of the Census 2001c).

in which people use cohabitation as a short-term safety net in economic or personal crises. If the nature of cohabitation changes over time—for example, because long-term cohabitation increases—the extent of mismeasurement of economic well-being also changes over time.

As an extension of this point, policies aimed at improving economic well-being, such as major welfare and tax reforms, may have long-term effects and therefore require long data series to examine their consequences, such as the SIPP can provide. Consider two examples. First, large welfare and tax reforms in the 1980s and 1990s likely affected the economic well-being of single mothers (see, for example, Meyer and Sullivan 2001). Single mothers are, by definition, unmarried, but they may be cohabiting with a partner who contributes to household income or does not contribute but is dependent on the household income; therefore, accounting for cohabitation is crucial to measuring the well-being of these women correctly. Second, the expansion of the Earned Income Tax Credit during the 1990s provided incentives for single-earner couples to marry and for dual-earner couples to cohabit rather than marry (Dickert-Conlin and Houser forthcoming; Eissa and Hoynes 1999; Ellwood 2000). Empirical analyses of both questions ideally call for data that not only span the pre- and post-policy change periods but also code cohabitation as consistently as possible across that time. Our goal, therefore, is to highlight the role of the SIPP in consistently identifying cohabitors over time with direct and inferred measures.

DIRECT AND INFERRED MEASURES OF COHABITATION IN THE SIPP

Direct Measures

The SIPP codes all household members by their relationship to the household head. The first panel of the SIPP to explicitly identify cohabitors began in 1996, when the questionnaire offered "unmarried partner" as a choice distinct from roommate or nonrelative of the household head. This gives us the opportunity to compare inferred and direct measures in the same data. For comparison to other data, we used a straightforward March 1996 cross section of data from the SIPP. We calculated the weighted percentage of the opposite-sex adults reported to be unmarried partners; we refer to this as the "direct measure."[3] Column 1 of Table 1 shows that 3.9% of respondents cohabited in March 1996. The rate was highest among younger age groups (5.9% of those age 25 to 44 years cohabited) and lowest among the elderly (only 1.2% of those age 60 to 64 years cohabited).

Inferred Measures

We created two inferred definitions of cohabitation in the 1996 SIPP and considered the merits of each relative to the direct measure. We first conditioned on several obvious demographic characteristics to identify *potential* cohabitors within a household. The SIPP defines all relationships relative to the household head, so the household head must be unmarried (separated, never married, divorced, or widowed). Potential cohabitors also must be unmarried, unrelated to the household head, and of the opposite sex. Unmarried couples in which neither partner heads the household are not identified; therefore, the SIPP will underestimate the number of cohabiting couples in the United States.[4]

---

3. Overall, approximately 3% of those reporting to be cohabiting couples are same-sex couples. Consistent with work by Black et al. (2000), we found that these couples have higher levels of education and are less likely to have children than are opposite-sex couples. Same-sex couples, however, are not in any of our reported estimates of cohabitation because of the insurmountable challenges of distinguishing them from roommates.

4. This problem is common to most other data sets. The SIPP yields somewhat more accurate data because relationships between all household members are spelled out in the SIPP Household Relationship Topical Module File (for an example of the topical module's use, see Brandon and Bumpass 2001). Because the SIPP gathers these data only once during each SIPP panel, however, the data are not useful for tracking changes in family structure through the panel.

Table 1.   Percentage of the Population Cohabiting: Direct and Inferred Measures in a Cross Section of the 1996 SIPP

| | | Inferred Measures | |
Age Group	Direct Measure (1)	POSSLQ (2)	Adjusted POSSLQ (3)
Total Sample (19–80+)	3.9	4.5**	5.1**
	(19.3)	(20.7)	(22.0)
Subsample (25–44)	5.9	6.5**	7.3**
	(23.7)	(24.6)	(26.8)
19–24	7.7	8.0	8.6*
	(26.6)	(27.1)	(28.0)
25–29	9.3	10.1	10.6*
	(29.1)	(30.1)	(30.8)
30–34	6.4	7.2*	7.7**
	(24.5)	(25.9)	(26.7)
35–39	4.5	5.3*	6.5**
	(20.8)	(22.5)	(24.7)
40–44	3.4	3.6	4.6**
	(18.1)	(18.7)	(21.0)
45–49	2.7	3.5**	4.3**
	(16.3)	(18.4)	(20.3)
50–54	2.0	3.1**	3.7**
	(14.1)	(17.3)	(18.9)
55–59	1.7	2.5*	3.1**
	(13.1)	(15.6)	(17.4)
60–64	1.2	2.0**	2.3**
	(10.9)	(13.9)	(14.9)
65–69	1.4	1.9†	2.2*
	(11.7)	(13.7)	(14.5)
70–74	0.8	1.3*	1.5**
	(9.0)	(11.4)	(12.2)
75–79	0.8	0.9	1.1
	(9.0)	(9.4)	(10.4)
80+	0.3	0.7*	0.8*
	(5.5)	(8.6)	(8.9)

Source: Authors' calculations using a March 1996 cross section of the SIPP.

Note: N = 72,402. Standard deviations are shown in parentheses.

†Statistically different than the direct measure, $p < .10$.

*Statistically different than the direct measure, $p < .05$.

**Statistically different than the direct measure, $p < .01$.

To identify the significant characteristics of reported cohabitors within the pool of potential cohabitors, we estimated a logistic regression model (results not shown but available from the authors upon request). We found that, within a pool of people who met our

criteria to be cohabitors, reported cohabitation rates differed significantly by gender, marital status, age, and size of household. Most strikingly, households with a higher total number of adults were less likely to contain a cohabiting couple, and households with more children, all else equal, were much more likely to contain a cohabiting couple than those without children. Also, individuals closer in age to their household head were more likely to report cohabiting.[5]

POSSLQ. The regression model suggests at least two criteria that could be used to infer cohabitation. First, households with more adults are much less likely to contain unmarried partners. The inferred measure of cohabitation most often used by the Census Bureau reflects the likelihood that households with cohabiting partners have few other adults: POSSLQ (Persons of the Opposite Sex Sharing Living Quarters) identifies cohabiting partnerships consisting of two unrelated, opposite-sex individuals living together in a household without any other individuals over age 15.

Column 2 of Table 1 presents estimates of cohabitation based on the POSSLQ definition. By this measure, 4.5% of the sample cohabited. The rates by age follow a pattern similar to the direct measure, with 6.5% of adults between age 25 and 44 cohabiting. Like other authors who have compared direct and inferred measures (Casper and Cohen 2000; Manning 1995), we found that POSSLQ yields a higher estimate of the cohabitation rate, relative to the direct measure. These differences are statistically significant at standard levels for almost all age groups.[6]

The false-positive error rate (i.e., the rate at which the inferred measure labels individuals as cohabitors but the direct measure does not) for the POSSLQ is 28%. The direct measure of cohabitation itself, however, may underestimate true cohabitation rates because of stigma: given the option to report cohabitation, some respondents may not.[7] That said, Table 2 shows that respondents labeled as cohabitors by the POSSLQ but not the direct measure have higher levels of education and are less likely to have children than directly measured cohabitors. The majority of these falsely identified cohabitors are reported in the data to be roommates. The false-negative error rate (i.e., the rate at which the inferred measure misses individuals reported to be cohabitors) for the POSSLQ is 19%. Many of these cases are older individuals who have larger households that contain children over age 15. Cohabitors missed by the POSSLQ estimate also are disproportionately likely to be black and to have low levels of education.[8]

Adjusted POSSLQ. Following the work of Casper and Cohen (2000), we also report an Adjusted POSSLQ measure of cohabitation. This definition is similar to the POSSLQ measure, except that it includes cohabiting households with other adults (age 15 or older)

---

5. We created a third inferred definition of cohabitation based on this finding (Baughman, Dickert-Conlin, and Houser 1999). We eliminated from the pool of potential cohabitors anyone more than eight years older or younger than the household head. (Eight years is the mean age difference plus one standard deviation among directly measured cohabiting couples in the 1996 SIPP.) This estimate, however, performed particularly poorly relative to all other measures, so we do not report these results here.

6. See the *SIPP Users' Guide* (U.S. Bureau of the Census 2001c: chap. 7) for a discussion of how one might further adjust the standard errors for the sample design.

7. Consistent with this possibility, Bumpass and Sweet (1995), using NSFH data, showed that about one-third of those under 50 and more than half of those over 50 disapprove of cohabitation.

8. One possibility is that our decision to exclude "married" persons from being identified as cohabitors incorrectly excludes cohabitors who consider themselves "married" to their cohabiting partner. We do not believe this is the case because only 4 of the 52 cases in which the respondent reported being married *and* cohabiting is recorded as "married, spouse present." In the remaining 48 cases, the marital status is listed as "married, spouse absent." Because "separated" is a mutually exclusive marital status, but individuals who report being married and cohabiting do not choose that option, we believe either that these individuals are not *legally* separated or that the inconsistency represents a reporting error. To avoid making assumptions about the source of the reporting, we excluded these from the inferred definition of cohabitation. This group still composes less than 10% of our false negatives in the inferred definitions.

Table 2.   **Demographic Characteristics of Individuals Misidentified by Inferred Measures: Sample of 25- to 64 Year Olds in the 1996 SIPP**

Variable	Direct Measure (1)	False Positives[a]		False Negatives[b]	
		POSSLQ (%) (2)	Adjusted POSSLQ (%) (3)	POSSLQ (%) (4)	Adjusted POSSLQ (%) (5)
Error Rate	—	28.0	29.4	19.0	10.0
Age	34.5	35.1	35.8**	37.6**	36.9**
	(10.3)	(11.6)	(11.8)	(9.4)	(9.4)
Education	12.5	12.8**	12.7*	11.8**	12.0**
	(2.5)	(2.4)	(2.4)	(2.8)	(3.0)
% < High School	17.7	11.6**	13.3**	27.4**	22.8*
	(38.2)	(32.0)	(34.0)	(44.6)	(42.0)
% White	82.6	80.8	78.6**	76.9**	80.0
	(37.9)	(39.4)	(41.0)	(42.2)	(40.1)
% Black	13.3	14.0	15.9*	19.3**	17.3[†]
	(34.0)	(34.7)	(36.6)	(39.5)	(37.9)
% With Children	20.9	16.5**	17.4*	30.2**	26.4*
	(40.7)	(37.1)	(37.9)	(45.9)	(44.2)
Household Size	2.9	2.5**	2.8*	4.0**	3.8**
	(1.2)	(0.9)	(1.2)	(1.5)	(1.6)
N	2,591	809	962	502	271

Source: Authors' tabulations from 1996 Survey of Income and Program Participation.

Note: Standard deviations are shown in parentheses.

[a]Individuals identified by the inferred measure but not reported as cohabiting.

[b]Individuals not identified by the inferred measure but reported as cohabiting.

[†]Statistically different than the direct measure, $p < .10$.

[*]Statistically different than the direct measure, $p < .05$.

[**]Statistically different than the direct measure, $p < .01$.

who are related to the reference person.[9] This definition allows, for example, cohabiting couples with older children to be classified as cohabiting. Not surprisingly, we see in column 3 of Table 1 that the Adjusted POSSLQ estimate of the number of cohabiting couples (5.1%) is even higher than the POSSLQ estimate. Column 3 of Table 2 shows that the false positive error rate is still quite high, at 29.4%. As with the POSSLQ definition, most of these are cases of roommates being designated as cohabitors. As expected, column 6 of Table 2 shows that the rate of false negatives falls dramatically, to 10%. Allowing adults in larger households to be coded as cohabitors still misses cohabitors with below-average levels of education and, on average, black families.

_____

9. Because the SIPP and the CPS primarily identify household members relative to the reference person, it is difficult to identify the relationship of adults related to the unmarried partner if he or she is not the reference person. The Census Bureau version of an Adjusted POSSLQ also stipulates that both unrelated individuals be age 18 or older in order to eliminate single parents living with foster children. We do not make this restriction because foster children are explicitly identified in the 1996 SIPP data and therefore are not in our pool of unrelated individuals for imputation purposes. The age restriction would be appropriate with previous panels of the SIPP, which do not explicitly identify foster children.

Our cross-sectional results suggest that inferred measures are likely to include too many childless, highly educated individuals as cohabitors and that the POSSLQ, in particular, excludes black cohabitors and large families. As Casper and Cohen (2000) pointed out using the CPS, the Adjusted POSSLQ improves greatly on identifying cohabitors with children and has the lowest error rate.

COMPARISONS WITH DIRECT AND INFERRED COHABITATION ESTIMATES IN THE CPS

In this section, we provide insight into how the SIPP estimates compare to those in the CPS.[10] In addition to being a widely used national data set, the CPS is the source for published estimates of cohabitation in the Census Bureau's annual *Marital Status and Living Arrangements* updates. Although the SIPP sample sizes are typically smaller than those of the CPS, the SIPP is superior to the CPS in many ways. One significant distinction is that the SIPP respondents report income and living arrangements for the same period, whereas the CPS respondents report living arrangements at the time of the interview and income in the previous year.

With respect to identifying cohabitors, the surveys ask almost identical survey questions about relationships to a household reference person. Casper and Cohen (2000) identified 2.86 million couples living as unmarried partners in the 1996 CPS, 30% fewer than the 4.06 million counted in the 1996 SIPP. In a sample of currently unmarried women, Casper and Cohen found similar discrepancies. For example, they found that the cohabitation rate in the 1996 CPS, relative to rates in the 1996 SIPP, was 14% lower for women age 25 to 29 in 1995/1996 and 40% lower for women age 35 to 39.

An obvious next question is whether this pattern in the SIPP and the CPS is consistent over time. Like the SIPP, the CPS failed to directly identify cohabiting couples in earlier years (before 1995). To check for consistencies over time, we compared POSSLQ estimates from both data. From the SIPP data we used cross sections from wave 1 of the 1990, 1991, 1992, and 1993 panels. For the CPS, we again relied on estimates from Casper and Cohen (2000). The inferred POSSLQ measures show similar patterns in the growth in cohabitation during the 1990s. The SIPP POSSLQ estimates, however, are consistently larger than the CPS estimates, by between 10% and 15%. This pattern suggests that there is a persistent difference between the two data sets. That is, CPS respondents appear less likely to report the presence of any unrelated individuals in the household and particularly unlikely to report the presence of an unmarried partner. As Casper and Cohen (2000) suggested, different reporting patterns may exist because the focus of the SIPP differs from that of the CPS.

INFERRED AND DIRECT MEASURES OF COHABITATION SPELLS

Our comparison of inferred and direct measures of cohabitation in the SIPP reveals patterns that other researchers have found in other data. So far, however, we have not exploited SIPP's panel nature.[11] In this section we highlight the relevant issues for a spell analysis of cohabitation with direct and indirect measures in the 1996 panel of the SIPP.

Like most SIPP panels, the 1996 panel includes four randomly selected subsamples of approximately equal size. The first group was interviewed in April 1996 about the

---

10. To test further the ability of an inferred SIPP cohabitation measure (POSSLQ) to track cohabitation rates over time, we also benchmarked it against two other nationally representative data sets that explicitly identify unmarried partners: the 1990 decennial census and the National Survey of Households and Families. These results are available from the authors.

11. We focus on the issue of measuring cohabitation, rather than the overall panel nature of the SIPP. Other researchers have pointed out the advantage of the SIPP's monthly panel to study economic well-being (see Bauman 1999; Blank and Ruggles 1994, 1996; Citro and Michael 1995; Eller 1996; Naifeh 1998; Shea 1995), and the general merits of panel data are well known (Hsiao 1990; Kiefer 1988).

previous four months, another subsample was interviewed the next month, and so on. When possible, the SIPP follows members of the original sample for 48 months. If original sample members exit the sample for a period, the SIPP attempts to interview them again in the future. If new individuals enter households in which original SIPP members live, the SIPP interviews them only as long as they remain in a household with an original SIPP member.

We found that cohabitation measured at a single point in time is not a good indicator of the household status over the past year. Using a balanced 12-month sample from the 1996 panel ending in March 1997, we show in column 1 of Table 3 that the cohabitation rate was 2.8% in the March 1997 cross section, but 21% higher (3.4%) if cohabitation is measured as having cohabited at some point during the past year. [12] Relative to the point-in-time estimate, approximately 11% more persons cohabited for at least six months during the last year (3.1% of the sample). Ignoring these spells of cohabitation by using a point-in-time measure of cohabitation may inaccurately represent cohabitation.

Bauman (1999) made a similar point using an inferred measure of cohabitation and data from the 1990 SIPP. We show in Table 3 that, not surprisingly, the use of inferred measures of cohabitation affects the degree to which a cross section understates cohabitation in the past year. Using the inferred definitions, we estimated that the number of people who cohabited at any time during the past year was approximately 28% higher than the point-in-time estimates of the cohabitation rate—a difference that was substantially greater than the 21% difference we estimated for the direct measure of cohabitation. This result suggests that using inferred measures of cohabitation, as Bauman did, will overstate both point-in-time and cumulative experience in cohabiting relationships. Further investigation into spells of cohabitation sheds light on this difference.

The remainder of Table 3 describes cohabitation spells in the entire 1996 SIPP panel. The inferred measures provide higher estimates of the prevalence of cohabitation spells. Based on the direct measure of cohabitation, there were 23.9 million spells of cohabitation during the 1996 panel. Using the POSSLQ definitions yielded 31.1 million spells, and the Adjusted POSSLQ estimated 34.5 million spells. Each individual averaged 1.06 spells using the direct measure, but 1.08 spells using an inferred definition. Although the magnitude of these differences is not substantial, the differences are statistically significant ($p < .01$). When we restricted our data to exclude individuals who exited the SIPP panel and then reentered after a period of absence (approximately 13% of the sample), the same pattern held.[13] Given what we know of the errors in inferred definitions, these results suggest that roommates are more likely to move in and out of households than are cohabitors. In addition, cohabitors with children are less likely to move in and out of cohabiting relationships than the average cohabitor.

Another relevant finding for researchers using the SIPP is that most spells of cohabitation are censored. In the direct measure of cohabitation only 2.6% of the spells are uncensored, with a mean length of 7.7 months; 69.3% of the spells are left- *and* right-censored, with a mean length of 14.7 months. Spells that are both left- and right-censored are well below the panel's length of 48 months because the SIPP loses almost 36% of the original sample owing to attrition and does not follow individuals who enter after the start of the panel and then exit (U.S. Bureau of the Census 2001c).

In the inferred definitions of cohabitation, censoring is less common—between 4.3% and 4.8% of spells with the inferred definition are uncensored—but the vast majority of

---

12. We omitted the individuals who were not in the SIPP sample for the entire 12 months beginning with April 1996, which is 23% of the sample. Restricting the data to a balanced panel clearly excludes many of the cohabitors, which accounts for the smaller cohabitation rates in this cross section, relative to the rates for March 1996.

13. We excluded these individuals because it is difficult to count spells if there are unobserved periods in the middle of them.

Table 3. Mean Cohabitation Spells in the 1996 SIPP: Means and Standard Deviations

Variable	Direct Measure		POSSLQ		Adjusted POSSLQ	
	Mean	SD	Mean	SD	Mean	SD
Balanced 12-Month Panel Ending in March 1997						
Percentage cohabiting in March 1997	2.8	16.5	3.2**	17.5	3.6**	18.7
Percentage of sample who cohabited at least 1 month of past year	3.4	18.2	4.1**	19.8	4.6**	20.8
Percentage of sample who cohabited at least 6 months of past year	3.1	17.2	3.4**	18.2	3.9**	19.4
Entire 1996 Panel						
Unweighted number of spells	7,557		9,633		10,808	
Weighted number of spells (millions)	23.9		31.1		34.5	
Mean number of spells per individual	1.06	0.26	1.08**	0.30	1.08**	0.29
Percentage of data with a data gap	13.8	34.5	13.2	33.8	13.6	34.3
Mean number of spells per individual, excluding observations with a data gap	1.01	0.10	1.03**	0.18	1.02**	0.16
Spell breakdown						
Percentage uncensored	2.6	15.8	4.8**	21.4	4.3**	20.4
Percentage right-censored	6.4	24.5	9.3**	29.0	9.0**	28.6
Percentage left-censored	21.7	41.2	23.8**	42.6	22.6	41.4
Percentage left- and right-censored	69.3	46.1	62.1**	48.5	64.6**	47.8
Mean spell duration						
Uncensored	7.7	6.0	7.6	6.5	7.2	6.8
Right-censored	10.7	9.2	10.7	9.7	9.7[†]	9.7
Left-censored	11.1	9.1	10.1**	8.8	10.0**	8.8
Left- and right-censored	14.7	13.7	13.2**	12.7	13.8**	13.1
Median spell duration						
Uncensored	6		5		5	
Right-censored	8		7		7	
Left-censored	8		8		7	
Left- and right-censored	9		8		8	
Length of spell: Kaplan Meier (no left-censored spells) probability (%)						
3 months	95		91[a]		92[a]	
12 months	65		60		62	
24 months	53		45		47	
36 months	47		38		39	

Source: Authors' calculations from the 1996 Survey of Income and Program Participation panel.

Note: Chi-square values are 1,6841.79 for the POSSLQ and 6,814.54 for the Adjusted POSSLQ.

[a]Log-rank test shows the survivor function is significantly different than that of the direct measure, $p < .01$.

[†]Statistically different than the direct measure, $p < .10$.

*Statistically different than the direct measure, $p < .05$.

**Statistically different than the direct measure, $p < .01$.

spells are still censored. Mean and median spell durations are shorter using the inferred definitions, relative to the direct measure. For example, an average uncensored spell estimated from the Adjusted POSSLQ is approximately 6% shorter than that estimated from the direct measure. The mean lengths in the inferred definition are statistically significantly different than the direct measure only for the censored spells.

After we dropped the left-censored spells, the Kaplan-Meier estimates confirmed that directly measured cohabiting spells last longer than inferred cohabiting spells. For example, the probability that a directly measured spell lasts at least 24 months is 53%, whereas the probabilities are only 45% for the POSSLQ and 47% for the Adjusted POSSLQ. Both are statistically different than the direct measure at standard levels.[14]

We conclude that the estimates of cohabitation based on inferred definitions, relative to those based on direct measures, yield higher estimates of the number of spells but lower estimates of the length of spells of cohabitation.

CONCLUSION

The SIPP has many advantages for studying cohabitation in the United States. Like the widely used CPS, the SIPP did not explicitly identify cohabitors in earlier years. Our article highlights the issues associated with using inferred definitions of cohabitation in the SIPP along many dimensions.

Our research is consistent with studies of other cross-sectional data. We found that inferred definitions of cohabitation typically overstate the level of cohabitation. A common problem with an inferred measure is the inability to exclude roommates in the sample of cohabitors; they also tend erroneously to exclude cohabiting couples who are black and those who have children. Comparing a cross section from the SIPP with the CPS estimates of cohabitation, we found that the SIPP consistently counts a larger number of cohabitors than the CPS when both direct and inferred measures are used.

Finally, we exploited the panel nature of SIPP to consider how inferred definitions of cohabitation affect the analysis of spells of cohabitation. We showed that, relative to direct measures, inferred measures estimate more but shorter cohabitation spells. We also highlighted some of the statistical issues associated with using the SIPP, such as the prevalence of data with gaps in the panel (about 13% of the observations) and left-censored spells.

These findings give researchers a basis for using the SIPP to include cohabitation in analyses of economic well-being and changes in family structure.

REFERENCES

Baughman, R., S. Dickert-Conlin, and S. Houser. 1999. "Estimating the Extent of Cohabitation in the SIPP: Comparisons Using Data From the Census, PSID, NLSY and NSFH." Working Paper, Syracuse University.

Bauman, K.J. 1999. "Shifting Family Definitions: The Effect of Cohabitation and Other Nonfamily Household Relationships on Measures of Poverty." *Demography* 36:315–25.

Black, D., G. Gates, S. Sanders, and L. Taylor. 2000. "Demographics of the Gay and Lesbian Population in the United States: Evidence From Available Systematic Data Sources." *Demography* 37:139–55.

Blank, R.M. and P. Ruggles. 1994. "Short-Term Recidivism Among Public-Assistance Recipients." *American Economic Review* 84(2):49–53.

———. 1996. "When Do Women Use Aid to Families With Dependent Children and Food Stamps? The Dynamics of Eligibility Versus Participation." *Journal of Human Resources* 31(1):57–89.

---

14. Log-rank tests showed that survivor functions for both inferred measures are significantly different than the survivor function for the direct measure at the 1% level. The chi-square values are 16,841.79 for the POSSLQ and 6,814.54 for the Adjusted POSSLQ.

Brandon, P. and L.L. Bumpass. 2001. "Children's Living Arrangements, Coresidence of Unmarried Fathers, and Welfare Receipt." *Journal of Family Issues* 22(1):3–26.

Bumpass, L.L. and J.A. Sweet. 1989. "National Estimates of Cohabitation." *Demography* 26:615–25.

———. 1995. "Cohabitation, Marriage, and Union Stability: Preliminary Findings From NSFH2." NSFH Working Paper No. 65. National Survey of Families and Households, Madison, WI.

Carlson, M. and S. Danziger. 1999. "Cohabitation and the Measurement of Child Poverty." *Review of Income and Wealth* 45(2):179–91.

Casper, L. and P.N. Cohen. 2000. "How Does POSSLQ Measure Up? Historical Estimates of Cohabitation." *Demography* 37:237–45.

Citro, C.F. and R.T. Michael, eds. 1995. *Measuring Poverty: A New Approach.* Washington, DC: National Academy Press.

Dickert-Conlin, S. and S. Houser. Forthcoming. "The EITC and Marriage." *National Tax Journal.*

Eissa, N. and H. Hoynes. 1999. "Good News for Low-Income Families? Tax-Transfer Schemes, and Marriage." Working Paper. Department of Economics, University of California, Berkeley.

Eller, T.J. 1996. "Dynamics of Economic Well-Being, Poverty 1993–94: Who Stays Poor? Who Doesn't?" U.S. Bureau of the Census, Current Population Reports, P70-55, U.S. Government Printing Office, Washington, DC. (Available on-line at http://www.census.gov/prod/2/pop/p70/p70-55.pdf.)

Ellwood, D. 2000. "The Impact of the Earned Income Tax Credit and Social Policy Reforms on Work, Marriage, and Living Arrangements." *National Tax Journal* 53:1073–106.

Hsiao, C. 1990. *Analysis of Panel Data*. Econometrics Society Monographs, No. 11.

Kiefer, N.M. 1988. "Economic Duration Data and Hazard Functions." *Journal of Economic Literature* 26(2):646–79.

London, R.A. 2000a. "The Interaction Between Single Mothers' Living Arrangements and Welfare Participation." *Journal of Policy Analysis and Management* 19(1):93–117.

———. 2000b. "The Dynamics of Single Mothers' Living Arrangements." *Population Research and Policy Review* 19:73–96.

Manning, W.D. 1995. "Comparisons of Direct and Inferred Measures of Cohabitation." Working Paper. Population Research Institute, Pennsylvania State University.

Manning, W.D. and D.T. Lichter. 1996. "Parental Cohabitation and Children's Economic Well-being." *Journal of Marriage and the Family* 58:998–1011.

Meyer, B.D. and J.X. Sullivan. 2001. "The Effects of Welfare and Tax Reform: The Material Well-being of Single Mothers in the 1980s and 1990s." NBER Working Paper No. W8298. National Bureau of Economic Research, Cambridge, MA.

Naifeh, M. 1998. "Dynamics of Economic Well-being, Poverty 1993–94: Trap Door? Revolving Door? Or Both?" U.S. Bureau of the Census, Current Population Reports, P70-63, U.S. Government Printing Office, Washington, DC. (Available on-line at http://www.census.gov/prod/3/98pubs/p70-63.pdf.)

Shea, M. 1995. "Dynamics of Economic Well-being: Poverty 1991 to 1993." U.S. Bureau of the Census, Current Population Reports, P70-45, U.S. Government Printing Office, Washington, DC. (Available on-line at http://www.census.gov/prod/2/pop/p70/p70-45.pdf.)

U.S. Bureau of the Census. 2001a. "Table DP-1: Profile of General Demographic Characteristics of the United States: 2000." (Available on-line at http://www.census.gov/Press-Release/www/2001/tables/dp_us_2000.PDF.)

———. 2001b. "Table DP-1: Profile of General Demographic Characteristics of the United States: 1990." (Available on-line at http://www.census.gov/Press-Release/www/2001/tables/dp_us_1990.PDF.)

———. 2001c. *SIPP Users' Guide.* 3rd ed. Washington, DC. (Available on-line at http://www.sipp.census.gov/sipp/pubsmain.htm.)