**THE SURVEY OF INCOME AND PROGRAM PARTICIPATION**

# The Effect of the Marriage Market on First Marriages: Evidence from SIPP

No. 108

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Bowdoin College

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# SURVEY OF INCOME AND PROGRAM PARTICIPATION

## Working Paper Series

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The rise in the number of female-headed families in the U.S. has generated interest in the effects of the Aid to Families with Dependent Children program (AFDC) and other transfer programs on women's choices concerning marriage, childbearing, and employment. This paper looks at marriage rates by never married women using a discrete time hazard model allowing for left and right censoring. It addresses the question of how the marriage market and welfare policy affect marriage rates using an improved measure of spouse availability.

Concern over the availability of desirable spouses stems from evidence on the low rate of family formation among blacks. Bane and Ellwood (1983), O'Neill, et al. (1984), and Blank (1986) all report that black women have a much lower probability of leaving AFDC by marriage than whites. Wilson and Neckerman (1986) show that black women face a shrinking pool of "marriageable" employed black men. They suggest that the rise in black female headed families over recent decades is more closely linked with this diminishing pool of marriage partners than with expansion of transfer programs. Earlier work by Honig (1974) had suggested that unemployment and low male earnings significantly contributed to the formation of female-headed families. My study uses employment based sex ratios to test a Wilson and Neckerman-style hypothesis that low availability of "marriageable" men reduces marriage rate. Hypotheses are tested using data from the 1984 Panel of the Survey of Income and Program Participation (SIPP), although the small sample size of blacks who marry does not allow separate estimation by race.

## I. PAST STUDIES

Work on marriage in economics has modelled the search for potential spouses to be much like the search for an acceptable job in the labor market. Keeley (1977) develops one such search model and derives implications for age at first marriage. Keeley (1979) extends the work and shows that sex ratios affect the proportion married using aggregated, cross-sectional data on states and SMSA's.

Hutchens (1979) also employs a search framework, and considers AFDC as a source of income while single. Increases in AFDC should cause a longer duration of marital search, since it reduces the gain to marriage for single female heads. He tests this hypothesis using data on individuals from the Panel Study of Income Dynamics and finds that AFDC reduces the probability of remarriage for female heads. In his study, the sex ratio has an insignificant effect, but the ratio used is very crude -- it is not disaggregated by race and includes both married and unmarried men and women. Further, Hutchens estimates the incidence of remarriage with a limited control for the length of time since divorce.

Demographers have stressed that crude sex ratios such as those employed by Hutchens are an inadequate measure of spouse

To make the model more clear, consider the following. In any short period, a woman receives a marriage offer with probability $\lambda$ (the arrival rate). The offer represents a draw from a distribution $F(q)$ where $q$ is a index of spouse quality, (e.g. spouse wages). The woman has formulated a reservation quality $q^*$. The probability that she accepts the offer is $1 - F(q^*)$ and the resulting marriage rate is

$$h = \lambda(1-F(q^*))$$

where $q^*$ depends on personal characteristics and policy variables.

Improvements in spouse availability increase $\lambda$. Women may then raise their standards $q^*$, and this can result in an increase or decrease in the rate of marriage. Increases in male income or employment improve F, the distribution of (quality) offers faced by a woman. This also causes a woman to choose a higher $q^*$ and again the marriage rate may either increase or decrease as a result.

The availability of AFDC benefits raises expected income while single relative to income while married, since married women are largely ineligible for AFDC[2]. This should raise $q^*$, increase search duration, and result in higher quality (e.g. earnings) spouse. Women need not be eligible for this to occur, but the effect should be more pronounced for those who are eligible (i.e. mothers). Other welfare programs have a more ambiguous effect since they are also available to persons who are married. In the empirical work we separately analyze women with and without children to see if there is a difference in effect.

Higher education levels may also increase the woman's attractiveness as a mate, and improve the offer distribution. Further, it indicates higher potential wages and thus raises potential income while single and married. To the extent that the new spouse is expected to share in the wages or to the extent that the woman plans to reduce future labor supply in marriage, higher education would raise single income relative to married income, and result in a higher reservation quality and later marriage. Thus these two effects result in an ambiguous effect on duration, but a positive effect on spouse quality.

Children, particularly young children, raise search costs and may increase the taste for being married. They may also make the mother a less attractive marriage partner and worsen the offer distribution.

All of these results flow from a one-sided search model. The male's search decision is not developed but is implicit in the offer arrival rate and the relevant offer distribution. Consideration of a double search model is not pursued here since

Unfortunately, we do not have full data on all individuals beginning at age 15 or, more to the point, at the age that they enter the marriage market. Thus the data also suffers from left censoring: we have a sample of never married women taken at a point in time (wave 1 of SIPP) and subsequently followed up to three years. Covariates that change through time are not observed before entry into the sample. Using only the information available, we can still draw inferences on marriage rates conditional on age (and other covariates) at entry into the sample. Lancaster (1979) derives continuous time hazard models for data with left and right censoring. Below I present the discrete time analogs.

Let $s_i$ denote the woman's age at sample entry -- that is interview one of SIPP. Then the likelihood conditional on age at entry becomes:

$$L = \prod_{i=1}^{n} \left(\frac{h(t_i)H(t_i)}{H(s_i)}\right)^{1-\delta i} \left(\frac{H(t_i+1)}{H(s_i)}\right)^{\delta i}$$

After some manipulation, the log likelihood can be expressed as

$$\log L = \sum_{i=1}^{n} \sum_{j=s_i}^{t_i} \{y_{ij} \log\left(\frac{h(j)}{1-h(j)}\right) + \log(1-h(j))\}$$

$$\text{where } y_{ij} = \begin{cases} 1 \text{ if marriage by person i in period j} \\ 0 \text{ otherwise} \end{cases}$$

The hazard is specified as a complementary log-log form which is appropriate for interval data when the underlying model is a continuous time proportional hazard model.[5]

$$h(t) = \exp[-\exp(\alpha(t) + \beta' X_i(t))]$$

The function $\alpha(t)$ will consist of two components: a function of age at sample entry (fixed for each person over time), and a set of dummies for duration in the sample after sample entry. This produces a semi-parametric stepwise underlying hazard. Conditional on age, the stepwise hazard shows the underlying effect on exit rates of time in sample, subject to the earlier caveat about heterogeneity.

## IV. DATA FROM SIPP AND MARITAL TRANSITIONS

This study uses a sample of never-married females from the 1984 panel of (SIPP). The SIPP is a survey of 20,000 households that gathers monthly data by interviewing households every four months. Roughly half of the sample is interviewed nine times and described below, are assumed to approximate the marriage market conditions faced by women in each state. To the extent that there is substantial variation within each state, this variable is not disaggregated enough.

Table 3 shows the means and definitions of the explanatory variables. All dollar denominated variables are adjusted to January 1984 dollars by the monthly CPI. I used a comprehensive measure of a state's welfare benefits, TBEN, that is the total of the AFDC benefit maximum for a family of four plus the accompanying Food Stamp benefit plus the cash value of Medicaid.[9] A dummy indicates the presence of an AFDC-Unemployed Parent program, AFDCU, in the woman's state of residence. These variables are intended to capture the relevant components of a state's welfare package. However, they may also pick up the effects of other unobserved state specific attributes as noted by Ellwood and Bane (1985).

Measures of spouse availability include a sex ratio and male employment variables. SEXRATIO is the ratio of single males to single females of the same race and in a relevant age group by state of residence. The key assumption is that this ratio approximates the marriage partner availability of each woman in a particular state. The second marriage market measure is EMPMALE, the ratio of employed single males to single males, by age group, state, and race. This is in the spirit of Wilson and Neckerman's argument that the quality of potential spouses is important. The third, EMPFTMALE, is the ratio of full time employed single males to single males by age groups, state, and race, a more restrictive measure of potential spouse quality.

The single sex ratio is calculated from the 1980 decennial Census by race, state, and age group. Goldman, et. al. present evidence that there is a fairly large variation in age differences at marriage so I chose 11-year age groups. I assume that husbands are on average two years older than their wives, also based on Goldman, et al. Thus, for a woman aged 30, I computed the number of unmarried men of age 27 to 37 and divided it by the number of unmarried women age 25 to 35 to get SEXRATIO. This was done for each race, state, and woman's age between 18 and 54. These ratios were then associated with sample women by race, state, and age. The appendix provides details. The employment ratios EMPMALE and EMPFTMALE are computed from the 1980 Census, then updated to 1985 by multiplying them by an adjustment ratio to reflect changes in employment between 1980 and 1985.[10]

## V. RESULTS

Two sets of results are presented. The first looks at a sample of never-married women who have children, whereas the second looks at all never-married women. The former group is expected to show stronger effects of welfare benefit availability since robustness of the marriage market results. These models include a constant plus seven time-in-sample dummies for the underlying stepwise hazard.[14]

The results of Model 3 for the age 15-56 sample again show the significant positive effect of education and negative effect of being black. Table 7 shows simulations for this model. Age at sample entry shows a positive effect to age 24 and a negative effect thereafter. Again, the negative effect could be due to unmeasured heterogeneity.

The presence of children has a significant and sizable positive effect on marriage rates. Holding all else constant, this suggests that the increased benefits of marriage for women with children or the increased cost of search outweighs any adverse effect on the offer distribution. The presence of a young child speeds marriage even more, although the effect is poorly estimated. Additional children have a negative impact on marriage rates, but the coefficient is statistically insignificant.

Turning to the policy and marriage market variables, we find that they are generally poorly estimated, i.e., not statistically different from zero at conventional levels. This statement applies to the benefits measure, TBEN, as well as the unemployment rate and the marriage market variables. The exception is the coefficient on AFDC-U which is negative and well estimated. To the extent that AFDC-U and TBEN together are proxying all aspects of a state's welfare system, the presence of an AFDC-U program could indicate other progressive characteristics of the state's welfare system that encourage welfare use and lead to lower marriage rates. The lack of statistical significance for TBEN, however, raises doubts about the importance of welfare benefits.

Model 4 uses the male full time employment ratio, EMPFTMALE, instead of EMPMALE. The EMPFTMALE might be a better indicator of availability high quality males or those males who are in the marriage market, but its coefficient is not significant. Compared to model 3, the other coefficients change very little and the log-likelihood falls by a small amount suggesting a worse fit. Model 5 imposes the cutoff at age 19, and again shows that the results are robust to this change.

The appendix tables A-3 and A-4 present further sensitivity tests. For these models cases were excluded where a marriage is reported but the survey respondent changed between interviews. This is an attempt to minimize misreporting. A large number of marriages were dropped on this basis, most likely including some legitimate ones, but the results are quite similar to those from the full sample. Thus I conclude that misreporting due to

## APPENDIX: COMPUTING MARRIAGE MARKET VARIABLES

To compute SEXRATIO from the 1980 Census I used the 1 percent sample for whites and the 5 percent sample for blacks. I included only noninstitutionalized civilians. For each state and race I computed the ratio of unmarried males to unmarried females by 11 year age groups as follows. For a woman age X, I divided the number of unmarried men age X-3 to X+7 by the number of unmarried women age X-5 to X+5. My census extract only included unmarried persons aged 18 to 54, so I adjusted the size of the groups at the endpoints to keep the same number of years for men and women. For example, for women age 18 the ratio is unmarried men age 20-25 divided by unmarried women age 18-23. For women age 19, the ratio is unmarried men age 20-26 divided by unmarried women age 18-24. Thus groups near the endpoints are less than 11 years, while groups in the middle (woman's age 23 to 47) are 11 year groups. These ratios were then assigned to women based on age, state, and race. Women younger than 18 were given the 18 ratio while women older than 54 were given the 54 ratio.

The employment ratios were computed using the same groups from the 1980 Census, then updated as follows. Let EMPSINGLE80 denote the ratio of employed single males to single males for a particular state, race, and age cell from the 1980 Census. To compute our EMPMALE, we adjust this as follows:

$$\text{EMPMALE} = \text{EMPSINGLE80} \cdot \frac{\text{EMPCPS85}}{\text{EMPCPS80}}$$

where EMPCPS85 is the employment ratios for all men (regardless of marital status) computed by the same state, race, and age cells from the 1985 CPS. EMPCPS80 is computed similarly from the 1980 CPS. Thus we adjust the single employment ratio by a quotient reflecting the change in employment of the total male population. The state, race, and age cells are too small to use the CPS to directly calculate these measures for single persons.

**FOOTNOTES**

[1]Montgomery and Trussell (1986, pp. 231-240) present a summary of marital search models and Hutchens (1979) develops a model.

[2]Some states have an AFDC-Unemployed parent program that provides aid to couples with the husband unemployed. This would partly offset the marriage effect, but AFDC-U has strict eligibility rules and was not available in all states during the sample period.

[3]This was done to avoid the "seam" problem in SIPP where transitions are reported to occur more frequently between interview periods than within interview periods.

[4]Allison (1982) discusses the estimation of discrete time hazard models.

[5]See Prentice and Gloeckler (1978) and Allison (1982).

[6]In waves five and six of SIPP, the Bureau of the Census reduced the sample size by about 15 percent as a cost saving measure.

[7]Appendix Table A-1 shows reported transitions for every person reporting a marital transition in SIPP, excluding those who drop out of the sample and then return with a new status. Some transitions are obviously misreported: the transition from widowed to never married for example. One explanation is that SIPP uses self reported marital status and accepts reports from proxies if a person is unavailable. Thus a change in respondents could generate a marital transition change. To guard against this possibility for marriages by never married females, I later report a set of results for a sample with all cases excluded where the respondent changed at the time of the marital transition. This exclusion obviously eliminates many valid marriages, but the results are not sensitive to the exclusion.

[8]These blips suggest that the actual marriage date is somewhat arbitrary. Ideally I would like to use the date that the couple commits to share financial resources and for that the actual marriage date is relevant.

[9]The TBEN sums 70 percent of the AFDC guarantee, the Food Stamp guarantee, plus 36.8 percent of the insurance value of Medicaid. Only 70 percent of the AFDC guarantee is used since Food Stamp benefits are reduced by 30 percent of the AFDC benefit. Smeeding (1982) estimated 36.8 percent as the conversion to the cash equivalent value of Medicaid. These data were provided to me by Robert Moffitt and are discussed more fully in Moffitt (1988). The results are little changed if one uses the AFDC maximum benefit for a family of four instead of TBEN.

## REFERENCES


Allison, Paul. "Discrete-time Methods for the Analysis of Event Histories." In Samuel Leinhart (ed.), **Sociological Methodology** (San Francisco: Jossey-Bass Publishers, 1982):61-98.

Bane, Mary Jo, and David Ellwood. "The Dynamics of Dependence: The Routes to Self-Sufficiency." Report prepared by Urban Systems Research and Engineering, Inc., for the U.S. Department of Health and Human Services (1983).

Becker, Gary. "A Theory of Marriage: Part I." **Journal of Political Economy** 81 (July/August 1973):813-846; "Part II." **Journal of Political Economy** 82 (March/April 1974):s11-s26.

Blank, Rebecca. "How Important Is Welfare Dependence?" Institute for Research on Poverty Discussion Paper 821-86 (1986).

Ellwood, David, and Mary Jo Bane. "The Impact of AFDC on Family Structure and Living Arrangement." In R. Ehrenberg (ed.) **Research in Labor Economics**, Vol. 7 (Greenwich, CT: JAI Press, 1985).

Espenshade, Thomas J. "Marriage Trends in America: Estimates, Implications, and Underlying Causes." **Population and Development Review**, 11 (June 1985):193-245.

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

Guttentag, Marcia, and Paul Secord. **Too Many Women? The Sex Ratio Question** (Beverly Hills: Sage Publications, 1983).

Hoffman, Saul, and Greg Duncan. "A Comparison of Choice-Based Multinational and Nested Logit Models: The Family Structure and Welfare Use Decisions of Divorced or Separated Women." **Journal of Human Resources**, XXIII (Fall 1988):550-562.

Honig, Marjorie. "AFDC Income Recipient Rates, and Family Dissolution." **Journal of Human Resources**, 9 (1974):303-322.

Hutchens, Robert M. "Welfare, Remarriage, and Marital Search." **American Economic Review**, 69 (June 1979):369-379.

Keeley, Michael. "The Economics of Family Formation." **Economic Inquiry**, 15 (April 1977): 238-250.

Keeley, Michael. "An Analysis of Age Pattern of First Marriage." **International Economic Review**, 20 (June 1979): 527-544.

Table 1

Marriage Rates for Never Married Women Age 15 and Over*

Panel A: Sample Counts

| | All Persons | Whites | Blacks |
|---|---|---|---|
| Number who marry | 424 | 378 | 36 |
| Total sample | 4,793 | 3,771 | 885 |

Panel B: Four Month Transition Rates (Constant Rate)

| | Interview No. | All Persons | White | Blacks |
|---|---|---|---|---|
| Total marriage rate (All interviews)** | | .0169 | .0190 | .00793 |
| Marriage rate by interview number | 2 | .0129 | .0130 | .00833 |
| | 3 | .0239 | .0281 | .00920 |
| | 4 | .0215 | .0232 | .01150 |
| | 5 | .0109 | .0119 | .00835 |
| | 6 | .0199 | .0237 | .00403 |
| | 7 | .0185 | .0218 | .00676 |
| | 8 | .0120 | .0134 | .00726 |
| | 9 | .0112 | .0133 | .00361 |
| Censoring Rate by interview number | 2 | .0770 | .0725 | .0964 |
| | 3 | .0721 | .0685 | .0841 |
| | 4 | .0604 | .0580 | .0658 |
| | 5 | .2050 | .1970 | .2270 |
| | 6 | .1170 | .1150 | .1310 |
| | 7 | .0564 | .0506 | .0834 |
| | 8 | .0303 | .0290 | .0435 |
| | 9 | .7510 | .7470 | .8020 |

Panel C: Sample Counts and Four Month Marriage Rates by Age at Sample Entry

| Age | 15-17 | 18-19 | 20-24 | 25-34 | 35+ |
|---|---|---|---|---|---|
| Number who marry | 27 | 77 | 160 | 154 | 6 |
| Total Marriage Rate** (All interviews) | .0139 | .0162 | .0224 | .0220 | .0014 |

Panel D: Annual Marriage Rates from U.S. Vital Statistics 1984 (Note: Rates above are four month rates.)

| Age | 15 or over | 18-19 | 20-24 | 25-44 | 45-64 | 65+ |
|---|---|---|---|---|---|---|
| Marriage rate | .0635 | .0721 | .104 | .0805 | .0083 | .0008 |

*Notes: Data from SIPP. Age taken at Sample Entry (Wave 1).
**Assumes equal, constant rate in each period.

## Table 3

### Never Married Women Age 15 to 56
### Means at First Interview

| Variable | Description | Mean: With or Without Children | Mean: With Children |
|---|---|---|---|
| EDUC12 | Dummy = 1 if high school graduate | .228 | .365 |
| HIEDUC | Dummy = 1 if completed some post secondary school | .411 | .203 |
| PROPERTY INCOME | Woman's Property Income (Rents, Interest, Dividend, Asset Income) | 51.9 | 7.7 |
| NKIDS | Number of Children | .180 | 1.15 |
| YKID | Dummy = 1 if child under 6 | .0853 | .547 |
| AGE | Age at entry into sample | 23.5 | 25.4 |
| RACE | Dummy = 1 if black | .208 | .562 |
| AFDC4MAX | AFDC guarantee for family of four, by state | 386 | 385 |
| AFDC U | Dummy = 1 if state of residence has AFDC-U unemployment parent program | .631 | .639 |
| TBEN | Measure of total welfare package for of 4 including AFDC, foodstamps and cash value of Medicaid, by state | 609 | 609 |
| UNEMP | Monthly state unemployment rate in percent | 8.26 | 8.35 |
| SEXRATIO | Single Male/Single Female by race, age, state | .966 | .896 |
| | Whites | .998 | .998 |
| | Blacks | .844 | .814 |
| EMPMALE | Proportion of single males who are employed by race, age, state | .702 | .656 |
| | Whites | .740 | .749 |
| | Blacks | .560 | .584 |
| EMPFTMALE | Proportion of single males who are employed full time by race, age, state | .409 | .395 |
| | Whites | .433 | .454 |
| | Blacks | .319 | .349 |
| MARRY | Dummy = 1 if marry | .118 | .174 |
| | Whites | .137 | .290 |
| | Blacks | .0512 | .0833 |
| Sample Size | | 3283 | 512 |

NOTES: Data from SIPP. Excludes women in grouped SIPP states or with missing age or education.

Table 5
Marriage Hazard Rates for Single Women
Complementary log log hazard with time dummies[a]

| | Age 15-56 Model 3 | Age 15-56 Model 4 | Age 19-56 Model 5 |
|---|---|---|---|
| EDUC12 | 1.07** | 1.08** | .974** |
| | (.177) | (.177) | (.204) |
| HIEDUC | .977** | .981** | +.831** |
| | (.181) | (.181) | (.202) |
| PROPERTY INCOME (in 1,000s) | -.242 | -.247 | -.271 |
| | (.274) | (.274) | (.282) |
| NKIDS | -.399 | -.395 | -.275 |
| | (.255) | (.254) | (.262) |
| YKID | .398 | .411 | .171 |
| | (.351) | (.352) | (.361) |
| NKID (dummy for nkids > 0) | 1.28** | 1.27** | .949* |
| | (.425) | (.423) | (.434) |
| RACE (Black = 1) | -1.66** | -1.48** | -1.38** |
| | (.260) | (.225) | (.267) |
| AFDC U | -.372** | -.359* | -.358* |
| | (.141) | (.142) | (.153) |
| SEXRATIO | .0341 | .00783 | -.187 |
| | (.310) | (.312) | (.359) |
| EMPMALE | -1.34 | | -1.04 |
| | (.822) | -- | (.866) |
| EMPFTMALE | -- | -.596 | -- |
| | | (.772) | |
| UNEMP (in percent) | .0471 | .0548 | .0431 |
| | (.0314) | (.0326) | (.0339) |
| AGE 1 ($\leq$ 24 spline) | .0218 | .0173 | .0482 |
| | (.0334) | (.0357) | (.0395) |
| AGE 2 (> 24 spline) | -.0747** | -.0725** | -.0858** |
| | (.0194) | (.0205) | (.0201) |
| TBEN (in 1,000s) | -1.18 | -1.17 | -.843 |
| | (.823) | (.830) | (.891) |
| LOG OF LIKELIHOOD FUNCTION | -1752 | -1753 | -1532 |
| SAMPLE SIZE: | | | |
| Persons | 3.283 | 2,283 | 2,556 |
| Person inteviews | 16,564 | 16,564 | 13,276 |

NOTES: SIPP data on blacks and whites. Excludes women in grouped SIPP states or with missing age or education data. Standard errors in parentheses. Starred coefficients are significantly different fro zero at a 5 percent significance level (*) or 1 percent (**).

[a]Seven time dummies and a constant were included. See Table A-2.

Table 7

Survivor Function Simulations

Never Married Women with or without Children, Age 15-56

| | Proportion Remaining Unmarried at: 1 Year | 2 Years | 3 Years |
|---|---|---|---|
| 1. Base Case (at means) | .96 | .91 | .85 |
| 2. Age = 20 | .96 | .90 | .84 |
| 3. Age = 30 | .97 | .92 | .87 |
| 4. NKIDS = 1 (YKID = 1) | .93 | .83 | .74 |
| 5. NKIDS = 0 (YKID = 0) | .97 | .91 | .86 |
| 6. TBEN increased 10% | .96 | .91 | .86 |
| 7. AFDC U = 0 | .95 | .89 | .82 |
| 8. AFDC U = 1 | .97 | .92 | .87 |
| 9. UNEMP increased 10% | .96 | .91 | .85 |
| 10. SEXRATIO increased 10% | .96 | .91 | .86 |
| 11. EMPMALE increased 10% | .97 | .92 | .86 |
| 12. Prop Inc increased 10% | .96 | .91 | .85 |
| 13. Ed < 12 | .98 | .95 | .92 |
| 14. Ed = 12 | .94 | .87 | .79 |
| 15. Ed > 12 | .95 | .89 | .82 |
| 16. Race = 1 (Black) | .99 | .97 | .95 |
| 17. Race - 0 (White) | .95 | .88 | .81 |

Notes: Uses coefficients from Model 3 of Table 5.

Table A-2

Time in Sample Dummy Coefficients for Models in Tables 3 and 4

Marriage Hazards for Single Women Age 15 to 56

Definition: $T_j = 1$ if spell ended in interview j

| A. | Model 1 |
|---|---|
| Constant | 3.42 (2.03) |
| T = 4, 5, 6 | .249 (.258) |
| T = 7, 8, 9, | .687* (.312) |

| B. | Model 3 |
|---|---|
| Constant | -4.36** (.941) |
| T3 | 1.44** (.176) |
| T4 | 1.30** (.189) |
| T5 | .587* (.230) |
| T6 | 1.24* (.211) |
| T7 | 1.47** (.213) |
| T8 | 1.18** (2.40) |
| T9 | .744* (2.91) |

Notes: Starred coefficients are significantly different from zero at 5 percent significance level (*) or 1 percent (**). Standard Errors in parentheses.

Table A-4
Marriage Rates for Single Women:
No Change in Survey Respondent After Marriage
Complementary log log hazard with time dummies.[a]

| | Age 15-56 | Age 19-56 |
|---|---|---|
| EDUC12 | 1.20** | 1.02** |
| | (.225) | (.260) |
| HIEDUC | 1.14** | .951** |
| | (.227) | (.259) |
| PROPERTY INCOME (in 1,000s) | -.251 | -.224 |
| | (.294) | (.296) |
| NKIDS | -.165 | -.111 |
| | (.278) | (.286) |
| YKID | .459 | .310 |
| | (.436) | (.445) |
| NKID (dummy for NKIDS > 0) | .869 | .661 |
| | (.509) | (.521) |
| RACE (Black = 1) | -1.51** | -1.26** |
| | (.303) | (.308) |
| AFDC U | -.336 | -.321 |
| | (.184) | (.198) |
| SEXRATIO | .167 | .0431 |
| | (.374) | (.452) |
| EMPMALE | -1.32 | -.975 |
| | (.979) | (1.01) |
| UNEMP (in percent) | .0561 | .0576 |
| | (.0404) | (.0433) |
| AGE 1 ($\leq$ 24 spline) | .0568 | .0846 |
| | (.0414) | (.0494) |
| AGE 2 (> 24 spline) | -.0574** | -.0654** |
| | (.0211) | (.0220) |
| TBEN (in 1,000s) | -1.58 | -1.22 |
| | (1.02) | (1.11) |
| LOG OF LIKELIHOOD FUNCTION | -1221 | -1097 |
| SAMPLE SIZE: | | |
| Persons | 3,074 | 2,383 |
| Person inteviews | 15,656 | 12,504 |

NOTES: SIPP data on blacks and whites. Excludes women in grouped SIPP states or with missing age or education data. Standard errors in parentheses. Starred coefficients are significantly different from zero at a 5 percent significance level (*) or 1 percent (**).

[a]Seven time dummies and a constant were included.