# Occupation, Sex-Integration and Divorce* 

by

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## PRELIMINARY AND INCOMPLETE

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#### Abstract

As women have entered the work force and as occupational sex-segregation has declined, workers experience increased contact with the opposite sex on the job. To the extent that this lowers the cost of search for alternative mates, we would expect the sex-mix a worker encounters on the job to affect the probability of divorce. This paper uses 1990 Census data to calculate the fraction of workers that are female by industry, occupation and industry-occupation cell. These results are then used to predict an individual's marital status, as reported in the 1990 Census. Because choice of occupation and industry could be endogenous if workers who are less committed to marriage are more likely to seek out employment in more sexually-integrated workplaces, the sex-mix a worker faces on the job is instrumented with the industry and occupation composition of employment in the worker's local area. The results indicate that those who work in occupations and industry-occupation combinations with a larger fraction of workers of the opposite sex are more likely to be divorced.


## 1. Introduction

In discussing the economics of marriage and divorce, Becker points out that imperfect information at the time of marriage and the acquisition of additional information while married is a key determinant of divorce. He states:
"Imperfect information can often be disregarded without much loss in understanding, but it is often the essence of divorce . . . participants in marriage markets hardly know their own interests and capabilities, let alone the dependability, sexual compatibility and other traits of potential spouses. Although they date and search in other ways to improve their information, they frequently marry with highly erroneous assessments, then revise these assessments as information improves after marriage." ${ }^{1}$

Information acquired during marriage can change both an individual's assessment of the quality of their current spouse as well as their assessment of their "outside alternatives."

As the labor force participation of women has increased and as women have increasingly found employment in industries and occupations that were once almost exclusively male, on the job contact with members of the opposite sex has increased. This workplace contact allows married men and women to acquire additional information about their outside alternatives at a much lower cost.

This paper examines the extent to which the sex-mix an individual encounters on the job affects their marital status. Specifically, the 1990 Census is used to calculate the fraction of workers that are female for each industry, occupation and industry-occupation cell. These results are then used to estimate the relationship between an individual's marital status, as reported in the 1990 Census, and the level of sex-integration in their industry, occupation and industryoccupation cell. Because choice of occupation and industry could be endogenous if workers who are less committed to marriage are more likely to seek out employment in more sexually-

[^0]integrated workplaces, the sex ratio a worker faces on the job is instrumented with the industrial and occupational composition of employment in the worker's local labor market.

The results indicate that women who work in occupations and industry-occupation combinations with a larger fraction of male coworkers are more likely to be divorced, and, to a lesser extent, men who work in occupations and industry-occupation combinations with a larger fraction of female coworkers are more likely to be divorced. It has long been argued that the increased labor force participation of women has raised divorce rates by increasing women's income, and therefore utility, outside of marriage. It is less recognized, however, that part of the effect of female employment on divorce operates through the increased interaction of men and women in the workplace.

## 2. Literature Review

There is a relatively extensive literature on the relationship between the probability an individual marries and the supply of potential spouses in the state or local geographic area. Much of this literature focuses on racial differences in marriage rates and is motivated by the contention of Wilson (1987) that marriage rates for black women are low relative to white women because of the limited supply of employed black men available as potential spouses (eg Lerman, 1989; Olsen and Farkas, 1990; Fitzgerald, 1991; Lichter, LeClere and McLaughlin, 1991; Brien, 1998).

The question of whether the availability of alternative spouses affects divorce rates has received considerably less attention, and no study has examined whether contact with members of the opposite sex in the workplace increases the likelihood of divorce. South and Lloyd (1995) consider whether the supply of alternative spouses in the local geographic area affect the probability of divorce. They find that divorce is more common in areas where the ratio of
unmarried men to unmarried women is either very high or very low. They also find that divorce is more likely in areas with a high female employment rate, even controlling for the employment and earnings of the wife. This latter result clearly has numerous interpretations, but the authors posit that increased labor force participation of women increases social interaction of men and women in the workplace. ${ }^{2}$

South (2001) studies the effect of wives' employment on divorce and argues that "historical declines in occupation sex segregation . . . have likely meant that more and more employed married women work in close proximity with men who might serve as more attractive mates than their current husband." While both South and Lloyd (1995) and South (2001) theorize that workplace interaction between men and women destabilizes marriage, to date that has been no direct test that relates marital dissolution to the actual sex-mix men and women encounter on the job.

There is both theoretical and empirical evidence to suggest that more sex-integrated workplaces will increase divorce rates. Becker, Landes and Michael (1977) apply search theory to marriage and divorce decisions, comparing them to the more familiar job search and on-thejob search for alternative employment. They state, "When remarriage is possible, continued marital search may be quite rational," but note that, "marital status often severely limits the effort they can devote to search."3

Clearly more contact with members of the opposite sex at work lowers costs of search, particularly for married individuals who may have less opportunity to engage in search outside of the workplace. It is important to point out that this workplace contact can result in divorce through multiple mechanisms. The first and most obvious is that an individual finds a potential

[^1]spouse at work that is more appealing than their current mate, and divorces in order to marry that person. The second is that workplace contact leads to an extra-marital affair that disrupts the marriage even if the liaison was unlikely to result in a long-term relationship or marriage. The final mechanism is less obvious, because it does not require the development of an actual romantic relationship with the coworker. Instead, interaction with members of the opposite sex at work may simply update an individual's perceptions of their outside alternatives, causing them to feel less satisfied with their current partner and more likely to divorce. ${ }^{4}$ Both Udry (1981) and White and Booth (1991) find evidence in survey data that individual's perceptions of their ability to replace or improve upon their mate is a significant predictor of divorce, independent of measures of marital satisfaction.

## 3. Empirical Analysis

## A. Sex-Segregation by Occupation and Industry

The economics literature has already documented that men and women in the workplace are heavily segregated by occupation and, to a lesser extent, by industry. This feature of the labor market has generally been of most interest to those researchers attempting to explain the gap between male and female wages (e.g. Bayard et al, 2000; Macpherson and Hirsch, 1995; and Sorenson, 1990). This literature also documents the declines in occupational segregation over time. For example, using CPS data, Macpherson and Hirsch report that in 1973 the average female worker worked in an occupation that was 72.1 percent female and the average male worker worked in an occupation that was 17.6 percent female. In 1993, the corresponding statistics were 68.2 and 28.8 percent.

For this analysis, sex-segregation measures are calculated using the 1990 Census for each of 235 civilian industries, 501 civilian occupations and 51,885 civilian industry-occupation cells.

[^2]The statistic of interest is the fraction of workers between the ages of 18 and 55 that are female. About half of the industry-occupation cells have no more than 5 observations. These industryoccupation combinations are omitted from the analysis because so few observations are available to calculate the fraction of workers that are female, leaving 26,182 industry-occupation cells.

Distributions of these statistics for men and women are reported in Table 1. It is clear that there is still substantial segregation by industry and occupation. The median woman works in an occupation that is $74 \%$ female and an industry that is $62 \%$ female, while the median man works in an occupation that is $26 \%$ female and an industry that is $32 \%$ female. The distributional statistics, however, indicate that there is substantial variation in the sex-mix experienced by men and women on the job. For example, about a quarter of women work in occupations that are at least 50 percent male, while a quarter of men work in occupations that are at least 40 percent female.

Table 2 presents some preliminary evidence on sex segregation and divorce. The table categorizes men and women based on whether the percent female in their industry-occupation cell is less than 25 percent, between 25 and 49 percent, between 50 and 74 percent, or 75 percent or more. Among the women, there is a very visible relationship between percent female and divorce. Only 6.3 percent of women work in industry-occupation combinations that are less than $25 \%$ female, but their divorce rate is 23.2 percent. In contrast, $55.8 \%$ of women work in industry-occupation combinations that are at least 75 percent female, but their divorce rate is only 18 percent. For men, there is a slight positive relationship between percent female in industry-occupation, but it is less pronounced.

The 1990 Census data are also used to calculate the fraction of non-institutionalized residents of each Public Use Microdata Area (PUMA) between the ages of 18 and 55 that are
female and the fraction of men and women ages 18 to 55 in each PUMA that are employed. South and Lloyd (1995) find a curvilinear relationship between local sex-ratios and divorce, so that divorce is more likely when either there is an oversupply of women or an oversupply of men. A similar relationship is modeled in the regression analysis below using linear and squared terms.

## B. Sample of Analysis

The sample from the 1990 Census used in the regression analysis includes all noninstitutionalized, ever-married, non-widowed individuals ages of 18 and 55 who report an industry and occupation. Individuals are dropped from the sample if they report an industryoccupation cell for which no more than 5 observations are available for calculating the fraction of workers who are female. ${ }^{5}$ The final sample consists of $2,124,778$ women and 2,090,033 men. Descriptive statistics are reported in Table 3.

One concern about the sample is that only those individuals who have worked within the past 5 years will report an industry or an occupation in the Census data. In the sample of noninstitutionalized ever-married women ages 18-55, 14.8 percent of married women do not report an industry or occupation and 9.2 percent of divorced women similarly must be excluded from the sample. For the sample of men, 1.8 percent of married men and 5.1 percent of divorced men do not report an occupation or industry. It is important to remember that the sample used in the analysis conditions on a certain level of labor force attachment.

## C. OLS Analysis

The baseline regression model used is the linear probability model:

[^3]\[

$$
\begin{align*}
Y_{\text {ionls }} & =\beta_{0}+\beta_{1} \text { FrFemOCC }_{o}+\beta_{2} \text { FrFemIND }_{n}+\beta_{3} \text { FrFemLOC }_{l}+\beta_{4}\left(\text { FrFemLOC }_{l}\right)^{2}  \tag{1}\\
& +\beta_{5} \text { FrMEMP }_{l}+\beta_{6} \text { FrWEMP }
\end{align*}
$$
\]

Where for person $i$ working in occupation $o$ and industry $n$, living in local PUMA $l$ and state $s, Y$ is an indicator for divorce, FrFemOCC is the fraction of workers in the occupation that are female, FrFemIND is the fraction of workers in the industry that are female, FrFemLOC is the fraction of residents ages 18-55 of the PUMA that are female, $\operatorname{FrMEMP}$ is the fraction of men employed in the PUMA, FrWEMP is the fraction of women employed in the PUMA, $X$ is a vector of individual control variables and STATE is a vector of state indicator variables. The individual controls include age, age-squared, race indicators (black, asian, other), a Hispanic ethnicity indicator, an urban residence indicator, and education indicators (high school degree, some college, college degree, more than college degree).

The cross-sectional nature of the data raises the concern that because we only observe marital status at one point in time, we only observe those individuals who are currently divorced. We have no way of knowing if an individual has divorced and remarried. But to the extent that workplace contact, through the mechanisms discussed above, generates divorce that is not immediately followed by remarriage, the effect of interest can be identified in the cross-sectional census data.

The initial regression results are reported in Table 4. Columns 1-3 report the results for women and columns 4-6 report the results for men. The first and fourth columns report the results obtained from estimating the regression model specified in equation (1). For women, working in industries and occupations with a higher fraction female lowers the probability of divorce. For men, working in an occupation with a higher fraction female raises the probability of divorce, but the fraction female in the industry of employment has no effect. In columns 2 and 5, the two variables for fraction female in occupation and industry are replaced with the
fraction female in the industry-occupation cell. The results show that that women working in an industry-occupation cell with a higher fraction of women are less likely to be divorced, while men working in an industry-occupation cell with a higher fraction of women are more likely to be divorced.

The magnitude of the effect for men is modest, although the effect for women is larger. For example, a woman moving from the $25^{\text {th }}$ percentile to the $75^{\text {th }}$ percentile of fraction female in industry-occupation cell, from .529 to .927 would decrease her probability of divorce by 3.1 percentage points. A man moving from the $25^{\text {th }}$ percentile to the $75^{\text {th }}$ percentile of fraction female in industry-occupation cell, from .051 to .413 , would increase his probability of divorce by a little less than 1 percentage point.

In columns 3 and 6, variables measuring the fraction female in the occupation, industry and industry-occupation cell are all included in the regression at the same time. For both men and women, the effect of the fraction female in the industry-occupation cell remains with the predicted sign and the effect increases in magnitude. The independent effects of fraction female in the industry and the occupation, however, reverse signs in three of the four cases. These effects are difficult to interpret. They suggest, for example, that a man working in an industryoccupation cell with a high percentage of female co-workers is more likely to get a divorce, but he is less likely to get a divorce if there are more women in his industry and occupation outside of his actual industry-occupation combination.

The other coefficients reported in Table 2 are for the PUMA-specific variables. As expected, there is a U-shaped relationship between the probability of divorce and the percent of women in the local PUMA. Also as one would expect, a higher employment rate for men in the
local area is associated with a lower probability of divorce and a higher employment rate for women in the local area is associated with a higher probability of divorce.

One concern about the results in Table 4 is that higher divorce rate for women working in occupations and industries with more men may reflect the fact that wages tend to be higher in these types of jobs, in which case a simple bargaining model would predict that women in these occupations and industries would have higher rates of divorce. Therefore, in Table 5, wage controls by industry, occupation and location are be added to the regression analysis.

For each occupation, industry, industry-occupation cell and PUMA, mean wages are calculated separately for men and women. ${ }^{6}$ These wage measures are then included as control variables in the divorce regressions. The results of this exercise are reported in Table 5. The effects of percent female in occupation, industry and industry-occupation are very similar to those reported in Table 4, except that the magnitudes of the effects have increased for women and decreased for men.

Because the addition of these wage controls has little effect on the coefficient estimates for the PUMA-specific variables, the coefficient estimates for these location controls are omitted from the table for brevity. The coefficient estimates for the occupation, industry and industryoccupation wages are reported in Table 5. It is difficult to predict the effects of these wage measures on divorce, because multiple mechanisms are at work. For example, if a man works in an occupation or industry with above-average wages, this suggests that his earnings potential is also above average. ${ }^{7}$ This would tend to make his marriage more stable to the extent that his current spouse should their marriage more highly. On the other hand, the higher wage also

[^4]makes him more attractive to potential alternative spouses. These results are therefore not a primary focus of the paper.

The general finding in Table 5 is that, for the most part, higher wages lower the probability of divorce, although there are exceptions. Higher male wages in an occupation increase the probability of divorce for women and higher male wages in an industry increase the probability of divorce for men.
D.2SLS Analysis

Because choice of occupation and industry could be endogenous if workers who are already divorced or generally less committed to marriage are more likely to seek out employment in more sexually-integrated workplaces, the sex-ratio a worker faces in his or her occupation or industry is instrumented with the industrial and occupational composition of employment in the worker's local labor market.

For a male worker in PUMA $l$, the instrument for the fraction employment in a worker's occupation that is female is:

$$
\begin{equation*}
\text { IVOCCMale }_{l}=\sum_{o} \frac{\text { ShareMaleEmp }_{o l} * \mathrm{FrFemOCC}_{o}}{\text { TotalMaleEmp }_{l}}, \tag{2}
\end{equation*}
$$

where ShareMaleEmp ${ }_{o l}$ is the fraction of total male employment in PUMA $l$ that occurs in occupation $o, \mathrm{FrFemOCC}_{o}$ is the fraction of national employment in occupation $o$ that is female, and TotalMaleEmp ${ }_{l}=\sum_{o}$ ShareMaleEmp $_{o l}$ is total male employment in PUMA $l$. An analogous instrument can be developed for the fraction female in a male worker's industry:

$$
\begin{equation*}
\text { IVINDMale }_{l}=\sum_{n} \frac{\text { ShareMaleEmp }_{n l} * \operatorname{FrFemIND}_{n}}{\text { TotalMaleEmp }_{l}} \tag{3}
\end{equation*}
$$

where ShareMaleEmp ${ }_{n l}$ is the fraction of total male employment in PUMA $l$ that occurs in industry $n$ and $\operatorname{FrFemInd} d_{n}$ is the fraction of national employment in industry $n$ that is female,

The instruments for a female worker in PUMA $l$ are:

$$
\begin{equation*}
\text { IVOCCFem }_{l}=\sum_{o} \frac{\text { ShareFemEmp }_{o l} * \text { FrFemOCC }_{o}}{\text { TotalFemEmp }_{l}}, \tag{4}
\end{equation*}
$$

and:

$$
\begin{equation*}
\text { IVINDFem }_{l}=\sum_{n} \frac{\text { ShareFemEmp }_{n l} * \text { FrFemIND }_{n}}{\text { TotalFemEmp }_{l}} . \tag{5}
\end{equation*}
$$

These instruments are calculated for each of the 1725 PUMAs in the 1990 PUMS.
The results of using these instruments are reported in Table 6. In column 1, the fraction female in occupation and industry encountered by female workers are instrumented with the variables described in equations (4) and (5). In column 4, the fraction female in occupation and industry encountered by male workers are instrumented with the variables described in equations (2) and (3).

For the women, the fraction female in their occupation, as predicted by the occupational composition of the workforce in their PUMA, has the predicted negative effect on divorce. The magnitude of the effect is substantially larger than that reported in Tables 4 and 5. The predicted fraction female in industry, however, has an unexpected positive effect on divorce. For men, there is a similar pattern in the results. The predicted fraction female in their occupation has the expected positive effect on divorce and is much larger in magnitude than the effects reported in Tables 4 and 5. The predicted fraction female in the industry, however, has a negative effect, although the effect is small in magnitude and statistically insignificant.

In columns 2 and 5, the fraction female in the worker's industry-occupation cell is instrumented with both the occupational and industrial composition variables. In both cases the
results are of the predicted sign and the effects are larger in magnitude than those obtained with OLS estimation. To give an idea of the size of these effects, a woman moving from the $25^{\text {th }}$ percentile to the $75^{\text {th }}$ percentile of fraction female in industry-occupation cell, from .529 to .927 would decrease her probability of divorce by 15.6 percentage points. A man moving from the $25^{\text {th }}$ percentile to the $75^{\text {th }}$ percentile of fraction female in industry-occupation cell, from .051 to .413, would increase his probability of divorce by 10.3 percentage points. These are very sizeable effects.
[ Columns 3 and 6 are blank b/c instruments by industry-occupation combinations have not yet been calculated]

## 5. Conclusions

This paper presents evidence that the fraction of workers in an individual's occupation or industry-occupation combination that are female affects the probability an individual is divorced. Women who work in occupations and industry-occupation combinations with more men are more likely to be divorced and men who work in occupations and industry-occupation combinations with more women are more likely to be divorced. The fraction of women in an individual's industry does not have the hypothesized effect on divorce. This could be that the fraction of female workers in an individual's occupation is a better indicator of the amount of workplace contact with members of the opposite sex than the fraction of female workers in an individual's industry.

The effects estimated in this paper are sizeable, leading one to wonder if they are perhaps too big. But if the workplace is now the primary venue for extra-marital search, then a substantial relationship between occupational sex-mix and divorce is perhaps not so surprising. If so, then it has to be acknowledged that one of the mechanisms through which the increased
labor force participation of women has increased divorce rates is by increasing contact of men and women in the workplace and lowering the costs of extra-marital search.

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Table 1: Distribution of Fraction Female in Occupation and Industry

|  | $\mathbf{5}^{\text {th }} \mathbf{\%}$ ile | $\mathbf{2 5}^{\text {th }} \mathbf{\%}$ ile | Median | $\mathbf{7 5}^{\text {th }} \boldsymbol{\%}$ ile | $\mathbf{9 5}^{\text {th }} \boldsymbol{\%}$ ile |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Women | .242 | .491 | .744 | .897 | .989 |
| $\quad$ Occupation | .215 | .474 | .619 | .747 | .891 |
| $\quad$ Industry | .213 | .529 | .798 | .927 | .991 |
| $\quad$ Industry-Occupation |  |  |  |  |  |
|  |  |  |  |  |  |
| Men | .021 | .070 | .261 | .404 | .737 |
| $\quad$ Occupation | .110 | .195 | .322 | .522 | .747 |
| $\quad$ Industry | .051 | .178 | .413 | .747 |  |
| $\quad$ Industry-Occupation | .013 |  |  |  |  |

Notes: Calculations from 1990 PUMS using samples of ever-married, non-widowed noninstitutionalized men and women ages 18-55. Those individuals reporting an industry, occupation or industry-occupation cell for which no more than 5 observations are available for calculating the fraction of workers who are female are dropped from the sample. Variables used in table calculations are the fraction of women in each individual's occupation, industry and industry-occupation cell.

Table 2:Fraction Female in Industry-Occupation Cell and Divorce Rates

| Fraction Female <br> in Industry- <br> Occupation | Women |  | Men |  |
| :--- | :--- | :--- | :--- | :--- |
| \% of Women <br> in Category | Divorce <br> Rate | \% of Men in <br> Category | Divorce Rate |  |
| 0.25 | $6.3 \%$ | $23.2 \%$ | $58.6 \%$ | $14.0 \%$ |
| $0.25-0.49$ | 16.1 | 21.9 | 24.7 | 13.1 |
| $0.50-0.74$ | 21.7 | 20.6 | 11.7 | 14.4 |
| $0.75+$ | 55.8 | 18.0 | 4.9 | 15.7 |

Notes: Calculations from 1990 PUMS. Sample the same as described in notes of Table 1.

Table 3: Descriptive Statistics

|  | Women |  | Men |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Mean | St Dev | Mean | St Dev |
| \% Divorced | 19.5 |  | 13.9 |  |
| Individual Characteristics: |  |  |  |  |
| Age | 37.35 | (9.03) | 38.71 | (8.75) |
| \% Black | 8.2 |  | 6.9 |  |
| \% Asian | 2.8 |  | 2.6 |  |
| \% Other Race | 3.9 |  | 4.5 |  |
| \% Hispanic | 1.8 |  | 1.8 |  |
| \% High School Degree | 34.1 |  | 30.5 |  |
| \% Some College | 31.7 |  | 27.8 |  |
| \% College Degree | 13.9 |  | 15.2 |  |
| \% More than College Degree | 6.5 |  | 9.6 |  |
| \% Urban | 66.0 |  | 64.4 |  |
| Local PUMA Characteristics: |  |  |  |  |
| Fraction Female | 0.51 | (0.17) | 0.51 | (0.16) |
| Fraction of Men Working | 0.92 | (0.43) | 0.92 | (4.33) |
| Fraction of Women Working | 0.78 | (0.63) | 0.78 | (0.65) |
| Mean Occupation Wage: |  |  |  |  |
| Men | 12.43 | (4.23) | 14.04 | (5.03) |
| Women | 10.28 | (2.73) | 11.10 | (2.94) |
| Mean Industry Wage: |  |  |  |  |
| Men | 13.97 | (5.13) | 13.61 | (3.75) |
| Women | 10.21 | (1.91) | 10.40 | (1.66) |
| Mean Industry-Occupation Wage: |  |  |  |  |
| Men | 12.29 | (5.01) | 14.15 | (5.60) |
| Women | 10.30 | (3.07) | 11.41 | (3.83) |
| Mean PUMA Wage: |  |  |  |  |
| Men | 12.19 | (2.91) | 12.20 | (2.93) |
| Women | 8.90 | (1.85) | 8.89 | (1.85) |
|  | $\mathrm{N}=2,124,778$ |  | $\mathrm{N}=2,090,033$ |  |

Notes: Sample the same as described in notes of Table 1.

Table 4: OLS Estimates of Probability of Divorce, 1990 Census

|  | (1) | Women | (3) | (4) | Men | (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (2) |  |  | (5) |  |
| Fraction Female, Industry-Occupation |  | $\begin{aligned} & -0.0789 \\ & (0.0011) \end{aligned}$ | $\begin{aligned} & -0.0960 \\ & (0.0027) \end{aligned}$ |  | $\begin{aligned} & 0.0268 \\ & (0.0011) \end{aligned}$ | $\begin{aligned} & 0.0676 \\ & (0.0027) \end{aligned}$ |
| Fraction Female, Occupation | $\begin{aligned} & -0.0448 \\ & (0.0012) \end{aligned}$ |  | $\begin{aligned} & 0.0350 \\ & (0.0025) \end{aligned}$ | $\begin{aligned} & 0.0179 \\ & (0.0013) \end{aligned}$ |  | $\begin{aligned} & -0.0334 \\ & (0.0024) \end{aligned}$ |
| Fraction Female, Industry | $\begin{aligned} & -0.0559 \\ & (0.0014) \end{aligned}$ |  | $\begin{aligned} & -0.0335 \\ & (0.0016) \end{aligned}$ | $\begin{aligned} & 0.0006 \\ & (0.0014) \end{aligned}$ |  | $\begin{aligned} & -0.0206 \\ & (0.0017) \end{aligned}$ |
| Fraction Female, PUMA | $\begin{aligned} & -2.180 \\ & (0.2848) \end{aligned}$ | $\begin{aligned} & -2.169 \\ & (0.2848) \end{aligned}$ | $\begin{aligned} & -2.174 \\ & (0.2847) \end{aligned}$ | $\begin{aligned} & -1.820 \\ & (0.2883) \end{aligned}$ | $\begin{aligned} & -1.799 \\ & (0.2883) \end{aligned}$ | $\begin{aligned} & -1.824 \\ & (0.2883) \end{aligned}$ |
| (Fraction Female, PUMA) ${ }^{2}$ | $\begin{aligned} & 2.197 \\ & (0.2886) \end{aligned}$ | $\begin{aligned} & 2.190 \\ & (0.2886) \end{aligned}$ | $\begin{aligned} & 2.193 \\ & (0.2885) \end{aligned}$ | $\begin{aligned} & 1.435 \\ & (0.2905) \end{aligned}$ | $\begin{aligned} & 1.433 \\ & (0.2905) \end{aligned}$ | $\begin{aligned} & 1.458 \\ & (0.2905) \end{aligned}$ |
| Fraction Men Employed, PUMA | $\begin{aligned} & -0.8943 \\ & (0.0127) \end{aligned}$ | $\begin{aligned} & -0.8898 \\ & (0.0127) \end{aligned}$ | $\begin{aligned} & -0.8928 \\ & (0.0127) \end{aligned}$ | $\begin{aligned} & -0.8030 \\ & (0.0114) \end{aligned}$ | $\begin{aligned} & -0.7973 \\ & (0.0114) \end{aligned}$ | $\begin{aligned} & -0.7989 \\ & (0.0114) \end{aligned}$ |
| Fraction Women Employed, PUMA | $\begin{aligned} & 0.4369 \\ & (0.0084) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.4377 \\ & (0.0084) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.4372 \\ & (0.0084) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.4762 \\ & (0.0075) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.4730 \\ & (0.0075) \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.4743 \\ & (0.0075) \\ & \hline \end{aligned}$ |
|  | $\mathrm{N}=2,124,778$ |  |  | $\mathrm{N}=2,090,033$ |  |  |

Notes: Samples are the same as described in notes of Table 1. Table reports the results from OLS regressions. Dependent variable is a binary indicator for divorce. All regressions include state fixed-effects and individual controls: age, age-squared, race (indicators for black, asian, other), Hispanic origin, urban residence, education (indicators for high school degree, some college, college degree and more than college).

Table 5: OLS Estimates of Probability of Divorce, Wage Controls Added, 1990 Census

|  | (1) | Women | (3) | (4) | Men | (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (2) |  |  | (5) |  |
| Fraction Female, Industry-Occupation |  | $\begin{aligned} & -0.0901 \\ & (0.0011) \end{aligned}$ | $\begin{aligned} & -0.1009 \\ & (0.0027) \end{aligned}$ |  | $\begin{aligned} & 0.0178 \\ & (0.0011) \end{aligned}$ | $\begin{aligned} & 0.0377 \\ & (0.0027) \end{aligned}$ |
| Fraction Female, Occupation | $\begin{aligned} & -0.0457 \\ & (0.0012) \end{aligned}$ |  | $\begin{aligned} & 0.0383 \\ & (0.0026) \end{aligned}$ | $\begin{aligned} & 0.0079 \\ & (0.0014) \end{aligned}$ |  | $\begin{aligned} & -0.0195 \\ & (0.0025) \end{aligned}$ |
| Fraction Female, Industry | $\begin{aligned} & -0.0542 \\ & (0.0015) \end{aligned}$ |  | $\begin{aligned} & -0.0303 \\ & (0.0016) \end{aligned}$ | $\begin{aligned} & 0.0091 \\ & (0.0015) \end{aligned}$ |  | $\begin{aligned} & -0.0084 \\ & (0.0018) \end{aligned}$ |
| Male Wage, IndustryOccupation Cell |  | $\begin{aligned} & -0.0003 \\ & (0.0001) \end{aligned}$ | $\begin{aligned} & -0.0001 \\ & (0.0001) \end{aligned}$ |  | $\begin{aligned} & -0.0036 \\ & (0.0001) \end{aligned}$ | $\begin{aligned} & -0.0029 \\ & (0.0001) \end{aligned}$ |
| Female Wage, IndustryOccupation Cell |  | $\begin{aligned} & -0.0037 \\ & (0.0001) \end{aligned}$ | $\begin{aligned} & 0.0016 \\ & (0.0002) \end{aligned}$ |  | $\begin{aligned} & -0.0004 \\ & (0.0001) \end{aligned}$ | $\begin{aligned} & -0.0001 \\ & (0.0001) \end{aligned}$ |
| Male Wage, Industry | $\begin{aligned} & -0.0006 \\ & (0.0001) \end{aligned}$ |  | $\begin{aligned} & -0.0004 \\ & (0.0001) \end{aligned}$ | $\begin{gathered} 0.0005 \\ (0.0001) \end{gathered}$ |  | $\begin{aligned} & 0.0018 \\ & (0.0001) \end{aligned}$ |
| Female Wage, Industry | $\begin{aligned} & -0.0019 \\ & (0.0002) \end{aligned}$ |  | $\begin{aligned} & -0.0028 \\ & (0.0002) \end{aligned}$ | $\begin{aligned} & -0.0029 \\ & (0.0002) \end{aligned}$ |  | $\begin{aligned} & -0.0029 \\ & (0.0002) \end{aligned}$ |
| Male Wage, Occupation | $\begin{gathered} 0.0021 \\ (0.0002) \end{gathered}$ |  | $\begin{aligned} & 0.0022 \\ & (0.0002) \end{aligned}$ | $\begin{aligned} & -0.0042 \\ & (0.0001) \end{aligned}$ |  | $\begin{aligned} & -0.0015 \\ & (0.0002) \end{aligned}$ |
| Female Wage, Occupation | $\begin{aligned} & -0.0069 \\ & (0.0003) \end{aligned}$ |  | $\begin{aligned} & -0.0088 \\ & (0.0003) \end{aligned}$ | $\begin{aligned} & 0.0001 \\ & (0.0002) \end{aligned}$ |  | $\begin{aligned} & -0.0004 \\ & (0.0002) \end{aligned}$ |
| $\mathrm{N}=2,124,778$ |  |  |  |  | $\mathrm{N}=2,090,033$ |  |

Notes: Samples are the same as described in notes of Table 1. Table reports the results from OLS regressions. Dependent variable is a binary indicator for divorce. All regressions include local controls: fraction female in PUMA, fraction of men in PUMA working, fraction of women in PUMA working, mean male wage in PUMA, mean female wage in PUMA, state fixed-effects, as well as individual controls: age, age-squared, race (indicators for black, asian, other), Hispanic origin, urban residence, education (indicators for high school degree, some college, college degree and more than college).

Table 6: 2SLS Estimates of Probability of Divorce, 1990 Census

|  | (1) | Women |  |  | Men | (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (2) | (3) | (4) | (5) |  |
| Fraction Female, Industry-Occupation |  | $\begin{aligned} & -0.3903 \\ & (0.0189) \end{aligned}$ |  |  | $\begin{gathered} 0.2858 \\ (0.0183) \end{gathered}$ |  |
| Fraction Female, Occupation | $\begin{aligned} & -0.720 \\ & (0.0264) \end{aligned}$ |  |  | $\begin{gathered} 0.4554 \\ (0.0054) \end{gathered}$ |  |  |
| Fraction Female, Industry | $\begin{aligned} & 0.377 \\ & (0.0236) \\ & \hline \end{aligned}$ |  |  | $\begin{aligned} & -0.0823 \\ & (0.0492) \end{aligned}$ |  |  |
|  |  | $\mathrm{N}=2,124,778$ |  |  | $\mathrm{N}=2,090,0$ |  |

Notes: Samples are the same as described in notes of Table 1. Table reports the results from 2SLS regressions. The occupational and industrial compositions of the PUMA are used as instruments for the fraction female in the occupation, industry and industry-occupation cell as described in the text. All regressions include all the occupation and industry wages controls, PUMA-specific controls, state fixed-effects, and individual-specific controls control variables used in the OLS regressions reported in Table 5.


[^0]:    ${ }^{1}$ Gary Becker, Treatise on the Family, Enlarged Edition, 1991, p. 324

[^1]:    ${ }^{2}$ For example, this empirical relationship could simply indicate that an area with a stronger labor market for women provides them with the economic independence to divorce.
    ${ }^{3}$ Becker, Landes and Michael, Journal of Political Economy, 1977, p. 1155.

[^2]:    ${ }^{4}$ A similar point is made by South and Lloyd (1995).

[^3]:    ${ }^{5}$ This omits 42,262 individuals, or about 1 percent of the sample. All occupation and industry categories have more than 5 workers from which to calculate the fraction of workers that are female.

[^4]:    ${ }^{6}$ Workers with wages less than $\$ 2 / \mathrm{hr}$ or greater than $\$ 200 / \mathrm{hr}$ are excluded from the wage calculation.
    ${ }^{7}$ Individual wages are not included as controls, as these could obviously be endogenous to marital status. The same goes for fertility related measures.

