Appendix A.

Educational Attainment Data in SIPP

The only available educational attainment indicator from the SIPP is the educational attainment of the woman at the time of the survey in 1986. This results in a significant overestimation of schooling levels at the time of first birth for some groups of women who had their first birth in the 1960's and 1970's and who subsequently continued their schooling.

Table A-1 presents the SIPP educational attainment levels as of the survey date in 1986—as used in this report—by the age of the women and the period of first birth. In comparison with Vital Statistics estimates from birth records, SIPP data show considerable differences in educational attainment among teenage mothers.

Between 1970 and 1980, Vital Statistics data show that 40 percent of teenage mothers had a least a high school education at the time of their first birth. Data from the SIPP show that about two-thirds of the women who had their first birth between 1971 and 1980, on average, had received at least a high school education by 1986. The problem of overestimation is less severe for older women or for SIPP estimates for the 1981–85 period. The SIPP educational indicator used in this report, however, also seems to overestimate college attainment levels for older women who had first births in the early 1970's.

Caution must be used in interpreting educational differences among young women for earlier periods as subsequent schooling has placed them in different educational categories than they were actually in at the time of their first birth.

Table A-1.
Educational Attainment of Women at the Time of Their First Birth
(Vital statistics estimates, 1970-85, and SIPP estimates of attainment as of the survey in 1986)

Educational attainment, source of data, and year of first birth	Age at first birth			
	Less than 20	20-24	25-29	30 and over
Percent 12+ Years				
Vital statistics:				
1985	40.7	87.9	96.0	96.8
1980	40.3	88.3	96.2	95.2
1975	37.8	88.1	94.7	89.9
1970	43.6	88.9	91.6	83.7
SIPP:				
1981-85	47.1	88.4	94.7	92.9
1976-80	62.1	89.6	95.2	92.7
1971-75	64.0	89.3	93.0	82.1
Percent 13+ Years				
Vital statistics:				
1985	4.0	32.7	60.2	71.8
1980	3.4	30.9	62.1	68.1
1975	2.7	30.7	60.0	55.6
1970	4.7	32.6	52.7	41.6
SIPP:				
1981-85	6.1	32.7	57.7	68.7
1976-80	12.0	30.5	62.5	67.5
1971-75	16.1	37.0	63.4	50.4
Percent 16+ Years				
Vital statistics:				
1985	(NA)	6.9	33.0	49.2
1980	(NA)	6.7	36.0	48.0
1975	(NA)	7.6	37.3	38.2
1970	(NA)	8.7	33.5	26.4
SIPP:				
1981-85	(NA)	8.3	29.3	49.7
1976-80	(NA)	8.2	38.9	45.4
1971-75	(NA)	13.3	40.6	31.5

NA Not applicable for this age group. Source: Vital Statistics data are from table B-1 of this report.

Appendix B.

Detailed Tables

Table B-1.

Educational Attainment of Women at the Time of Their First Birth: 1970 to 1985

(Vital statistics estimates. In percent)

Educational attainment and year of first birth	All ages	Age at first birth			
		Less than 20 years	20-24 years	25-29 years	30 years and over
12 or more years:					
1985	80.1	40.7	87.9	96.0	96.8
1980	77.3	40.3	88.3	96.2	95.2
1975	71.9	37.8	88.1	94.7	89.9
1970	73.1	43.6	88.9	91.6	83.7
13 or more years:					
1985	38.6	4.0	32.7	60.2	71.8
1980	33.8	3.4	30.9	62.1	68.1
1975	28.2	2.7	30.7	60.0	55.6
1970	26.0	4.7	32.6	52.7	41.6
16 or more years:					
1985	18.1	(NA)	6.9	33.0	49.2
1980	15.4	(NA)	6.7	36.0	46.0
1975	12.7	(NA)	7.6	37.3	38.2
1970	9.9	(NA)	8.7	33.5	26.4

NA Not applicable for this age group.

Source: Annual issues of Vital Statistics of the United States. The number of States reporting on educational attainment was 47 for 1980 and 1985, 42 States for 1975, and 38 States for 1970, in addition to the District of Columbia for all years except for 1970.

Table B-2.
Women Who Worked for Pay Continuously for 6 or More Months Before Their First Birth, and Who Worked During Their First Pregnancy, by Race: 1961-65 to 1981-85

(In percent)

Race and year of first birth	Total	Age at first birth					
		Less than 18 years	18-19 years	20-21 years	22-24 years	25-29 years	30 years and over
Worked 6 or More Months Continuously							
All races:							
1981-85	75.2	20.8	47.8	73.5	85.2	92.7	93.8
1976-80	73.1	31.0	54.7	73.2	83.2	90.0	92.6
1971-75	68.9	32.0	57.1	73.1	84.0	89.0	75.9
1966-70	68.4	31.2	52.5	69.6	79.9	83.7	73.2
1961-65	60.0	27.2	43.6	67.9	74.9	72.8	74.0
White:							
1981-85	80.4	26.9	53.5	77.1	88.0	94.1	95.2
1976-80	77.7	38.0	56.9	76.2	86.0	93.4	93.1
1971-75	72.7	33.3	59.6	75.0	85.6	90.0	78.5
1966-70	69.5	29.8	53.8	70.9	81.6	88.0	72.5
1961-65	63.6	22.2	46.9	69.8	77.4	79.4	74.7
Black:							
1981-85	50.8	11.9	31.0	63.5	67.2	(B)	(B)
1976-80	50.9	18.2	(B)	(B)	(B)	(B)	(B)
1971-75	53.4	30.0	49.0	(B)	(B)	(B)	(B)
1966-70	51.0	32.7	47.8	(B)	(B)	(B)	(B)
1961-65	41.9	37.6	28.7	(B)	(B)	(B)	(B)
Worked During Pregnancy							
All races:							
1981-85	64.5	16.8	38.9	59.3	71.9	82.3	83.4
1976-80	61.4	23.5	40.8	57.4	73.1	81.1	74.0
1971-75	53.5	25.1	38.3	57.4	66.6	73.1	60.7
1966-70	49.4	19.1	40.1	50.8	61.4	66.2	44.3
1961-65	44.4	25.0	29.2	49.4	56.8	54.4	51.9
White:							
1981-85	69.3	21.7	42.5	63.5	74.1	85.2	83.8
1976-80	65.5	29.7	43.7	61.2	75.8	82.8	73.1
1971-75	57.0	26.1	41.7	59.3	67.9	74.3	63.9
1966-70	51.6	15.3	39.1	51.7	63.9	70.5	43.0
1961-65	46.7	20.7	32.1	50.0	58.5	58.1	54.1
Black:							
1981-85	42.9	9.4	29.0	45.7	54.8	(B)	(B)
1976-80	40.5	11.8	(B)	(B)	(B)	(B)	(B)
1971-75	39.8	23.3	28.1	(B)	(B)	(B)	(B)
1966-70	37.9	24.2	46.9	(B)	(B)	(B)	(B)
1961-65	32.2	34.4	13.7	(B)	(B)	(B)	(B)

B Base too small to show derived measure.
Note: Population bases are in table B-3.

Table B-3.
Distribution of Women, by Year of First Birth, Age at First Birth, and Employment Status During Pregnancy, by Race: 1961-65 to 1981-85

(Numbers in thousands)

Race and year of first birth	Total	Age at first birth					
		Less than 18 years	18-19 years	20-21 years	22-24 years	25-29 years	30 years and over
All Women							
All races:							
1981-85	8,129	810	1,042	1,301	1,738	2,207	1,031
1976-80	7,192	887	1,083	1,246	1,657	1,744	575
1971-75	6,920	1,032	1,475	1,318	1,495	1,227	373
1966-70	8,956	928	1,253	1,578	1,734	1,098	365
1961-65	6,306	862	1,312	1,319	1,322	925	565
White:							
1981-85	6,660	492	796	1,053	1,504	1,933	881
1976-80	5,972	603	865	1,047	1,430	1,534	493
1971-75	5,537	635	1,142	1,095	1,287	1,091	287
1966-70	5,817	590	1,011	1,408	1,568	925	316
1961-65	5,301	575	1,070	1,175	1,207	779	495
Black:							
1981-85	1,184	297	211	202	206	187	81
1976-80	933	249	193	177	142	124	48
1971-75	1,154	377	305	186	163	73	49
1966-70	932	315	222	145	117	107	27
1961-65	832	260	211	129	86	94	53
Worked During Pregnancy							
All races:							
1981-85	5,239	136	405	772	1,249	1,816	860
1976-80	4,414	209	442	715	1,210	1,414	425
1971-75	3,700	259	566	757	995	897	226
1966-70	3,435	177	502	801	1,065	727	162
1961-65	2,797	215	383	652	751	503	293
White:							
1981-85	4,612	107	338	668	1,114	1,646	738
1976-80	3,914	179	378	640	1,084	1,271	361
1971-75	3,158	166	476	650	874	810	183
1966-70	3,003	90	395	728	1,002	652	136
1961-65	2,476	119	343	568	706	452	268
Black:							
1981-85	508	28	61	93	113	136	77
1976-80	378	29	56	71	83	100	38
1971-75	459	88	86	98	114	48	26
1966-70	354	76	104	66	48	48	13
1961-65	268	89	29	64	41	28	17

Table B-4.
Logistic Regression for Odds of Working During First Pregnancy: 1961-65 to 1981-85

Characteristic	Main effect	Interaction of selected characteristics with—							
		Child's birth cohort					Educational attainment		
		1961-65	1966-70	1971-75	1976-80	1981-85	Less than high school	High school	College, 1 or more years
Age at first birth:									
Less than 20 years	**-0.733	0.073	0.059	0.024	−0.059	−0.097	0.114	*-0.107	−0.007
	(0.056)	(0.062)	(0.080)	(0.092)	(0.094)	(0.084)	(0.073)	(0.066)	(0.085)
20 and 21 years	**-0.088	0.126	0.039	0.083	*-0.139	−0.109	−0.021	**0.177	**-0.155
	(0.039)	(0.103)	(0.095)	(0.107)	(0.075)	(0.087)	(0.076)	(0.081)	(0.071)
22 to 24 years	**0.330	−0.019	0.020	−0.029	0.077	−0.049	−0.044	−0.012	0.056
	(0.052)	(0.072)	(0.075)	(0.078)	(0.083)	(0.080)	(0.094)	(0.067)	(0.074)
25 years and over	**0.492	*-0.180	−0.118	−0.078	0.122	**0.255	−0.049	−0.058	0.106
	(0.044)	(0.093)	(0.097)	(0.104)	(0.094)	(0.102)	(0.083)	(0.077)	(0.068)
Race:									
White[1]	**0.176	−0.080	−0.073	−0.025	0.057	0.121	*-0.105	**0.114	−0.009
	(0.040)	(0.087)	(0.081)	(0.057)	(0.066)	(0.081)	(0.056)	(0.046)	(0.049)
Marital status at first birth:									
Married[2]	−0.014	−0.044	**-0.132	−0.040	**0.142	0.074	***	***	***
	(0.033)	(0.067)	(0.064)	(0.065)	(0.060)	(0.069)			
Educational attainment:									
Less than high school	**-0.795	0.026	0.093	0.025	0.040	**-0.184	(X)	(X)	(X)
	(0.061)	(0.098)	(0.079)	(0.085)	(0.087)	(0.090)			
High school	**0.211	0.051	−0.052	−0.051	−0.019	0.072	(X)	(X)	(X)
	(0.046)	(0.070)	(0.065)	(0.069)	(0.087)	(0.064)			
College, 1 or more years	**0.584	−0.077	−0.041	0.026	−0.020	0.112	(X)	(X)	(X)
	(0.051)	(0.079)	(0.068)	(0.074)	(0.067)	(0.079)			
Child's birth cohort:									
1961-65	**-0.264								
	(0.086)								
1966-70	−0.055								
	(0.080)								
1971-75	0.067								
	(0.070)								
1976-80	0.104								
	(0.087)								
1981-85	**0.147								
	(0.089)								
Constant	*-0.073								
	(0.045)								
Degrees of freedom	192								
Jackknifed X2	2.85								

* Coefficient significant at the 0.10 level.
** Coefficient significant at the 0.05 level.
***Interaction not in regression.
X Interaction not applicable.
[1]Includes White and all other races except Black.
[2]Includes births after first marriage.
Note: Coefficients represent the log of the odds of working during first pregnancy. Numbers in parenthesis represent the standard errors of the coefficients.

Table B-5.
Women at Work During Their First Pregnancy and After Their First Birth, by Monthly Interval Before and After First Birth and Employment Status During First Pregnancy: 1961-65 to 1981-85

(Numbers in thousands)

Monthly interval	Year of first birth					
	1981-84	1976-80	1971-75	1966-70	1961-65	1981-85
Number of women with first births	6,671	7,192	6,920	6,956	6,306	8,129
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Working During Pregnancy						
Total	63.5	61.4	53.5	49.4	44.4	64.5
Working in month before first birth:						
8 months	63.4	61.1	53.1	49.4	44.1	64.3
7 months	62.7	60.5	51.9	48.5	43.5	63.3
6 months	61.5	59.0	49.6	47.2	42.2	62.1
5 months	58.4	56.7	48.4	42.5	38.7	58.8
4 months	55.8	54.3	42.9	39.9	35.8	56.6
3 months	52.9	50.4	39.8	35.6	30.1	53.7
2 months	49.6	45.2	34.2	28.5	22.9	50.1
1 month	41.2	36.2	23.0	19.4	15.3	41.7
Less than 1 month[1]	29.9	25.1	14.5	12.9	10.1	30.5
Working After Birth						
Total						
Cumulative percent:						
Less than 1 month[1]	3.2	2.5	1.8	1.3	1.9	(I)
1 month	12.1	7.2	6.7	4.6	3.8	(I)
2 months	25.4	16.8	12.1	9.0	7.8	(I)
3 months	32.9	22.4	15.6	12.7	9.9	(I)
4 months	37.4	27.1	17.6	15.2	11.2	(I)
5 months	40.5	29.5	19.4	16.5	12.3	(I)
6 months	43.5	32.2	21.9	18.3	13.7	(I)
7 months	45.2	33.4	22.9	19.2	14.2	(I)
8 months	47.4	34.6	24.3	20.5	14.6	(I)
9 months	48.9	35.3	25.1	21.5	15.3	(I)
10 months	50.3	36.3	25.6	22.1	15.6	(I)
11 months	51.0	37.1	26.6	22.6	15.8	(I)
12 months	52.5	38.8	27.9	23.9	16.8	(I)
18 months	(I)	45.1	33.5	27.4	20.6	(I)
24 months	(I)	48.0	37.0	29.8	22.5	(I)
36 months	(I)	54.6	42.4	34.3	26.6	(I)
48 months	(I)	59.2	46.9	38.2	30.4	(I)
60 months	(I)	64.3	50.0	41.1	33.5	(I)
Worked During Pregnancy						
Number of women	4,237	4,414	3,700	3,435	2,797	(I)
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Cumulative percent at work:						
Less than 1 month[1]	4.7	3.7	2.6	2.4	4.1	(I)
1 month	16.9	10.3	10.3	7.7	6.1	(I)
2 months	36.3	24.2	18.8	14.6	13.5	(I)
3 months	46.0	32.6	24.1	19.6	16.5	(I)
4 months	52.3	38.7	27.0	22.8	17.7	(I)
5 months	56.1	42.0	29.3	24.3	19.3	(I)
6 months	59.3	45.4	32.1	26.7	21.4	(I)
7 months	61.2	46.9	33.2	27.7	22.3	(I)
8 months	64.2	48.1	34.7	29.1	22.9	(I)
9 months	65.9	48.9	35.4	30.2	23.5	(I)
10 months	67.1	49.8	36.1	30.7	24.0	(I)
11 months	67.8	50.6	37.6	31.3	24.5	(I)
12 months	69.7	52.6	38.8	32.7	25.8	(I)
18 months	(I)	59.3	44.3	37.0	29.4	(I)
24 months	(I)	62.0	47.2	39.1	30.8	(I)
36 months	(I)	68.4	52.0	43.8	35.0	(I)
48 months	(I)	72.6	56.6	46.7	38.7	(I)
60 months	(I)	76.3	59.3	49.5	41.2	(I)

Table B-5.
Women at Work During Their First Pregnancy and After Their First Birth, by Monthly Interval Before and After First Birth and Employment Status During First Pregnancy: 1961-65 to 1981-85—Continued

(Numbers in thousands)

Monthly interval	Year of first birth					
	1981-84	1976-80	1971-75	1966-70	1961-65	1981-85
Working After Birth—Con.						
Did Not Work During Pregnancy						
Number of women	2,434	2,778	3,221	3,522	3,509	(I)
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Cumulative percent at work:						
Less than 1 month[1]	0.6	0.5	1.0	0.2	0.2	(I)
1 month	3.7	2.4	2.5	1.7	2.0	(I)
2 months	6.5	5.1	4.4	3.6	3.4	(I)
3 months	9.9	6.3	5.9	6.0	4.6	(I)
4 months	11.5	8.5	6.8	7.8	6.0	(I)
5 months	13.4	9.6	8.1	9.0	6.7	(I)
6 months	16.2	11.1	10.1	10.2	7.5	(I)
7 months	17.5	11.9	10.9	11.0	7.8	(I)
8 months	18.2	13.0	12.3	12.1	7.9	(I)
9 months	19.4	13.7	13.2	13.0	8.8	(I)
10 months	21.0	14.9	13.5	13.7	8.9	(I)
11 months	21.8	15.6	14.1	14.1	8.9	(I)
12 months	22.5	16.8	15.3	15.3	9.6	(I)
18 months	(I)	22.5	21.2	18.2	13.7	(I)
24 months	(I)	25.8	25.2	20.8	16.0	(I)
36 months	(I)	32.7	31.4	25.2	19.8	(I)
48 months	(I)	37.8	35.7	29.9	23.8	(I)
60 months	(I)	45.2	39.2	33.0	27.4	(I)

I Incomplete data for this interval.
[1]Includes women who responded that they never stopped working during their pregnancy or after their birth.
Note: 1981-84 estimates are used for comparing worker rates before and after birth for the most recent first birth cohort.

Table B-6.
Women Who Worked During their First Pregnancy, by When They Stopped Working Before First Birth: 1961-65 to 1981-85

(Numbers in thousands)

Month before birth that woman stopped working	Year of first birth					
	1981-85	1976-80	1971-75	1966-70	1961-65	1981-84
Total Working						
Total	5,239	4,414	3,700	3,435	2,797	4,237
Month 8 or earlier	89	65	111	59	56	55
Month 7	100	104	154	90	81	83
Month 6	268	171	221	328	223	207
Month 5	176	173	248	181	181	170
Month 4	243	281	215	303	357	192
Month 3	290	369	384	491	453	224
Month 2	682	650	773	629	479	556
Month 1	914	796	591	453	332	756
Less than 1 month	2,475	1,805	1,002	899	635	1,995
Worked Full Time[1]						
Total	4,387	3,821	3,291	3,074	2,502	3,587
Month 8 or earlier	77	48	87	55	41	43
Month 7	78	90	124	72	70	65
Month 6	214	145	178	279	204	173
Month 5	131	130	205	161	173	125
Month 4	179	205	184	263	314	154
Month 3	233	322	347	439	423	185
Month 2	523	549	724	568	413	423
Month 1	759	723	541	415	305	636
Less than 1 month	2,194	1,609	901	825	560	1,784

[1]Worked full time at last job before child's birth.

Table B-7.
Women Who Worked During Last Trimester of First Pregnancy or Worked Within One Month of Child's Birth, by Selected Characteristics: 1961-65 to 1981-85

(In percent)

Characteristic	Year of first birth				
	1981-85	1976-80	1971-75	1966-70	1961-65
Women Working in Last Trimester					
Total	77.7	73.7	64.0	57.7	51.7
Employment status at last job:					
Full time	79.2	75.4	65.8	58.8	51.1
Part time	70.1	62.5	49.0	48.7	57.1
Age at first birth:					
Less than 18 years	(B)	64.2	67.9	(B)	58.9
18 and 19 years	58.7	63.5	55.0	41.7	51.8
20 and 21 years	68.8	73.9	57.7	62.5	50.3
22 to 24 years	78.3	71.8	67.4	59.9	56.0
25 to 29 years	83.1	78.4	67.5	56.6	45.6
30 years and over	83.0	78.3	74.0	(B)	48.8
Race:					
White	77.8	74.6	63.2	57.0	50.5
Black	74.9	67.2	66.5	59.3	61.3
Child born:					
Before first marriage	70.2	74.4	67.7	61.8	57.3
Within first marriage	79.0	73.4	63.5	56.6	50.4
After first marriage	86.4	75.1	(B)	(B)	(B)
Educational attainment:					
Less than high school	63.0	59.5	54.8	59.5	54.6
High school	73.7	69.9	64.0	56.8	52.5
College, 1 to 3 years	83.3	79.6	66.5	60.4	55.7
College, 4 or more years	84.1	80.2	65.2	55.3	43.5
Women Working Within 1 Month of Child's Birth					
Total	47.2	40.9	27.1	26.2	22.7
Employment status at last job:					
Full time	50.0	42.1	27.4	26.8	22.4
Part time	33.0	33.0	24.6	20.5	25.4
Age at first birth:					
Less than 18 years	(B)	33.0	42.1	(B)	32.6
18 and 19 years	32.0	38.3	25.9	13.1	20.9
20 and 21 years	41.6	40.8	21.1	27.4	22.2
22 to 24 years	45.6	36.8	25.7	29.1	27.3
25 to 29 years	51.9	47.5	30.6	24.1	14.1
30 years and over	53.9	37.4	25.2	(B)	21.9
Race:					
White	48.5	41.7	25.9	24.6	21.9
Black	34.9	34.3	33.5	36.0	27.8
Child born:					
Before first marriage	40.9	34.7	31.2	30.9	33.9
Within first marriage	48.5	42.3	26.4	24.8	20.3
After first marriage	53.3	39.6	(B)	(B)	(B)
Educational attainment:					
Less than high school	31.5	31.5	29.4	30.9	18.0
High school	42.6	38.4	25.7	25.9	20.1
College, 1 to 3 years	50.2	40.0	28.6	25.9	31.0
College, 4 or more years	58.1	50.2	27.4	24.7	24.4

B Base too small to show derived measure.
Note: Percents based on number of women reported working during first pregnancy within the selected socioeconomic population groups.

Table B-8.
Logistic Regression for Odds of Working in Last Trimester of Pregnancy Among Employed Women: 1981-85 to 1981-85

Characteristic	Main effect	Interaction of selected characteristics with—									
		Child's birth cohort					Full time work	Age at first birth			
		1961-65	1966-70	1971-75	1976-80	1981-85		Less than 20 years	20-21 years	22-24 years	25 years and over
Age at first birth:											
Less than 20 years	−0.070	*0.200	**-0.244	0.042	0.037	−0.035	***	(X)	(X)	(X)	(X)
	(0.082)	(0.109)	(0.113)	(0.128)	(0.141)	(0.134)					
20 and 21 years	−0.117	−0.017	**0.289	**-0.239	0.152	*-0.185	***	(X)	(X)	(X)	(X)
	(0.094)	(0.141)	(0.093)	(0.115)	(0.166)	(0.113)					
22 to 24 years	0.048	0.127	0.025	0.050	**-0.216	0.016	***	(X)	(X)	(X)	(X)
	(0.089)	(0.108)	(0.104)	(0.067)	(0.101)	(0.112)					
25 years and over	0.139	**-0.309	−0.069	0.147	0.027	*0.204	***	(X)	(X)	(X)	(X)
	(0.097)	(0.091)	(0.106)	(0.097)	(0.128)	(0.126)					
Race:											
White[1]	0.005	−0.190	−0.011	−0.044	**0.230	0.015	***	***	***	***	***
	(0.056)	(0.132)	(0.125)	(0.121)	(0.111)	(0.130)					
Marital status at first birth:											
Married[2]	0.003	0.029	−0.064	−0.051	−0.086	**0.171	*-0.111	*-0.133	−0.048	0.055	0.125
	(0.061)	(0.105)	(0.125)	(0.099)	(0.098)	(0.085)	(0.065)	(0.074)	(0.093)	(0.078)	(0.085)
Educational attainment:											
Less than high school	−0.086	*0.247	**0.336	−0.060	−0.257	*-0.246	**-0.222	−0.045	*-0.251	0.005	**0.291
	(0.093)	(0.148)	(0.155)	(0.159)	(0.177)	(0.153)	(0.110)	(0.095)	(0.136)	(0.126)	(0.111)
High school	−0.049	0.043	−0.073	0.142	−0.050	−0.062	0.060	**-0.235	*0.163	0.048	0.024
	(0.061)	(0.123)	(0.096)	(0.102)	(0.108)	(0.096)	(0.072)	(0.091)	(0.101)	(0.078)	(0.083)
College, 1 or more years	*0.135	**-0.290	**-0.264	−0.063	**0.308	**0.308	**0.162	**0.280	0.088	−0.053	**-0.315
	(0.073)	(0.129)	(0.119)	(0.113)	(0.117)	(0.102)	(0.073)	(0.095)	(0.108)	(0.090)	(0.082)
Work status:											
Employed full time	**0.170	**-0.279	0.009	*0.171	0.105	−0.006	(X)	***	***	***	***
	(0.064)	(0.133)	(0.113)	(0.094)	(0.090)	(0.087)					
Child's birth cohort:											
1961-65	−0.140										
	(0.144)										
1966-70	−0.185										
	(0.145)										
1971-75	−0.169										
	(0.157)										
1976-80	0.133										
	(0.127)										
1981-85	**0.361										
	(0.146)										
Constant	**0.466										
	(0.069)										
Degrees of freedom	423										
Jackknifed X2	9.27										

* Coefficient significant at the 0.10 level.
** Coefficient significant at the 0.05 level.
*** Interaction not in the regression.
X Interaction not applicable.
[1] Includes White and all other races except Black.
[2] Includes births after first marriage.
Note: Coefficients represent the log of the odds of working during the last trimester of pregnancy.
Numbers in parenthesis represent the standard errors of the coefficients.

Table B-9.
Distribution of Type of Leave Arrangements Used by Women Who Worked During their First Pregnancy
A. First Births, 1976-80

(Numbers in thousands. Percent distribution may exceed 100.0 because of multiple answers)

Characteristic	Number of women	Total	Quit job	Maternity, sick/paid leave	Unpaid leave	Let go from job	Never stopped working
Total	4,414	100.0	41.3	34.0	20.2	4.9	2.0
Employment status at last job:							
Full time	3,821	100.0	38.6	37.3	20.5	4.6	1.6
Part time	593	100.0	59.2	12.7	17.9	6.5	4.3
Stopped working before birth:							
Less than 1 month	1,805	100.0	25.6	44.0	25.8	3.1	4.8
1 month	798	100.0	37.2	43.6	21.9	1.7	-
2 months	650	100.0	47.8	27.9	20.9	4.5	-
3 to 5 months	824	100.0	65.1	16.2	10.5	8.2	-
6 or more months	339	100.0	65.0	13.6	8.2	14.5	-
Age at first birth:							
Less than 18 years	209	100.0	51.7	14.4	28.5	4.2	1.1
18 and 19 years	442	100.0	43.9	24.8	20.2	10.9	1.3
20 and 21 years	715	100.0	42.2	30.4	23.3	6.8	0.4
22 to 24 years	1,210	100.0	45.6	31.8	19.7	3.7	2.3
25 to 29 years	1,414	100.0	39.2	38.0	19.4	2.7	2.7
30 years and over	425	100.0	27.2	52.6	14.5	6.4	2.2
Race:							
White	3,914	100.0	42.3	33.4	19.9	4.7	1.9
Black	378	100.0	33.2	43.5	17.5	7.1	2.3
Child born:[1]							
Before first marriage	722	100.0	34.0	33.0	24.9	8.2	2.9
Within first marriage	3,392	100.0	43.0	34.6	19.1	4.0	1.8
Educational attainment:							
Less than high school	331	100.0	56.0	12.0	22.6	8.4	1.0
High school	2,086	100.0	41.9	32.4	19.9	5.9	2.3
College, 1 to 3 years	1,004	100.0	42.3	37.0	19.6	4.3	0.8
College, 4 or more years	994	100.0	34.4	41.8	20.7	2.2	2.7

- Represents zero.
[1]Data not shown separately for births occurring after first marriage because of too few sample cases.

Table B-9.
Distribution of Type of Leave Arrangements Used by Women Who Worked During their First Pregnancy—Continued
B. First Births, 1971-75

(Numbers in thousands. Percent distribution may exceed 100.0 because of multiple answers)

Characteristic	Number of women	Total	Quit job	Maternity, sick/paid leave	Unpaid leave	Let go from job	Never stopped working
Total	3,700	100.0	51.1	23.4	20.8	4.6	1.7
Employment status at last job:							
Full time	3,291	100.0	48.5	25.7	20.9	4.8	1.6
Part time	409	100.0	72.0	5.5	20.3	2.8	2.6
Stopped working before birth:							
Less than 1 month	1,002	100.0	28.3	33.0	33.1	2.4	6.4
1 month	591	100.0	47.2	32.8	20.5	1.3	-
2 months	773	100.0	56.1	23.2	17.0	4.4	-
3 to 5 months	847	100.0	65.3	12.2	18.4	5.1	-
6 or more months	487	100.0	70.1	12.3	6.0	12.2	-
Age at first birth:							
Less than 18 years	259	100.0	61.3	17.3	18.4	1.0	3.3
18 and 19 years	568	100.0	58.3	16.1	21.5	3.3	0.9
20 and 21 years	757	100.0	52.8	19.3	22.5	7.4	0.8
22 to 24 years	995	100.0	49.5	25.7	18.3	5.6	2.1
25 to 29 years	897	100.0	48.5	28.6	19.4	3.3	1.8
30 years and over	226	100.0	33.1	32.4	32.7	3.0	3.4
Race:							
White	3,158	100.0	54.2	20.6	20.5	4.9	1.7
Black	459	100.0	32.5	44.0	20.3	2.6	1.3
Child born:[1]							
Before first marriage	727	100.0	46.9	24.2	22.0	5.3	2.1
Within first marriage	2,827	100.0	51.9	23.7	20.5	4.2	1.6
Educational attainment:							
Less than high school	348	100.0	53.3	18.0	21.3	5.7	2.7
High school	1,692	100.0	52.2	21.6	21.8	4.1	1.4
College, 1 to 3 years	854	100.0	48.6	25.9	20.5	5.6	2.0
College, 4 or more years	806	100.0	50.5	27.1	18.8	3.9	1.7

- Represent zero.
[1]Data not shown separately for births occurring after first marriage because of too few sample cases.

Table B-9.
Distribution of Type of Leave Arrangements Used by Women Who Worked During their First Pregnancy—Continued
C. First Births, 1966-70

(Numbers in thousands. Percent distribution may exceed 100.0 because of multiple answers)

Characteristic	Number of women	Total	Quit job	Maternity, sick/paid leave	Unpaid leave	Let go from job	Never stopped working
Total	3,435	100.0	58.9	18.3	17.6	4.2	1.4
Employment status at last job:							
Full time	3,074	100.0	57.3	19.8	17.5	4.4	1.5
Part time	361	100.0	72.6	5.6	18.4	3.1	0.3
Stopped working before birth:							
Less than 1 month	899	100.0	44.7	26.8	22.4	1.4	5.4
1 month	453	100.0	52.0	18.0	25.9	4.1	-
2 months	629	100.0	61.3	21.0	14.1	3.6	-
3 to 5 months	975	100.0	65.1	12.7	15.9	6.9	-
6 or more months	478	100.0	76.5	10.5	8.7	5.0	-
Age at first birth:							
Less than 18 years	177	100.0	(B)	(B)	(B)	(B)	(B)
18 and 19 years	502	100.0	57.3	16.4	21.7	4.6	-
20 and 21 years	801	100.0	59.8	21.0	14.2	3.2	2.2
22 to 24 years	1,065	100.0	62.0	16.6	16.0	4.8	1.5
25 to 29 years	727	100.0	51.7	19.8	22.6	5.6	0.7
30 years and over	162	100.0	(B)	(B)	(B)	(B)	(B)
Race:							
White	3,003	100.0	60.5	17.2	17.3	4.5	1.1
Black	354	100.0	50.7	25.3	18.1	2.5	3.5
Child born:[1]							
Before first marriage	581	100.0	56.1	24.6	14.1	3.0	2.2
Within first marriage	2,728	100.0	59.9	16.8	17.8	4.6	1.3
Educational attainment:							
Less than high school	369	100.0	56.7	16.6	20.2	3.0	3.5
High school	1,508	100.0	62.6	17.0	15.7	3.8	1.2
College, 1 to 3 years	865	100.0	54.7	20.8	19.2	5.2	1.5
College, 4 or more years	692	100.0	57.3	18.9	18.4	4.8	0.7

- Represents zero.
B Base too small to show derived measure.
[1]Data not shown separately for births occurring after first marriage because of too few sample cases.

Table B-9.
Distribution of Type of Leave Arrangements Used by Women Who Worked During their First Pregnancy—Continued
D. First Births, 1961-65

(Numbers in thousands. Percent distribution may exceed 100.0 because of multiple answers)

Characteristic	Number of women	Total	Quit job	Maternity sick/paid leave	Unpaid leave	Let go from job	Never stopped working
Total	2,797	100.0	62.8	16.0	14.1	5.0	2.7
Employment status at last job:							
Full time	2,502	100.0	62.1	17.1	14.8	4.7	1.9
Part time	295	100.0	68.9	6.7	8.5	7.4	9.6
Stopped working before birth:							
Less than 1 month	635	100.0	43.0	25.9	19.2	1.5	12.1
1 month	332	100.0	65.0	17.2	16.5	1.3	-
2 months	479	100.0	64.2	16.3	16.0	3.6	-
3 to 5 months	991	100.0	71.3	9.8	11.1	8.6	-
6 or more months	360	100.0	70.7	14.4	9.0	6.8	-
Age at first birth:							
Less than 18 years	215	100.0	48.7	22.7	19.7	1.9	7.0
18 and 19 years	383	100.0	75.5	8.5	14.7	3.5	-
20 and 21 years	652	100.0	55.3	23.5	12.4	6.9	3.2
22 to 24 years	751	100.0	65.9	13.6	16.3	2.8	1.7
25 to 29 years	503	100.0	64.8	14.7	10.3	8.1	2.1
30 years and over	293	100.0	62.2	13.0	14.3	5.6	5.9
Race:							
White	2,476	100.0	65.7	14.4	13.7	5.4	1.8
Black	268	100.0	39.0	32.6	19.3	-	9.1
Child born[1]:							
Before first marriage	466	100.0	60.1	20.5	11.9	3.9	5.4
Within first marriage	2,246	100.0	63.4	15.2	14.8	5.1	2.1
Educational attainment:							
Less than high school	343	100.0	60.6	18.8	11.2	5.1	6.1
High school	1,417	100.0	62.4	16.4	17.1	4.7	0.6
College, 1 to 3 years	528	100.0	62.8	15.6	11.6	4.8	5.2
College, 4 or more years	510	100.0	65.7	13.5	10.7	6.2	3.8

- Represents zero.
[1]Data not shown separately for births occurring after first marriage because of too few sample cases.

Table B-10.
Logistic Regression for Odds of Quitting Job Before Birth of First Child: Employed Women, 1961-65 to 1981-85

Characteristic	Main effect	Interaction of variables with birth cohort				
		1961-65	1966-70	1971-75	1976-80	1981-85
Age at first birth:						
Less than 20 years	0.111	0.149	*-0.237	0.193	*-0.218	0.113
	(0.070)	(0.125)	(0.130)	(0.158)	(0.124)	(0.155)
20 and 21 years	0.030	**-0.385	0.031	-0.019	0.021	**0.352
	(0.059)	(0.158)	(0.124)	(0.127)	(0.105)	(0.108)
22 to 24 years	0.081	0.059	0.103	-0.135	0.110	-0.138
	(0.055)	(0.144)	(0.109)	(0.107)	(0.096)	(0.132)
25 years and over	**-0.222	0.176	0.103	-0.039	0.087	**-0.327
	(0.069)	(0.130)	(0.103)	(0.103)	(0.099)	(0.120)
Race:						
White[1]	**0.347	**0.255	-0.156	0.194	-0.089	*-0.204
	(0.056)	(0.120)	(0.112)	(0.125)	(0.126)	(0.117)
Educational attainment:						
Less than high school	0.134	-0.170	-0.173	-0.174	0.209	**0.308
	(0.085)	(0.146)	(0.148)	(0.151)	(0.142)	(0.153)
High school	-0.049	0.075	**0.214	0.087	*-0.147	**-0.229
	(0.052)	(0.101)	(0.105)	(0.101)	(0.079)	(0.082)
College, 1 or more years	-0.085	0.095	-0.041	0.087	-0.062	-0.079
	(0.055)	(0.107)	(0.114)	(0.108)	(0.096)	(0.122)
Work status:						
Employed full time	**-0.355	0.063	0.005	-0.100	-0.008	0.040
	(0.057)	(0.110)	(0.112)	(0.096)	(0.080)	(0.086)
When left job:						
Last trimester	**-0.495	*0.138	*0.132	0.008	*-0.154	*-0.123
	(0.034)	(0.076)	(0.075)	(0.076)	(0.080)	(0.071)
Child's birth cohort:						
1961-65	0.119					
	(0.143)					
1966-70	**0.354					
	(0.165)					
1971-75	-0.033					
	(0.163)					
1976-80	-0.048					
	(0.140)					
1981-84	**-0.392					
	(0.145)					
Constant	**0.183					
	(0.062)					
Degrees of freedom	435					
Jackknifed X2	8.16					

* Coefficient significant at the 0.10 level.
** Coefficient significant at the 0.05 level.
[1]Includes White and all other races except Black.
Note: Coefficients represent the log of the odds of quitting the last job held before the first birth.
Numbers in parenthesis represent the standard errors of the coefficients.

Table B-11.
Logistic Regression for Odds of Receiving Employee Maternity Benefits for the First Child: Employed Women, 1961-65 to 1981-85

Characteristic	Main effect	Interaction of variables with birth cohort				
		1961-65	1966-70	1971-75	1976-80	1981-85
Age at first birth:						
Less than 20 years	**-0.366	0.044	0.262	-0.001	0.194	**-0.500
	(0.110)	(0.201)	(0.199)	(0.150)	(0.170)	(0.217)
20 and 21 years	0.085	**0.458	0.077	**-0.255	-0.179	-0.101
	(0.073)	(0.158)	(0.134)	(0.128)	(0.131)	(0.129)
22 to 24 years	0.002	-0.184	-0.145	0.136	-0.039	*0.232
	(0.067)	(0.934)	(0.151)	(0.135)	(0.106)	(0.130)
25 years and over	**0.279	*-0.319	-0.194	0.120	0.024	**0.369
	(0.094)	(0.168)	(0.167)	(0.127)	(0.103)	(0.124)
Race:						
White[1]	**-0.420	*-0.214	0.112	**-0.298	0.109	**0.290
	(0.054)	(0.122)	(0.128)	(0.130)	(0.124)	(0.095)
Educational attainment:						
Less than high school	**-0.267	**0.403	0.199	0.130	*-0.531	-0.201
	(0.110)	(0.191)	(0.224)	(0.203)	(0.266)	(0.183)
High school	0.079	-0.142	-0.149	-0.103	**0.282	0.112
	(0.060)	(0.122)	(0.149)	(0.132)	(0.140)	(0.100)
College, 1 or more years	**0.188	*-0.261	-0.050	-0.028	*0.249	0.089
	(0.078)	(0.145)	(0.139)	(0.133)	(0.150)	(0.120)
Work status:						
Employed full-time	**0.707	0.003	-0.006	0.181	-0.093	-0.086
	(0.098)	(0.250)	(0.242)	(0.205)	(0.172)	(0.126)
When left job:						
Last trimester	**0.535	-0.145	*-0.163	-0.024	0.083	**0.250
	(0.044)	(0.102)	(0.099)	(0.101)	(0.089)	(0.071)
Child's birth cohort:						
1961-65	-0.081					
	(0.250)					
1966-70	-0.243					
	(0.289)					
1971-75	-0.034					
	(0.212)					
1976-80	0.083					
	(0.218)					
1981-84	*0.275					
	(0.172)					
Constant	*-1.753					
	(0.119)					
Degrees of freedom	435					
Jackknifed X2	4.13					

* Coefficient significant at the 0.10 level.
** Coefficient significant at the 0.05 level.
[1]Includes White and all other races except Black.
Note: Coefficients represent the log of the odds of receiving maternity benefits for the first birth. Numbers in parenthesis represent the standard errors of the coefficients.

Table B-12.
Women Who Worked After their First Birth, by Interval After the First Birth: 1961-65 to 1981-84

(Numbers in thousands)

Characteristic	Year of first birth				
	1981-84	1976-80	1971-75	1966-70	1961-65
Number of women with first births	6,671	7,192	6,920	6,956	6,306
Total Returning to Work					
Month returned after birth:					
Less than 1 month	212	177	127	91	121
1 month	594	343	333	231	118
2 months	888	688	376	303	255
3 months	496	405	245	255	129
4 months	302	333	135	174	83
5 months	209	175	126	97	70
6 months	202	191	170	124	86
7 months	114	87	68	59	35
8 months	142	85	99	91	21
9 months	102	56	57	69	48
10 months	91	72	35	41	19
11 months	52	56	72	34	14
12 months	97	119	83	91	58
13 to 18 months	(I)	456	394	247	243
19 to 24 months	(I)	210	237	167	122
25 to 36 months	(I)	474	377	313	254
37 to 48 months	(I)	325	309	269	240
49 to 60 months	(I)	368	214	203	200
Returning to Work Full Time					
Month returned after birth:					
Less than 1 month	166	114	107	75	83
1 month	422	255	281	163	107
2 months	708	583	329	242	211
3 months	308	296	193	209	90
4 months	175	257	104	127	70
5 months	92	129	85	71	54
6 months	100	136	107	95	70
7 months	57	60	42	34	20
8 months	68	76	70	67	13
9 months	71	17	43	54	40
10 months	64	55	21	33	8
11 months	30	36	52	29	6
12 months	57	80	53	73	48
13 to 18 months	(I)	322	256	179	195
19 to 24 months	(I)	124	134	113	65
25 to 36 months	(I)	278	249	192	173
37 to 48 months	(I)	170	201	199	161
49 to 60 months	(I)	220	131	142	138

I Incomplete data for this interval.

Table B-13.
Women Returning to Work Less than 6 Months and Less than One Year After the Birth of Their First Child, by Selected Characteristics: 1961-65 to 1981-84

Characteristic	Year of first birth				
	1981-84	1976-80	1971-75	1966-70	1961-65
Number of women with first births (thousands)	6,671	7,192	6,920	6,956	6,306
Returning in Less Than 6 Months					
Total (percent)	40.5	29.5	19.4	16.5	12.3
Employment status during pregnancy:					
Employed	56.1	42.0	29.3	24.3	19.3
Full time at last job	57.6	43.2	29.4	25.5	18.3
Part time at last job	47.3	34.1	28.3	14.6	28.5
Not employed	13.4	9.6	8.1	9.0	6.7
Stopped working before birth:[1]					
Less than 1 month	70.9	55.7	45.8	34.7	35.2
1 month	48.9	43.9	30.3	25.0	24.0
2 months	46.7	32.0	24.5	23.1	17.7
3 or more months	35.6	25.0	19.2	18.2	11.3
Maternity benefits[1]					
Received benefits	71.2	56.0	49.0	38.1	25.6
Received no benefits	42.8	34.7	23.3	21.2	18.1
Age at first birth:					
Less than 18 years	15.4	17.3	15.1	18.4	15.8
18 and 19 years	30.7	30.0	17.6	18.4	9.3
20 and 21 years	38.5	26.8	19.8	16.2	14.8
22 to 24 years	44.1	29.9	21.1	17.9	12.5
25 to 29 years	49.5	34.9	21.5	13.4	10.0
30 years and over	48.6	35.5	23.5	9.9	11.4
Race:					
White	41.8	30.4	18.3	15.3	11.8
Black	34.3	25.1	25.1	24.6	15.9
Child born:					
Before first marriage	33.1	28.1	22.9	19.4	14.6
Within first marriage	42.8	29.5	17.6	15.5	11.6
After first marriage	50.4	35.5	31.8	25.1	15.1
Educational attainment					
Less than high school	19.4	19.1	15.8	12.0	9.4
High school	42.7	27.9	20.4	16.6	13.3
College, 1 to 3 years	48.0	33.7	20.5	19.4	13.6
College, 4 or more years	48.3	39.1	19.5	18.4	12.7
Returning in Less Than 1 Year					
Total (percent)	51.0	37.1	26.6	22.6	15.8
Employment status during pregnancy:					
Employed	67.8	50.6	37.6	31.3	24.5
Full time at last job	69.2	51.7	37.7	32.4	23.5
Part time at last job	60.2	43.9	36.3	22.1	33.0
Not employed	21.8	15.6	14.1	14.1	8.9
Stopped working before birth:[1]					
Less than 1 month	79.4	62.2	52.2	39.9	39.9
1 month	62.7	51.1	42.1	32.5	26.8
2 months	63.1	44.4	31.4	32.8	24.8
3 or more months	50.0	35.9	28.2	24.9	16.2
Maternity benefits: [1]					
Received benefits	79.8	63.4	56.7	44.0	28.2
Received no benefits	57.3	44.0	31.7	28.4	23.8

Table B-13.
Women Returning to Work Less than 6 Months and Less than One Year After the Birth of Their First Child, by Selected Characteristics: 1961-65 to 1981-84—Continued

Characteristic	Year of first birth				
	1981-84	1976-80	1971-75	1966-70	1961-65
Returning in Less Than 1 Year—Con.					
Age at first birth:					
Less than 18 years	23.2	25.6	23.5	23.5	19.8
18 and 19 years	41.1	37.3	25.8	29.2	11.7
20 and 21 years	47.1	33.5	27.7	21.6	19.4
22 to 24 years	54.3	38.5	26.3	21.9	16.4
25 to 29 years	61.1	42.9	27.9	19.1	12.8
30 years and over	62.5	40.8	32.5	14.9	14.8
Race:					
White	52.8	36.0	24.9	20.6	15.6
Black	42.4	32.7	36.0	34.7	18.0
Child born:					
Before first marriage	41.6	32.8	30.5	26.6	16.7
Within first marriage	53.8	38.3	24.6	21.4	15.3
After first marriage	65.7	41.1	44.1	26.6	22.2
Educational attainment:					
Less than high school	26.7	26.0	22.9	17.1	12.0
High school	53.2	35.7	28.1	22.6	16.8
College, 1 to 3 years	59.1	41.9	25.9	26.0	17.1
College, 4 or more years	61.6	46.4	28.0	25.0	18.2

[1]Data limited to women who were employed during first pregnancy. Population bases for numbers of women working during first pregnancy are found in table B-6.

Table B-14.
Logistic Regression for Odds of Working Less than 6 Months After Birth of First Child: All Women, 1961-65 to 1981-84

Characteristic	Main effect	Interaction of variables with birth cohort				
		1961-65	1966-70	1971-75	1976-80	1981-85
Age at first birth:						
Less than 20 years	**0.145	-0.010	*0.248	*-0.201	0.145	-0.183
	(0.051)	(0.127)	(0.154)	(0.107)	(0.098)	(0.132)
20 and 21 years	0.018	*0.166	0.006	-0.038	-0.080	-0.053
	(0.058)	(0.097)	(0.131)	(0.096)	(0.096)	(0.108)
22 to 24 years	-0.045	-0.031	0.063	0.038	-0.127	0.058
	(0.050)	(0.124)	(0.121)	(0.107)	(0.101)	(0.089)
25 years and over	*-0.119	-0.125	**-0.317	*0.201	0.063	**0.178
	(0.062)	(0.128)	(0.116)	(0.105)	(0.095)	(0.089)
Race:						
White[1]	**-0.189	-0.027	*-0.169	-0.091	*0.202	0.085
	(0.045)	(0.116)	(0.097)	(0.110)	(0.096)	(0.098)
Marital status at first birth:						
Married[2]	*-0.096	-0.007	0.099	-0.087	-0.082	0.077
	(0.050)	(0.101)	(0.084)	(0.078)	(0.060)	(0.063)
Educational attainment:						
Less than high school	*-0.105	0.041	-0.096	*0.238	-0.013	-0.170
	(0.054)	(0.145)	(0.131)	(0.127)	(0.115)	(0.129)
High school	0.041	0.007	-0.030	0.004	-0.097	0.115
	(0.043)	(0.081)	(0.091)	(0.082)	(0.079)	(0.080)
College, 1 or more years	0.064	-0.048	0.126	**-0.242	0.110	0.054
	(0.044)	(0.120)	(0.112)	(0.091)	(0.071)	(0.097)
Employed during pregnancy?:						
Employed	**0.842	**-0.196	**-0.179	0.022	**0.192	*0.162
	(0.048)	(0.083)	(0.074)	(0.075)	(0.078)	(0.083)
Child's birth cohort:						
1961-65	**-0.475					
	(0.082)					
1966-70	**-0.214					
	(0.102)					
1971-75	-0.018					
	(0.090)					
1976-80	0.123					
	(0.086)					
1981-84	**0.584					
	(0.100)					
Constant	**-1.382					
	(0.048)					
Degrees of freedom	435					
Jackknifed X2	6.43					

* Coefficient significant at the 0.10 level.
** Coefficient significant at the 0.05 level.
[1]Includes White and all other races except Black.
[2]Includes births after first marriage.
Note: Coefficients represent the log of the odds of working less than 6 months after the first birth. Numbers in parenthesis represent the standard errors of the coefficients.

Table B-15.
Logistic Regression for Odds of Returning to Work Less than 6 Months After First Birth: Women Employed During Pregnancy, 1961-65 to 1981-85

Characteristic	Main effect	Interaction of variables with birth cohort				
		1961-65	1966-70	1971-75	1976-80	1981-84
Age at first birth:						
Less than 20 years	**0.186	0.234	0.054	−0.219	0.206	−0.275
	(0.079)	(0.168)	(0.186)	(0.160)	(0.134)	(0.178)
20 and 21 years	0.055	−0.113	0.030	0.037	*-0.180	*0.226
	(0.067)	(0.141)	(0.157)	(0.104)	(0.110)	(0.128)
22 to 24 years	−0.013	−0.002	0.157	−0.018	−0.122	−0.015
	(0.053)	(0.161)	(0.122)	(0.112)	(0.126)	(0.116)
25 years and over	**-0.229	−0.119	*-0.241	0.200	0.096	0.063
	(0.072)	(0.158)	(0.135)	(0.125)	(0.099)	(0.112)
Race:						
White[1]	**-0.249	0.043	*-0.267	0.048	0.135	0.041
	(0.077)	(0.183)	(0.140)	(0.132)	(0.134)	(0.127)
Marital status at first birth:						
Married[2]	−0.024	−0.030	**0.257	−0.069	*-0.152	−0.005
	(0.076)	(0.133)	(0.128)	(0.105)	(0.081)	(0.080)
Educational attainment:						
Less than high school	**0.213	0.108	−0.006	0.062	−0.107	−0.057
	(0.078)	(0.205)	(0.172)	(0.186)	(0.150)	(0.179)
High school	*-0.098	−0.030	−0.051	0.103	−0.043	0.021
	(0.052)	(0.109)	(0.105)	(0.114)	(0.096)	(0.099)
College, 1 or more years	**-0.115	−0.079	0.057	−0.164	*0.150	0.036
	(0.055)	(0.140)	(0.134)	(0.118)	(0.085)	(0.123)
Work status when pregnant:						
Employed full-time	0.036	**-0.236	**0.335	*-0.192	0.086	0.007
	(0.067)	(0.116)	(0.160)	(0.107)	(0.085)	(0.089)
When left previous job?						
Last trimester	**0.390	0.106	−0.123	−0.042	0.052	0.007
	(0.053)	(0.108)	(0.078)	(0.083)	(0.081)	(0.077)
Receive maternity leave?						
Yes	**0.385	*-0.250	−0.022	0.142	−0.020	**0.150
	(0.042)	(0.141)	(0.079)	(0.099)	(0.077)	(0.075)
Child's birth cohort 1961-65	**-0.563					
	(0.171)					
1966-70	**-0.554					
	(0.176)					
1971-75	0.101					
	(0.192)					
1976-80	0.218					
	(0.148)					
1981-84	**0.799					
	(0.143)					
Constant	**-0.447					
	(0.078)					
Degrees of freedom	1,865					
Jackknifed X2	19.76					

* Coefficient significant at the 0.10 level.
** Coefficient significant at the 0.05 level.
[1]Includes White and all other races except Black.
[2]Includes births after first marriage.
Note: Coefficients represent the log of the odds of returning to work less than 6 months after the first birth. Numbers in parenthesis represent the standard errors of the coefficients.

Table B-16.
Logistic Regression for Odds of Returning to Work 6 to 11 Months After First Birth: Women Employed During Pregnancy, 1961-65 to 1981-84

(Excludes women returning to work 0 to 5 months after first birth)

Characteristic	Main effect	Interaction of variables with birth cohort				
		1961-65	1966-70	1971-75	1976-80	1981-84
Age at first birth:						
Less than 20 years	0.130	−0.334	**0.533	0.131	−0.174	−0.155
	(0.122)	(0.348)	(0.220)	(0.242)	(0.271)	(0.240)
20 and 21 years	0.069	0.331	−0.149	0.109	−0.114	−0.177
	(0.115)	(0.255)	(0.248)	(0.235)	(0.194)	(0.234)
22 to 24 years	*-0.173	0.107	−0.271	−0.348	**0.330	0.182
	(0.106)	(0.239)	(0.203)	(0.240)	(0.161)	(0.171)
25 years and over	−0.026	−0.104	−0.113	0.108	−0.042	0.150
	(0.116)	(0.235)	(0.174)	(0.159)	(0.164)	(0.185)
Race:						
White[1]	−0.201	*0.857	−0.281	−0.120	−0.227	−0.229
	(0.139)	(0.477)	(0.273)	(0.238)	(0.198)	(0.197)
Marital status at first birth:						
Married[2]	*0.204	−0.092	0.022	0.054	0.105	−0.089
	(0.114)	(0.234)	(0.232)	(0.206)	(0.188)	(0.176)
Educational attainment:						
Less than high school	0.128	0.255	−0.413	0.121	0.164	−0.127
	(0.158)	(0.312)	(0.285)	(0.202)	(0.271)	(0.237)
High school	*-0.175	−0.183	0.140	0.071	−0.049	0.021
	(0.091)	(0.203)	(0.189)	(0.133)	(0.169)	(0.170)
College, 1 or more years	0.047	−0.072	0.273	−0.192	−0.115	0.105
	(0.101)	(0.263)	(0.212)	(0.140)	(0.203)	(0.161)
Work status when pregnant:						
Employed full-time	0.045	0.005	0.077	−0.011	−0.079	0.008
	(0.089)	(0.293)	(0.184)	(0.201)	(0.175)	(0.164)
When left previous job?						
Last trimester	*0.119	0.121	0.037	−0.073	−0.089	0.004
	(0.063)	(0.148)	(0.134)	(0.121)	(0.101)	(0.115)
Receive maternity leave?						
Yes	−0.008	−0.365	0.015	0.198	0.107	0.046
	(0.077)	(0.286)	(0.171)	(0.179)	(0.169)	(0.146)
Child's birth cohort:						
1961-65	**-1.582					
	(0.526)					
1966-70	−0.295					
	(0.253)					
1971-75	0.205					
	(0.327)					
1976-80	**0.530					
	(0.227)					
1981-84	**1.142					
	(0.204)					
Constant	**-1.986					
	(0.153)					
Degrees of freedom	1,865					
Jackknifed X2	10.31					

* Coefficient significant at the 0.10 level.

** Coefficient significant at the 0.05 level.

[1]Includes White and all other races except Black.

[2]Includes births after first marriage.

Note: Coefficients represent the log of the odds of returning to work 6 to 11 months after the first birth. Numbers in parenthsis represent the standard errors of the coefficients.

Appendix C.

Overview of the SIPP Program

The Survey of Income and Program Participation (SIPP) provides a major expansion in the kind and amount of information available to analyze the economic situation of households and persons in the United States. Each household selected in the initial sample is reinterviewed up to 8 times over the course of 2 and one-half years at intervals of 4 months. Each reinterview constitutes a "wave" in the initial sample or "panel" begun usually each year in February. This overlapping design provides a larger sample from which cross-sectional estimates can be made.

In the eighth reinterview or wave of the 1984 panel and in the fourth wave of the 1985 panel, questions on fertility and maternity leave arrangements were included in the survey in addition to standard or "core" items on labor force activity and income recipience in the prior 4-month period. These additional "topical module" items form the basis of the analysis in this report.

Items on maternity leave were only included in the 1984 and 1985 panels of the SIPP. Plans for including these items on upcoming panels are under consideration.

Appendix D.

Facsimile of SIPP Questionnaire

Section 5 — TOPICAL MODULES (Continued)

Part D — FERTILITY HISTORY

CHECK ITEM T18 — *Refer to cc items 24 and 28.* What is . . .'s age and sex? — 8186

1 ☐ Female, 15 + years old — *SKIP to item 19a*
2 ☐ Male, 18 + years old — *SKIP to item 18*
3 ☐ Male, 15–17 years old

CHECK ITEM T19 — *Refer to cc item 26a.* What is . . .'s current marital status? — 8187

1 ☐ Married, spouse present
2 ☐ Married, spouse absent
3 ☐ Widowed
4 ☐ Divorced
5 ☐ Separated
6 ☐ Never married — *SKIP to part E*

STATEMENT B — **Now I have a few questions about the number of children, if any, that have been born to . . . .**

18. How many children, IF ANY, is . . . the father of? — 8188
(If previously married, include all children born in previous and current marriages. Do not count adopted, foster or stepchildren.)

☐☐ Number
x3 ☐ None
x1 ☐ Don't Know
} *SKIP to part E, page 54*

19a. How many children, if any, has . . . ever had? *(Do not count stillbirths, adopted, foster, or stepchildren.)* — 8190

☐☐ Number
x3 ☐ None — *SKIP to Check Item T27, page 53*

b. Are all of . . .'s children currently living in this household? — 8192

1 ☐ Yes
2 ☐ No — *SKIP to Check Item T21*

CHECK ITEM T20 — *Refer to cc item 24.* Verify the birth date of . . .'s first and last child (if more than one child ever born) and enter the person number of the child(ren).

		Month		Year		Person number	
First child	8194	☐☐	8196	☐☐	8198	☐☐☐	
Last child	8200	☐☐	8202	☐☐	8204	☐☐☐	

} *SKIP to Check Item T24*

CHECK ITEM T21 — *Refer to item 19a.* How many children has . . . ever had? — 8206

1 ☐ One child — *SKIP to item 21a*
2 ☐ 2 + children

20a. In what month and year was . . .'s last child born? — 8208

☐☐ Month x1 ☐ Don't know

8210 — 1 9 ☐☐ Year x1 ☐ Don't know

CHECK ITEM T22 — *Refer to item 20a.* Was . . .'s last child born on or after January 1, 1960? — 8212

1 ☐ Yes
2 ☐ No — *SKIP to item 21a*

ASK OR VERIFY —

20b. With whom does the child live now? — 8214

1 ☐ **Resides in this household** — *Go to Check Item T23*

Resides elsewhere
2 ☐ In his/her own household

With relatives
3 ☐ With own father
4 ☐ With own grandparent(s)
5 ☐ With adoptive parents
6 ☐ With other relatives

With nonrelatives
7 ☐ In foster care/foster family
8 ☐ In an institution (hospital)
9 ☐ In school
10 ☐ In correctional facility
11 ☐ Other
12 ☐ Deceased
13 ☐ DK

} *SKIP to item 21a*

CHECK ITEM T23 — Write the person number of the last child. — 8216

☐☐☐ Person number of last child

21a. In what month and year was . . .'s (first) child born? — 8218

☐☐ Month x1 ☐ Don't know

8220 — 1 9 ☐☐ Year x1 ☐ Don't know

CHECK ITEM T24 — *Refer to item 21a or to Check Item T20.* Was . . .'s (first) child born on or after January 1, 1960? — 8222

1 ☐ Yes
2 ☐ No — *SKIP to Check Item T27, page 53*

Section 5 — TOPICAL MODULES (Continued)

Part D — FERTILITY HISTORY (Continued)

ASK OR VERIFY —

21b. With whom does the child live now?

8224
1 ☐ **Resides in this household** — *Go to Check Item T25*

Resides elsewhere
2 ☐ In his/her own household

With relatives
3 ☐ With own father
4 ☐ With own grandparent(s)
5 ☐ With adoptive parents
6 ☐ With other relatives

With nonrelatives
7 ☐ In foster care/foster family
8 ☐ In an institution (hospital)
9 ☐ In school
10 ☐ In correctional facility
11 ☐ Other

12 ☐ Deceased
13 ☐ DK

} *SKIP to item 22a*

CHECK ITEM T25 — Write the person number of the (first) child.

8226 ☐☐☐ Person number of (first) child

22a. Before the birth of . . .'s (first) child, did . . . ever work for pay continuously for six months or more either part time or full time?

8228
1 ☐ Yes
2 ☐ No

b. Did . . . work for pay at a job at any time when . . . was pregnant with . . .'s (first) child?

8230
1 ☐ Yes
2 ☐ No — *SKIP to item 22g*

c. Did . . . work 35 hours or more per week at the last job . . . held before the birth of . . .'s (first) child?

8232
1 ☐ Yes
2 ☐ No

d. How long before the birth of . . .'s (first) child did . . . stop working?

8234
☐☐ Number of months
x3 ☐ Less than a month
x4 ☐ Never stopped/worked right up to delivery

e. Did . . . quit or was . . . let go from this job, or did . . . take maternity leave or unpaid leave of absence (either before the birth of the child or up to 6 weeks after the child's birth)?

Mark all that apply

8236 1 ☐ Quit
8238 2 ☐ Let go
8240 3 ☐ Maternity/sick/other paid leave
8242 4 ☐ Unpaid leave of absence
8244 5 ☐ Never stopped working — *SKIP to Check Item T27*

CHECK ITEM T26 — *Refer to item 22e.* Is category 3, "Maternity/sick/other paid leave," marked in item 22e?

8246
1 ☐ Yes
2 ☐ No — *SKIP to item 22g*

22f. Did . . .'s employer pay for all or part of . . .'s leave through maternity benefits or sick pay?

8248
1 ☐ Yes, all
2 ☐ Yes, part
3 ☐ No

ASK OR VERIFY —

g. Did . . . work for pay at any time after the birth of . . .'s (first) child?

8250
1 ☐ Yes
2 ☐ No — *SKIP to Check Item T27*

h. In what month and year did . . . first begin working after the birth of . . .'s (first) child?

8252 ☐☐ Month x1 ☐ Don't know
8254 1 9 ☐☐ Year x1 ☐ Don't know

i. When . . . FIRST began working after the birth of . . .'s (first) child, did . . . work 35 hours or more per week?

8256
1 ☐ Yes
2 ☐ No

CHECK ITEM T27 — *Refer to cc item 24.* Is . . . 18 to 44 years old and a self respondent?

8258
1 ☐ Yes
2 ☐ No — *Skip to part E, page 54*

23. Do you expect to have any (more) children?

8260
1 ☐ Yes
2 ☐ No
x1 ☐ DK
} *SKIP to part E, page 54*

24. How many (more) children do you expect to have?

8262
☐☐ Number
x1 ☐ DK

25. When do you expect to have your next (first) child?

8264
1 ☐ Within a year
2 ☐ 1 + but less than 2 years
3 ☐ 2 + but less than 3 years
4 ☐ 3 + but less than 5 years
5 ☐ 5 + years
x1 ☐ DK

GO to part E, page 54

Source and Accuracy of Data

Source of Data

The estimates in the first paper come from data obtained in June of 1985 in the Current Population Survey (CPS). The Bureau of the Census conducts the survey every month, although this report uses only June data for its estimates. The June survey uses two sets of questions, the basic CPS and the supplement.

The data for the second paper were collected during the eighth wave of the 1984 panel and the fourth wave of the 1985 panel of the Survey of Income and Program Participation (SIPP).

The universe for both surveys is the noninstitutionalized resident population living in the United States. This population includes persons living in group quarters, such as dormitories, rooming houses, and religious group dwellings. Crew members of merchant vessels, Armed Forces personnel living in military barracks, and institutionalized persons, such as correctional facility inmates and nursing home residents, were not eligible to be in either survey. Also, United States citizens residing abroad were not eligible to be in the surveys. Foreign visitors who work or attend school in this country and their families were eligible; all others were not eligible. With the exceptions noted above, persons who were at least 14 years of age for CPS and 15 years of age for SIPP at the time of the interview were eligible to be interviewed.

Basic CPS. The basic CPS collects primarily labor force data about the civilian noninstitutional population. Interviewers ask questions concerning labor force participation about each member 14 years old and over in every sample living quarter (LQ).

The present CPS sample consists of clusters of four LQ's systematically selected from the 1980 decennial census files with coverage in all 50 States and the District of Columbia. The sample is continually updated to account for new residential construction. It is located in 729 areas comprising 1,973 counties, independent cities, and minor civil divisions. About 59,500 occupied LQ's are eligible for interview every month. Interviewers are unable to obtain interviews at about 2,500 of these LQ's because the occupants are not found at home after repeated calls or are unavailable for some other reason.

Since the introduction of the CPS, the Bureau of the Census has redesigned the CPS sample several times to improve the quality and reliability of the data and to satisfy changing data needs.

June supplement. In addition to the basic CPS questions, interviewers asked supplementary questions in June about marriage and fertility of American women.

CPS estimation procedure. This survey's estimation procedure inflates weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, sex, race and Hispanic/non-Hispanic categories. The independent estimates were based on statistics from decennial censuses of population; statistics on births, deaths, immigration and emigration; and statistics on the size of the Armed Forces. The independent population estimates used in June 1985 were based on updates to controls established by the 1980 decennial census. For more details on the change in independent estimates, see the section entitled "Introduction of 1980 Census Population Controls" in an earlier report (Series P-60, No. 133).

The estimates in this report also employ a revised survey weighting procedure for persons of Hispanic origin. In previous years, weighted sample results were inflated to independent estimates of the noninstitutional population by age, sex, and race. There was no specific control of the survey estimates for the Hispanic population. Since then, the Bureau of the Census developed independent population controls for the Hispanic population by sex and detailed age groups. Revised weighting procedures incorporate these new controls. The independent population estimates include some, but not all, undocumented immigrants.

1984 SIPP panel. The sample for the 1984 SIPP panel is located in 174 areas comprising 450 counties (including one partial county) and independent cities. Within these areas, clusters of two to four LQ's were systematically selected from lists of addresses prepared for the 1970 decennial census to form the bulk of the sample. In addition, the sample is continually updated to account for new residential construction.

The first interview of this panel was conducted during October, November, and December 1983, and January 1984. Approximately one-fourth of the sample was interviewed in each of these months. Each sample person was visited every 4 months thereafter. At each interview the reference period was the 4 months preceding the interview month.

Approximately 26,000 LQ's were originally designated for the sample. At the first contact, interviews were obtained from occupants in about 19,900 of the 26,000 designated LQ's. Most of the remaining 6,100 LQ's were found to be vacant, demolished, converted to nonresidential use, or otherwise ineligible for the survey. However, approximately 1,000 of the 6,100 LQ's were not interviewed because the occupants refused to be interviewed, could not be found at home, were temporarily absent, or were otherwise unavailable. Thus, occupants of about 95 percent of all eligible LQ's participated in the first interview of the survey. For the eighth interview, occupants of about 78 percent of all eligible LQ's participated in the survey.

For subsequent interviews, only original sample persons (those interviewed in the first interview) and persons living with them were eligible to be interviewed. Original sample persons were followed if they moved to a new address, unless the new address was more than 100 miles from a SIPP sample area. Then, telephone interviews were attempted. All first interview noninterviewed households were automatically designated as noninterviews for all subsequent interviews. When original sample persons moved to remote parts of the country, moved without leaving a

forwarding address or refused to be interviewed, additional noninterviews resulted.

1985 SIPP panel. The 1985 panel SIPP sample is located in 230 areas, each consisting of a county or a group of contiguous counties. Within these areas, expected clusters of two or four LQ's were systematically selected from lists of addresses prepared for the 1980 decennial census to form the bulk of the sample. The sample is continually updated to account for new residential construction. In addition, sample LQ's were selected from supplemental frames that included LQ's identified as missed in the 1980 census and group quarters.

Approximately 17,800 LQ's were originally designated for the sample. At the first contact, interviews were obtained from the occupants of about 13,400 of the 17,800 designated LQ's. Most of the remaining 4,400 LQ's were found to be vacant, demolished, converted to nonresidential use, or otherwise ineligible for the survey. However, approximately 1,000 of the 4,400 LQ's were not interviewed because the occupants refused to be interviewed, could not be found at home, were temporarily absent, or were otherwise unavailable. Thus, occupants of about 93 percent of all eligible LQ's participated in the first interview of the survey. For the fourth interview, occupants of about 84 percent of all eligible LQ's participated in the survey.

For waves 2–8, only original sample persons (those in wave 1 sample households and interviewed in wave 1 and/or 2) and persons living with them were eligible to be interviewed. With certain restrictions, original sample persons were to be followed even if they moved to a new address. When original sample persons moved without leaving a forwarding address or moved to extremely remote parts of the country and no telephone number was available, additional noninterviews resulted.

Sample LQ's within each sample panel are divided into four subsamples of nearly equal size. These subsamples are called rotation groups 1, 2, 3, or 4 and one rotation group is interviewed each month. Each LQ in the 1985 sample was scheduled to be interviewed at 4-month intervals over a period of roughly 2 1/2 years beginning in February 1985. The 1984 panel began in October of 1983. The reference period for the questions is the 4–month period preceding the interview month. In general, one cycle of four interviews covering the entire sample, using the same questionnaire, is called a wave. The exception is wave 2 which covers three interviews.

SIPP topical modules. As a part of most waves, subjects are covered that do not require repeated measurement during the panel and are of particular interest cross–sectionally for research purposes. A specific set of topical questions are referred to as a topical module. For this report the topical modules analyzed include questions on fertility history and maternity leave history. They were implemented in wave 8 of the 1984 panel and wave 4 of the 1985 panel.

SIPP Estimation Procedure. The estimation procedure used to derive SIPP person weights for each panel involved several sample stages of weight adjustments. Each person received a base weight equal to the inverse of his/her probability of selection. A noninterview adjustment factor was applied to the weight of every occupant of interviewed households to account for households which were eligible for the sample but were not interviewed. (Individual nonresponse within partially interviewed households was treated with imputation. No special adjustment was made for noninterviews in group quarters.) A factor was applied to each interviewed persons' weight to account for the SIPP sample areas not having the same population distribution as the strata from which they were selected.

An additional stage of adjustment to persons' weights was performed to reduce the mean square error of the survey estimates by ratio adjusting SIPP sample estimates to monthly Current Population Survey (CPS) estimates[1] of the civilian (and some military) noninstitutional population of the United States by age, race, Hispanic origin, sex, type of householder (married, single with relatives, single without relatives), and relationship to householder (spouse or other). The CPS estimation process was explained earlier in this report.

Combining panels of SIPP. This is the first report that utilizes data from combined SIPP panels. The concurrency of wave 8 of the 1984 panel and wave 4 of the 1985 panel along with the fact that they both contain the same relevant topical modules on fertility and marital history makes this possible. The data were combined and then analyzed as a single data set. The primary motivation for combining these data is to obtain an increase in sample size in conjunction with a reduction in time in sample bias due to nonresponse.

Accuracy of Estimates

Since the CPS and SIPP estimates come from a sample, they may differ from figures from a complete census using the same questionnaires, instructions, and enumerators. A sample survey estimate has two possible types of error: sampling and nonsampling. The accuracy of an estimate depends on both types of error, but the full extent of the nonsampling error is unknown. Consequently, one should be particularly careful when interpreting results based on a relatively small number of cases or on small differences between estimates. The standard errors for CPS and SIPP estimates primarily indicate the magnitude of sampling error. They also partially measure the effect of some nonsampling errors in responses and enumeration, but do not measure systematic biases in the data. (Bias is the average over all possible samples of the differences between the sample estimates and the desired value.)

Nonsampling variability. Nonsampling errors can be attributed to many sources. These sources include the inability to obtain information about all

[1]These special CPS estimates are slightly different from the published monthly CPS estimates. The differences arise from forcing counts of husbands to agree with counts of wives.

cases in the sample, definitional difficulties, differences in the interpretation of questions, respondents' inability or unwillingness to provide correct information or to recall information, errors made in data collection such as in recording or coding the data, errors made in processing the data, errors made in estimating values for missing data, and failure to represent all units with the sample (undercoverage).

CPS and SIPP undercoverage results from missed housing units and missed persons within sample households. Compared to the level of the 1980 decennial census, overall CPS and SIPP undercoverage is about 7 percent. Undercoverage varies with age, sex, and race. Generally, undercoverage is larger for males than for females and larger for Blacks and other races combined than for Whites. As described previously, ratio estimation to independent age–sex–race–Hispanic population controls partially corrects for the bias due to undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics from those of interviewed persons in the same age–sex–race–Hispanic group. Furthermore, the independent population controls have not been adjusted for undercoverage in the 1980 census.

For additional information on nonsampling error including the possible impact on CPS data when known, refer to Statistical Policy Working Paper 3, *An Error Profile: Employment as Measured by the Current Population Survey,* Office of Federal Statistical Policy and Standards, U.S. Department of Commerce, 1978; and Technical Paper 40, *The Current Population Survey: Design and Methodology,* Bureau of the Census, U.S. Department of Commerce. For additional information on nonsampling error found in the SIPP data, refer to the *Quality Profile for the Survey of Income and Program Participation,* SIPP Working Paper #8708, Bureau of the Census, July 1987.

Sampling variability. Sampling variability is variation that occurs by chance because a sample was surveyed rather than the entire population. Standard errors, as calculated by methods described later in "Standard Errors and Their Use," are primarily measures of sampling variability, although they may include some nonsampling error.

Comparability of data. Data obtained from the CPS, SIPP and other sources are not entirely comparable. This results from differences in interviewer training and experience and in differing survey processes. This is an example of nonsampling variability not reflected in the standard errors. Use caution when comparing results from different sources.

Note when using small estimates. Summary measures (such as medians and percentage distributions) are shown only when the base is 75,000 or greater for CPS, 200,000 or greater for SIPP. Because of the large standard errors involved, summary measures would probably not reveal useful information when computed on a smaller base. However, estimated numbers are shown even though the relative standard errors of these numbers are larger than those for corresponding percentages. These smaller estimates permit combinations of the categories to suit data users' needs. Care should be taken in the interpretation of small differences. For instance, even a small amount of nonsampling error can cause a borderline difference to appear significant or not, thus distorting a seemingly valid hypothesis test.

Standard errors and their use. The sample estimate and its standard error enable one to construct a confidence interval, a range that would include the average result of all possible samples with a known probability. For example, if all possible samples were surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.

A particular confidence interval may or may not contain the average estimate derived from all possible samples. However, one can say with specified confidence that the interval includes the average estimate calculated from all possible samples.

Some statements in the report may contain estimates followed by a number in parentheses. This number can be added to and subtracted from the estimate to calculate upper and lower bounds of the 90-percent confidence interval. For example, if a statement contains the phrase "grew by 1.7 percent (±1.0)," the 90-percent confidence interval for the estimate, 1.7 percent, is 0.7 percent to 2.7 percent.

Standard errors may also be used to perform hypothesis testing, a procedure for distinguishing between population parameters using sample estimates. The most common type of hypothesis appearing in this report is that the population parameters are different. An example of this would be comparing the median age at first birth of Black women versus the median age at first birth of White women.

Tests may be performed at various levels of significance, where a significance level is the probability of concluding that the characteristics are different when, in fact, they are the same. All statements of comparison in the text have passed a hypothesis test at the 0.10 level of significance or better. This means that the absolute value of the estimated difference between characteristics is greater than or equal to 1.6 times the standard error of the difference.

Standard errors of estimated numbers. The approximate standard error, s_x, of an estimated number shown in this report can be obtained using the formula

$$s_x = \sqrt{ax^2 + bx} \qquad (1)$$

Here x is the size of the estimate and a and b are the parameters in tables A or C associated with the particular type of characteristic. When calculating standard errors for numbers from cross-tabulations involving different characteristics, use the factor or set of pa-

rameters for the characteristic which will give the largest standard error.

Table A.
Standard Error Parameters for CPS Estimates

Characteristic	Persons	
	a	b
Fertility:		
Number of women:		
Total or White	-0.000032	1903
Black	-0.000233	1903
Hispanic origin	-0.000444	1903
Educational attainment:		
Total or White	-0.000013	2312
Income:		
Total or White	-0.000011	2077
Marital status:		
Total or White, some household members	-0.000025	4480

Illustration.

From table B-12 of the second paper (SIPP), the total number of women who had their first child in the 1976–80 period was 7,192,000. The appropriate "a" and "b" parameters to use in calculating SIPP standard error estimates are obtained from table C. They are a = -0.0000522 and b = 4791, respectively. Using formula (1), the approximate standard error is

$$s_x = \sqrt{-0.0000522\,(7{,}192{,}000)^2 + 4{,}791\,(7{,}192{,}000)} = 176{,}00$$

The 90-percent confidence interval as shown by the data is from 6,907,000 to 7,477,000. Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 90 percent of all samples.

Standard errors of estimated percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends on the size of the percentage and its base. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. When the numerator and denominator of the percentage are in different categories, use the parameter from table A or C indicated by the numerator.

The approximate standard error, $s_{x,p}$, of an estimated percentage can be obtained by use of the formula

$$s_{x,p} = \sqrt{bp\,(100 - p)/x} \qquad (2)$$

Here x is the total number of persons, families, households, or unrelated individuals in the base of the percentage, p is the percentage ($0 \leq p \leq 100$), and b is the parameter in table A or C associated with the characteristic in the numerator of the percentage.

Illustration.

Table B-9, part C of the second paper (SIPP) shows that in the 1966–70 period, of the 3,435,000 women who worked during their first pregnancy, 17.6 percent took an unpaid leave of absence from their job. Using formula (2) and the "b" parameter of 4,791 (from table C), the approximate standard error is

$$s_{x,p} \sqrt{\frac{4{,}791}{3{,}435{,}000}\,(17.6)(100-17.6)} = 1.4 \text{ percent}$$

Consequently, the 90-percent confidence interval as shown by these data is from 15.4 to 19.8 percent.

Table B.
Standard Error Parameters for CPS Fertility Ratios

Parameter	Value
a	0.000001
b	814
c	1485

Standard error of a median. The sampling variability of an estimated median depends on the form of the distribution and the size of the base. One can approximate the reliability of an estimated median by determining a confidence interval about it. (See the section on sampling variability for a general discussion of confidence intervals.)

Estimate the 68-percent confidence limits of a median based on sample data using the following procedure.

1. Determine, using formula (2), the standard error of the estimate of 50 percent from the distribution.
2. Add to and subtract from 50 percent the standard error determined in step 1.
3. Using the distribution of the characteristic, determine upper and lower limits of the 68-percent confidence interval by calculating values corresponding to the two points established in step 2.

   Use the following formula to calculate the upper and lower limits.

$$X_{pN} = \frac{pN - N_1}{N_2 - N_1}(A_2 - A_1) + A_1 \qquad (3)$$

   where

   X_{pN} = estimated upper and lower bounds for the confidence interval ($0 \leq p \leq 1$). For purposes of calculating the confidence interval, p takes on the values determined in step 2. Note that X_{pN} estimates the median when p = 0.50.

   N = **for distribution of numbers**: the total number of units (persons, households, etc.) for the characteristic in the distribution.

   = **for distribution of percentages**: the value 1.0.

   p = the values obtained in step 2.

   A_1, A_2 = the lower and upper bounds, respectively, of the interval containing X_{pN}.

   N_1, N_2 = **for distribution of numbers**: the estimated number of units (persons, households, etc.) with values of the characteristic greater than or equal to A_1 and A_2, respectively.

   = **for distribution of percentages**: the estimated percentage of units (persons, households, etc.) having values of the characteristic greater than or equal to A_1 and A_2, respectively.
4. Divide the difference between the two points determined in step 3 by two to obtain the standard error of the median.

Illustration.

Table E of the first paper (CPS) shows that the estimated median age at first

birth of White ever-married mothers born from 1940 to 1944 is 21.9 years and the base of the distribution from which this median was determined, N, is 5,376,000 women.

Table C.
SIPP Selected Generalized Variance Parameters for Use with Combined Data from the 1985 Panel

Characteristic	a	b
PERSONS		
Total or White 16+ income and labor force: Female	−0.0000522	4791
Fertility: Number of women	−0.0000712	3901
Educational attainment	−0.0000401	5314
Marital status: Some household members	−0.0000391	8042
Black		
All characteristics: Female	−0.0004329	6445
HOUSEHOLDS		
All others: Total or White	−0.0000678	5920

1. Using formula (2) and the appropriate parameter (b = 1,903) from table A, the standard error of 50 percent with a base of 5,376,000 is

$$\sqrt{\frac{1{,}903}{5{,}376{,}000}(50)(100-50)} = 0.9 \text{ percent}$$

2. To obtain the 68-percent confidence interval, add to and subtract from 50 percent the standard error found in step 1. This yields percentage limits of 49.1 and 50.9.
3. From the distribution of ages at first birth for White ever-married mothers born from 1940 to 1944, there were 3,231,000 or 60.1 percent who were 21 years old or older and 2,613,000 or 48.6 percent who were 22 years old or older. Using formula (3), the upper limit on the 68-percent confidence interval is

$$\frac{0.491(5{,}376{,}000) - 3{,}231{,}000}{2{,}613{,}000 - 3{,}231{,}000}(22-21) + 21 = 22.0$$

Similarly, the lower limit on the 68-percent confidence interval is

$$\frac{0.509(5{,}376{,}000) - 3{,}231{,}000}{2{,}613{,}000 - 3{,}231{,}000}(22-21) + 21 = 21.8$$

4. The standard error of the median age at first birth of White mothers born from 1940 to 1944 can be approximated as

$$s_{median} = \frac{22.0 - 21.8}{2} = 0.1 \text{ years}$$

The 90-percent confidence interval on the median age at first birth of White mothers born from 1940 to 1944 is 21.7 to 22.1, i.e., 21.9 ± 1.6 (0.1).

Standard error of a difference. The standard error of the difference between two sample estimates is approximately equal to

$$s_{x-y} = \sqrt{s_x^2 + s_y^2} \qquad (4)$$

where s_x and s_y are the standard errors of the estimates, x and y. The estimates can be numbers, percentages, ratios, etc. This will represent the actual standard error quite accurately for the difference between estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. However, if there is a high positive (negative) correlation between the two characteristics, the formula will overestimate (underestimate) the true standard error.

Illustration.

Table E of the first paper (CPS) shows that median age at first birth of White ever-married mothers born from 1940 to 1944 is 21.9 years and the median age at first birth of Black mothers born in the same time period is 21.0 years. The apparent difference in the two ages is 0.9 years. Using b = 1,903 from table A and formula (3), the standard error on the median age of 21.9 years is 0.1 years.

Similarly, the standard error on 21.0 years is 0.4 years.

Therefore, using formula (4) the standard error on the difference of 0.9 years is

$$s_{x-y} = \sqrt{(0.1)^2 + (0.4)^2} = 0.4 \text{ years.}$$

This means that the 90-percent confidence interval on the difference between the median age at first birth of White women and Black women born from 1940 to 1944 is from 0.3 to 1.5, i.e., 0.9 ± 1.6(0.4). Since this interval does not contain zero, we can conclude with 90-percent confidence that among women born 1940 to 1944 the median age at first birth for Black women is lower than that of White women.

Standard error of a fertility ratio. The standard error of a fertility ratio is approximately equal to

$$s_x = \sqrt{x^2\left[a + \left[\frac{b}{xy}\right] + \left[\frac{c}{1000y}\right]\right]} \qquad (5)$$

where x is the number of children ever-born per 1,000 women and y is the total number of women in thousands. The values of the standard error parameters a, b, and c are given in table B.

Illustration.

Table A of the first paper (CPS) shows that the average number of children born per woman is 2.89 for women born from 1920 to 1954. This implies 2,890 children were born per 1,000 women. The total number of women born from 1920 to 1954 is 40,581,000. Using formula (5) and the parameters from table B, the standard error on 2,890 children can be approximated as

$$s_x = \sqrt{(2{,}890)^2\left[0.000001 + \frac{814}{(2{,}890)(40{,}581)} + \frac{1485}{(40{,}581{,}000)}\right]} = 19.3 \text{ children}$$

This means the 90-percent confidence interval on the number of children born per 1,000 women who were born from 1920 to 1954 is from 2,859 to 2,921, i.e., 2,890 ± 1.6 (19.3).

U.S.GOVERNMENT PRINTING OFFICE:1990-266-161:20251

U.S. Department of Commerce
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Washington, D.C. 20233

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Penalty for Private Use, $300

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