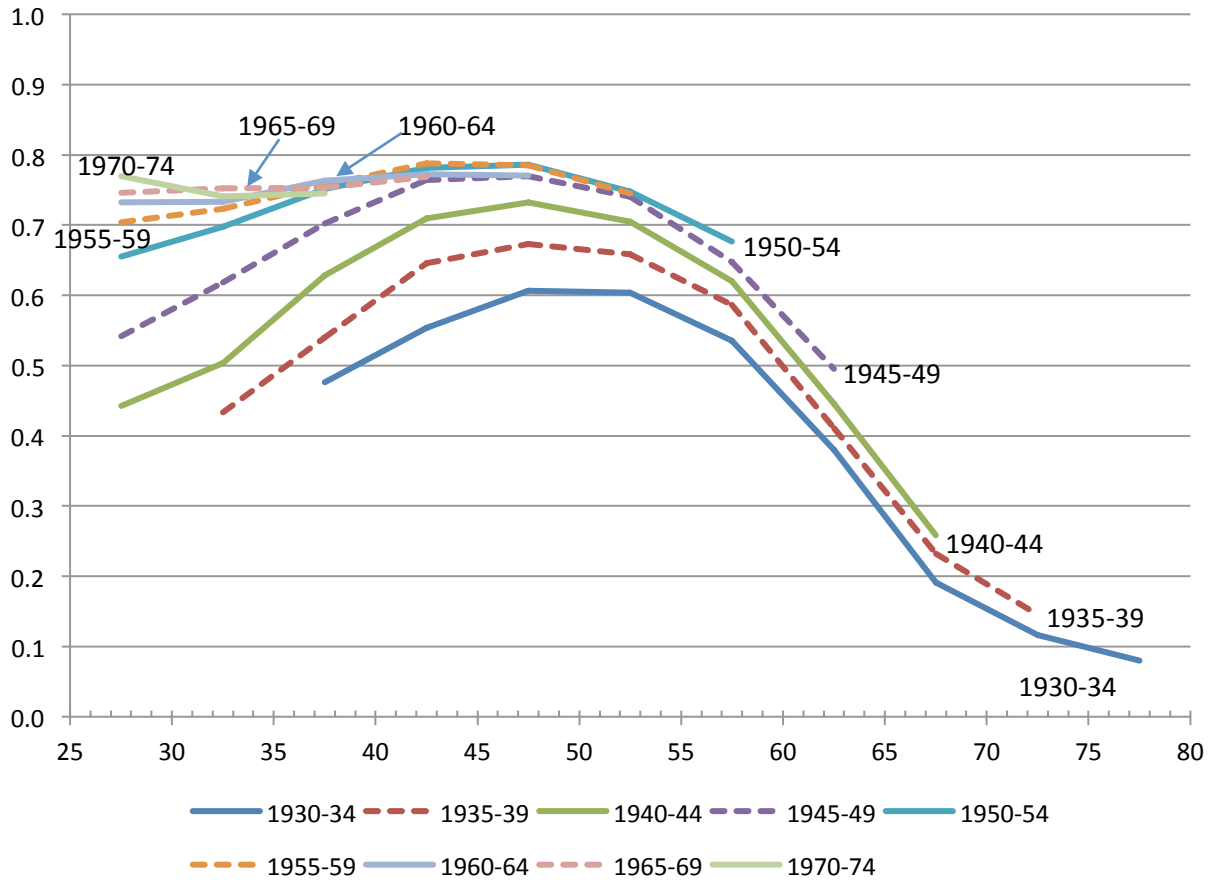
Appendix Material to

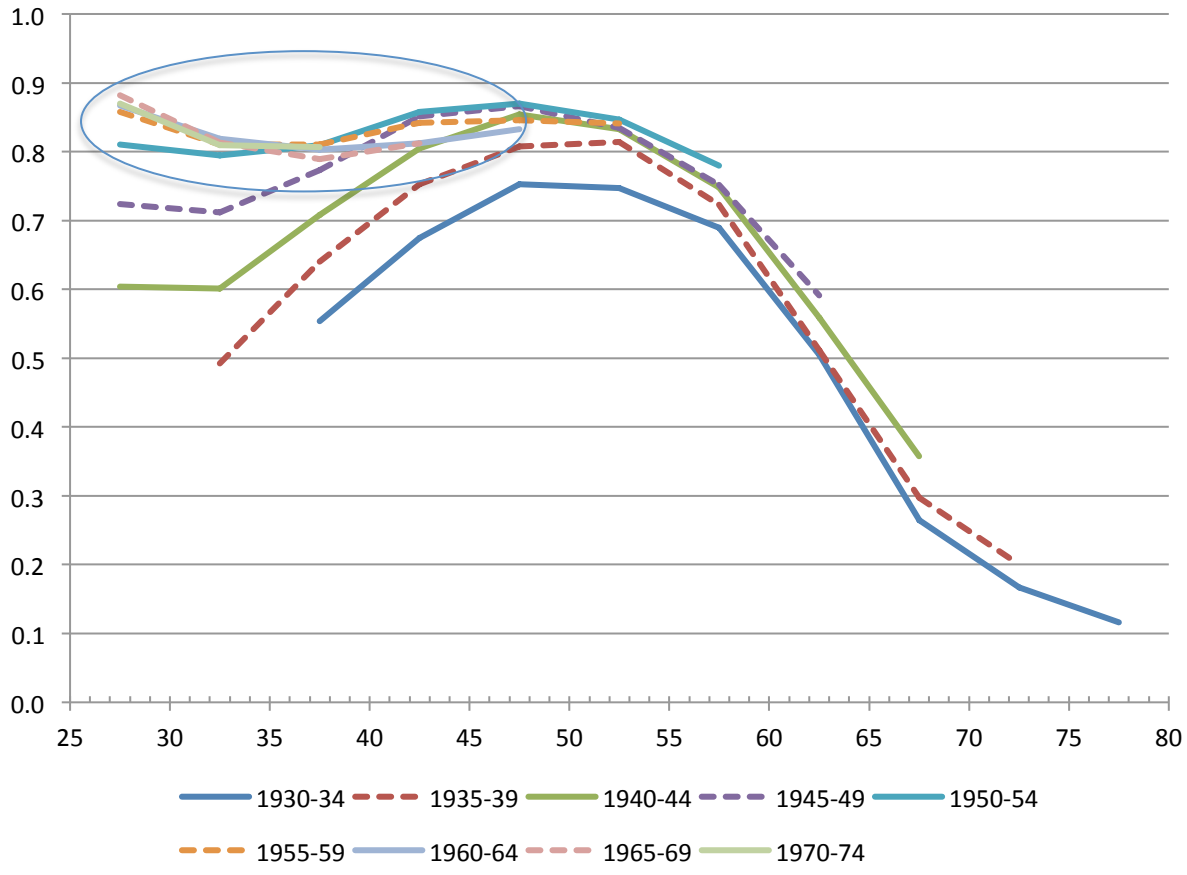
C. Goldin and J. Mitchell, "A New Lifecycle of Women's Employment"

Appendix Figure 1: Female Labor Force Participation Rates by Cohorts Born for 1930 to 1974 by Five-Year Age Groups and Five-Year Birth Cohorts (for all women by education)

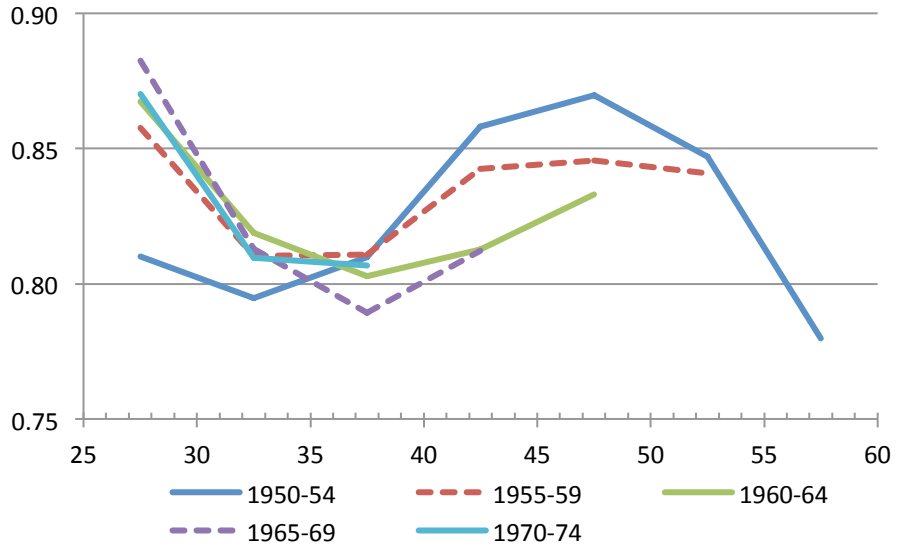
A. All Education Groups



B. College Graduate Women



C. College Graduates, Four Recent Cohorts (Area Circled in B.)



Source: CPS micro-data, March, 1963 to 2014.

Note: These graphs are identical those in Figure 1.A to 1.C of the article but include all women, not just the native-born, for the CPS data beginning with 1994. All other details are the same as in Figure 1.

Appendix on the Health and Retirement Study and the Survey of Income and Program Participation

1. Health and Retirement Study (HRS)

Both the Health and Retirement Study (known as the HRS) and the Survey of Income and Program Participation (known as the SIPP) are widely used data sets. Our analyses use restricted access versions of the data. Information on and public use data for the HRS can be found at http://hrsonline.isr.umich.edu/ The U.S. Census Bureau supports external researchers' use of the SIPP through the Research Data Center network www.census.gov/ces and public-use data can be accessed through www.sipp.census.gov/sipp/ (click "Access SIPP Synthetic Data"). This brief Appendix discusses certain details of the data relevant to this paper.

The HRS, supported by the National Institute on Aging and the Social Security Administration, was begun in 1992 with a random sample of households in which at least one member was born between 1931 and 1941 and thus between 51 and 61 years old. This initial sample is known as the HRS cohort, is also termed the "Intermezzo" cohort. In households containing a married or partnered couple, the "spouse" and "respondent" categories were randomly assigned to age-eligible individuals. "Spouses" were not given positive sample weights until 1998, if born from 1931 to 1941. If they were born from 1942 to 1947, they are not given positive sample weights until the "War Baby" (WB) cohort was added. The "War Baby" (WB) cohort was born 1942 to 1947. The "Early Baby Boomer" (EBB) cohort, born 1948 to 1953, was added in 2004. The Mid-Boomer (MBB) cohort, 1954 to 1959 was added in 2010. The WB, EBB, and MBB cohorts were between 51 and 56 years old at the start of the survey.

The cohorts mentioned have been surveyed every two years. Additional cohorts born before 1931 are also part of the HRS, but the HRS, WB and EBB are the primary ones we use here. At the time of this writing, the HRS data are available to 2012. Individuals were asked at each interview if they would agree to have their Social Security earnings records linked. Therefore the fraction with a linkage increases with the number of interviews. Among the 1931 to 1942 birth cohort the linkage rate is 89 percent. It is 85 percent for the 1943 to 1945 cohort, 79 percent for the 1946 to 1948 cohort and 71 percent for the 1949 to 1951 group.

2. Survey of Income and Program Participation (SIPP)

The Survey of Income and Program Participation (SIPP) Gold Standard File consists of a harmonized set of SIPP panels linked to longitudinal earnings records. Our analysis

uses SIPP panels 1996, 2001, 2004, and 2008 and integrates information from the fertility history topical modules conducted in Wave 2 of each panel. We combine basic demographic information from the Gold Standard File with information from the topical modules on the number of children, year the first child is born and mothers' use of leave-taking. The variables we use from each SIPP survey are cross-sectional, not longitudinal. The panel dimension of the data comes exclusively from the linked earnings records. Linkage rates vary by SIPP panel but are typically around 85 percent.

We restrict our overall sample to women approximately 30 to 60 years old when first interviewed (among those with a valid Social Security number [SSN] assigned). We estimate a logit regression for each panel using demographic characteristics to predict SSN assignment and multiply the survey weights by the inverse of the estimated propensity score. SSN assignment rates vary by panel but are typically around 85 percent.

The Social Security earnings records, to which both HRS and SIPP respondent data are linked, also contain W-2 forms from 1978. But the HRS was not originally linked to the full group of W-2 forms. Therefore, we use the W-2 forms for the HRS only after 1980 when the linkage is complete.

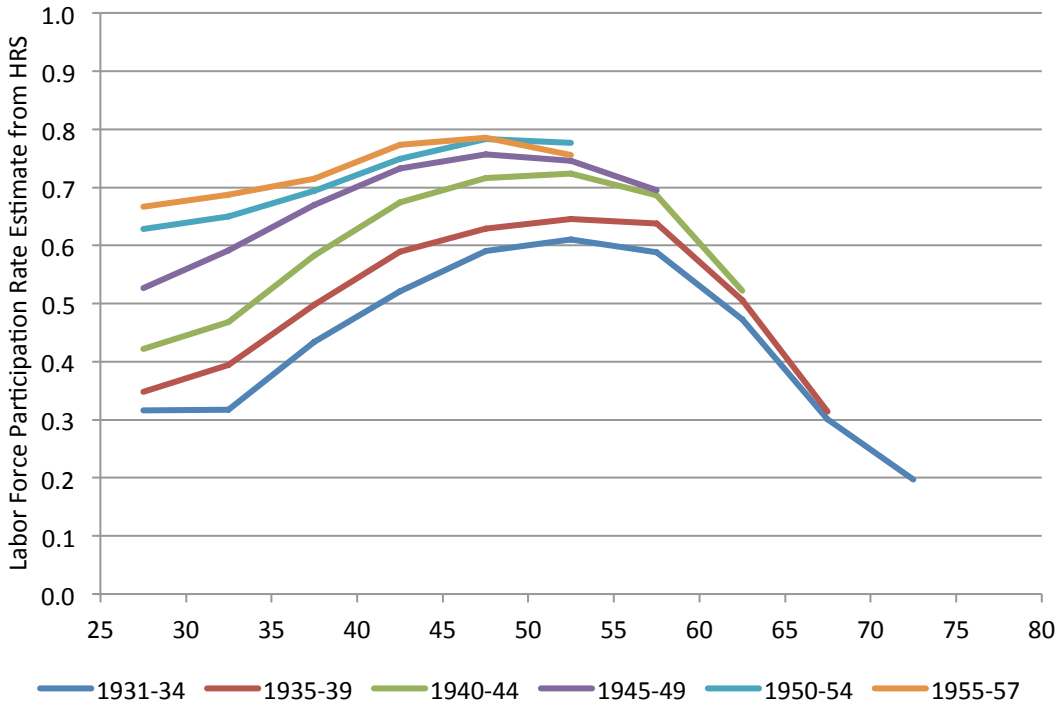
3. Construction of Labor Force Participation Rates Using the HRS-SSA and SIPP-SSA and Comparisons with the CPS-ASEC

The definition of labor force participation in the CPS-ASEC concerns whether the individual was working for pay or profit (or actively searching for work) during the census week. In using both the HRS-SSA and the SIPP-SSA we have annual income data and not a variable that corresponds to the one in the CPS-ASEC. Both the HRS and SIPP have contemporaneous questions about labor force participation but that does not exist going back in time.

Our labor force participation variable treats individuals as being a labor force participant if they earned (reported as SS or W-2 earnings) at least the equivalent of ten hours per week at the existing federal minimum wage for 52 weeks per year. The HRS respondents are included in the labor force if they stated they were "in the labor force" once the survey began or if they were working for a state, federal or municipal government in particular years prior to the HRS survey even if they had no SS earnings. Because the HRS is biennial, we averaged the two years when we used the HRS respondent information and some, therefore, have the value of 0.5 (the ages for these entries would older than 50 years). All others are non-participants.

But how close is that definition to the one in the CPS-ASEC? The answer is that it is very close. Appendix Figure 1 gives the participation rates for all women estimated from the HRS for cohorts born from 1931 to 1957. It can be compared with Figure 1 from the CPS-ASEC. Out of the 36 entries (five-year birth cohorts from 1930 to 1959 and five-year age groups from 25 to 54), just 14 are not within 5 percentage points (0.95 to 1.05 for the ratio HRS estimate/CPS-ASEC) and just one is not within 10 percentage points. For the 55 to 59 year old group the estimates are within 10 percentage points. For reasons that are not yet clear, the HRS overstates participation for those older than 60 years relative to the CPS. See also Goldin and Katz (2016) for other comparisons of the HRS and the CPS labor force data.

Appendix Figure 2: Labor Force Participation Rates Estimated from the HRS for Birth Cohorts from 1931-1957



Source and Notes: HRS restricted access version. Labor force participation rate estimates are computed using the algorithm described above.

Appendix Table 1: Age at First Birth, Number of Children and Fraction with Zero Births for All and College Graduate Women

Year of Birth	HRS (> 50 Years Old) and SIPP (≥ 44 Years Old)						CPS June Fertility Supplements (≥ 40 Years Old)			
	All Ever-Moms		Fraction with Zero Births, All Women	Ever-Mom College Graduates		Fraction with Zero Births, College Grads	Ever-Moms Number of Children	Fraction with Zero Births, All Women	College Graduates	
	Age at First Birth	Number of Children		Age at First Birth	Number of Children				Ever-Mom Number of Children	Fraction with Zero Births
1935-39	22.44	3.28	0.0778	25.52	2.64	0.152	3.26	0.101	2.68	0.172
1940-44	22.66	2.89	0.100	25.67	2.24	0.227	2.85	0.112	2.42	0.192
1945-49	23.38	2.54	0.121	26.71	2.13	0.209	2.48	0.151	2.23	0.243
1950-54	23.86	2.33	0.190	27.53	2.07	0.300	2.36	0.172	2.16	0.272
1955-59	24.22	2.36	0.200	28.48	2.16	0.320	2.29	0.191	2.22	0.272
1960-64	24.61	2.33	0.191	28.50	2.18	0.310	2.29	0.203	2.20	0.260
1965-69	24.84	2.38	0.200	28.22	2.26	0.230	2.29	0.189	2.20	0.231

Sources: HRS for 1935 to 1949 and SIPP (native-born) for 1950 to 1969. Micro-data for the CPS June Fertility Supplements, 1973 to 2014 (annually to 1988 except 1978 and then biennially except for 1995 rather than 1996). Native-born women can be identified consistently only with the 1994 CPS. The CPS has information on age at first birth only in 2014. See Goldin (2016) for description of the source; see especially the discussion of possible biases due to a change in the CPS imputation algorithm for missing information concerning births.

Notes: In all cases, number of children ever born is truncated at nine. Completed births are measured at 40 years old and above for the CPS, at 44 years and above for the SIPP and at 50 years and above for the HRS. The CPS data has between 10,000 and 20,000 observations per five-year birth interval for all women. The SIPP contains about 400 respondents and the HRS from 1,200 to 2,300 per relevant five-year cohort. The HRS no-birth fractions appear to be too low, but the reason is not clear. One possibility that that the fraction of women