Child Care Costs in the Current Population Survey's Annual Social and Economic Supplement (CPS ASEC): A Comparison to SIPP

SEHSD Working Paper Number 2011-1

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This paper reports the results of research and analysis undertaken by U.S. Census Bureau staff. It has undergone more limited review than official publications and was released to inform interested parties of ongoing research and to encourage discussion of work in progress. Any views expressed are those of the authors and not necessarily those of the U.S. Census Bureau. We thank Trudi J. Renwick and Kathleen Short for substantive and editorial comments.

Brief Summary

This paper assesses child care cost estimates from the 2010 Current Population Survey's Annual Social and Economic Supplement (CPS ASEC). Although the CPS ASEC has asked whether or not households paid for child care since 2001, the 2010 CPS ASEC is the first to collect data on child care costs. The new cost estimates are compared to similar data from the Survey of Income and Program Participation (SIPP). Despite several limitations and important differences between the two surveys, the authors find that although differences in child care cost estimates between the CPS ASEC and the SIPP are significant, with noted exceptions, the differences are small in magnitude.

Introduction

In the fall of 2009 the Office of Management and Budget's Chief Statistician formed an Interagency Technical Working Group (ITWG) on Developing a Supplemental Poverty Measure (SPM). That group included representatives from the U.S. Census Bureau, Bureau of Labor Statistics, Economics and Statistics Administration, Council of Economic Advisers, U.S. Department of Health and Human Services, and Office of Management and Budget. They issued a series of suggestions to the Census Bureau and BLS on how to develop a new Supplemental Poverty Measure. Their suggestions drew on the recommendations of a 1995 National Academy of Sciences report and the extensive research on poverty measurement conducted over the past 15 years, at the Census Bureau and elsewhere. The new thresholds are not intended to assess eligibility for government programs and will not replace the official poverty thresholds. If the

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¹ For more detail see *Observations from the Interagency Technical Report on Developing a Supplemental Poverty Measure* at http://www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf

² Measuring Poverty: A New Approach. 1995. National Research Council. Citro, Constance F. and Robert T. Michael, (eds.) National Academy Press, Washington DC. Online at http://www.census.gov/hhes/povmeas/methodology/nas/report.html>

President's budget initiative is approved, the Census Bureau will publish the first set of poverty estimates using the new approach in September 2011.

Child care expenses are an important part of the SPM which, consistent with the recommendations of the 1995 NAS report, uses a resource measure based on money available for spending after work expenses and medical out-of-pocket expenses are subtracted from income. To improve these resource estimates, the U.S. Census Bureau added several items to its 2010 CPS ASEC, including questions on child care expenditures.

Since the most reliable and widely used child care cost data at the national level come from the Survey of Income and Program Participation (SIPP), the new items in the 2010 CPS ASEC were modeled from this survey.³ The SIPP items were adapted to 1) collect child care costs annually and 2) collect a household estimate based on all children in residence. In this report we compare the cost of child care reported in the 2010 CPS ASEC for the 2009 calendar year to estimates from the SIPP 2004 Panel Wave 4 for Spring 2005.

Differences between CPS ASEC and SIPP

Table 1 summarizes the child care components of both the 2010 CPS ASEC and 2004 SIPP Wave 4. In the CPS ASEC, the cost of child care is collected only if care was necessary for an adult's employment. In the SIPP, child care cost information is collected for all children ages 0 to 14 in a regular arrangement, regardless of parental employment. Both surveys are nationally representative. The SIPP reference period is spring 2005 while the CPS ASEC references the year 2009. Table 2 shows the size of these populations. Employed women who were designated

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³ Questions were adapted from Wave 3 of the 2004 SIPP Panel, the *Work Related Expenses and Child Support Paid* module. Child care data has been collected intermittently in the Survey of Income and Program Participation (SIPP) beginning in 1985. The eighth wave of the 2004 SIPP collected child care information in the summer of 2006. Due to seasonality issues related to child care, we elected to use the 2005 child care data from the spring of 2005. Wave 5 of the 2008 SIPP collected child care information in January–April 2010 but the data have not yet been released. For detailed reports see http://www.census.gov/population/www/socdemo/childcare.html

parents for children under age 15 in 2005 totaled 23.0 million in the SIPP, whereas 24.0 million women in the CPS ASEC were employed, female family reference persons living with children under age 15 in 2009 (Table 2).

Each reference person in the CPS ASEC who lived with a child under age 15 was asked if they or another adult in the household paid for care so that an adult could work. The universe is marginally more inclusive in the CPS ASEC compared to the SIPP because the CPS ASEC asks parents and non-parents about paid child care. Non-parents such as grandparents or cohabiting partners are perhaps less likely to be familiar with child care arrangements throughout the previous year. To maximize comparability across these two surveys employed women were selected as the unit of analysis for this assessment. CPS ASEC cases are restricted to adult women who were family reference persons or spouses and who lived with a child under age 15.

To compare *annual* CPS ASEC estimates with *weekly* SIPP estimates the data needed to be standardized. In the CPS, year-round, paid child care is atypical. So to create a better SIPP comparison, weekly cost estimates in this report were based on the length of time child care was used. Periodicity of payments, the number of payments made and the amounts paid were used to convert the CPS ASEC annual estimates to weekly estimates. As a consequence, weekly cost estimates in this report were based only on cases for which periodicity of payments was specified.⁴

Results

Table 2 shows the results of the CPS ASEC and SIPP comparison for both the use of paid child care and its average cost among selected demographic groups. In the CPS ASEC 26.9 percent of employed women who lived with a child paid for child care in 2009. This compares to

⁴ The current analysis used CPS cases for which the number and frequency of payments was known. This restriction limited the universe defined in Table 2 to about 81 percent of cases.

the nearly 34.8 percent of employed mothers in the SIPP who paid for child care during the preceding month in spring 2005. For each group, the CPS ASEC estimates are lower than SIPP estimates with statistically significant differences ranging from -4.2 percentage points for Black women to -12.7 percentage points for women living with or parenting children 0-4 years.

Table 2 also compares median and mean weekly costs of care in constant 2009 dollars. For all employed women, the median estimate is \$90 in the CPS ASEC and \$82 in SIPP. Mean values for all employed women were \$127 in the CPS ASEC and \$118 in SIPP. The differences, \$8 and \$9 respectively, are statistically significant. Among women living with child under age five, median values differed significantly, but the mean estimates were not statistically different. For both Black and Hispanic women, neither the median nor the differences in mean child care expenditures were statistically different across the two surveys. Poor women were the only subgroup to show a large difference in the mean, \$63 in the CPS ASEC compared to \$103 in SIPP. However, the median values were not significantly different for poor women across the two surveys. For each of the other subgroups, either the mean or the median difference was statistically significant, but small in magnitude. Margins of error for these estimates are shown in Table 3 for the CPS ASEC and Table 4 for the SIPP.

Table 2 also shows the cost of child care as a percentage of family income and as a percentage of women's personal income. Differences between the two surveys are statistically significant with the exception of child care as a percentage of family income among the nonpoor. For women total and the nonpoor, CPS ASEC estimates are larger than SIPP estimates or not statistically different. For women total and for each subgroup, family income differences are smaller across the two surveys compared with differences in personal income. With respect to the poor, SIPP estimates for proportions of income spent on child care are significantly larger,

28.2 percent of family income and 41.6 percent of personal income, compared to 19.6 percent and 24.1 percent of income respectively, in the CPS ASEC.

Several factors may account for differences in the estimated use of paid child care and the cost of care between the two surveys: the unit of analysis, the number and specificity of questions about child care and its cost, and the reference periods.

First, the SIPP child care topical module is administered to the designated parent who is most often the mother of the child. In SIPP, child care questions refer only to designated parents' own children. In contrast, in the CPS ASEC paid child care (as a work related expense) is captured at the household level and the household estimate includes the cost of care for children regardless of their relationship to the householder or family reference person (Table 1). As noted previously, non-parents may be less familiar with the details and costs of child care arrangements.

Additionally, SIPP asks more questions about child care and with greater specificity than the CPS ASEC. The SIPP 2004 Panel, Wave 4 was designed to compare the cost of child care among different types of arrangements. The designated parent is asked, for each child, to name every child care arrangement used regularly last month and the cost of care in a typical week for each of the arrangements for each child. By contrast, in the CPS ASEC questions are few and broad. The 2010 CPS ASEC asked adults if they or someone else in the household paid for the care of any child in the household during the previous calendar year and if the answer is yes, how much was paid.

Reference periods differ between the two surveys. In SIPP parents are asked about a typical week last month and then they are asked to specify the cost for each type of care. In contrast, CPS ASEC respondents were asked in the spring about child care payments for the

previous calendar year. Respondents are not prompted to recall more than one child care arrangement but may report payments in several ways including annually, monthly or weekly. Compared to SIPP's more recent reference period, the more distant time horizon in the CPS ASEC may mean singular arrangements used a year prior to the interview are less likely to be recalled. That is, the burden of respondent recall necessary to answer the child care questions differs between the CPS ASEC and the SIPP. Since the SIPP has a more recent reference period (last month), SIPP parents may say 'yes' more often to the paid child care question.

In summary, the broader universe in the CPS ASEC, the single child care use question and its longer reference period, may explain the lower child care use estimate in CPS ASEC compared with the SIPP. With respect to costs, evidence is more mixed. Respondents asked to summarize expenditures over a long period of time may recall only their most regular arrangements or they may be more likely to round off numbers for convenience. SIPP estimates by contrast are based on a week in the previous month and as such may be affected by any factors unique to one month in a given calendar year.

Finally, use of paid child care in 2009 may have been affected by the economic recession and its impact on women's work hours. If so, data from the 2010 CPS ASEC may be atypical compared to earlier years with respect to use of and cost estimates for paid child care. Table 5a shows that child care use fell after the 2001 economic recession. The percentage of employed women whose families paid for child care decreased from 30.0 percent in 2000 to 27.6 percent in 2002. A decrease is also observed from a rate of about 30 percent beginning in 2006 down to the rate of 26.9 percent in 2009 (Table 5a). For women living with children, economic circumstances in 2005 may not be directly comparable to their circumstances in 2009.

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⁵ Recessions are determined by the National Bureau of Economic Research, a private research organization.

The lower CPS ASEC estimates of mean child care expenditures for poor women are also of some concern. Women who lived below the poverty level may have reported the total cost of care in SIPP without subtracting the value of some subsidies. The Wave 4 SIPP asked respondents whether they received child care assistance but the 2010 CPS ASEC did not.⁶

Conclusion

For all employed women and for most demographic subgroups, CPS ASEC estimates of the cost of paid child care were significantly different than SIPP estimates both in dollar values and as a proportion of income. However, differences between the estimates were, with noted exceptions, both positive and negative, and modest in size. The reported use of paid child care among employed women was greater in the SIPP. Since the estimated differences in amounts paid were modest in magnitude, the new CPS ASEC child care expense estimates appear reliable for use in the new Supplemental Poverty Measure. As the 2010 CPS ASEC estimates may have been effected by the economic downturn, further analysis should be undertaken when data from SIPP 2008 Panel Wave 5 are released.

The data in this report are from the Annual Social and Economic Supplement (ASEC) to the 2010 Current Population Survey (CPS) and the Survey of Income and Program Participation (SIPP), 2004 Panel Wave 4. The estimates in this paper (which may be shown in the text and tables) 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. SIPP standard errors were calculated using design factors. CPS standard errors are based on replicate weights.

For information on confidentiality protection, sampling error, nonsampling error, and definitions see < www.census.gov/apsd/techdoc/cps/cpsmar10.pdf> for the CPS ASEC and < www.sipp.census.gov/sipp/sourceac/S&A04 W1toW12(S&A-9).pdf > for SIPP.

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⁶ In previous years the CPS also collected data about child care assistance to aid employment or school attendance, but the 2010 CPS did not collect this data so further comparison across the two surveys was not possible.

Table 1. Child Care Components in the CPS ASEC (2010) and the SIPP (2004)

	Current Population Survey (CPS) ASEC	Survey of Income and Program Participation (SIPP) Child Care Topical Module			
Interview Method	in person and telephone	in person			
Child care reference period	2009 calendar year	Spring 2005 (Feb-May)			
Employment reference period	2009 calendar year	four months prior to interview			
Child care level of measurement	household	family			
Child care data collected for:	all children in the household	own children			
Cost refers to these types of child care arrangements:	all	care on a regular basis, at least once a month			
Types of arrangements specified:	none	each type			
Question1	Did (you/anyone in this household) pay for the care of (your/their) child(ren) while you/they worked last year? include preschool; exclude kindergarten or grade school	During a typical week last month, please tell me if [you] used any of the following arrangements to look after [child 1] on a regular basis. By regular basis, I mean at least once a week during the past month [FLASHCARD]			
Question 2		For [arrangement 1] and [child 1] did you or your family usually make any money payment? (asked for each type of arrangement)			
Question3	How much did you or they pay weekly/monthly/annually for child care?	In a typical WEEK last month, how much did [you]/[your] family pay the day care center to care for [child 1]?			
Periodicity of child care payments	weekly, biweekly, monthly, bimonthly, or annually (what is convenient for R)	weekly (typical week last week)			

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2010 and Survey of Income and Program Participation (SIPP), 2004 Panel Wave 4.

Table 2. Comparison of Child Care Estimates between SIPP and CPS ASEC (numbers in thousands)

		CPS AS	EC 2009			SIPI	P 2005				
Unit of analysis) living in a	ce persons o household v er 15*		Female c	-	parents (ages under 15	Difference (+/-) between CSP-SIPP			
Demographic variables	Z	% who paid	median weekly ¹	mean weekly ¹	Ν	% who paid	median weekly (constant 2009 dollars²)	mean weekly (constant 2009 dollars²)	% who paid	median weekly	mean weekly
Total employed mothers/women	23,978	26.9%	\$90	\$127	22,960	34.8%	\$82	\$118	-7.9%*	\$8*	\$9*
Fulltime	15,327	30.6%	\$96	\$133	15,793	37.9%	\$88	\$123	-7.3%*	\$8*	\$10*
Child age 0-4	10,570	37.2%	\$100	\$148	9,210	49.9%	\$110	\$141	-12.7%*	-\$10*	\$7
Child age 5-14	13,408	18.7%	\$60	\$94	13,750	24.7%	\$53	\$87	-6.0%*	\$7*	\$7
Poor	2,670	18.9%	\$49	\$63	2,378	24.3%	\$55	\$103	-5.4%*	\$6	-\$40*
Not poor	21,307	27.9%	\$96	\$132	20,583	36.0%	\$82	\$120	-8.1%*	\$14*	\$12*
Black	3,550	27.2%	\$74	\$101	3,582	31.4%	\$84	\$112	-4.2%*	-\$9	-\$11
Hispanic	4,108	24.0%	\$74	\$106	3,742	36.5%	\$82	\$99	-12.6%*	-\$9	\$7
White-NH	14,752	28.0%	\$99	\$135	14,336	32.5%	\$79	\$120	-4.6%*	\$20*	\$16*
Income spent on child care	N		<i>yearly</i> income	% of yearly personal income	N		monthly income	% of yearly personal income	% of family income		% of personal income
Total employed	23,978	7.	7%	19.9%	22,961	6	.4%	13.2%	1.3%*		6.7%*
Poor	2,670	19	.6%	24.1%	2,378	28	3.2%	41.6%	-8.6%*		-17.5%*
Not poor	21,307	6.	7%	19.6%	20,583	6	.5%	12.7%	0.2%		7.0%*

¹Among mothers reporting number and periodicity of child care payments; 81.8%, 5,243 of 6,411 weighted cases.

For information on confidentiality protection, sampling error, nonsampling error, and definitions see <www.census.gov/apsd/techdoc/cps/cpsmar10.pdf> and <www.census.gov/sipp/sourceac/S&A04_W1toW12(S&A-9).pdf>

Sources: U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement, 2010; U.S. Census Bureau, Survey of Income and Program Participation (SIPP), 2004 Panel Wave 4.

²2005 dollars were adjusted to 2009 based on annual CPI values from the CPI-U-RS. http://www.bls.gov/cpi/cpiurs1978_2009.pdf

^{*} Indicates a statistically significant difference between CPS and SIPP estimates at the 90-percent confidence level.

Table 3. Margins of Error for Child Care Estimates, CPS ASEC 2010 (numbers in 1,000s)

			CPS,	Estimates for 2009)						
Unit of analysis	Fe	Female family reference persons or spouses (ages 18+), employed and lived with a child under age 15									
Demographic variables	N	percent who paid for child care	MOE ²	Median weekly 2009 dollars ¹	MOE ²	Mean weekly 2009 dollars ¹	MOE ²				
Total employed mothers/women	23,978	26.9%	0.64%	\$90	\$4	\$127	\$4				
Fulltime	15,415	30.6%	0.89%	\$96	\$4	\$133	\$5				
Child age 0-4	10,570	37.2%	0.59%	\$100	\$4	\$148	\$6				
Child age 5-14	13,408	18.7%	0.38%	\$60	\$2	\$94	\$3				
Poor	2,670	18.9%	1.03%	\$49	\$5	\$63	\$3				
Not poor	21,308	27.9%	0.39%	\$96	\$3	\$132	\$4				
Black	3,450	27.2%	0.88%	\$74	\$6	\$101	\$8				
Hispanic	4,108	24.0%	0.77%	\$74	\$7	\$106	\$15				
White-NH	14,752	27.9%	0.45%	\$99	\$2	\$135	\$5				

Income	spent	on	child	care
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Total employed

Poor

Not poor

N	% paid	MOE	% of <i>yearly</i> family income ¹	MOE ²	% of <i>yearly</i> personal income ¹	MOE ²
23,978	26.9%	0.4%	7.7%	0.3%	19.9%	2.8%
2,670	18.9%	1.0%	19.6%	1.4%	24.1%	2.1%
21,308	27.9%	0.4%	6.7%	0.2%	19.6%	3.0%

¹Among mothers reporting number and periodicity of child care payments; 81.8%, 5,243 of 6,411 weighted cases.

For information on confidentiality protection, sampling error, nonsampling error, and definitions see <www.census.gov/apsd/techdoc/cps/cpsmar10.pdf> Source: U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement, 2010.

² This number added to or subtracted from the estimate yields the 90-percent confidence interval around the estimate.

Table 4. Margins of Error for Child Care Parameters: SIPP 2004 Panel Wave 4 (numbers in 1,000s)

					SIPP,	Estimates for 2	2005					
		Female designated parents (ages 18+) of a child under 15										
Demographic variables	N	% paid	MOE ¹	median weekly, 2005 dollars	MOE ¹	mean weekly, 2005 dollars	MOE ¹	median weekly, 2009 dollars ²	MOE ¹	mean weekly,	MOE ¹	
Total employed mothers/women	22,960	34.8%	1.1%	\$75	\$4	\$107	\$6	\$82	\$4	\$118	\$6	
Fulltime	15,793	37.9%	1.4%	\$80	\$4	\$112	\$7	\$88	\$4	\$123	\$7	
Child age 0-4	9,210	49.9%	1.8%	\$100	\$7	\$128	\$7	\$110	\$7	\$141	\$8	
Child age 5-14	13,750	24.7%	1.3%	\$48	\$5	\$79	\$9	\$53	\$6	\$87	\$9	
Poor	2,378	24.3%	3.1%	\$50	\$10	\$94	\$26	\$55	\$11	\$103	\$29	
Not poor	20,583	36.0%	1.2%	\$75	\$4	\$109	\$6	\$82	\$4	\$120	\$7	
Black	3,582	31.4%	2.7%	\$76	\$14	\$102	\$8	\$84	\$15	\$112	\$9	
Hispanic	3,742	36.5%	2.8%	\$75	\$24	\$90	\$16	\$82	\$27	\$99	\$18	
White-NH	14,336	32.5%	1.4%	\$72	\$6	\$109	\$4	\$79	\$7	\$120	\$4	

Income spent on child care
Total employed
Poor
Not poor

n	N	% paid	MOE ¹	% of <i>monthly</i> family income	MOE ¹	% of monthly personal income	MOE ¹	
	22,961	34.8%	1.1%	6.4%	0.6%	13.2%	0.8%	
	2,378	24.3%	3.1%	28.2%	3.3%	41.6%	3.6%	
	20,583	36.0%	1.2%	6.5%	0.6%	12.7%	0.8%	

¹ This number added to or subtracted from the estimate yields the 90-percent confidence interval around the estimate.

For information on confidentiality protection, sampling error, nonsampling error, and definitions see <www.census.gov/sipp/sourceac/S&A04_W1toW12(S&A-9).pdf>

Source: U.S. Census Bureau, Survey of Income and Program Participation (SIPP), 2004 Panel Wave 4.

²2005 dollars were adjusted to 2009 based on annual CPI values from the CPI-U-RS. http://www.bls.gov/cpi/cpiurs1978_2009.pdf

Table 5a. Percent of Women in Households Paying for Child Care by Employment and Poverty Status, CPS ASEC 2001-2010

Year of Reference	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Current Population Survey Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Women ages 18 and older, who are family- heads or spouses in households with at least one child, age 0-14 years	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In households that paid for child care	23.8	22.3	21.0	20.3	20.4	20.5	22.8	22.4	22.6	20.0
Employed	73.8	72.4	71.2	70.2	69.8	70.1	70.2	70.4	70.5	68.8
Paid for child care	30.0	28.9	27.6	26.9	26.9	27.1	30.3	29.7	30.0	26.9
Not employed	26.2	27.6	28.8	29.8	30.2	29.8	29.8	29.6	29.5	31.2
Paid for child care	6.3	5.1	4.8	4.9	5.3	4.9	5.1	5.0	5.1	5.0
In poverty, paid for child care	14.4	13.5	11.1	10.9	11.7	9.9	12.4	11.5	11.4	9.8
Not in poverty, paid for child care	25.3	23.8	22.8	22.1	22.1	22.5	24.7	24.5	24.9	22.3

Table 5b. Number of Women in Households Paying for Child Care, by Employment and Poverty Status, CPS ASEC 2001-2010 (numbers in 1000s)

Year of Reference	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Current Population Survey Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Women ages 18 and older who are family- heads or spouses in households with at least one child, age 0-14 years	34,375	34,307	34,646	34,836	35,137	34,795	35,545	34,405	34,726	34,841
In households that paid for child care	8,182	7,665	7,289	7,080	7,174	7,137	8,094	7,707	7,856	6,983
Employed	25,368	24,839	24,651	24,448	24,523	24,404	24,941	24,228	24,480	23,978
Paid for child care	7,616	7,181	6,811	6,569	6,606	6,625	7,554	7,193	7,332	6,444
Not employed	9,008	9,469	9,995	10,389	10,614	10,381	10,604	10,177	10,246	10,863
Paid for child care	566	484	478	511	567	512	540	513	524	540
In poverty, paid for child care	678	657	564	583	652	531	688	631	663	618
Not in poverty, paid for child care	7,504	7,007	6,725	6,497	6,522	6,606	7,406	7,075	7,193	6,365

For information on confidentiality protection, sampling error, nonsampling error, and definitions see <www.census.gov/apsd/techdoc/cps/cpsmar10.pdf>.

Source: U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplements, 2001-2010.