

Evaluation of the Marital Events Items on the ACS

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NOTE: The estimates in this paper are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone statistical testing and are significant at the 90-percent confidence level unless otherwise noted. Further information about the source and accuracy of the estimates is available at:

http://www.census.gov/acs/www/Downloads/data_documentation/Accuracy/accuracy2008.pdf.

INTRODUCTION

Beginning in 2008, marital history items were added to the American Community Survey (ACS) to collect national and state-level marriage and divorce data previously obtained only through vital records collection. With these new items on the ACS, we now have a more complete picture of the state of marriage, divorce, and widowhood in American society.

The goal of this working paper is to examine how new estimates of marriage, divorce, and widowhood from the 2008 ACS compare with previous vital records tabulations at the state and national levels. First, the survey-based rates and estimates obtained in 2008 in the ACS are compared to those obtained through the Survey of Income and Program Participation and vital statistics data from the National Center for Health Statistics (NCHS). Then, the marriage and divorce rates derived from the ACS are examined for men and women at the state level for comparability, given different population bases, as used in previous vital statistics reports published by NCHS¹ (the total population; those 15 and older; and the population at risk,

¹ S.C. Clarke, "Advance Report of Final Marriage Statistics, 1989 and 1990." Monthly Vital Statistics Report, Vol. 43, No. 12 (Supplement), Hyattsville, MD: National Center for Health Statistics, 1995.

meaning the unmarried population for those married in the last year and the married population for those divorced in the last year). Finally, using 2008 ACS data, median ages at first marriage for men and women were calculated for those who reported having a first marriage in the past 12 months. These data are then compared to median ages at first marriage reported in historical vital statistics reports, and in Census Bureau tables, where indirect estimates were obtained by a demographic and statistical modeling procedure.

BACKGROUND ON THE ACS AND THE NEW MARITAL HISTORY ITEMS

The American Community Survey (ACS) was started in the late 1990's to replace the collection of data from the long form questionnaire in the decennial Censuses previously distributed to 1 in 6 households. Since 2005, the ACS is now fully implemented and the Census Bureau regularly mails a quarter-million ACS questionnaires every month to a nationwide sample. Follow ups are conducted with non-responders to the mail questionnaire by phone and in-person interviews, ultimately collecting data from a sample of 2.2 million households annually. The sample is then weighted to be representative of the nation's population as a whole.

Among national surveys, the ACS is notable for its ability to reach a large, representative sample nationwide annually and to provide reliable estimates of trends in the U.S. and for smaller geographies as well (such as the state, county, and place levels). Additionally, the ACS collects extensive data on a number of other topics of interest, ranging from demographic characteristics (age, sex, Hispanic ethnicity, foreign-born status, educational attainment) to economic characteristics (labor-force participation, income, poverty, and program participation) to housing characteristics. These attributes make the ACS the ideal survey to collect annual national and state-level data that mirror vital statistics records on marriage and divorce and to

S.C. Clarke, "Advance Report of Final Divorce Statistics, 1989 and 1990." Monthly Vital Statistics Report, Vol. 43, No. 8 (Supplement), Hyattsville, MD: National Center for Health Statistics, 1995.

provide a portrait of American marital history patterns across a number of important characteristics.²

The marital status question, if the person is currently married, widowed, divorced, separated, or never married, has been asked on the ACS since the beginning of the survey. This question identifies the marital status of each respondent at the time of the survey. Marital history questions were added to the survey in 2008 and were asked of respondents 15 years old and older who had ever been married at the time of the survey. The new questions help to construct a history of marriage, divorce, and widowhood among respondents by asking: (1) “In the past 12 months did this person get a) married?” b) widowed?” c) divorced?” (2) “How many times has this person been married?” and (3) “In what year did this person last get married?” Overall, the new marital history questions allow better measurement and understanding of changes in family growth and their outcomes.

These new marital history items fill a void, particularly, in the marriage and divorce data collected in the United States. Historically, data on marriages and divorces in the United States were collected from marriage and divorce certificates filed and collected at the state-level through the vital statistics system by the National Center for Health Statistics (NCHS). In 1996, the Centers for Disease Control (CDC) and the NCHS decided to discontinue the collection of detailed state-level vital records data from marriage and divorce certificates. Three reasons have been cited as factors for the discontinuation of vital statistics on marriages and divorces at the NCHS: a lack of funding; incomplete reporting from states (marriage data was only being

² A September 2008 Urban Institute Report prepared for the U.S. Department of Health and Human Services entitled, “Assessment of Survey Data for the Analysis of Marriage and Divorce at the National, State, and Local Levels,” by Ratcliffe, C., Acs, G., Dore, T., and D. Moskowitz provides a detailed comparison of national surveys considered as possible candidates for collecting marital history data in lieu of vital statistics and identifies the ACS as best suited for the task.

provided by 42 states and the District of Columbia, while divorce data was only being collected from 31 states and the District of Columbia); and a poor match between the collection of marriage and divorce data and the mission of a health statistics agency.³

In the absence of up-to-date vital records information on marriages and divorces, the quality of U.S. estimates of these events has diminished. Consequently, the U.S. Department of Health and Human Services (DHHS) approached the Census Bureau about adding marital history items to the ACS in order to have reliable and valid data for researchers and policymakers alike as part of its Healthy Marriage Initiative.⁴ Among the reasons cited for resuming collection of these much-needed data include: the calculation of marriage and divorce rates and understanding the characteristics of individuals experiencing such transitions; the ability to understand changes in family structure at various geographic levels; and the evaluation of family and marriage-based social, tax, retirement, and disability policies both at the national and state levels.⁵ The new marital history data collected on the ACS is a response to the long-standing void in data on marriages and divorces and will provide reliable estimates of marriage and divorce rates (among other data) for nations and states annually.

COMPARISON OF ACS MARRIAGE, DIVORCE, AND WIDOWHOOD RATES TO VITAL STATISTICS

In order to evaluate the quality of the marriage, divorce, and widowhood estimates obtained through survey methods in the ACS, comparisons were made to the most recent vital statistics information on marriage, divorce, and widowhood. As the following tables show, the

³ The Lewin Group, August 2008, "Collection of Marriage and Divorce Statistics by States: Final Report" prepared for the U.S. Department of Health and Human Services.

⁴ See the Department of Health and Human Services "Healthy Marriage Initiative" website for more information at <http://www.acf.hhs.gov/healthymarriage/>.

⁵ The Lewin Group, October 2008, "American Community Survey: New Survey Questions Enable Measurement of Marital Transitions," prepared for the U.S. Department of Health and Human Services.

overall estimates of marriage, divorce, and widowhood from the ACS are comparable to the most recent up-to-date vital records data on these marital events.⁶

Table 1 compares the national marriage, divorce, and widowhood rates obtained with the 2008 ACS data with data from the 2004 Survey of Income and Program Participation (SIPP) and the most comparable vital statistics from NCHS (2007). It is important to note that the ACS and SIPP data are survey-based estimates and thus count marital history events at the individual level (as reported by each person on the survey). In contrast, the NCHS data are drawn from vital statistics, or the reporting of events on marriage certificates, divorce decrees, and death certificates. Thus, the NCHS vital statistics report a single event for each couple experiencing such a transition. Couple-level events reported in the NCHS should be approximately half the rate of such events reported at the individual-level on surveys (ACS and SIPP).

In 2008, the ACS marriage rate was 15 marriages occurring in the last year per 1,000 people in the total population of the United States.⁷ Men reported a marriage rate of 15.5 (per 1,000 men in the total population) and women reported a marriage rate of 14.4 (per 1,000 women in the total population). Survey-based rates from the 2004 SIPP are slightly higher, yet comparable to the 2008 ACS.⁸ The ACS marriage rates were also comparable to the couple-based rates from NCHS, as NCHS recorded a rate of 7.3 marriages per 1,000 people in 2007, close to half of the marriage rates reported by men and women individually (Table 1).

Looking at the divorce rates reported in Table 1, the ACS divorce rate was 8.2 in the last year per 1,000 people in the total population of the United States, with the divorce rate for men at

⁶ In the ACS and the SIPP, data are edited and shown only for opposite sex married couples.

⁷ The population base used in this table is the total population of the United States in order to be comparable with the published NCHS vital statistics rates (which use the total population as its base rather than a more demographically specific population at risk).

⁸ The SIPP rates are based upon the reported number of marriages and divorces on Table 9 from the detailed SIPP tables, available at <http://www>.

7.9 per 1,000 men and the divorce rate for women at 8.5 per 1,000 women. The rates from the ACS are slightly higher than those from the SIPP or 5.8 per 1,000 people (5.9 per 1,000 men and 5.7 per 1,000 women). The content test of the ACS marital history items prior to their inclusion on the 2008 survey, revealed that 16% of men and 8% of women reported getting a divorce in the past 12 months, but had not actually received a final divorce decree during that period.⁹ So, the methodology of the ACS may produce estimates that are slightly higher than would be reported through NCHS divorce decrees, and perhaps higher than surveys such as the SIPP which ask respondents to specify dates associated with marital events.

The NCHS couple-based divorce rates are comparable to the ACS with 3.6 divorce decrees per 1,000 people – less than half of the person-based divorce rates reported in the ACS. The NCHS estimates differ from the survey-based data because they do not include data from missing states (California, Georgia, Hawaii, Indiana, Louisiana, and Minnesota). It is not clear how the missing data affect comparability between the NCHS and survey-based rates, as we do not know if these states in the aggregate have higher or lower rates than the national average.

Table 1 also compares the rates of widowed men and women across the ACS, SIPP, and NCHS data. The survey-based rates from the ACS are slightly higher than both the rates from the SIPP and the NCHS. While the ACS has a rate of 4.9 widowed individuals per 1,000 in the population, the SIPP and the NCHS report lower rates (3.4 per 1,000 population for SIPP and 3.1 per 1,000 population in NCHS). Similarly, rates for men and women who were widowed in the last 12 months are higher in the ACS than in the SIPP or the NCHS (Table 1).

Another way to understand the validity of the survey-based ACS marriage and divorce data relative to the NCHS vital statistics data is to compare the state-based estimates. Table 2

⁹ O’Connell, Martin Gooding, Gretchen, and Leah Ericson. 2007. “Evaluation Report Covering Marital History: Final Report,” 2006 American Community Survey Content Test Report P.9, U.S. Census Bureau.

shows the state-level estimates of marriage and divorce from the 2008 ACS to the most recent vital statistics information (2007). Prior to discussing comparisons in Table 2, the methodology of the data collected in the ACS must be discussed because of notable differences in some of the numbers.

The first important difference between the ACS and the NCHS concerns a methodological difference in how geographic location is reported. While the ACS uses the state in which the respondent lived at the time of survey, the NCHS uses the state in which the marriage or divorce certificate was filed. Notably, the NCHS over-represents marriages in those states that serve as destinations for weddings. For example, the NCHS numbers are much higher than the ACS in Nevada (126,354 couples in the NCHS compared with 22,323 men and 21,944 women in the ACS) and Hawaii (27,346 couples in the NCHS compared with 10,078 men and 9,265 women in the ACS) (Table 2). Furthermore, there are key states absent from the state-level NCHS divorce data, including California, Georgia, Hawaii, Indiana, Louisiana, and Minnesota because of record-keeping issues in those states.

The second important difference concerns the reference period of data collection. The ACS marital event data is the average number of events reported by respondents in the 12-month period prior to the interview date, which occurred for each month in a calendar year. For example, a person interviewed in January 2008 could report they had a marital event occur between January 2007 and January 2008, while a person interviewed in December 2008 could report they had a marital event occur between December 2007 and December 2008. In effect, these reported events represent a possible time span over the period from January 2007 to December 2008. In contrast, the NCHS data for 2008 includes only those events reported during the calendar year period from January 2008 through December 2008.

Another important difference is that the collection universe for which the marriage and divorce numbers are presented varies between the ACS and NCHS. While the ACS collects individual reports of marital events in the survey questionnaire, the NCHS collects couple-level reports of marital events in the form of counts of marriage certificates and divorce decrees filed with the state. Thus, the ACS numbers of events to men and women are different due to individual reporting of events and differences in the applied weights to individuals, even if they are husband and wife and are living in the same household. Overall, the ACS reports 130,000 more marriages for men than the NCHS.¹⁰ Reports of divorce are higher with the ACS for both men and women, but it should be noted that the NCHS estimates of divorce are imperfect due to reporting issues at the state-level.

Given these differences, the couple-level reports in the NCHS for both marriage and divorce are comparable to the estimates that men and women report individually. For example, two states that have high quality, electronic-based collection of vital records information are New Hampshire and Delaware¹¹, and neither state is an established destination for weddings nor is known for relaxed policies toward divorce.

In Table 2, NCHS vital statistics for marriage and divorce are compared state-by-state to ACS numbers of men and women reporting marriages and divorces in the last year. The ACS estimates are statistically comparable to NCHS estimates for men marrying in the last year for 25% of states, for women marrying in the last year for 31% of the states, for men divorcing in the last year for 33% of the states, and for women divorcing in the last year for 41% of the states. In New Hampshire, a state that did not have statistically significant differences between NCHS

¹⁰ The vital statistics data from NCHS are statistically significantly different from the total estimates of marriages for men and women from the ACS.

¹¹ The Lewin Group, August 2008, "Electronic Collection of Marriage and Divorce Statistics: Findings from Seven States" prepared for the U.S. Department of Health and Human Services.

and ACS estimates, 9,350 marriage certificates were recorded in 2007 per NCHS compared to 9,237 men and 8,663 women who reported on the ACS that they were married in the last year. In Delaware, another state that did not have statistically significant differences between NCHS and ACS estimates, 4,970 marriage certificates were recorded in 2007 per NCHS compared to 5,309 men and 5,143 women who reported on the ACS that they were married in the last year. Divorce numbers in these two states are also comparable: In New Hampshire, 4,981 divorce decrees were filed in 2007 compared to 5,145 men and 5,059 women reporting on the 2008 ACS that they were divorced in the last 12 months; and in Delaware, 3,215 divorce decrees were filed in 2007, while 3,720 men and 4,318 women reported on the 2008 ACS that they were divorced in the last 12 months.¹² The comparability of the estimates for New Hampshire and Delaware demonstrate that when state records are collected accurately and a state is not a destination for marriages, nor presents an easy process for divorce, the ACS survey-based estimates are similar to those reported through official marriage certificates and divorce decrees.

STATE-BY-STATE COMPARISON OF MARRIAGE AND DIVORCE RATES IN THE ACS

One of the clear benefits of the new marital history measures on the ACS is the ability to compare state-level marriage and divorce rates in a more detailed way than has been possible in recent years with the vital statistics data published by NCHS. Furthermore, because the methodology of the ACS records where people live who have recently married or divorced, it presents a more even comparison across the states to try to understand regional differences in the culture of marriage and divorce. The following section shows state-level tables and figures from

¹² The ACS estimates are all within sampling errors of the data as shown in Appendix IV, Table 2SE.

the 2008 ACS that compare the marriage, divorce, and widowhood rates for men and women by state, as well as national maps showing geographic variations in these marital events.

Table 3 compares the marriage, divorce, and widowhood rates from the ACS for men and women age 15 and older. As these data show, when the population is restricted to the population of age for marriage (15 and older), the national rates of marriage are 19.6 per 1,000 men and 17.9 per 1,000 women. There is considerable state variation on marriage rates in the ACS, ranging from a low of 15.1 per 1,000 men and 13.4 per 1,000 women (both in Massachusetts) to a high of 27.8 per 1,000 men (Alaska) and 28.4 per 1,000 women (Utah).

Nationally, for the population 15 and older, the divorce rate in the ACS is 9.9 per 1,000 men and 10.5 per 1,000 women. Like marriage rates, divorce rates also vary greatly among the states. Men's divorce rates ranged from a low of 7.0 per 1,000 men in New York and New Jersey to a high of 21.0 per 1,000 men in Wyoming. Women's divorce rates ranged from a low of 6.0 per 1,000 women in North Dakota to a high of 16.5 per 1,000 women in Oklahoma (Table 3).

Table 3 also demonstrates how widowhood rates vary among the states. Nationwide, 3.7 men per 1,000 men 15 and older were widowed last year, while 8.4 women per 1,000 women 15 and older were widowed last year. The imbalance in widowhood by sex reflects much about the demographic composition of the population – women live longer than men¹³ and tend to marry men older than them¹⁴, so they are more likely to experience the loss of a spouse than men. Among men, the range of widowhood rates across states includes a low of 1.9 per 1,000 men in Wyoming to a high of 5.2 per 1,000 men in Delaware. Rates of widowhood for women range

¹³ Arias E. "United States life tables, 2004." National vital statistics reports; vol 56 no 9. Hyattsville, MD: National Center for Health Statistics. 2007.

¹⁴ Kreider, Rose M. and Jason M. Fields, 2001. "Number, Timing, and Duration of Marriages and Divorces: Fall 1996." Current Population Reports, P70-80. U.S. Census Bureau, Washington, DC.

from a low of 4.5 per 1,000 women in Alaska to a high of 12.3 per 1,000 women in West Virginia (Table 3).

Figures 1 through 4 present national maps of the state variations in marriage and divorce rates per 1,000 men and women age 15 and older. Each map shows whether states are significantly below, not significantly different from, or significantly above the U.S. averages for marriages and divorces for men and women. Figure 1 shows state variations in the marriage rates for men and whether or not they are significantly different from the U.S. average of 19.6 marriages per 1,000 men age 15 and older. A total of 17 states have marriage rates for men significantly above the U.S. average, ranging from 21.0 to 27.8 marriages per 1,000 men age 15 and older. Eleven states have marriage rates for men significantly below the U.S. average, ranging from 15.1 to 18.1 marriages per 1,000 men age 15 and older. The map shows a regional distinction in marriage rates for men; all of the states with men having rates of marriage below the U.S. average are located east of the Mississippi River.

Figure 2 shows marriage rates for women and whether state rates vary significantly from the U.S. average of 17.9 marriages per 1,000 women 15 and older. Overall, 16 states have marriage rates for women that are significantly above the U.S. average, ranging from 19.9 to 28.4 marriages per 1,000 women 15 and older. Eleven states have marriage rates for women significantly below the U.S. average, ranging from 13.4 to 16.5 marriages per 1,000 women 15 and older. As was the case with the men's rates, all of the states with marriage rates for women significantly below the U.S. average are located east of the Mississippi River. In general, both figures indicate higher than average marriage rates for both men and women in a broad area running from Texas through Midwestern states of Kansas and Nebraska up through Idaho and Washington.

In Figure 3, the divorce rates for men are shown by state, given significant differences from the U.S. average of 9.9 divorces per 1,000 men 15 and older. A total of 16 states have divorce rates for men that are significantly above the U.S. average, ranging from 10.9 to 21.0 divorces per 1,000 men 15 and older. In contrast, 7 states have divorce rates for men that are significantly below the U.S. average, ranging from 7.0 to 8.7 divorces per 1,000 men 15 and older. Of the 7 states with below average divorce rates for men, 4 states are located in the Northeast (Pennsylvania, New Jersey, New York, and Massachusetts). Higher than average rates are located in a block of states extending from Mississippi, Alabama, and Georgia in the South, and up through Tennessee, Kentucky, and Indiana. Another large area of above average rates is located from Texas through Nebraska and Nevada through Missouri.

Finally, Figure 4 shows the divorce rates for women by state and whether or not the rates vary significantly from the U.S. average of 10.5 divorces per 1,000 women 15 and older. Overall, thirteen states have divorce rates for women significantly above the U.S. average of 10.5, with a range from 11.7 to 16.5 divorces per 1,000 women 15 and older. Seven of the thirteen states are located in the South, including Texas, Oklahoma, Arkansas, Kentucky, Tennessee, Georgia, and Alabama. In contrast, ten states have divorce rates for women significantly below the U.S. average, ranging from 6.0 to 9.9 divorces per 1,000 women 15 and older. Half of the states with below average divorce rates for women are in the Northeast (Pennsylvania, New Jersey, New York, Connecticut, and Massachusetts). It is no coincidence that areas with high marriage rates are also areas with high divorce rates as the population possibly experiencing a divorce must be derived from the population who are married.

Table 4 presents rates of marriage for men and women by comparing state-level rates for different population bases which have historically been used in publication by NCHS to illustrate

differences by more demographically specific populations at risk and by availability of state-specific data. The three indicators in Table 4 are: marriages per 1,000 total population; marriages per 1,000 people 15 and older (the population base used in most ACS tables); and marriages per 1,000 people “at risk” for marriage, namely, the unmarried population 15 and older (demographically, the most accurate population base).

First, it is important to note that while the rates increase as the population becomes more restrictive of those eligible for marriage, the relative state-by-state rates are highly correlated across the different population bases: 0.99 for both men and women when correlating marriages per 1,000 total population with marriages per 1,000 people 15 and older, and 0.94 for men and 0.97 for women, when correlating marriages per 1,000 people 15 and older with marriages per 1,000 unmarried people 15 and older. What these correlation rates demonstrate is that although marriage rates change according to how the population is restricted, they vary in approximately the same ways across the states. Given this finding, the marriage rates per 1,000 in the population 15 and older as described previously in Table 3 are valid indicators of state-level variations in marriage rates for men and women.

Similarly, Table 5 presents divorce rates for men and women at the state-level for three different population bases (divorces per 1,000 total population, divorces per 1,000 people 15 and older, and divorces per 1,000 married people 15 and older). As with Table 4 which showed the high correlations of marriage rates for successively refined population bases, there is also a high correlation between divorce rates across the different population bases. The correlation between divorce rates per 1,000 in the total population and per 1,000 in the population 15 and older is 0.99 for both men and for women. Also quite high is the correlation between divorce rates per 1,000 in the population 15 and older and per 1,000 in the married population 15 and older (0.86

for men and 0.81 for women). These correlations suggest that the population base does not affect the ways in which state-level divorce rates vary. Thus, use of the population 15 and older in most of the ACS tables is acceptable for understanding state-level variations in both marriage and divorce rates for men and women.

CHARACTERISTICS OF THE MARRIED POPULATION IN THE ACS COMPARED TO OTHER DATA: MEDIAN AGE AT FIRST MARRIAGE AND TIMES MARRIED

A secondary evaluation of the new ACS data is to compare marital indicators derived from the ACS to other data sources. Here we look at two marital characteristics: median age at first marriage and the number of times married.

We first will compare medians from several data sources: The NCHS median (calculated using marriage certificate data), the ACS 2008 median¹⁵ (using the new marital history questions), and the CPS¹⁶ median (using a model by Shryock & Siegel¹⁷ based on the population ages 15-54). We also include a median from the ACS¹⁸ (for the years 2005-2008) also using the model by Shryock & Siegel for comparison. The CPS medians derived from a model are the only medians that are available for the entire time period of 1964-2008 in the figures. The NCHS data are shown for 1964 to the final year of publication in 1990. The ACS model data only became available starting in 2005, while the ACS median based on the marital history questions only became available in 2008.

¹⁵ U.S. Census Bureau, American Community Survey, special tabulation

¹⁶ U.S. Census Bureau, Current Population Survey, Table MS-2, at <http://www.census.gov/population/www/socdemo/hh-fam/ms2>

¹⁷ Shryock, H.S. and Siegel, J.S. 1976. *The Methods and Materials of Demography*. San Diego: Academic Press.

¹⁸ U.S. Census Bureau, American Community Survey, Table B12007, at http://factfinder.census.gov/servlet/DTTable?_bm=y&-geo_id=01000US&-ds_name=ACS_2008_1YR_G00_&-_lang=en&-mt_name=ACS_2008_1YR_G2000_B12007&-format=&-CONTEXT=dt

For men (see Figure 5) the CPS data (using the Shryock & Siegel model) has tended to trend higher than the NCHS data, with the largest differences (of around a year older at first marriage) in the 1970s and early 1980s. This difference increasingly dwindles in the late 1980s. The 2005-2008 ACS median, using the same Shryock & Siegel model, has a slope similar to the CPS. The ACS 2008 estimate (28.3 years) using data from the new marital history questions is significantly higher than the CPS model (27.6 years) but not significantly different from the ACS model (28.0 years).

For women (see Figure 6) the CPS data and the NCHS data have trended more closely to each other than that for the men, with a half-year difference at most in median age at first marriage (during the 1970s). During the 1960s and 1980s, however, the two data sources produced very similar median ages at first marriage. In comparing the 2005-2008 ACS and the CPS (which both use the Shryock & Siegel model) the ACS median age at first marriage trends a bit higher than the CPS median age at first marriage. As was the case for men, the highest estimate of median age at first marriage for women was the 2008 ACS median (using the new marital history questions), at 26.5 years, compared to the two models (26.2 years from the ACS model and 25.9 years from the CPS model¹⁹).

An examination of the number of times ever married among ever-married people 15 years and over between the ACS 2008²⁰ and SIPP 2004²¹ data (see Figure 7), produced very similar distributions. The number of men who had only been married once according to the 2008

¹⁹ The ACS model produced a significantly higher median age at first marriage for women than the CPS model.

²⁰ U.S. Census Bureau, American Community Survey, Table B12505 at http://factfinder.census.gov/servlet/DTable?_bm=y&-geo_id=01000US&-ds_name=ACS_2008_1YR_G00_&-_lang=en&-redoLog=false&-mt_name=ACS_2008_1YR_G2000_B12505&-format=&-CONTEXT=dt

²¹ U.S. Census Bureau, American Community Survey, Table 3 at http://www.census.gov/population/www/socdemo/marr-div/2004detailed_tables.html

ACS was 75.4% while in the 2004 SIPP it was 78.4%. The number of women who had only been married once according to the 2008 ACS was 75.7 while in the 2004 SIPP it was 78.0%. The number of men who had been married three or more times according to the 2008 ACS was 5.2% while in the 2004 SIPP it was 4.5%. The number of women who had been married three or more times according to the 2008 ACS was 5.1% while in the 2004 SIPP it was 4.2%. Keeping in mind that there is a 4-year difference in collection of the data for these two surveys (2004 versus 2008), these results are fairly close, although they are closer between genders within each survey than they are when compared across the surveys.

CONCLUSION

Overall, this paper documents that the survey-based marriage, divorce, and widowhood data collected through the ACS in 2008 are valid and quite comparable to vital records tabulations at the state and national levels. In the wake of NCHS discontinuing the collection of state-level vital records data from marriage and divorce certificates in 1996, the ACS survey-based estimates now fill a much-needed void in information. Because the new marital history questions were included on a nationally representative survey with the scope and magnitude of the ACS, these data were collected at a cost-savings compared with the old marriage and divorce registration system, and present complete snapshots of data uniformly collected for each state and the District of Columbia. This is a marked improvement relative to the challenges encountered by vital records-based data collection efforts.

When the ACS marriage, divorce, and widowhood rates are compared to rates tabulated by the NCHS through vital records information, the national rates are quite similar. Even at the state-level, the ACS marriage and divorce rates are comparable to NCHS. The ACS has the additional advantage over vital records data of having complete estimates for those states that

had long stopped providing divorce decree information to NCHS (California, Georgia, Hawaii, Indiana, Louisiana, and Minnesota). The ACS survey-based marriage and divorce rates also provide better snapshots of where newly married and divorced people live, rather than the states in which they chose to marry or file for divorce. When state-level marriage and divorce rates are examined in detail and across different population bases, the findings are also consistent with regional differences, providing further evidence that the survey-based estimates from the ACS are valid.

Finally, examining the demographic characteristics of the married population also reveals that the new ACS data are comparable to prior estimates of the median age at first marriage and the proportion of individuals married one, two, and three or more times. While the median age at first marriage calculated from the ACS data is a bit higher than median ages determined through modeling techniques, it is within reason. Also, the distribution of individuals and the number of times they are married is comparable between the 2008 ACS and the 2004 SIPP.

As the findings in this paper show, the ACS data are reasonable and provide valid marriage and divorce rates. Detailed comparisons by geography and demographic characteristics also indicate that the composition of these population groups is consistent with what we know about the married and divorced in the U.S. Researchers should be heartened by these findings, as the depth and breadth of the data available on the ACS annually will undoubtedly yield many in-depth studies about the state of marriage, divorce, and widowhood in the United States over the coming years.

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APPENDIX I: TABLES

APPENDIX II: FIGURES

APPENDIX III: SOURCING AND CALCULATION OF RATES

Table 1

ACS marital history rates

State-level marriage and divorce rates were run from internal ACS data files and are based on the incidence of each marital event nationally for men and women (the numerator) divided by a denominator constituting the count of the total population of men and women in the United States.

SIPP marital history rates

NUMERATOR: Estimates for numbers of marriages, divorces, and widow(er)s were pulled from the 2004 Table 9 on website: <http://www.census.gov/population/socdemo/marital-hist/2004/Table9.2004.xls>

DENOMINATOR: Population estimates (total, male, and female population) were pulled from Census estimates for July 1, 2003 on the following website: <http://www.census.gov/popest/national/asrh/NC-EST2008/NC-EST2008-03.xls>

Marriage rate:

Total: $(2,239,000 + 2,252,000) / 290,210,914 * 1,000 = 15.47495212$

Men: $2,239,000 / 142,618,767 * 1,000 = 15.69919617$

Women: $2,252,000 / 147,592,147 * 1,000 = 15.25826438$

Divorce rate:

Total: $(844,000 + 842,000) / 290,210,914 * 1,000 = 5.809567865$

Men: $844,000 / 142,618,767 * 1,000 = 5.917874749$

Women: $842,000 / 147,592,147 * 1,000 = 5.704910574$

Widowhood rates:

Total: $(268,000 + 711,000) / 290,210,914 * 1,000 = 3.373408624$

Men: $268,000 / 142,618,767 * 1,000 = 1.879135584$

Women: $711,000 / 147,592,147 * 1,000 = 4.817329475$

NCHS marital history rates

Marriage and Divorce rates:

Vital statistics marriage and divorce rates were pulled from Table A of: Betzaida Tejada-Vera and Paul D. Sutton, "Births, Marriages, Divorces, and Deaths: Provisional Data for 2007," National Vital Statistics Reports, Volume 56, Number 21, National Center for Health Statistics: Hyattsville, MD, 2008.

Widowhood rates:

NUMERATOR: Vital statistics death rates were pulled from Table 25 of: Melanie Heron, Donna L. Hoyert, Sherry L. Murphy, Jiaquan Xu, Kenneth D. Kochanek, and Betzaida Tejada-Vera, "Deaths: Final Data for 2006," National Vital Statistics Reports, Volume 57, Number 14, National Center for Health Statistics: Hyattsville, MD, 2009.

Data on deaths from Vital Statistics was converted to a rate of 1,000 in the population by dividing by 100, because the vital statistics report gave rates per 100,000 in the population. Death rates for married men indicate widowhood of women, and vice versa.

DENOMINATOR: Death rates for married men and women were then divided by 2006 population estimates (in Table III of the aforementioned NCHS report).

$$\begin{aligned} \text{Total: } & 921,539 / 299,398,484 * 1,000 = 3.078 \\ \text{Men: } & 299,757 / 147,512,152 * 1,000 = 2.032 \\ \text{Women: } & 621,782 / 151,886,332 * 1,000 = 4.094 \end{aligned}$$

Table 2

ACS marriage and divorce state estimates

State-level marriage and divorce counts were run from internal ACS data files and simply tally the incidence of individuals reporting they were married or divorced in the last 12 months in the United States and for each state.

NCHS vital statistics estimates

State-level marriage and divorce data are available from the NCHS on Table A in the National Vital Statistics Report, "Births, Marriages, Divorces, and Deaths: Provisional Data for 2008," http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_19.pdf. The national totals of marriages and divorces from the NCHS are listed as the national totals on this table. The NCHS totals do not match the sum totals of data from the 50 states and the District of Columbia. This is because NCHS estimates a national count of marriages and divorces despite missing and incomplete data from a number of states.

Table 3

ACS marriage, divorce, and widowhood rates were run from internal ACS data files and are based on the incidence of each marital event for men and women (the numerator) divided by a denominator constituting the count of the population of men and women 15 and older, in the United States and for each state.

Table 4

ACS marriage rates were computed for men and women for three population bases: per 1,000 in the total population; per 1,000 in the population 15 and older; and per 1,000 in the unmarried

population 15 and older. For each rate, the numerator was constant for men and women (2,327,018 nationally for men and 2,227,084 nationally for women), while the denominator varied. The denominator for the total population of men nationally was 149,863,485 and the denominator for the total population of women nationally was 154,196,243. The denominator for the population 15 and older nationally for men was 118,573,007 and the denominator for the population 15 and older nationally for women was 124,380,400. The denominator for the unmarried population 15 and older (defined as those widowed, divorced, and never married) was 55,100,441 for men and 61,802,139 for women, nationally.

Correlations between state-level marriage rates were calculated with the Pearson product correlation function in Excel.

Table 5

ACS divorce rates were computed for men and women for three population bases: per 1,000 in the total population; per 1,000 in the population 15 and older; and per 1,000 in the married population 15 and older. For each rate, the numerator was constant for men and women (1,178,915 nationally for men and 1,309,921 nationally for women), while the denominator varied. The denominator for the total population of men nationally was 149,863,485 and the denominator for the total population of women nationally was 154,196,243. The denominator for the population 15 and older nationally for men was 118,573,007 and the denominator for the population 15 and older nationally for women was 124,380,400. The denominator for the married population 15 and older (defined as those married and separated) was 63,472,566 for men and 62,578,261 for women, nationally.

Correlations between state-level divorce rates were calculated with the Pearson product correlation function in Excel.