Fertility Timing and „Opting Out": A Cohort Comparison of Women with Advanced and College Degrees for Birth Cohorts 1931-1975

Natalie Nitsche and Hannah Brueckner

Yale University, Department of Sociology
Center for Research on Inequalities and the Life Course
natalie.nitsche@yale.edu
hannah.brueckner@yale.edu

Paper Prepared for Submission to the PAA Meeting 2010, September 2009

ABSTRACT

This paper adds new evidence to the 'opt out' debate regarding white married mothers with high levels of education. We use the CPS June files on fertility (1979—2006) to address differences in age and cohort (1930-1975) trends in labor force participation (lfp) and full-time employment rates between women with college and women with advanced degrees. Furthermore, we estimate a series of logistic regressions to assess the effect of age at first birth on lfp rates. We do not find evidence for increased levels of retreat from the labor market; however, the lfp rate clearly stalled for both educational groups, and full-time rates declined. Also, the child penalty in lfp is 10% higher for college educated women compared to women with advanced degrees. Moreover, throughout the cohorts, women who had their first birth between 26 and 33 are subsequently significantly less likely to be employed than women who had their first child either earlier or later in the life course.

INTRODUCTION

In the mid 2000s, the news media suggested that a current trend of opting out of the labor market takes place among mothers with high levels of education. Evidence presented by recent research is somewhat mixed but largely suggests otherwise. For example, Boushey (2005) found that the negative effect of children on mothers' labor force participation (lfp in the following) decreased consistently between 1984 and 2004 and she did not find a reversal of this trend between the years 2000 to 2004. After looking at the trend for different educational groups separately, however, she detected a slight increase in child penalty in the 2000s among women in their thirties with advanced degrees, but not for college educated women. A recent cohort study by Percheski (2008) did not find evidence for an 'opt out revolution' of professional women. Still, Percheski shows that the share of employed professional women has stalled in the youngest two cohorts in general and for professional women in their mid to late thirties in particular. On the other hand, she finds that working full time has increased for all cohorts. Stone (2007, 2009) also assesses a plateau in labor force participation rates of white college educated women with a recent slight decrease in labor force participation and increase in homemaking since the late

1990s. Without suggesting that mothers with high levels of education increasingly leave the workforce, she illuminates the reasons of those who choose to do so. Stone finds that many mothers with high levels of education are leaving employment not in order to tend to their family in the first place, but because high demands in the workplace make a combination of family and career too difficult. Some of the interviewed women tried to make both career and family work after childbirth, to eventually leave the labor force only after a while, when they realized that their workplace demands could not be adjusted to a balanced family life. Vere (2007), on the other hands, suggests that it is rather younger college educated women in their 20s born after 1973 who reduce their work hours due to new higher levels of fertility early in the life course of college educated females.

In sum, while the labor force participation among women with college and advanced degrees, or women in professional occupations as defined by Percheski, has increased significantly over the last cohorts and is today in general very high, a stalling of the lfp rates in the last two birth cohorts appears to take place. Despite this in general consistent evidence, several aspects in labor force participation patterns among females with high levels of education have not yet been fully understood.

The most important aspect is the distinction between women with college education only and women with graduate education and thus, advanced degrees. Boushey's study so far is the only one examining the 'opt out' argument differentiated for women with college and women with advanced degrees. However, she reports cross sectional child penalties over time only, without reporting basic labor force participation rates by educational level, cohort differences or giving a broad spectrum of age groups. Also, she does not report the age of the children, which might be a crucial confounder because the median age at first birth has gone up consistently over the last

cohorts, and lies today at 33/34 for women with advanced degrees (Brueckner, Nitsche and Aisenbrey 2008). Mothers of young children are more likely to drop out of employment, so that decreases in the labor force participation among a certain age group over time might primarily reflect changes in the timing of first birth and temporarily absence of mother with preschool-aged children from the workforce. Thus, the increased child penalty for highly educated women in their 30s reported by her study could, at least in part, be due to changes in the age at first birth. While the discussion of the retreat of mothers out of the labor market has focused on females with higher levels of education, no study yet systematically illuminates differences in labor force participation patterns between women with college versus women with graduate education.

Different expected returns to education, however, suggest that labor force participation behavior of mothers might differ among those two educational groups. Based on the assumption that females with an advanced degree have invested more in their education and are better qualified, their returns to their education can, on average, be expected to be higher than for women who obtained a college degree only. It might be more reasonable for females with advanced degrees, compared to women with college degrees, to stay in the labor market while their children are young due to several reasons. Childcare costs in the US are high, which is particularly true for high quality daycare, however, higher salaries of mothers with advanced degrees are more likely to set off high childcare expenses. In addition, females with advanced degrees might be more likely to pursue a professional career instead of just 'having a job'. This means that opportunity cost due to lost experience might be higher for them, because time spent away from the labor market hurts those most who have very specific skills which may get lost or outdate more quickly during a period of absence than do more general skills. Also, women with graduate degrees pursuing professional careers might be more often on specific career tracks (like tenure

track in academia or aspiring partnership in a law firm) and need therefore to be present in the labor force without interruption. Percheski chooses to study a different segment of women, namely women with professional occupations, which are, due to the definition of the survey she uses, women who have been in the labor force at least once in the five years before surveyed, some of them with college and some of them with advanced degrees. This, however, leads to women with higher levels of education falling out of the sample if they have been out of the labor force for longer than this, which could specifically apply to women with school aged-children and might lead to bias in results for this specific subgroup. Thus, we think it might add some new evidence to the debate to examine labor force participation behavior of the whole population of women with college degrees and women with advanced degrees separately, without conditioning on prior labor force participation.

Moreover, we think it is important to differentiate between married and unmarried females. We theorize that opting out of the labor market might be a strategy pursued primarily by those who are able to buffer their income loss with the earnings of the partner[1]. Single mothers, in contrast, are probably more likely to be in the workforce, in order to make ends meet. Pamela Stone's research suggest that highly achieving women are rather pushed out of the labor force than they are opting out, still, single mothers might simply have less choices when being confronted with the difficulty of combining demanding and inflexible employment with raising children[2].

[1] This, of course, is true for cohabitating couples as well. On the other hand, women who are not married might be more reluctant to give up their job, due to less strong legal commitment of the partner. Nevertheless, we are not able to identify cohabiting couples in the data. Therefore, we reduce our analysis to married women only. Nitsche and Brueckner (2009) have shown that highly educated white women have traditionally been married in high percentages; also, non-marital fertility is very low among women with advanced degrees.

[2] We conducted some preliminary analyses of labor force participation rates for married versus unmarried women, and they showed that unmarried mothers were less often out of the labor force than married mothers.

Additionally, while the stalling labor force participation among recent birth cohorts of well educated females has been assessed, it is not yet clear if there are subgroups of females that are more strongly affected than others. In order to fully understand labor market behavior of women with high levels of education, we argue that it is necessary to investigate mothers and non-mothers separately by age to gain a fuller picture of child penalties for specific cohorts and age groups. Also, we think that it is important to examine mothers of young and mothers of older children separately, as well as mothers of different parity.

Inspired by Percheski, in addition to labor force participation rates, we examine full time employment rates for mothers and non mothers for women with college and advanced degrees separately, and find that full time rates have declined for older mothers with postgraduate education while they appear to stall for mothers with college education. These findings contradict Percheski's results.

Also, we think that more research is needed to address whether the timing of the first birth has, net of the age of the youngest child or the number of children, an effect on labor force participation later in the life course and whether this effect differs over cohorts. It is well possible that having a first birth before, during or after the phase of education and early career formation has a differential effect on labor market outcomes. Having to tend to young children during college, graduate school or during the entry into the labor market could have adverse effects on the career due to a restriction of time and energy that mothers of young children can invest into their education or the workplace. Also, Goldin's research (2004) has shown that women's strategies to combine family and career have changed over the course of the 20th century, so that we could expect an effect of age at first birth on labor force participation outcomes to differ between cohorts. For example, if combining early career formation and family

formation happens parallel for large shares of a birth cohort, subsequent child penalties might be lower due to more acceptance and support to combine family and career in the workplace. Ideally, we would like to assess the effect of age at first birth on other employment outcome variables like income or occupational status. Unfortunately, we did not have sufficient information on income in the data but plan to address the effect on occupational status in later stages of our work.

Finally, recent research by Garcia-Manglano and Bianchi (2009) finds that mothers of grown children are more likely to exit the labor force than mothers of younger children for birth cohort 1958 in the UK. They find the "empty nest" effect for the general sample, without interacting the effect with different educational levels. It could be expected, however, that women with high levels of education are rather more likely to stay in or return to the workforce after their children have grown up, because they can expect higher returns to their education than mothers with lower educational levels. Moreover, in the US, college education is costly, and mothers of children over 18 with high levels of education might have an incentive to be employed and generate income in order to financially support their children's college education. We will test Garcia-Manglano and Bianchi's "empty-nest" hypothesis for the US context of women with high levels of education.

In the following, we will in a first step describe the data used. Thereafter, we will present and discuss our results. First, we will compare labor force participation and full time employment rates for college degreed versus advanced degreed non-mothers and mothers by age of youngest child, and parity. Second, we will present the results of a series of logistic regressions. We estimate the effect of timing of first birth on subsequent labor force participation rates and the effect of age of youngest child on labor force participation ("empty nest" effect). We restrict all

of our analyses to white and married women. Descriptive statistics of our sample, detailed information about the measurement of most variables and a broader overview over the literature are still missing and will be added to the next version of the paper.

DATA

For our analyses, we use the June Supplement on Fertility of the Current Population Survey (CPS). We pooled all available waves from 1979 to 2006, which generated a dataset containing 563,836 females born between 1886 and 1991. For our analysis, we used a subsample of 55,973 women with completed college education and 25,219 women with graduate education born between 1931 and 1975.

The high case numbers allow us to look at six representative birth cohorts of females with graduate education and college educated females separately. The collection of the CPS series on fertility started in the 1970s, providing times series data with multiple waves and covering a long time span. This makes the data unique in that it provides complete rich information on fertility for a large sample of women covering multiple cohorts.

The June fertility supplement, which we use to estimate age at first birth and levels of childlessness, is available annually or bi-annually since 1971. The target population has changed over the years. With the purpose of keeping the sample population from year to year as comparable as possible, we selected 14 out of the 23 available survey years.[3] In recent years, only women up to age 44 were included in the fertility supplement. Because of the steep decline

[3] The sample population of the years included in our analysis: 1979: all women 18-59 (and 14-18 if ever married), 1980: all women 18+ (and younger if ever married), 1981-83: all women 18-59 (and 15-18 if ever married), 1985: all women 18+ (and younger if ever married), 1990: all women 15-65, 1992: all women 15-44, 1998-2006: all women 15-44.

in fertility after age 40, however, we hope to still capture the fertility information well, specifically with respect to the timing of the first birth.

The core fertility variables collected are the number of live birth a women has ever had and the date of birth of the youngest child. There are virtually no missing values on these two variables. In addition, the timing of all other children has been collected in most of the waves, giving a complete fertility history for much of the sample. Unfortunately, as of 1998, the timing of all birth but the most recent one has no longer been collected. We estimate the age at first birth for the more recent waves from the household information (see below).

Measurement

Education. Until 1990, education was collected as years of schooling, from 0-18+.[4] In 1992 and later, the educational variable switched to a measurement of highest degree completed, with 16 categories in total. We collapsed those two variables into one educational variable with five categories: less than high school, high school, some college, college and postgraduate education. Our group of those with postgraduate education consists of individuals who had 17 or 18+ years of education (before 1992) or reported to have completed a Masters or Professional degree or a PhD (after 1992). In the June Fertility Supplement data, information on current school enrollment is incomplete and therefore we cannot distinguish between those enrolled in graduate school at the time of survey and those with completed graduate schooling.

Age at First Birth. In the fertility supplement, the only two variables that have been collected consistently throughout all survey years are the number of live births the women experienced and

[4] Before 1992, respondents were asked some version of these two questions: What is the highest grade (or year) of school this person has ever attended? Did s/he finish the highest grade (or year) he attended?

her age at the most recent birth/age of most recent child. Questions on the timing of all others birth were included in the survey until 1995, but were unfortunately discontinued in 1998. For survey years 1998-2006, we reconstructed age at first birth based on the women's age, her number of live births, and the age of the oldest child living in her household. First, we derived the age at first birth for those women who had only one birth directly from the 'age at last birth' variable, accounting for roughly 30% of the mothers in the years 1998-2006. Second, for all other mothers, we compared the number of births a woman reported to have ever had to the number of children living in her household. If the two numbers matched, we subtracted the age of the oldest child in the household from the age of the mother to calculate age at first birth. If the numbers did not match, we assigned a missing value. The number of mothers without a match was around 30% for all survey years that did not include information for age at first birth; however, this number is smaller with higher levels of education. For the group of the highly educated, we were not able to reconstruct age at first birth for about 15-20%, depending on survey year. Of course, one might think of selection bias here, because certain groups are presumably more likely to not be living with all and exclusively their own children in one household. For example, women who had their children early, so that they already left the house, women who are separated with children living with the father, or women with a new partner who brings own children into the household, and women with higher parity. We are confident that we can adjust for this bias by using a birth cohort approach in analyzing the sample. This is because we can 'catch' birth cohort members early in their life course, when they were still living with all and exclusively their own children in one household so that we count them as a 'match' at least once. By accumulating birth cohort members across survey years, we avoid sample selectivity. Finally, there are probably some woman who have wrong positive matches, because the number

of children that live in the household coincidentally reflects the number of births a women has had, but those children are not (all) her own children. We of course cannot identify those cases, but we excluded women who had a unrealistic age at first birth of 11 and younger from the analysis. We recognize therefore that we have some error margin in the age at first birth variable for the survey years 1998-2006 and are working on cross-checking our estimates with other data.

RESULTS AND DISCUSSION

Labor Force Participation by Age of Youngest Child

Figures 1 and 5 show the lfp rates for married white women without children. Traditionally, women with postgraduate education had higher lfp rates than women with college degrees, but college educated women without children have caught up as of cohort 1956-60. Labor force participation rates for both groups are around 90% for the 3 most recent birth cohorts. Thus, there are only very slight differences in lfp rates between college educated and highly educated women among recent cohorts of non-mothers.

However, and as expected, the lfp for mothers with graduate education is consistently higher than for mothers with college degrees, as can be seen in figures 2 and 6. For the older birth cohorts, especially college educated mothers in their 20s and 30s have been much less likely to be in the workforce than mothers with graduate education. College educated cohorts born after 1960 have caught up, so that the difference in labor force participation to mothers with advanced degrees declined from about 20% in older cohorts to 5-10% in the younger cohorts. These differences apply primarily to mothers of preschool children aged 5 or younger than for mothers

of children aged 6-18 (figures 3&4 and 7&8)[5]. Between 70% and 80% of highly educated women with children below age 6 were in the labor force in the last three cohorts, but only between 60% and 70% of college educated mothers. Also, the age group of 40-44 year old mothers with small children experienced decreases in lfp in both educational groups over the last three cohorts. All younger age groups with small children among highly educated women had increases in lfp, but this was only true for 25-29 year old college educated women. Labor force participation of college educated women with small children in their 30s is stalling at about 65% over the last three cohorts. This seems to support our theoretical considerations, which predict that women with advanced degrees have more incentives to stay in the workforce while their children are young than college educated mothers. With respect to older children, lfp rates of highly educated women have been high throughout (about 80%-90%) but stalled at that level[6]. College educated mothers of older kids have had more gains in the lfp rate because they started at lower levels in older cohorts, but appear to stall as well at a level of ca. 80% in recent cohorts. Moreover, there is an obvious decrease in labor force participation for college educated women who are between 30 and 39 and have school-aged children in the youngest cohort born 1971-75, while no such trend is visible for the same cohort of women with advanced degrees.

In sum, lfp rates for mothers with high levels of education are high, but are stalling at about 85% for highly educated mothers and at about 75% for college educated mothers. Thus, college educated mothers are absent from the workforce more often than highly educated mothers, which is especially true for mothers of children aged 5 and younger. Also, while there is no sign of an

[5] The figures that show lfp or full-time employment rates for all mothers contain more cases than just those with children 0-5 and children 6-18, namely all mothers whose youngest child is older than 18. That is why graphs shown in the figures for all mothers combined seem at times to indicate other trends for women over 40 than the graphs by age of youngest child suggest.

[6] Women with advanced degrees aged 25-29 with children 6 and older are an exception, but this is a small are probably very select groups.

increased retreat from the labor market for well educated mothers, there is some evidence for a slight decrease in lfp for college educated mothers of the birth cohort 1971-75 (especially of older children) who are in their 30s, while no such trend is visible for highly educated mothers. This might support Stone's argument that middle-aged mothers retreat from the labor market because they, after trying at first, cannot succeed in combining childrearing with inflexible employment. Also, if such a phenomenon should exist, there is preliminary evidence that it might apply to college educated mothers more strongly than to mothers with advanced degrees.

Labor Force Participation by Parity

Figures 17-22 show labor force participation trends for advanced and college degreed mothers by parity. It is obvious that for both educational groups, labor force participation goes down with greater parity. What is again visible is that especially mothers in their 20s and 30s traditionally stayed out of the labor force much more often when they had college than when they had advanced degrees. Mothers with advanced degrees of one child had higher participation rates throughout, but mothers of one child with college degrees have increased their lfp significantly with cohort 1961-70. However, no further increase has then taken place with cohort 1971-75 for college educated mothers of one child (figures 17 &20).

Interestingly, lfp rates of college educated mothers aged 35 to 44 with two children appear to have declined, but have increased for the two younger groups (ages 25-34). The same applies to college educated mothers of three or more children (figure 22). No such trend of retreat from the labor force is detectable for highly educated mothers over 35 with two children or higher parity. This, again, might be interpreted as support for Stone's argument that women are leaving the workforce only after encountering irresolvable difficulties in combining career and family. Our

results indicate that this might apply to college educated mothers with two or more children in the first place, but not to mothers of higher parity with advanced degrees.

The relatively greatest gains have been for mothers of three or more children with graduate education. More than 65% of mothers with three of all age groups have been employed in the cohort 1961-70, with a large increase to 75% or more mothers of three or more kids being employed in all age groups of the cohort born between 1971 and 1975. Lfp rates for college educated mothers with a parity of three or more, conversely, are stalling or declining with the exception of mothers in their 20s. Thus, lfp rates differ most strongly between college educated and highly educated of three or more children.

Full Time Employment Rates

Full-time employment rates of those women who are in the workforce are shown in figures 9-16. Women with graduate education who are married but childless have traditionally had high levels of full-time rates of roughly 70% to 80%, also college educated childless married women had similarly high rates for birth cohorts 1950 and younger (figures 9 and 13). Full-time time employment rates of mothers are much lower. They lie between 50% and 60% for mothers with advanced degrees born after 1950, with a slightly declining tendency, particularly for mothers over 35. College educated mothers work full-time at even lower rates. With the exception of mothers over 45 in cohort 1940-49, less than 50% of college educated mothers of all age groups and cohorts work full time. This figure seems to be stalling consistently for the last three cohorts of women with college degrees, except for 24-29 year old mothers. A closer look at mothers' full-time employment by age of youngest child (figures 11-16) reveals that mothers of young children work full-time about 10% less often than of mothers of older children, roughly

speaking. This is true for both educational groups. Furthermore, for both groups of mothers with children under 6 and for college educated mothers with kids 6-18, the 25-34 year olds are those who work-full time most often. This is particularly true for college educated mothers of school-aged children. Possiblly, women in this age group are more likely to be in the early stages of their career, and might need to work full-time more often because of career demands.

Timing of First Birth and Labor Force Participation

In order to better understand if the timing of the first birth has an effect on the labor force participation later in the life course, we estimated a series of logistic regressions shown in tables 1 and 2. To avoid complicated interaction effects, we estimated the models separately for college educated and highly educated women, and separately for each birth cohort. The downside of this strategy is that we are not able to compare effect sizes among different cohorts and between women with college and advanced degrees. To do so, we plan to include interacted models in future version of this paper. The five models for women with advanced degrees are shown in table 1; the models for college educated women are shown in table 2. We were able to include the regression for the sixth and youngest cohort (1971-75) for college educated women only; case numbers were not high enough for an interpretable model of mothers with advanced degrees.

White married mothers aged 65 and younger are included in the models. We control for age effects by including a linear, a squared and a cubed age term. Also, we control for age of youngest child and number of children. The independent variable of interest is the age at first birth indicator. In order to allow for nonlinearity, we created three dummy variables: One for an

early first birth at or before age 25, which is the reference category in the models, one for middle ages at first birth (26-33) and one for a late first birth at or beyond age 34.

Both tables (coefficients in odds ratios) show a significant relationship between timing of first birth and labor force participation later in the life course, net of age effects, age of youngest child and number of children ever had. Women with advanced degrees (table 1) who had their first birth early are most likely to be in the workforce, but only significantly so compared to women who had their first birth between 26 and 33. The coefficients for women who had their first baby after age 33 are smaller than one throughout as well, but not significant with the exception of birth cohort 1930-39. Women who had their first birth at 'middle' ages (26-33), are 45% less likely to be employed at the time of survey in the birth cohort 1950-55, and about 25% less likely to be employed in the cohort born 1940-49. The other coefficients fall somewhere between these two values.

College educated women show relatively similar patterns, albeit with some more variation. Having a first birth between 26 and 33 is significantly related to a decreased likelihood of subsequent labor force participation for all birth cohorts but birth cohort 1950-55 and the oldest cohort born in the 1930s. In addition, college educated women who had their first birth at age 33 or later are also, compared to women with an early timing of first birth, less likely to be employed at the time of survey in the cohorts born between 1956 and 1970.

The effects for the control variables, number of children and age of youngest child, are significant in almost all models for both educational groups, and the effect sizes are very similar throughout. Each year increase in the age of the youngest child increases the odds of participating in the labor force by 4%-8%. Each additional child significantly lowers the odds of being employed by 13% to 35%, depending on the cohort.

The question of when the best time to have a baby is for women who wish to combine a career and a family has been asked oftentimes and is certainly not answered by our research. Still, it is informative, and also somewhat counterintuitive, that those who had their children early in the life course seem to be more successful in combining both than those who had their children at middle ages or even late in their reproductive careers. We are of course unable to say whether these effects are real effects or might be due to selection. It is well thinkable that those who had their children early and nevertheless succeed to complete their education are more determined than others to succeed in the labor market. Also, those who have their first child during graduate school or the early career formation phase might put less emphasis on a successful career. However, the consistent effect throughout cohorts and both educational groups may also indicate that having a child around age thirty, when many women are either in graduate school or in the early career formation process, might hurt a successful career in the long run. It might well be the case that women who are tending to young children and are trying to build their career at the same time, are disadvantaged in terms of career outcomes, because they cannot invest as much effort into their graduate education/first job as their childless peers or their peers with older children can. We think that further research is needed to address these questions more thoroughly.

"Empty-Nest Effect"

The models shown in tables 3 and 4 address the 'empty nest' effect, which suggests that women of grown children who have left the home have lower incentives to earn an income and drop out of the labor force. Again, we estimate a series of logistic regression models of a mother's labor force participation for white married individuals, separately for cohorts and educational groups. We control for age effects and number of live birth the women has ever had. In addition, we include a dummy that indicates whether the age of the youngest child is above or below 18. Cleary, we cannot find any evidence for an "empty-nest" effect in any of the cohorts for college and highly educated women alike. For some cohorts, there are clear positive effects on labor force participation of having a youngest child over the age of 18, and the insignificant coefficients are positive throughout.

CONCLUSION

We conducted this research because we were puzzled by several questions regarding the labor force participation of mothers with high levels of education, which have, so far, not yet been addresses in the debate on the "opt-out revolution". On the one hand, our interest centers around the relationship between fertility outcomes like parity, age of youngest child, and timing of first birth and subsequent labor force outcomes. On the other hand, we were intrigued by the fact that, when the "opt out"-phenomenon is discussed, usually there is no distinction made between women with college degrees and women with advanced degrees. However, we hypothesize that differences in labor force outcomes should be expected between these two groups due to their different investments in education. Our findings indicate that this is indeed the case. Women

with advanced degrees are, roughly speaking, about 10% more likely to be in the labor force than women with college degrees. Also, they work full-time more often, especially while mothering children of preschool ages. Although these differences between women with college and women with graduate education have grown smaller over the cohorts, they are still well detectable in the youngest cohort examined, which is birth cohort 1971-75. Furthermore, we do not find general evidence for an "opt out"-revolution among white married women with high levels of education. Our findings have shown, however, that lfp rates of women with high levels of education have stalled in the most recent 3 cohorts, and that college degreed women in their mid to late 30s and early 40s might recently be more prone to leave the labor force, especially if they have two or more children. In addition, we did find that the timing of the first birth is significantly related to the subsequent labor force participation. Net of age of the youngest child and number of children, women who had their children early in the life course are most likely to be employed. Those who had their children between 26 and 33, thus during the phase of graduate education and/or early career formation, are significantly less likely than mothers with an early first birth to be in the workforce at the time of survey. The question of whether these effects are due to selection, are spurious effects or are real effects remains unanswered and needs to be addressed in further research. Finally we did not find any evidence for an "empty nest" effect. Just the contrary was true; mother with high levels of education whose youngest child was 18 or older, and thus has possibly left the parental household, were significantly more likely to be in the labor force throughout birth cohorts 1931-1970.

LITERATURE

Brueckner, Hannah, N. Nitsche and A. Aisenbrey (2009): Timing of Family Formation among Highly Educated Women. Paper presented at the Meeting of the eastern Sociological Society, March 2009.

Boushey, Heather (2005): Are Women Opting Out? Debunking the Myth. CEPR Briefing Paper, November 2005.

Garcia-Mangalano, Javier and S. Bianchi (2009): Timing of Births, Childrearing and Employment of British Mothers at Midlife. Paper Presented at the Annual Meeting at the American Sociological Association 2009

Goldin, Claudia (2004): The Long Road to the Fast Track: Career and Family. The Annals of the American Academy of Political and Social Science 596 (November 2004): 20-35.

Percheski, Christine (2008): Opting Out? Cohort Difference in Professional Women's Employment Rates from 1960-2000. American Sociological Review 73: 497-517.

Stone, Pamela (2009): Getting to Equal: Progress, Pitfalls, and Policy Solutions on the Road to Gender Parity in the Workplace. Pathways, Spring 2009.

Vere, James (2007): "Having it All" No Longer: Fertility, Female Labor Supple, and the New Life Choices of Generation X. Demography 44 (4): 821-828.

FIGURES AND TABLES

Figure 1

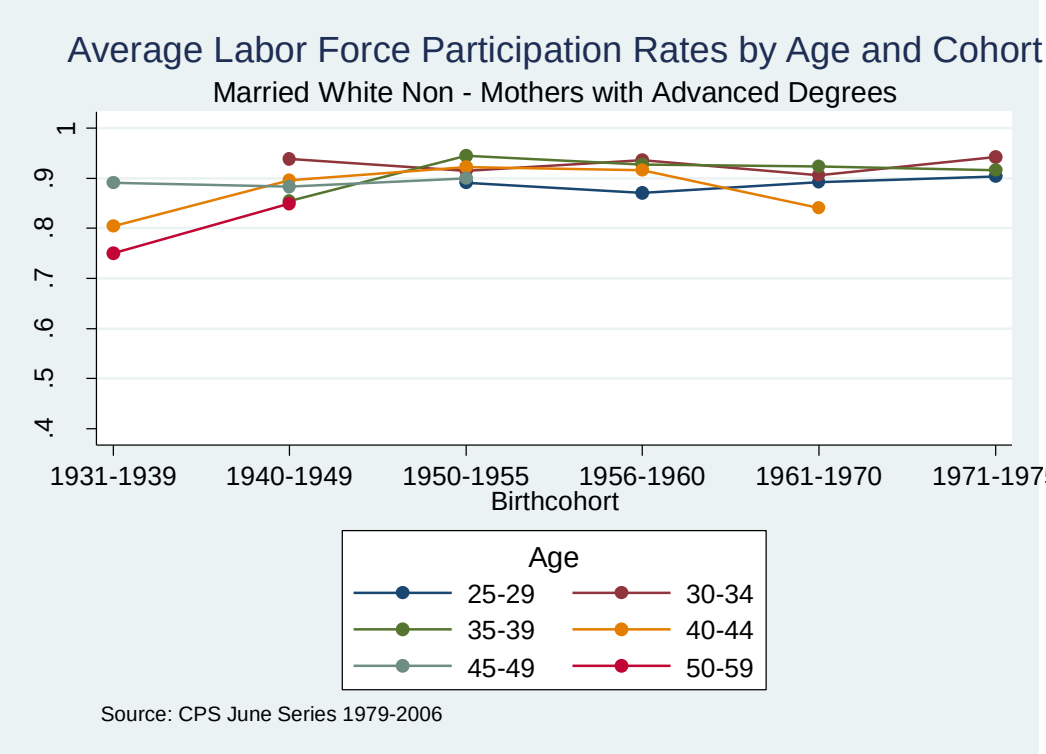

Figure 2

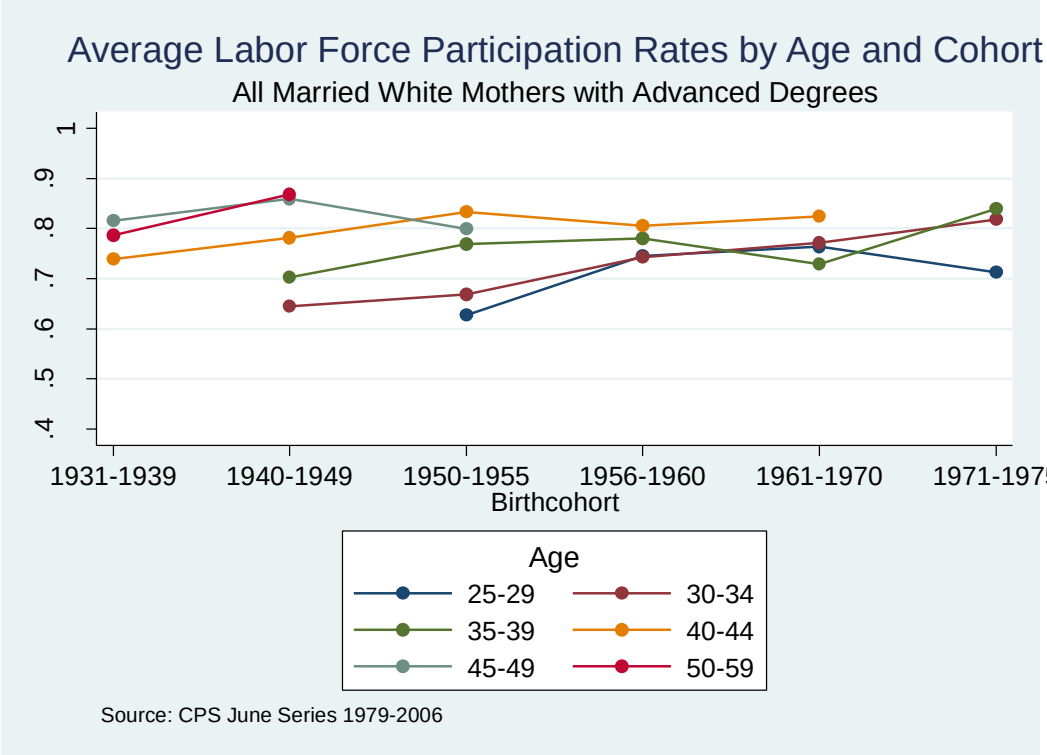

Figure 3

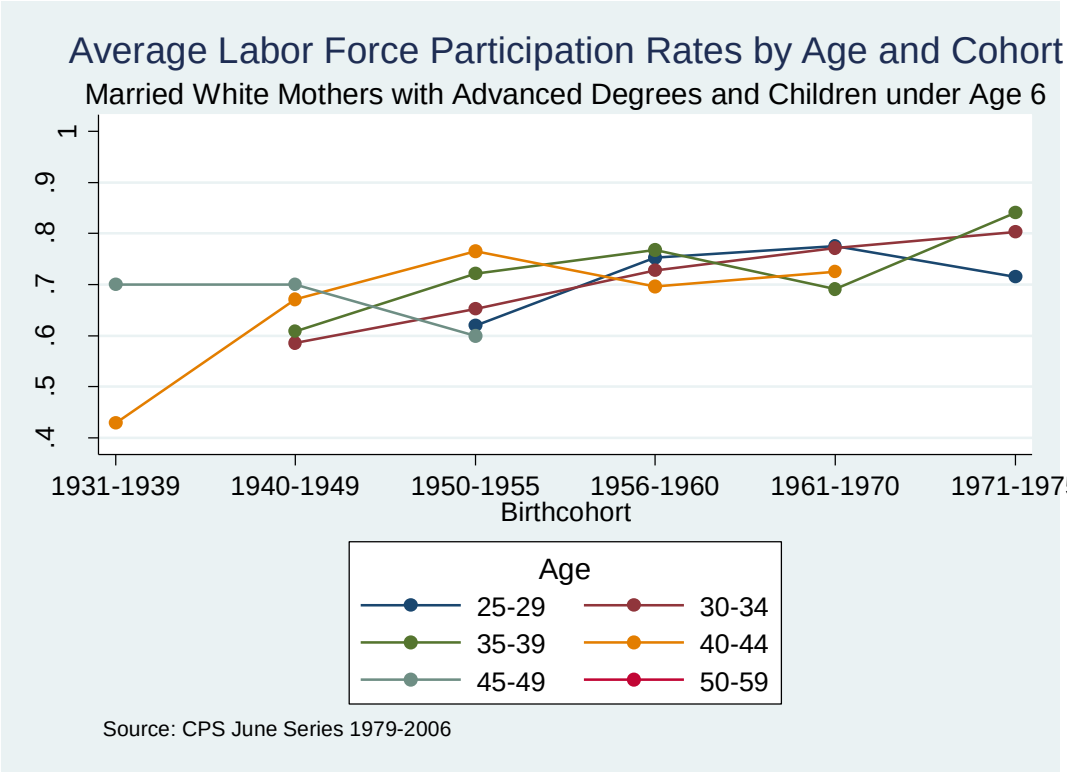

Figure 4

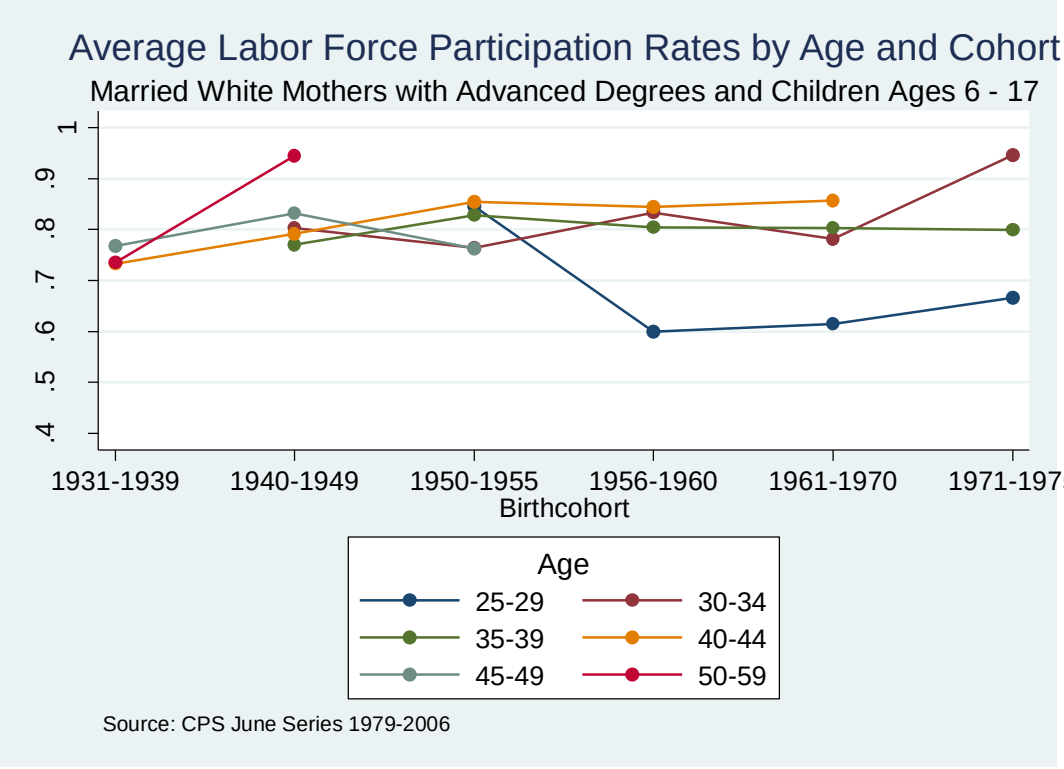

Figure 5

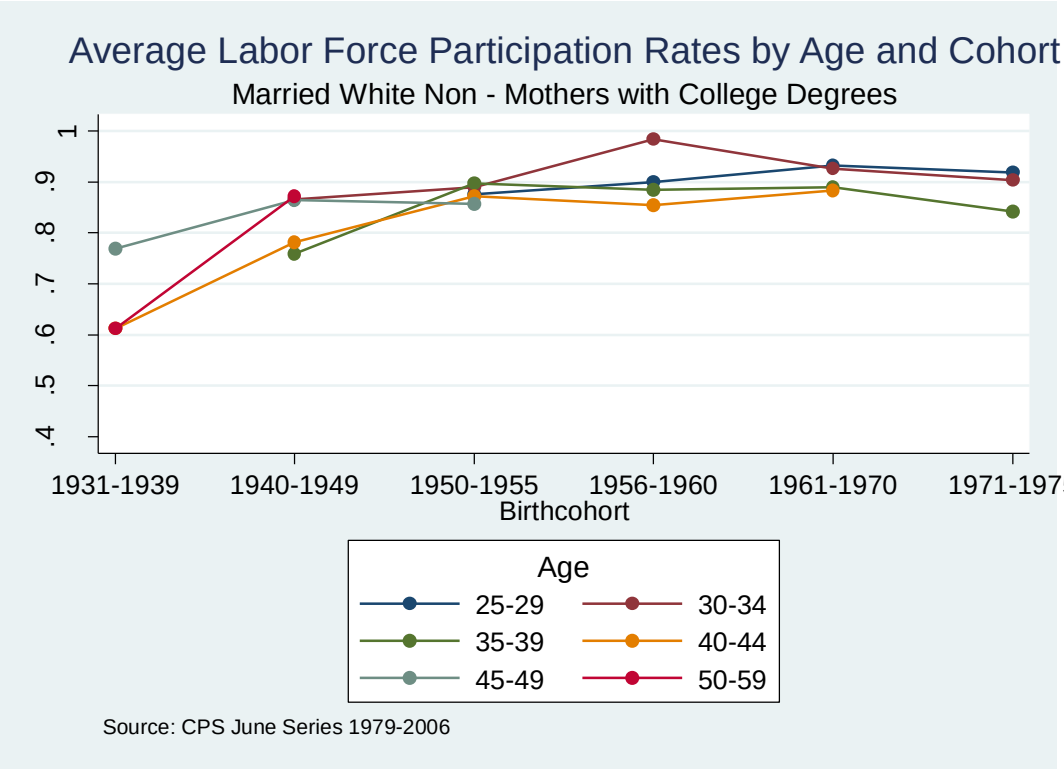

Figure 6

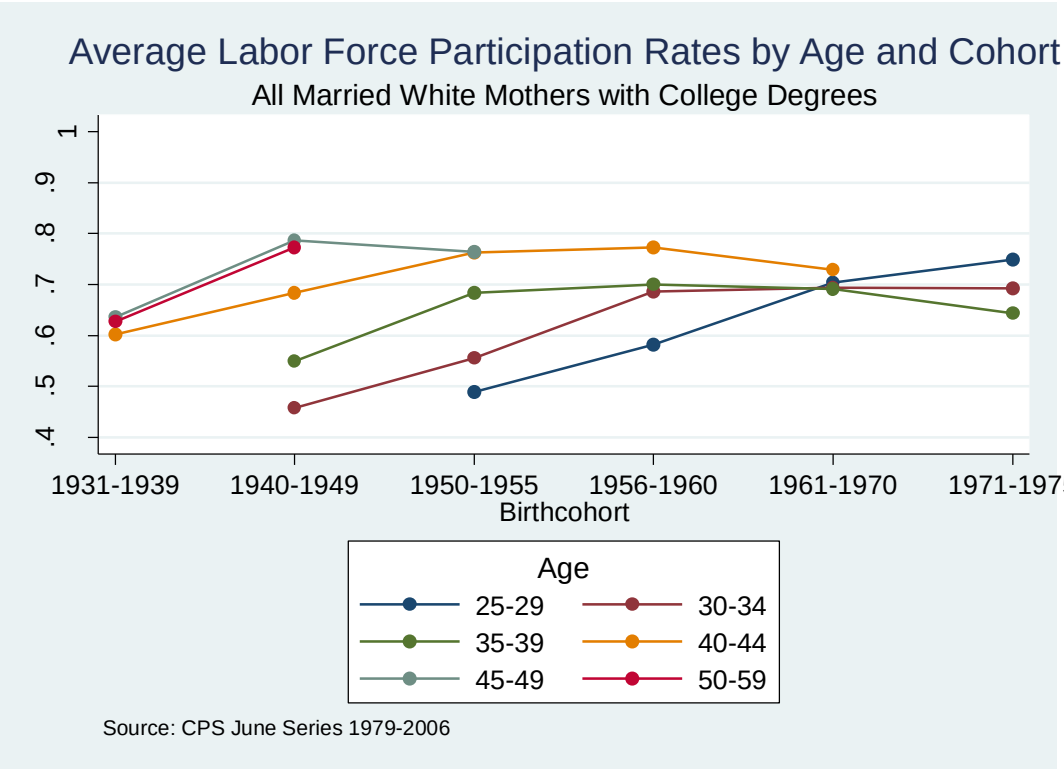

Figure 7

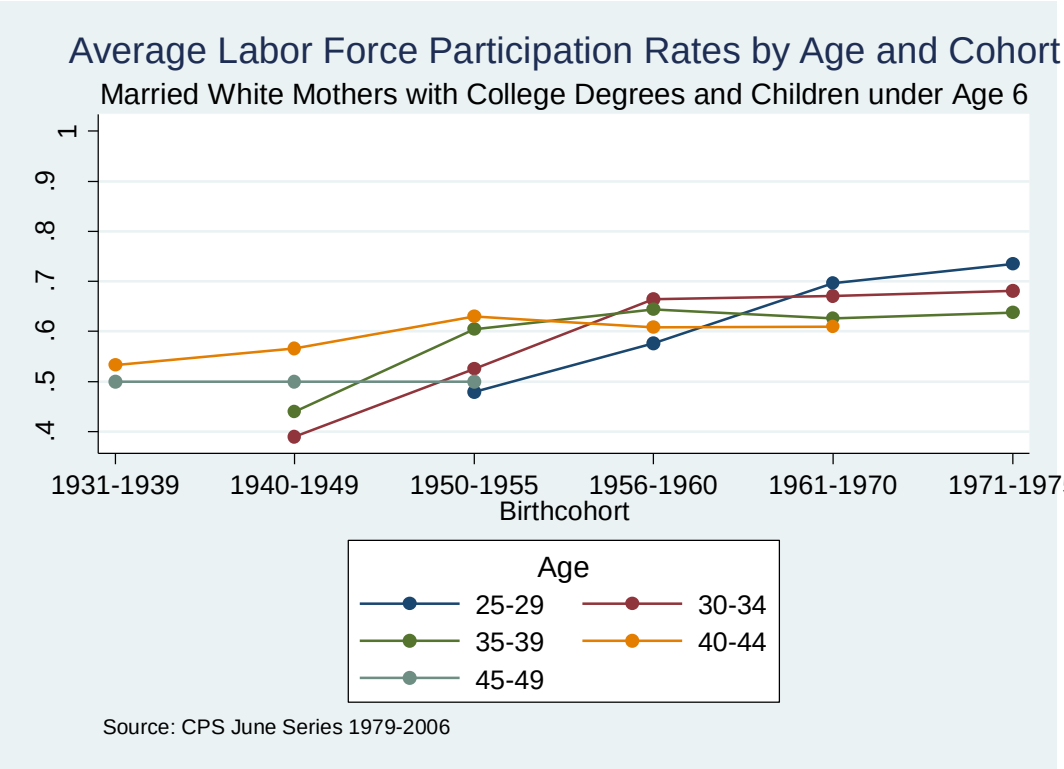

Figure 8

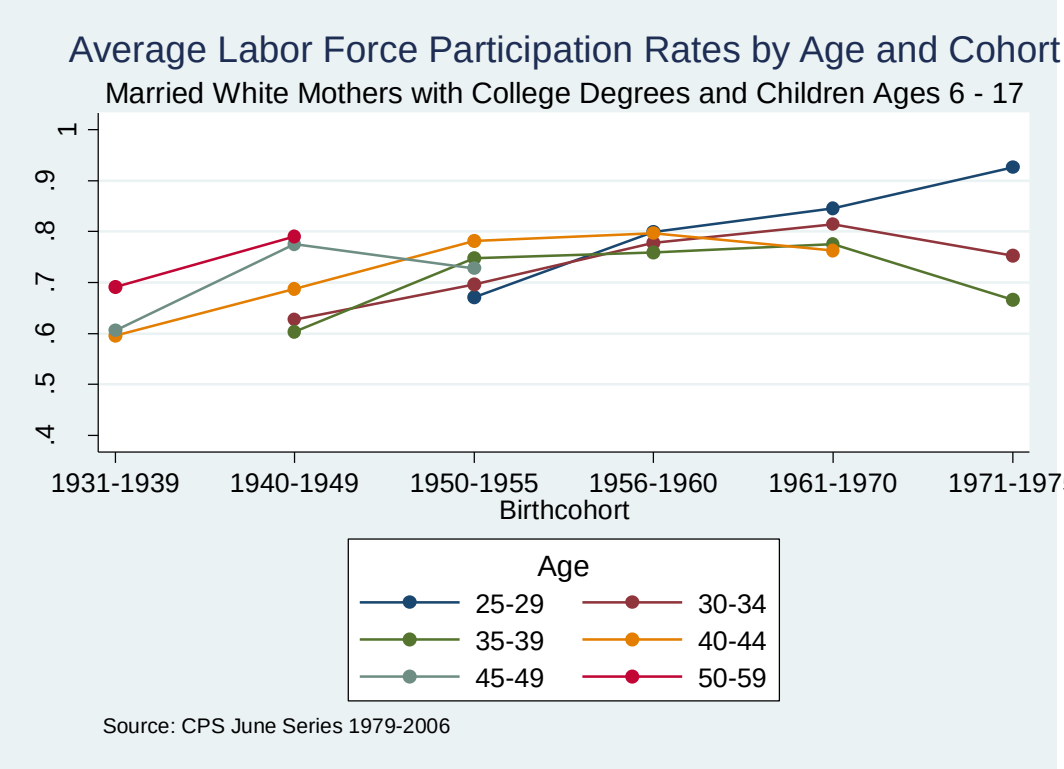

Figure 9

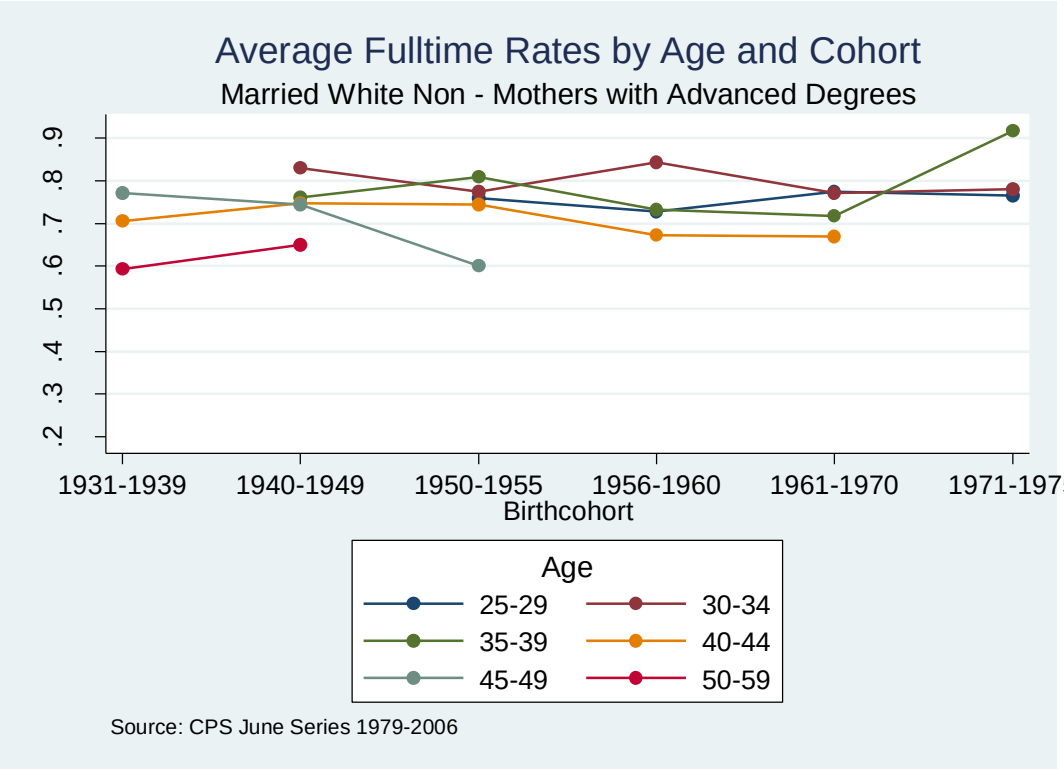

Figure 10

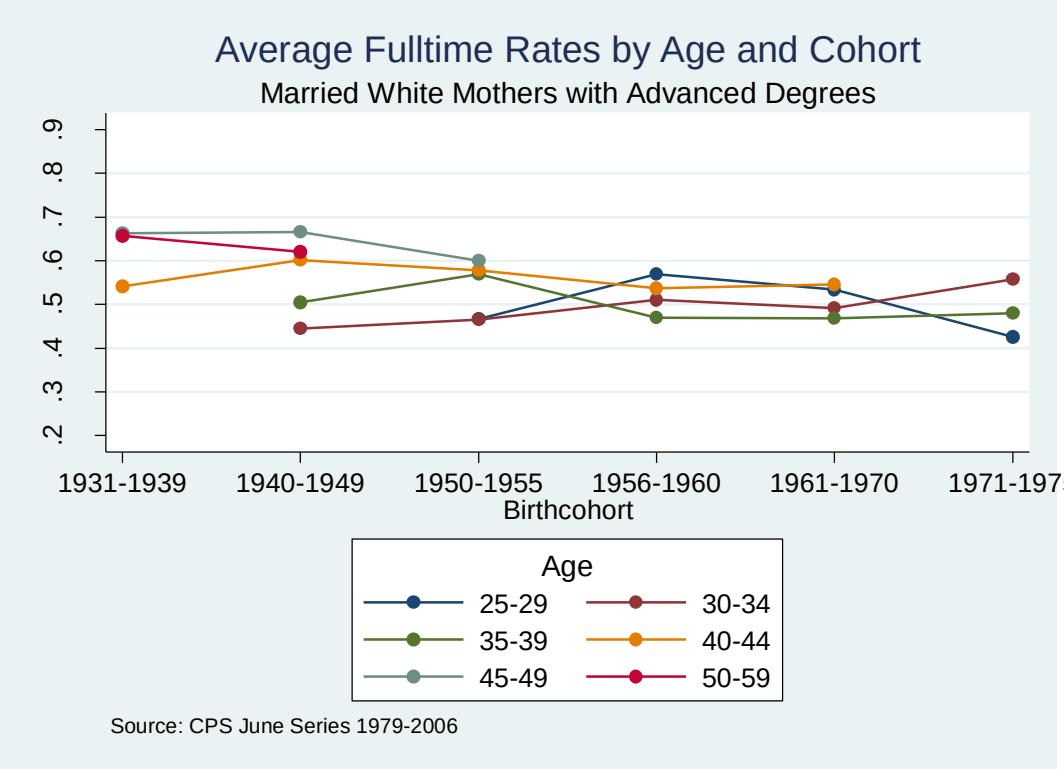

Figure 11

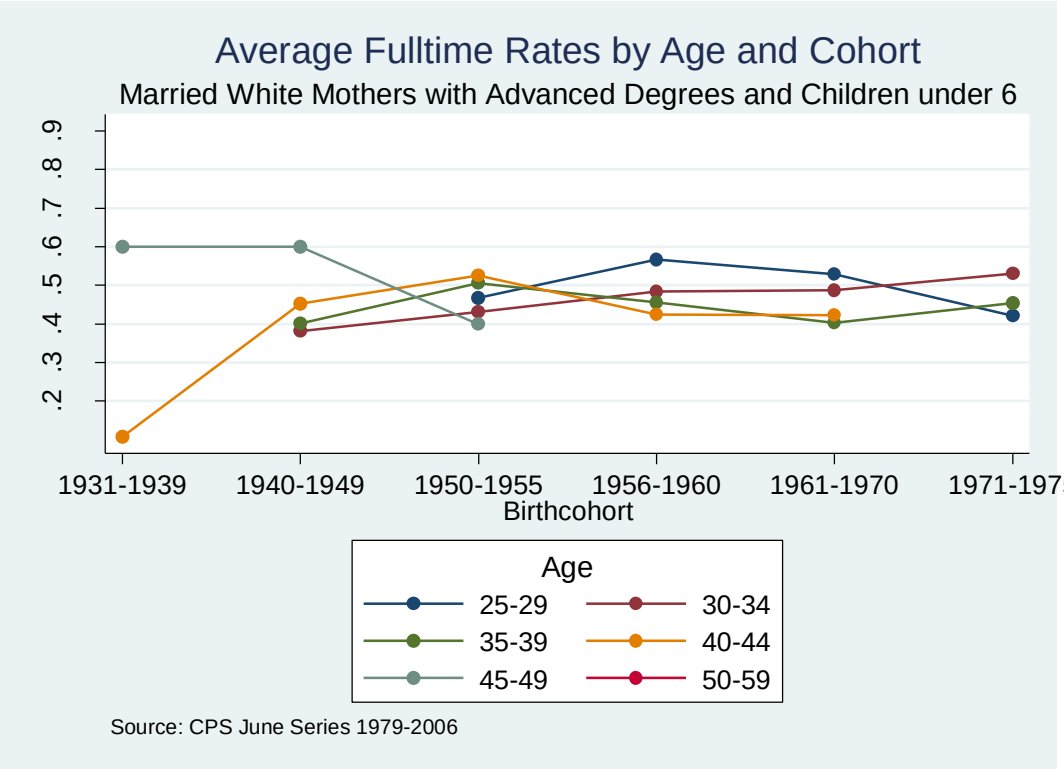

Figure 12

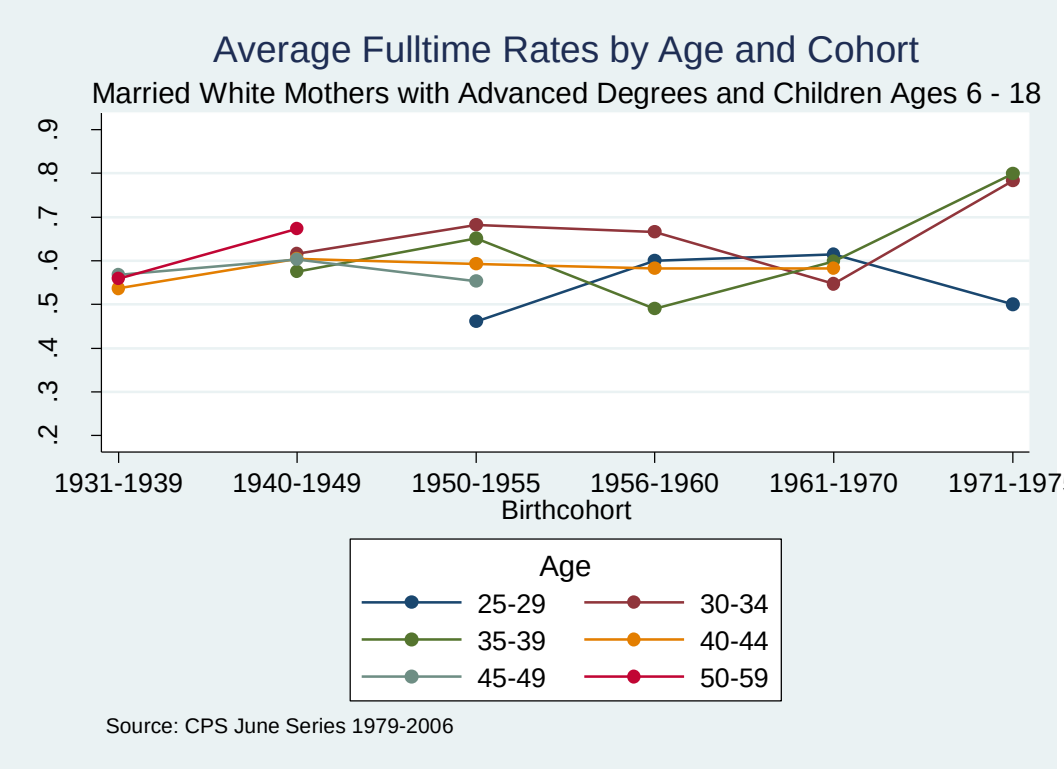

Figure 13

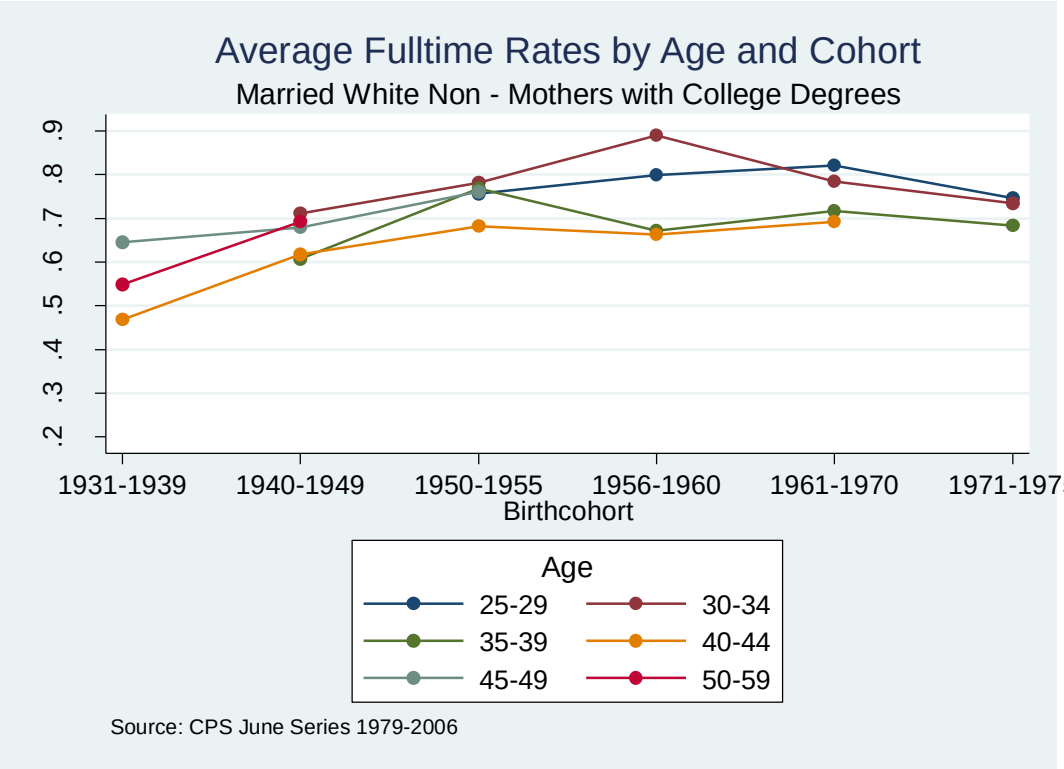

Figure 14

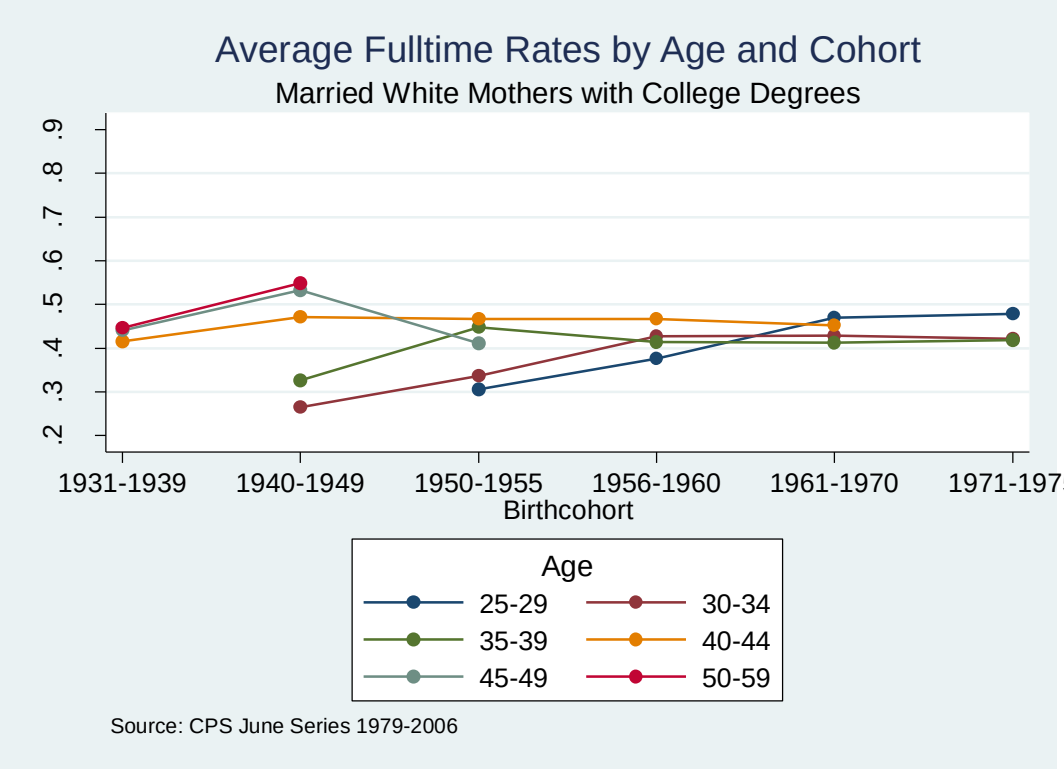

Figure 15

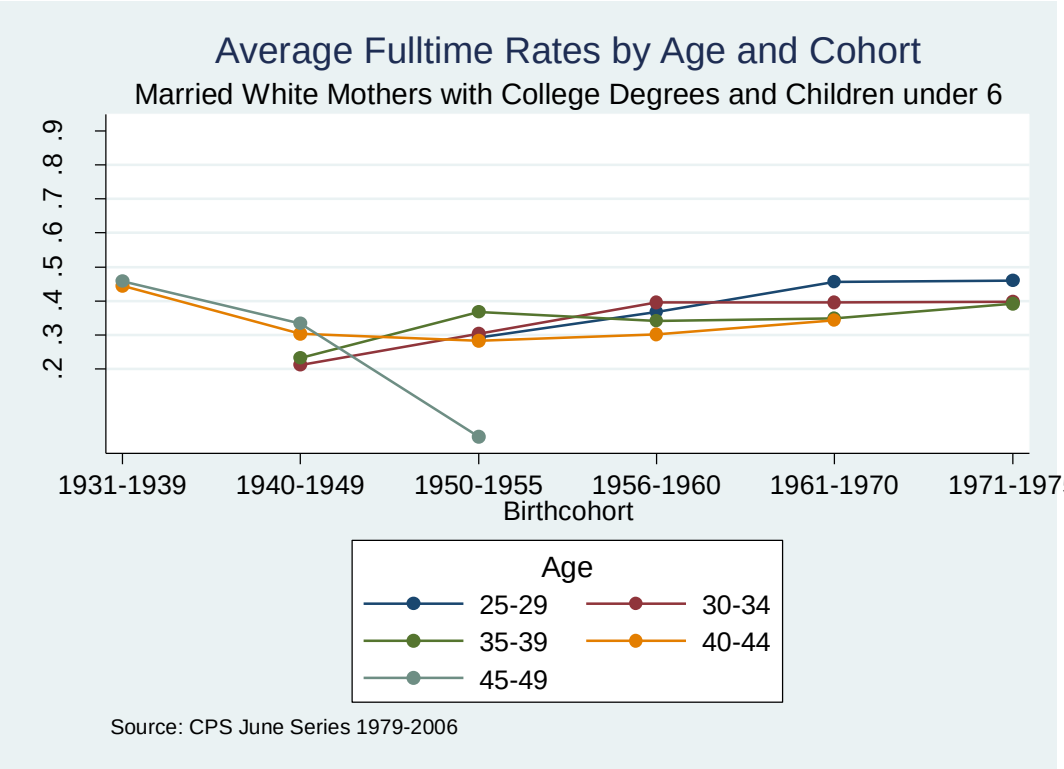

Figure 16

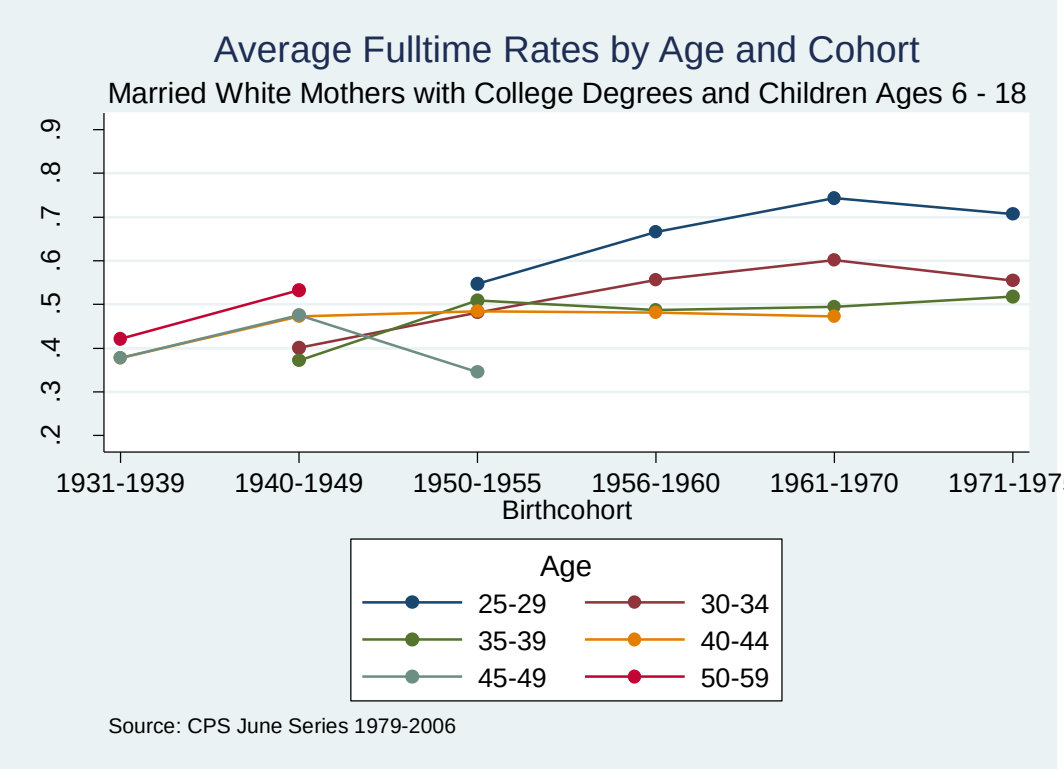

Figure 17

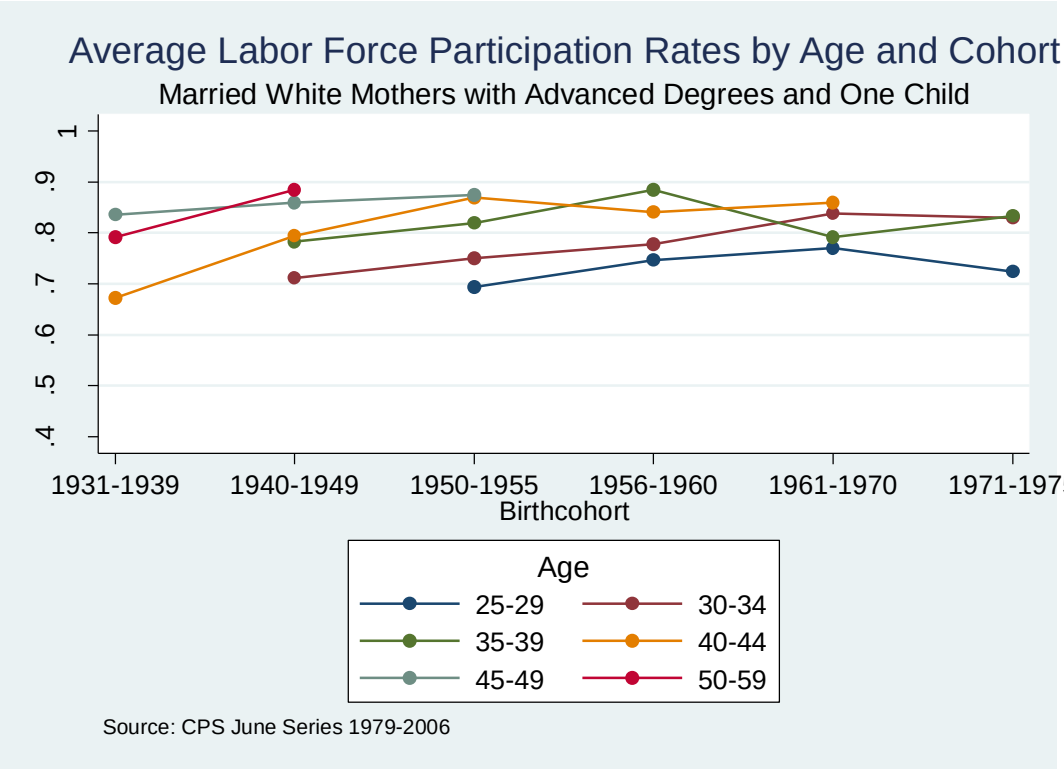

Figure 18

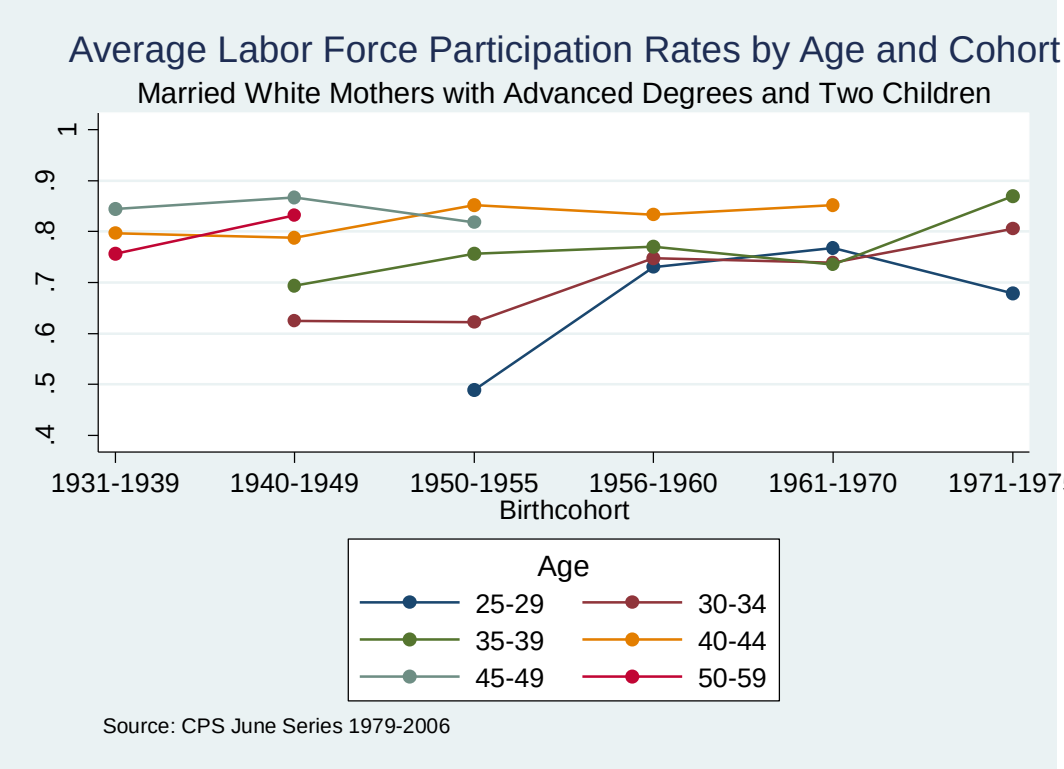

Figure 19

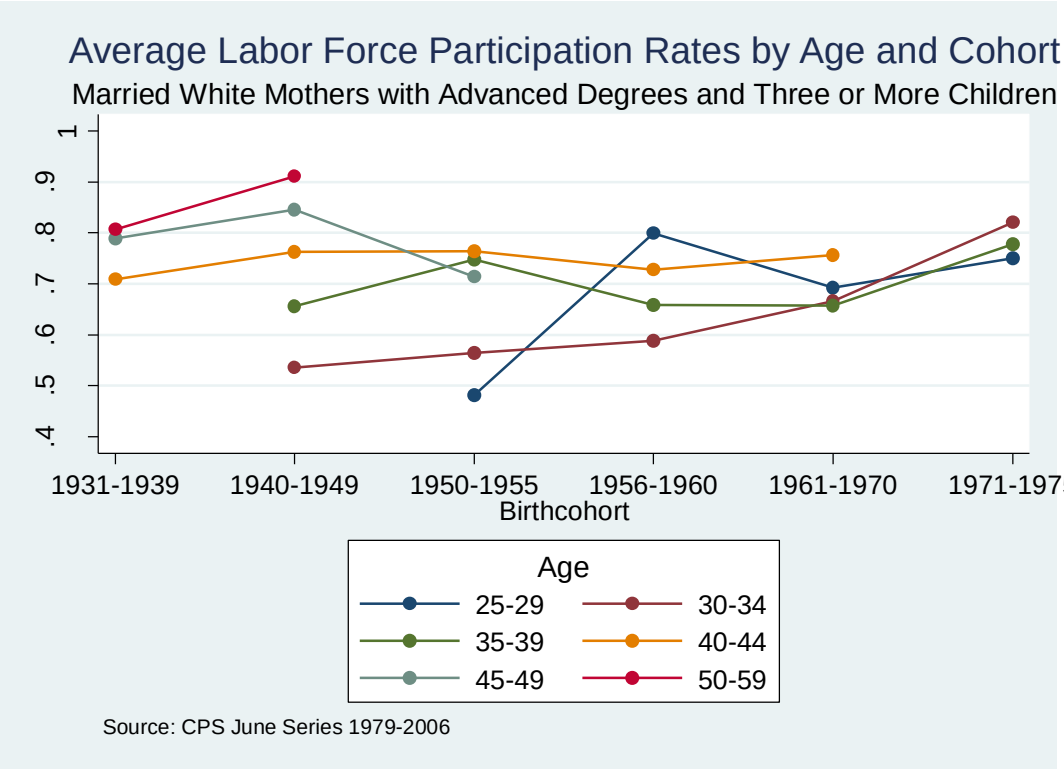

Figure 20

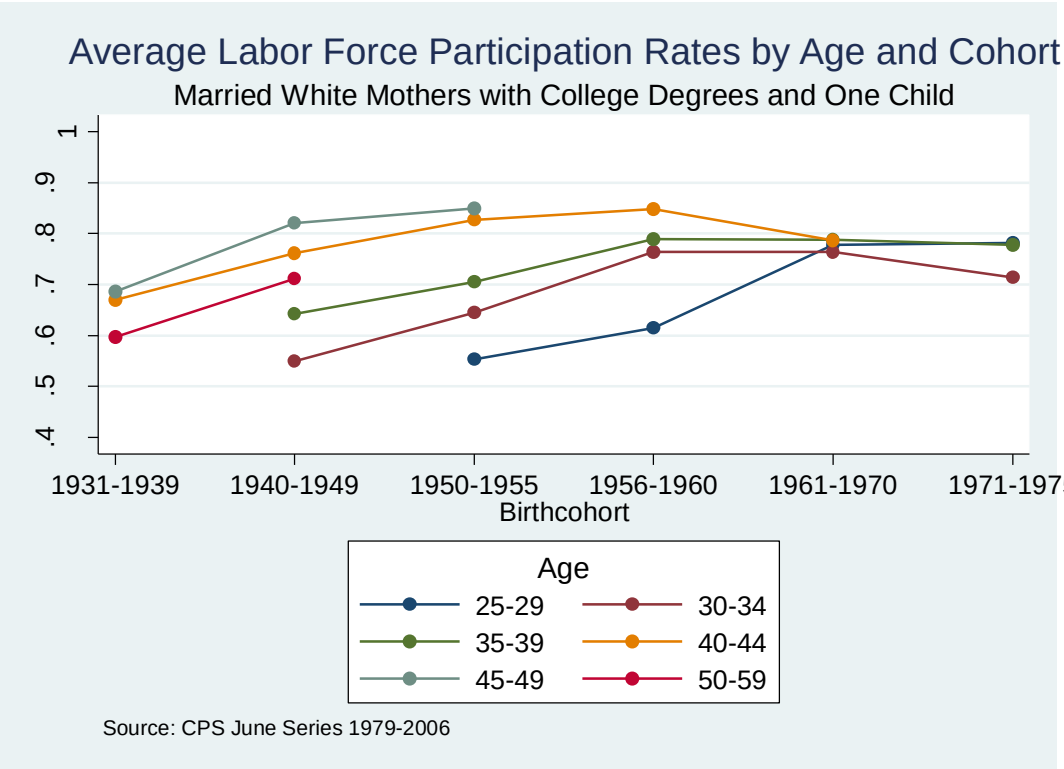

Figure 21

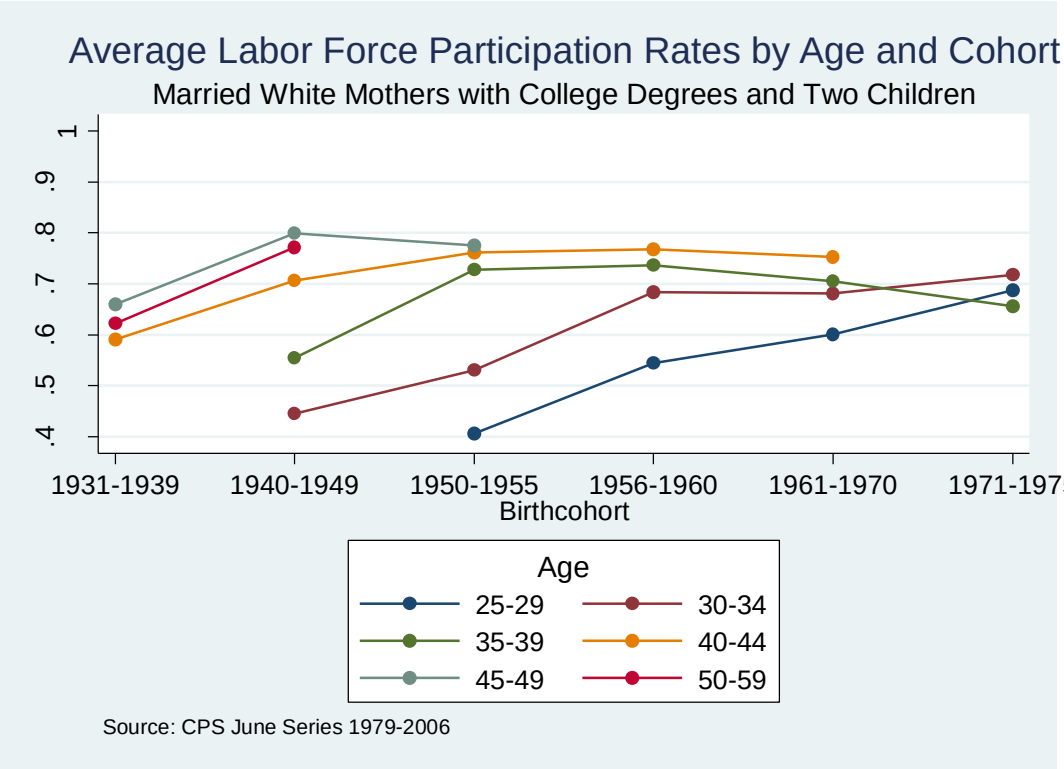

Figure 22

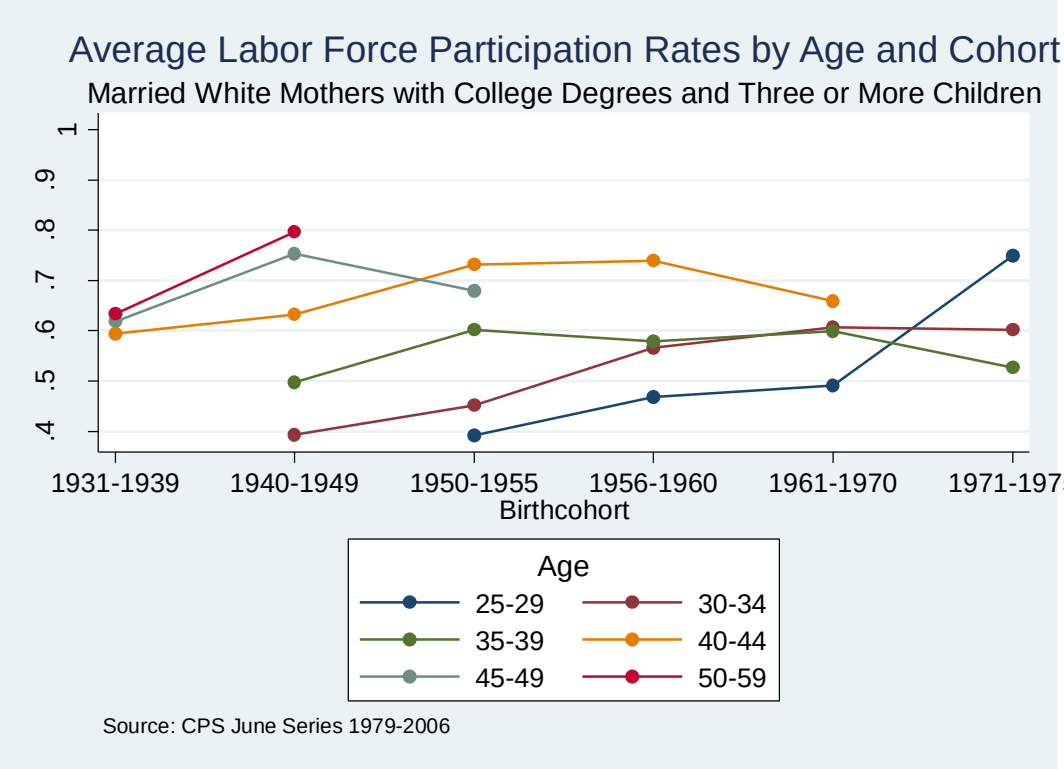

TABLE 1 ("Timing of first birth effect?")

Logistic Regression of Mother's Labor Force Participation at Age 65 or Younger. Highly educated white and married women only. Coefficients reported in odds ratios.

	Model 1: Birthcohort 1930-39	**Model 2: Birthcohort 1940-49**	**Model 3: Birthcohort 1950-55**	**Model 4: Birthcohort 1956-60**	**Model 5: Birthcohort 1961-70**
	N= 1465	N=3527	N=2130	N=1211	N=2149
age	3.81	0.15**	0.30	5.94	16.47**
age^2	0.98	1.05**	1.04	0.95	0.92**
age^3	1.00	1.00**	1.00	1.00	1.00***
age of youngest child	1.04*	1.07***	1.04*	1.02	1.06***
no. of children ever had	0.94	0.81***	0.65***	0.65***	0.71***
first birth between 26 & 32†	0.70**	0.76**	0.55***	0.61**	0.86
first birth at 33 or later†	0.43**	0.87	0.64	0.54	0.83
F	61.19***	235.79***	150.64***	41.04***	75.05***
df	7	7	7	7	7
R^2	0.0393	0.0583	0.061	0.0316	0.032

†Reference group is women with a first birth at age 25 or younger

*** = p<=.001, ** = p<=.005, * = p<=.01

TABLE 2 ("Timing of first birth effect?")

Logistic Regression of Mother's Labor Force Participation at Age 65 or Younger. College educated white and married women only. Coefficients reported in odds ratios.

	Model 1: Birthcohort 1930-39	**Model 2: Birthcohort 1940-49**	**Model 3: Birthcohort 1950-55**	**Model 4: Birthcohort 1956-60**	**Model 5: Birthcohort 1961-70**	**Model 6: Birthcohort 1971-75**
	N= 2868	N=6036	N=4749	N=3569	N= 6340	N=1544
age	0.18	0.19**	0.24*	2.80	3.97**	15.27
age²	1.04	1.05***	1.05**	0.98	0.96**	0.92
age³	1.00**	1.00***	1.00**	1.00	1.00*	1.00
age of youngest child	1.05***	1.06***	1.09***	1.05***	1.08***	1.08**
no. of children ever had	1.05	0.87***	0.79***	0.67***	0.65***	0.71***
first birth between 26 & 32†	1.17	0.79***	0.90	0.81*	0.71***	0.72*
first birth at 33 or later†	1.41	1.04	1.22	0.55**	0.62**	2.23
F	64.84***	531.52***	400.76***	205.11***	317.67***	47.54***
df	7	7	7	7	7	7
R^2	0.02	0.07	0.06	0.05	0.04	0.03

†Reference group is women with a first birth at age 25 or younger

*** = p<=.001, ** = p<=.005, * = p<=.01

TABLE 3 ("Empty nest effect?")

Logistic Regression of Mother's Labor Force Participation at age 65 or younger. Highly educated white and married women only. Coefficients reported in odds ratios.

	Model 1: Birthcohort 1930-39	**Model 2: Birthcohort 1940-49**	**Model 3: Birthcohort 1950-55**	**Model 4: Birthcohort 1956-60**	**Model 5: Birthcohort 1961-70**
	N=1465	N=3527	N= 2154	N= 1290	N=2345
age	5.68	0.15**	0.17	5.09	13.74**
age²	0.97	1.05**	1.06	0.96	0.93**
age³	1.00	1.00**	1.00	1.00	1.00**
no. of children ever had	1.00	0.82***	0.72***	0.70***	0.73***
youngest child 18 or older	2.05***	1.53**	1.47	0.98	1.47
F	45.42***	154.43***	116.33***	30.97***	52.45***
R^2	0.03	0.04	0.05	0.02	0.02
df	5	5	5	5	5

*** = p<=.001, ** = p<=.005, * = p<=.01

TABLE 4 ("Empty nest effect?")

Logistic Regression of Mother's Labor Force Participation at age 65 or younger. College educated, white, married women only. Coefficients reported in odds ratios.

Column1	**Model 1: Birthcohort 1930-39**	**Model 2: Birthcohort 1940-49**	**Model 3: Birthcohort 1950-55**	**Model 4: Birthcohort 1956-60**	**Model 5: Birthcohort 1961-70**
	N= 2868	N=6036	N=4776	N=3803	N=6869
age	0.20	0.22***	0.19**	2.16	3.08*
age²	1.04	1.04***	1.05**	0.98	0.97*
age³	1.00*	1.00***	1.00**	1	1.00*
no. of children ever had	0.99	0.84***	0.76***	0.74***	0.71***
youngest child 18 or older	1.21*	1.34**	1.27	2.02***	1.38
F	53.23***	409.57***	313.34***	154.7***	155.53***
R^2	0.01	0.05	0.05	0.03	0.02
df	5	5	5	5	5

*** = p<=.001, ** = p<=.005, * = p<=.01