The Marriage Boom and the New Deal in Housing

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The "marriage boom" was a major determinant of the "baby boom" in the United States. One of the best-known explanations for these phenomena is Easterlin's relative cohort model. Using an age-period-cohort model of marriage this paper will try to show that the marriage boom is not a cohort effect but a period effect. Previous explanations have ignored the fact that the marriage boom started immediately after the National Housing Act of 1934 established the Federal Housing Administration to oversee a program of home mortgage insurance against default. This paper shows that a period factor, the Federal Housing Administration and Veteran Affairs shares of total mortgage originations, explains most of the marriage boom.

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After World War II there was an unprecedented marriage boom among (Hajnal 1953a; Haines 1996; Fitch and Ruggles 2000). The marriage boom is a major proximate cause of the baby boom (Bean 1983; Morgan 1996; Ryder 1980). The baby boom gave rise to the best-known cohort theory of marriage and fertility. Richard A. Easterlin (2000) argues that the baby boom resulted from a relatively small cohort of new job seekers because of low fertility in the late 1920s and 1930s. This created unusually good job prospects for young people after the war, and so feeling more prosperous than their parents, they married earlier and had more children (Easterlin 1961; Pampel 1993; Macunovich 1998; Doyle 2005).

Whereas "cohort" theories locate the explanatory factors in behavioral experiences occurring earlier in life that extend over time, "period" theories give precedence to the influence of contemporaneous conditions thought to affect the timing of marriage. The major alternative period explanation of the marriage boom comes from the model of household decision-making which forms the core of the New Home Economics pioneered and promoted by Becker and Mincer. Butz and Ward (1979a and 1979b) interpret the baby boom as a response to rising male incomes. They argue that in the 1960s an increase in female wages and employment caused a decrease in fertility. Like Easterlin, they do not discuss the relative importance of proximate determinants, such as marriage.

Economic incentives may also influence the decision to marry (Alm and Whittington 1995, p. S147). This paper asserts that government policy in the form of a program of home mortgage insurance against default is a major explanation for the marriage boom. Previous explanations have ignored the fact that the marriage boom

started before the war immediately after the National Housing Act of 1934 established the Federal Housing Administration (hereafter FHA) to oversee a program of home mortgage insurance against default. Moreover, they fail to account for the fact that there was no marriage boom among African Americans (Fitch and Ruggles 2000).

Before the depression of the 1930s, home mortgages were typically for ten years or less with home down payments of 30 percent. The Great Depression engendered a liquidity crisis with catastrophic effects on housing suppliers as well as housing consumers. The National Housing Act of 1934 established the FHA to oversee a program of home mortgage insurance against default with terms as long as 20 years and with home down payments of 10 percent. Near the end of World War II, the Department of Veteran Affairs (hereafter VA) added its own program. It was widely feared that the peacetime economy would return the housing market to its depression-era performance. The VA home loan guaranty program, passed as a part of the G.I. Bill in 1944, rapidly evolved to a long-range housing program available to veterans for a decade or more after returning to civilian life (Quigley 2006).

In 1936, the FHA published an Underwriting Manual directing its appraisers to insure that FHA insured properties would be secure from "lower class occupancy and inharmonious racial groups" (Spencer 1977, p. 524). Urban rioting led to the 1968 Fair Housing Act prohibiting discrimination in the sale, rental, and financing of housing on account of race. In 1970 coverage was extended to single-family homes (Sidney 2001). The FHA now started to redirect its lending programs to neighborhoods that were redlined (Vandell 1995; Metzger 2000). At about the same time FHA and VA shares of total mortgage originations started to decline (Quigley 2006, p. 284).

Using census micro-data in an age-period-cohort model of marriage this paper shows that the marriage boom is not a cohort effect. However, while there does not seem to be any support for the marriage boom being due to cohort replacement, cohort replacement does matter. This paper shows that cohort effects had a dampening effect on marriage. In other words, if not for cohort effects, the marriage boom and, hence, probably also the baby boom would have been even larger. Thus, cohort replacement is a moderator variable in the marriage boom. While the marriage boom is a period effect, this paper found no evidence for the marriage boom being the result of rising wages or more job opportunities. Instead, this paper will try to show that housing policies explain most of period effect in the marriage boom in the United States.

COHORT AND PERIOD THEORIES OF MARRIAGE

Using Dixon's (1971) framework, I review cohort and period theories of marriage in terms of three mediating factors between social structure and marriage behavior: availability of mates, feasibility of marriage, and desirability of marriage (for an earlier review see Hobcraft, Menken and Preston 1982). The availability of mates is determined primarily by the sex ratio of persons of marriageable age within endogamous groups. Feasibility is determined primarily by expectations regarding financial and residential independence of the newly married couple and by the availability of resources for meeting these obligations. The desirability of marriage, or the strength of the motivation to marry, is determined by the availability of social and institutional alternatives to marriage and by the extent to which these alternatives are considered rewarding.

The availability of mates is unlikely to be the major explanation for a phenomenon that has affected both men and women. Indeed Hirschman and Matras (1971) found no close correspondence between annual fluctuations in the marriage market and in nuptiality probability. According to marriage squeeze theory, women born in the 1930s should have experienced a much more favorable market than those born earlier, because of their small numbers relative to men a few years older. For men, the large cohorts of baby-boom women should give those born in the years right before the baby-boom a greater advantage in finding a mate, compared with men born earlier (Goldman et al. 1984; Goldscheider and Waite 1986).

Dixon's second variable is the feasibility of marriage. One explanation for the marriage boom is based on the idea that marriage behavior is strongly influenced by economic conditions because they affect the ease with which independent households can be established by young couples (Landale and Tolnay 1991). In Easterlin's relative cohort model income potential depends on the size of cohorts entering the labor force. Large cohorts face a crowded labor market. The size of current cohorts relative to the size of previous cohorts indicates a generation's income potential relative to the income of the parental generation (Easterlin 1961; Pampel 1993; Macunovich 1998).

The relative cohort size hypothesis of Easterlin remains a much debated issue. Previous studies used proxies to test Easterlin's relative cohort size model with varying results, depending on the proxies chosen. Although they did not perform a formal age-period-cohort analysis, Rodgers and Thornton (1985) concluded that period was the more relevant dimension. While the results of a panel data analysis seem to support the hypothesis, a meta-analysis of macro-level studies of the impact

of age structure on fertility seems to undermine the empirical support for the hypothesis (Jeon and Shields 2005; Waldorf and Byun 2005).

The major alternative "period" explanation of the marriage and baby boom comes from the model of household decision-making which forms the core of the New Home Economics pioneered and promoted by Becker and Mincer. Without discussing the relative contribution of nuptiality and marital fertility to the baby boom, Butz and Ward (1979a and 1979b) argue that rising wages and job opportunities caused the baby boom, while fertility started to decline when women went to work. Macunovich (1995), however, has severely criticized their statistical model arguing that their estimates of female wages are inaccurate. Another problem concerns the timing of the onset of the marriage and baby boom. Butz and Ward (1979a and 1979b) ignore the pre-war period. Marriage rates, however, already started to increase in the middle of the 1930s. In general, few studies discuss trends in the 1930s. Bogue (1959, p. 239) attributes the rise in crude marriage rates in the middle of the 1930s to the postponement of marriage during unfavorable conditions in the previous years.

Oppenheimer (1988) asserts that a decline in young men's labor-market position is the major explanation for the end of the marriage boom. A major impediment to making a long-term commitment is the uncertain nature of future characteristics and a major source of uncertainty lies in the timing of the transition to a stable work career. Easterlin (1978) argues that the sharp decline in the relative economic position of young males is because of the entry into the labor market of baby-boom cohorts that are large relative to older cohorts.

In Western societies marriage and transition to home-ownership often occur in the same year (Mulder and Wagner 1998, p. 702). Modell, Furstenberg and Strong

(1978) suggest that the G.I. Bill may have contributed to the marriage boom through the removal of barriers to marriage among World War II veterans, for example, by generously financing home mortgages. New Deal housing policies, however, may have been as important as the VA loan program. Although the FHA was intended to promote homeownership, Goodman and Nichols (1997) concluded that the effect of the FHA on homeownership was to accelerate ownership, not to increase homeownership. Thus, to the extent that marriage and transition to home-ownership were determined simultaneously, the FHA may have enabled earlier marriage.

Dixon's third variable is the desirability of marriage. The economic independence model asserts that increases in educational attainment, a rise in rates of labor-force participation, and increased earnings have diminished women's economic reliance on men and have made marriage less desirable (Sassler and Schoen 1999). Butz and Ward (1979) and Ermisch (1979) argue that increases in female wages and employment explain the baby bust and, hence, perhaps also the end of the marriage boom.

Recently, Doepke et al. (2007) have proposed another economic cohort theory to explain the marriage and baby boom. Their one-time demand shock for female labor model argues that a decline in labor-force participation of younger cohorts of women made marriage more desirable. Cohorts of women who were too young to replace men in factories and offices during the war chose to marry early and have more children after the war, because they were crowded out of the labor market by older cohorts of women who had accumulated labor-market experience during the war.

The desirability of marriage is also influenced by attitudes. Ideational shifts in the ethical, religious and political realm are a commonly invoked explanation for

changes in marriage (Lesthaeghe and Surkyn 1988). Simons (1980) provides one of the few cultural explanations for the baby boom: a shift to religious involvement. He shows that the participation figures for Easter communication, a measure of institutional religious involvement, "predict" the English baby boom better than Easterlin's intergenerational ratios of male wages or employment. It is not clear to what extent the English marriage boom is a function of the shift in religious involvement.

Values, beliefs, and attitudes expressed in the family of origin may also influence the desirability of marriage (Barber 2000). Several empirical studies provide evidence for intergenerational influences on age at marriage (Anderton et al. 1986: 477; Van Poppel et al. 2008). Marriage was relatively late in the 1930s. Hence, I predict that cohort influences will attenuate the marriage boom.

DATA AND VARIABLES

I downloaded one percent samples of the 1960 and 1980 US Census from IPUMS (Ruggles et al. 2008). There was essentially no marriage boom for African Americans (Fitch and Ruggles 2000). Hence, they were excluded. People born outside the United States have also been excluded.

There is a question on the date of first marriage in the census of 1930, 1940, 1960, 1970 and 1980. While the question is comparable across years, the universe shifted significantly. In 1930, all currently married persons responded; in 1940, only sample-line women responded; in 1960-1980, all ever-married adults responded. Hence, the analysis is limited to the 1960 and 1980 census only. To examine the relationship between entry into first marriage and time-varying covariates, I divided the retrospective life history data that respondents provided in the census into single-

year observational records that represent their life-course experience at one-year intervals from age 20 to the year in which the respondent first married or reached age 35 or to end of the year before the census, whichever came first. Women contributed 2,138,217 person-years to the analysis.

The dependent variable is a variable indicating whether a never-married woman aged 20-34 married in a specific calendar year. Sets of dummy variables were used to model the effects of cohorts and periods. There are fourteen five-year birth cohorts, 1945-49 being the reference category; and eleven five-year periods, the first period –1925-29– being the reference period.

There are social-class differences in nuptiality (Fitch and Ruggles 2000). To control for these, I added two dummy variables indicating whether a person at least finished grade 8, but did not go to college, and whether the respondent had at least one year of college.

Several contextual variables referring to period conditions are included in the analysis. A higher income makes marriage more feasible. As a proxy for average income an annual series of GDP per capita was obtained from Johnston and Williamson (2008). Higher rates of unemployment are associated with delays in marriage (Cooney and Hogan 1991). Annual averages of monthly percentages unemployed in the civilian labor force were ascertained from the *Historical Statistics of the United States* and the *Statistical Abstract of the United States* (U.S. Bureau of the Census 1975 and 2010). The economic independence model asserts that increased earnings have diminished women's economic reliance on men and have made marriage less desirable (Sassler and Schoen 1999). Hence, I also added an estimate of an annual series of the average wage of married women aged 25-34 published by Macunovich (1995). Unfortunately the series starts in 1947. Until the 1960s, the

average wage of married women increased very slowly. Hence, I have assumed that the series was constant before 1947. Following Chevan (1989, p. 252), government encouragement of home ownership is embodied in the FHA and VA shares of total mortgage originations, as estimated by Quigley (2006). Linear interpolation was used to replace missing values in 1934-38.

Census micro-data samples are individual-level data clustered by household. The clustering of individuals within households can significantly increase standard errors of estimates (Davern et al. 2009). The analysis presented below being based on a very large sample, however, inflated *t*-ratios are less likely to influence conclusions.

STATISTICAL METHODS

The census only lists the calendar year of marriage. Hence, a discrete-time hazard model is used to assess the effects of the covariates on the probability of marrying. I have assumed that the hazard for a marriage is constant within annual intervals. I estimate discrete-time event-history models using logistic regression. This kind of analysis can accommodate two common features of event histories: censored data and time-varying variables (Allison 1982). The dependent variable in the statistical model is the annual log odds of marrying.

My review of the literature identified several hypotheses that predict cohort influences. Age-period-cohort models are particularly useful to detect the distinct impacts of age, period, and cohort on some outcome of interest. Disentangling the distinct effects of age, period and cohort, however, involves a methodological problem, because the three are perfectly correlated. There are at least three conventional strategies for identification and estimation: (1) constraining two or more of the age, period, or cohort coefficients to be equal; (2) transforming at least one of

the age, period or cohort variables so that its relationship is nonlinear; and (3) assuming that the cohort or period effects are proportional to certain measured variables (Yang and Land 2006).

Mason et al. (1973) point out that the identification problem can be solved by imposing equality constraints on categories of age, period and/or cohort. One criticism of this method is that estimates of model effect coefficients are sensitive to the arbitrary choice of the identifying constraint. Mason et al. (1973) designed their strategy for aggregate data, such as mortality rates. The identification problem for aggregate population data, however, does not necessarily transfer directly to individual-level data. One can use different temporal groupings for the age, period, and cohort variables, for example single years of age, and five-year intervals for time periods and birth cohorts, to break the linear dependency (Yang 2008, p. 210).

A second strategy is to apply a parametric nonlinear transformation, such as a polynomial, to at least one of the age, period, or cohort variables so that its relationship to the others is nonlinear. Following Raftery, Lewis, and Aghajanian (1995) and Yang (2008) I use a polynomial to model the effect of age. While the use of a polynomial solves the problem of the arbitrary choice of the identifying constraint, this approach still is not very informative about the mechanisms by which period-related changes and cohort-related processes act on the dependent variable of interest.

"Period" is a poor proxy for some set of contemporaneous influences, and "cohort" is an equally poor proxy for influences in the past. When these influences can themselves be directly measured, there is no reason to probe for period or cohort effects (Hobcraft, Menken, and Preston 1982). Hence, a third strategy is to constrain the effects of period and/or cohort to be proportional to some other substantive

variable. Heckman and Robb (1985) term this the “proxy” variable approach because period and cohort are represented by some other variable. The third model presented below replaces the period effect by five proxies: GDP per capita, women's wages, the unemployment rate, a variable indicating the war years, and the FHA and VA shares of total mortgage originations. The "proxy" variable approach, however, also has its drawbacks. Although replacing an accounting dimension with measured variables solves an identification problem, it makes room for specification errors (Smith, Mason and Fienberg 1982). Replacing the period dummies by proxies may lessen the rigorousness of the control for the period effects on cohort differences (O'Brien 2000, p. 125). If the use of proxies does not lessen the rigorousness of the control for period effects, however, then cohort differences in the "proxy" variable approach should resemble cohort differences in the approach that uses period dummies. In order to determine the extent to which the use of proxies lessens the rigorousness of the control for period effects, we compare cohort differences in both strategies. After replacing period dummies with proxy variables, there is no need to replace age dummies by a polynomial in order to identify the model. I retained the polynomial, however, to enhance comparability of the cohort dummies in the first and second model presented below.

If one does not want to generalize results to cohorts or periods that were not included in the analysis, then conventional statistical methodology guidelines suggest that it might be more appropriate to model them with a fixed-effects specification. Hence, I model period and cohort influences as fixed effects. Yang and Land (2006 and 2008), however, argue that when sample sizes within each cohort and/or period are unbalanced, mixed (fixed and random effects) models use the available information in the data more efficiently than fixed-effects models. They warn that the

standard errors of estimated coefficients of conventional fixed-effects regression models may be underestimated, leading to inflated t-ratios and actual alpha levels that are larger than nominal levels of significance. The analysis presented below being based on a very large sample, however, inflated t-ratios are less likely to influence my conclusions.

RESULTS

Table 1 presents the log odds (e^b) of three binary logistic regression models for women. Coefficients are presented as odds ratios. Hence, I will report a negative relationship whenever an odds ratio shows an effect of less than unity. The first model only includes period dummies. It shows that the marriage boom started in the 1930s. By the late 1970s it was all but over. The second model adds cohort dummies to determine the extent to which the marriage boom is a cohort effect. Contrary to the prediction of economic cohort theories of fertility, such as the relative cohort-size model and the one-time demand shock for female labor model, cohort dummies have a *negative* effect during the marriage boom years. Thus, these theories do not seem to account for the marriage boom including the subsequent decline in marriage. Figure 3 presents period trends in marriage in terms of odds ratios in the first two models. It shows how the cohort dummies attenuate the period effects. If not for the cohort dummies the period effects would have been much larger.

[Table 1 and Figure 1 about here]

The third model replaces the period dummies with proxies. Replacing the period dummies by proxies may lessen the rigorousness of the control for the period effects on cohort differences (O'Brien 2000, p. 125). Figure 2 shows the extent to which net cohort effects in the third model resemble those in the second model. As in

the second model, cohort effects in the third model also have an attenuating effect in the marriage boom. Except for GDP per capita, the proxies have a significant effect on the odds of marriage. Moreover the effects are in the expected direction. Figure 3 presents observed and predicted probabilities of marriage and shows the extent to which the third model is able to predict the marriage boom.

[Figures 2 and 3 about here]

The next step is a counterfactual analysis to evaluate the contribution of the mortgage programs to the marriage boom. I estimated a series of probabilities of marrying based on the third model assuming that there were no mortgage programs. Figure 3 shows that without mortgage programs most of the marriage boom disappears.

CONCLUSION AND DISCUSSION

Economic cohort theories of fertility, such as the relative cohort-size model or the one-time demand shock for female labor model, predict that the marriage boom is a cohort effect. However, the ability of cohort theories to account for long-term change remains to be shown (Ní Bhrolcháin 1992). Using census micro-data in an age-period-cohort model of marriage this paper shows that the marriage boom is not a cohort effect. However, while there does not seem to be any support for the marriage boom being due to cohort replacement, cohort replacement does matter. Cohort effects seem to have had a dampening effect on marriage. In other words, if not for cohort effects, the marriage boom and, hence, probably also the baby boom would have been even larger. Thus, cohort replacement is a moderator variable in the marriage boom.

While the marriage boom is a period effect, this paper found no evidence for the marriage boom being the result of rising wages or more job opportunities. The

empirical results seem to indicate that housing policies explain most of period effect in the marriage boom in the United States. Of course, the analysis only shows that there is a strong correlation between housing policies and marriage. Thus it does not show that housing policies *caused* the marriage boom. The hypothesis that housing policies were a major cause of the marriage boom is, however, consistent with two features of the marriage boom. First, the marriage boom started in the middle of the 1930s, immediately after the National Housing Act of 1934. Second, there was essentially no postwar marriage boom for African Americans (Fitch and Ruggles 2000). Discrimination may explain this feature, because it prevented most African Americans from access to FHA-insured loans (Gotham 2000; Kain and Quigley 1972; Kimble 2007).

REFERENCES

Allison, Paul D. 1982. "Discrete-Time Methods for the Analysis of Event Histories." *Sociological Methodology* 13: 61-98.

Alm, James, and Leslie A. Whittington. 1995. "Income Taxes and the Marriage Decision." *Applied Economics* 27: 25-31.

Anderton, Douglas L., Noriko O. Tsuya, Lee L. Bean, and Geraldine P. Mineau. 1986. "Intergenerational Transmission of Relative Fertility and Life Course Patterns." *Demography* 24: 467-480.

Barber, Jennifer S. 2000. "Intergenerational Influences on the Entry into Parenthood: Mothers' Preferences for Family and Nonfamily Behavior." *Social Forces* 79: 319-348.

Bean, Frank D. 1983. "The Baby Boom and Its Explanations." *The Sociological Quarterly* 24: 353-365.

Bogue, Donald J. 1959. *The Population of the United States*. Glencoe: Free Press of Glencoe.

Butz, William P., and Michael P. Ward. 1979a. "The Emergence of Countercyclical U.S. Fertility." *The American Economic Review* 69: 318-328.

Butz, William P., and Michael P. Ward. 1979b. "Will US Fertility Remain Low? A New Economic Perspective." *Population and Development Review* 5 (4): 663-688.

Chevan, Albert. 1989. "The Growth of Home Ownership: 1940-1980." *Demography* 26 (2): 249-266.

Cooney, Teresa M., and Dennis P. Hogan. 1991. "Marriage in an Institutionalized Life Course: First Marriage among American Men in the Twentieth Century." *Journal of Marriage and Family* 53 (1): 178-190.

Davern, Michael, Steven Ruggles, Tami Swenson, J. Trent Alexander, and J. Michael Oakes. 2009. "Drawing Statistical Inferences from Historical Census Data, 1850-1950." *Demography* 46: 589-603.

Dixon, Ruth B. 1971. "Explaining Cross-Cultural Variations in Age at Marriage and Proportions Never Marrying." *Population Studies* 25: 215-233.

Doepke, Matthias, Moshe Hazan, and Yishay Maoz. 2007. "The Baby Boom and World War II: A Macroeconomic Analysis," NBER Working Paper No. 13707.

Doyle, Rodger. 2005. "Baby Boom Origins: Confluence of Forces May Have Led to Postwar Births." *Scientific American* 293: 25.

Easterlin, Richard A. 1961. "The American Baby Boom in Historical Perspective." *The American Economic Review* 51: 869-911.

Easterlin, Richard A. 1978. "What Will 1984 be Like? Socioeconomic Implications of Recent Twists in Age Structure." *Demography* 15: 397-432.

Ermisch, John. 1979. "The Relevance of the 'Easterlin Hypothesis' and the 'New Home Economics' to Fertility Movements in Great Britain." *Population Studies* 33: 39-58.

Catherine A. Fitch, and Steven Ruggles. 2000. "Historical Trends in Marriage Formation: The United States 1850-1990." Pp. 59-88 in Linda J. Waite (ed.), *The Ties that Bind: Perspectives on Marriage and Cohabitation*. New York: Aldine de Gruyter.

Goldman, Noreen, Charles F. Westoff, and Charles Hammerslough. 1984. "Demography of the Marriage Market in the United States." *Population Index* 50: 5-25.

Goldscheider, Frances Kobrin, and Linda J. Waite. 1986. "Sex Differences in the Entry into Marriage." *American Journal of Sociology* 92: 91-109.

Goodman, John L. and Nichols, Joseph B. 1997. “Does FHA Increase Home Ownership or Just Accelerate It?” *Journal of Housing Economics* 6 (2): 184-202.

Gotham, Kevin Fox. 2000. "Racialization and the State: The Housing Act of 1934 and the Creation of the Federal Housing Administration." *Sociological Perspectives* 43 (2): 291-317.

Haines, Michael R. 1996. "Long-term Marriage Patterns in the United States from Colonial Times to the Present," *The History of the Family* 1: 15-39.

Hajnal, John. 1953a. "The Marriage Boom." *Population Index* 19: 80-101.

Hajnal, John. 1953b. “Age at Marriage and Proportions Marrying.” *Population Studies* 7:111-136.

Hirschman, Charles, and Judah Matras. 1971. "A New Look at the Marriage Market and Nuptiality Rates, 1915-1958." *Demography* 8 (4): 549-569.

Hobcraft, John, Jane Menken, and Samuel Preston. 1982. "Age, Period, and Cohort Effects in Demography: A Review." *Population Index* 48: 4-43.

Jeon, Yongil, and Michael P. Shields. 2005. "The Easterlin Hypothesis in the Recent Experience of Higher-Income OECD Countries: A Panel-Data Approach." *Journal of Population Economics* 18: 1-13.

Johnston, Louis D., and Samuel H. Williamson. 2008. "What Was the U.S. GDP Then?" *MeasuringWorth*, http://www.measuringworth.org/usgdp/.

Kain, John F., and John M. Quigley. 1972. "Housing Market Discrimination, Home-ownership, and Savings Behavior." *The American Economic Review* 62 (3): 263-277.

Kimble, John. 2007. "Insuring Inequality: The Role of the Federal Housing Administration in the Urban Ghettoization of African Americans." *Law & Social Inquiry* 32 (2): 399-434.

Landale, Nancy S., and Stewart E. Tolnay. 1991. "Group Differences in Economic Opportunity and the Timing of Marriage: Blacks and Whites in the Rural South, 1910." *American Sociological Review* 56 (1): 33-45.

Lesthaeghe, Ron, and Johan Surkyn. 1988. "Cultural Dynamics and Economic Theories of Fertility Change." *Population and Development Review* 14: 1-45.

Macunovich, Diana J. 1995. "The Butz-Ward Fertility Model in the Light of More Recent Data." *The Journal of Human Resources* 30 (2): 229-255.

Macunovich, Diana J. 1998. "Fertility and the Easterlin Hypothesis: An Assessment of the Literature. *Journal of Population Economics* 11: 53-111.

Mason, Karen O., William M. Mason, H. H. Winsborough, and W. Kenneth Poole. 1973. "Some Methodological Issues in Cohort Analysis of Archival Data." *American Sociological Review* 38: 242-258.

Metzger, John T. 2000. "Planned Abandonment: The Neighborhood Life-Cycle Theory and National Urban Policy." *Housing Policy Debate* 11 (1): 7-40.

Modell, John, Frank F. Furstenberg Jr., and Douglas Strong. 1978. "The Timing of Marriage in the Transition to Adulthood: Continuity and Change, 1860-1975." *The American Journal of Sociology* 84, Supplement: Turning Points: Historical and Sociological Essays on the Family, S120-S150.

Morgan, S. Philip. 1996. "Characteristic Features of Modern American Fertility." *Population and Development Review* 22, Supplement: Fertility in the United States: New Patterns, New Theories, pp. 19-63.

Mulder, Clara H., and Michael Wagner. 1998. "First-time Home-ownership in the Family Life Course: A West German-Dutch Comparison." *Urban Studies* 35: 687-713.

Ní Bhrolcháin, Máire. 1992. "Period paramount? A critique of the cohort approach to fertility." *Population and Development Review* 18: 599-629.

O'Brien, Robert M. 2000. "Age Period Cohort Characteristic Models." *Social Science Research* 29 (1): 123-139.

Pampel, Fred C. 1993. "Relative Cohort Size and Fertility: The Socio-Political Context of the Easterlin Effect." *American Sociological Review* 58: 496-514.

Quigley, John M. 2006. "Federal Credit and Insurance Programs: Housing." *Federal Reserve Bank of St. Louis Review* 88 (4): 281-309.

Raftery, Adrian E., Steven M. Lewis, and Akbar Aghajanian. 1995. "Demand or Ideation? Evidence from the Iranian Marital Fertility Decline." *Demography* 32: 159-82.

Rodgers, Willard L., and Arland Thornton. 1985. "Changing Patterns of First Marriage in the United States." *Demography* 22: 265-279.

Ruggles, Steven, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. 2008. *Integrated Public Use Microdata Series: Version 4.0* [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], http://usa.ipums.org/usa/.

Ryder, Norman B. 1980. "Components of Temporal Variations in American Fertiilty." Pp. 11-54 in R. W. Hiorns (ed.), *Demographic Patterns in Developed Societies*. London: Taylor and Francis.

Sassler, Sharon, and Robert Schoen. 1999. "The Effect of Attitudes and Economic Activity on Marriage." *Journal of Marriage and the Family* 61: 147-159.

Sidney, Mara S. 2001. "Images of Race, Class, and Markets: Rethinking the Origin of U.S. Fair Housing Policy." *Journal of Policy History* 13 (2): 181-214.

Simons, John. 1980. "Reproductive Behaviour as Religious Practice." Pp. 131-145 in Charlotte Höhn and Rainer Mackensen (eds.), *Determinants of Fertility Trends: Theories Re-Examined*. Liège: Ordina Editions.

Smith, Herbert L., William M. Mason, and Stephen E. Fienberg. 1982. "Estimable Functions of Age, Period, and Cohort Effects: More Chimeras of the Age-Period-Cohort Accounting Framework: Comment on Rodgers." *American Sociological Review* 47 (6): 787-793.

Spencer, Roger K. 1977. "Enforcement of Federal Fair Housing Law." *Urban Lawyer* 9: 514-558.

U.S. Bureau of the Census. 1975. *Historical Statistics of the United States: Colonial Times to 1970*.

U.S. Bureau of the Census. 2010. *Statistical Abstract of the United States*.

Van Poppel, Frans, Christiaan Monden and Kees Mandemakers. 2008. "Marriage Timing over Generations." *Human Nature* 19: 7-22.

Vandell, Kerry D. 1995. "FHA Restructuring Proposals: Alternatives and Implications." *Housing Policy Debate* 6 (2): 299-393.

Waldorf, Brigitte, and Pilsung Byun. 2005. "Meta-Analysis of the Impact of Age Structure on Fertility." *Journal of Population Economics* 18: 15-40.

Yang, Yang. 2008. "Social Inequalities in Happiness in the United States, 1972 to 2004: An Age-period-cohort Analysis." *American Sociological Review* 73 (2): 204-226.

Yang, Yang, and Kenneth C. Land. 2006. "A Mixed Models Approach to the Age-Period-Cohort Analysis of Repeated Cross-Section Surveys, with an Application to Data on Trends in Verbal Test Scores." *Sociological Methodology* 36: 75-97.

Yang, Yang. 2008. "Social Inequalities in Happiness in the United States, 1972 to 2004: An Age-Period-Cohort Analysis." *American Sociological Review* 73: 204-226.

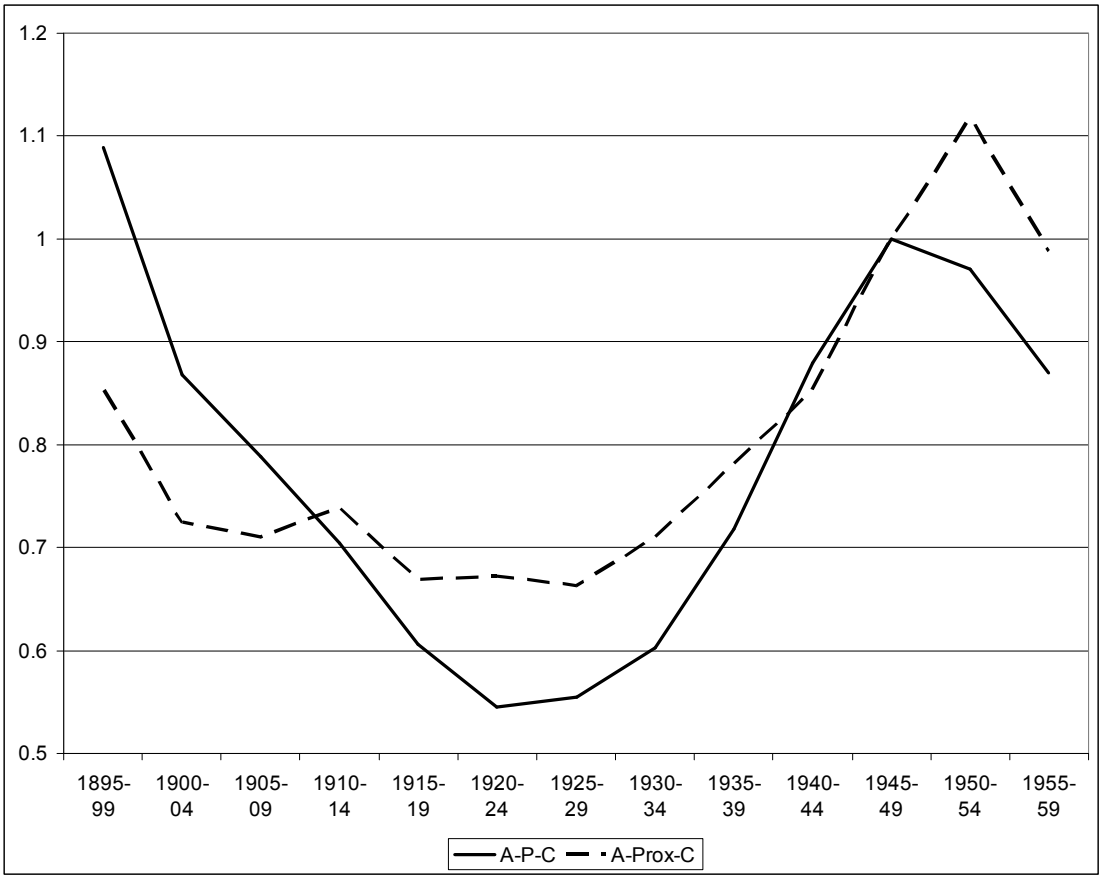
Table 1. Logistic Regression of the Odds of First Marriage: Women 1925-1979

	Model 1		Model 2		Model 3	
Variables	**e^b**	**p-value**	**e^b**	**p-value**	**e^b**	**p-value**
Age	19.009	0.000	21.319	0.000	19.639	0.000
Age squared	0.895	0.000	0.891	0.000	0.894	0.000
Age cubic	1.001	0.000	1.001	0.000	1.001	0.000
Education:						
Grade 8-12	1.379	0.000	1.385	0.000	1.391	0.000
College	1.153	0.000	1.144	0.000	1.149	0.000
Period:						
1925-29	1.000	-	1.000	-		
1930-34	0.886	0.000	0.993	0.571		
1935-39	1.084	0.000	1.380	0.000		
1940-44	1.340	0.000	1.925	0.000		
1945-49	1.632	0.000	2.480	0.000		
1950-54	1.578	0.000	2.334	0.000		
1955-59	1.694	0.000	2.228	0.000		
1960-64	1.478	0.000	1.604	0.000		
1965-69	1.507	0.000	1.384	0.000		
1970-74	1.378	0.000	1.213	0.000		
1975-79	1.061	0.000	0.988	0.748		
Period proxies:						
FHA-VA					1.017	0.000
GDP per capita					1.000	0.973
Unemployment					0.989	0.000
War					0.953	0.000
Women's wage					0.622	0.000
Birth cohort:						
1895-99			1.089	0.037	0.853	0.000
1900-04			0.868	0.000	0.724	0.000
1905-09			0.788	0.000	0.710	0.000
1910-14			0.704	0.000	0.739	0.000
1915-19			0.606	0.000	0.669	0.000
1920-24			0.545	0.000	0.672	0.000
1925-29			0.555	0.000	0.662	0.000
1930-34			0.603	0.000	0.711	0.000
1935-39			0.718	0.000	0.782	0.000
1940-44			0.879	0.000	0.853	0.000
1945-49			1.000	-	1.000	-
1950-54			0.971	0.007	1.117	0.000
1955-59			0.870	0.000	0.988	0.381

Figure 1. Period trends in marriage in terms of odds ratios in A-P and A-P-C models.

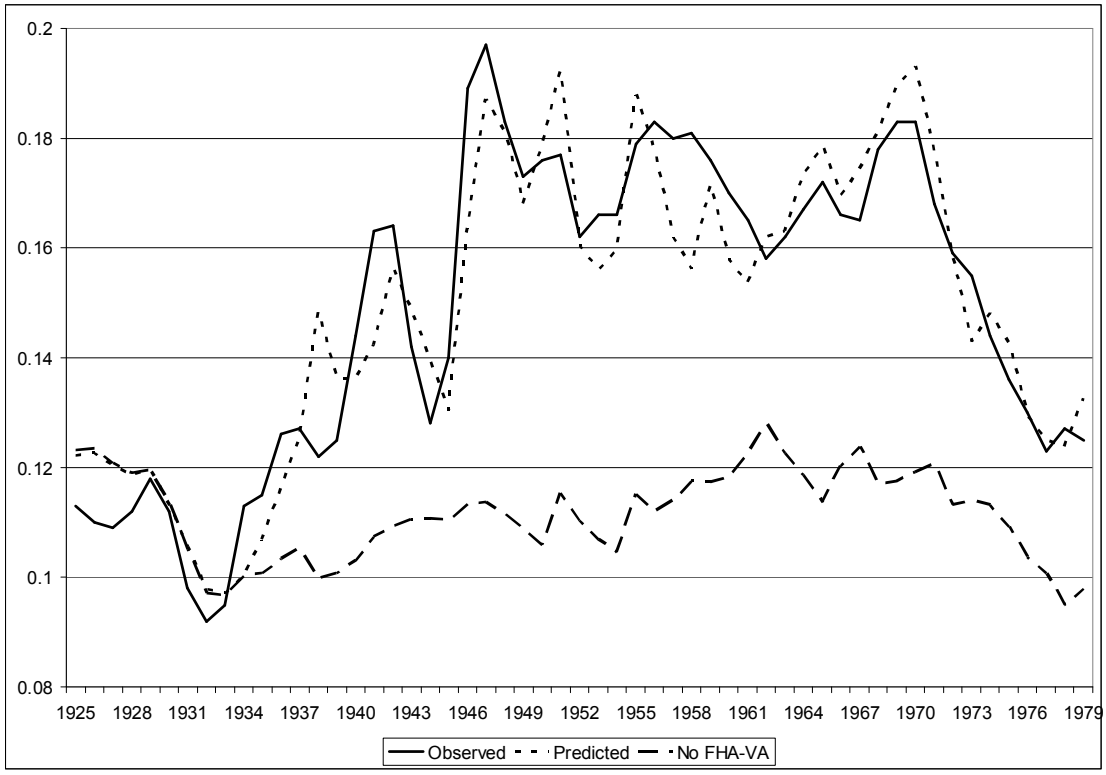
Source: Table 1.

Figure 2. Cohort trends in marriage in terms of odds ratios in second and third models.



Source: Table 1.

Figure 3. Observed, Predicted and Counterfactual-Predicted Probabilities of Marriage Assuming there were no Mortgage Programs.



Source: Table 1.