Marriage, Labor Supply, and Home Production

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1. Introduction

- Since WWII, the labor force participation of married women has increased dramatically. Many explanations have been proposed: technological change in the household (Greenwood et al. (2016), is a recent contribution), contraception (Goldin and Katz (2002)), changes in wage distributions by gender and experience (e.g., Knowles (2013)), cultural change (Fernández (2013)), structural change in the economy (Galor and Weil (1996)), child care (Attanasio, Low, and Sanchez-Marcos (2008)), divorce laws (Fernández and Wong (2014)).

- By 1990, the labor supply of married women has reached a plateau, and yet strong differences in time uses persist between men and women, and between single and married persons.

- Using British Household Panel Survey (BHPS) data, we thus observe that between 1991 and 2008, married women increase market work and reduce non-market work, but at a very low pace in comparison to the preceding decades (see Section 3 for details).

2. A Brief Review of the Literature on Marriage and Intrahousehold Resource Allocation

- Lundberg and Pollak (1996) ended their insightful survey on bargaining and distribution in marriage by stating that "bargaining models provide an opportunity for integrating the analysis of distribution within marriage with a matching or search model of the marriage market."

- Since then, the search-matching-and-bargaining framework has been widely used in applied macroeconomics in the perspective of understanding long-term changes such as declining marriage rates or rising female labor supply.

- Aiyagari, Greenwood, and Guner (2000), Greenwood, Guner, and Knowles (2000), Chiappori (2003), Caucutt, Guner, and Knowles (2002), Gould and Paserman (2003), Fernandez, Guner, and Knowles (2005) are early examples of applications (see the first paragraph for more recent references).

3. Data and Facts

BHPS Data

- We use the original British Household Panel Survey (BHPS) sample of 5,050 British households and 9,092 adults interviewed in the first wave (1991).
- The panel interviews all adult members of all households comprising either an original sample member or an individual born to an original sample member every year until 2008.
- It therefore remains broadly representative of the British population (excluding Northern Ireland and North of the Caledonian Canal) as it changes over time.
- We only keep individuals who are either single or married to (or cohabiting with) a heterosexual partner, and who are between 22 and 50 years of age at the time of interview.
- To reduce nonresponse biases, we use the Individual Respondent Weights provided in the survey.

- In order to reduce the number of labor supply corners (zero market hours and missing wages), we replace current observations on wages and market hours by a moving average of past, present, and future observations.

- Specifically, suppose that we observe wage $w_1, w_2, \ldots$ and hours $h_1, h_2, \ldots$ We replace w_t and h_t by

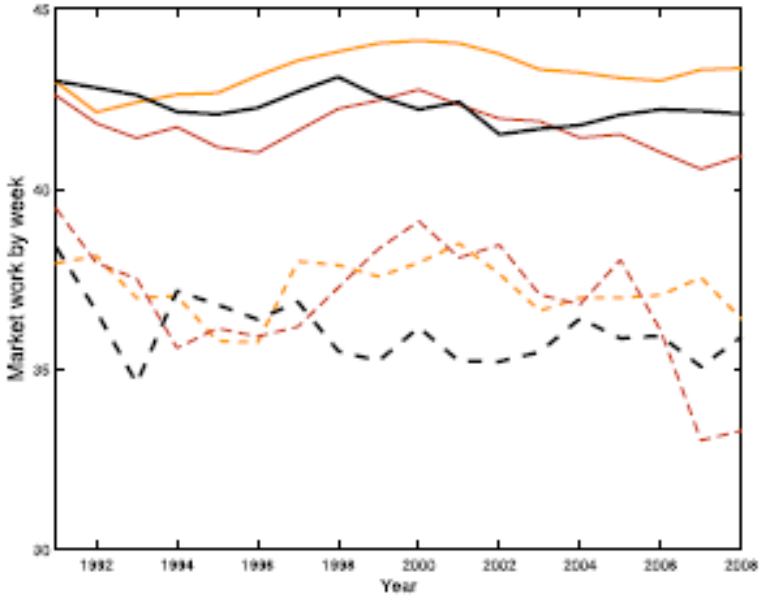
$$\widehat{w}_t = \frac{\sum_{\tau=-\infty}^{+\infty} w_{t+\tau} 1\{h_{t+\tau} \neq 0\} \phi(\tau/k)}{\sum_{\tau=-\infty}^{+\infty} 1\{h_{t+\tau} \neq 0\} \phi(\tau/k)}, \qquad \widehat{h}_t = \frac{\sum_{\tau=-\infty}^{+\infty} h_{t+\tau} \phi(\tau/k)}{\sum_{\tau=-\infty}^{+\infty} \phi(\tau/k)},$$

where ϕ is the standard normal PDF and k is a smoothing parameter that we arbitrarily choose equal to 2, yielding weights 1, 0.882, 0.607, 0.325, 0.135, 0.044, 0.011 for 0, 1, 2, 3, 4, 5, 6 years apart.

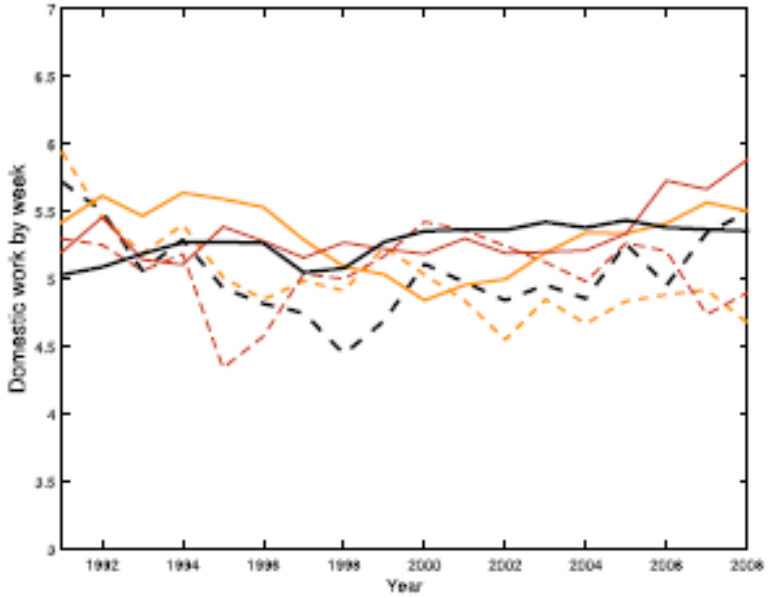
Trends

- The rather short period of time between 1991 and 2008 has produced some remarkable changes in time uses, wages, and education by gender and marital status.
- Figure 1 confirms well-known facts about market and non-market work.
- Men work more paid hours than women, married men work more than single men, and all men, married and single, devote the same amount of time (little) to home production.
- Married and low-educated women work fewer hours outside the home, and more inside than single and higher-educated women.
- Education is not a key determinant for men; it is for women.
- Male hours are remarkably stable over time, while female differences by education and marital status are gradually subsiding.

Figure 1: Time use trends



(a) Men, market hours per week



(b) Men, non-market hours/week

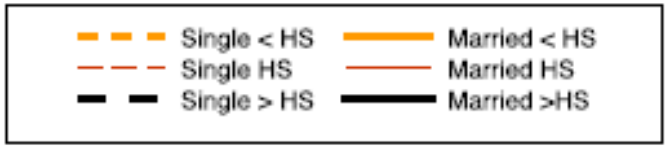
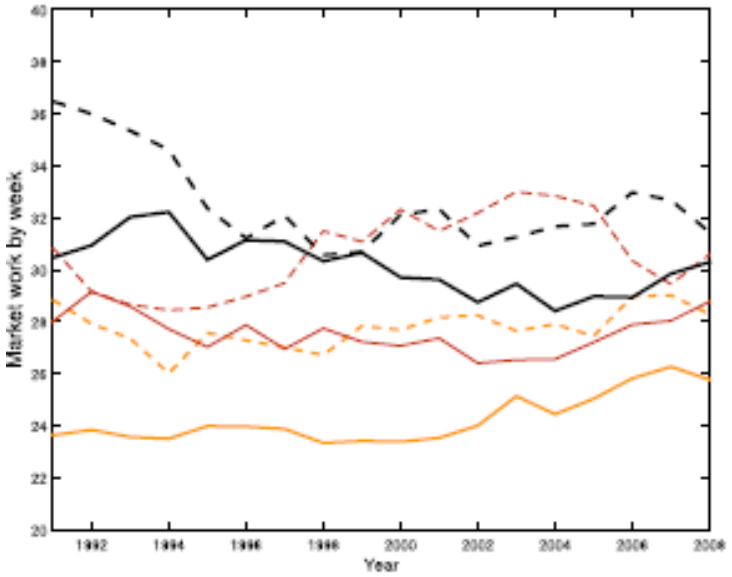
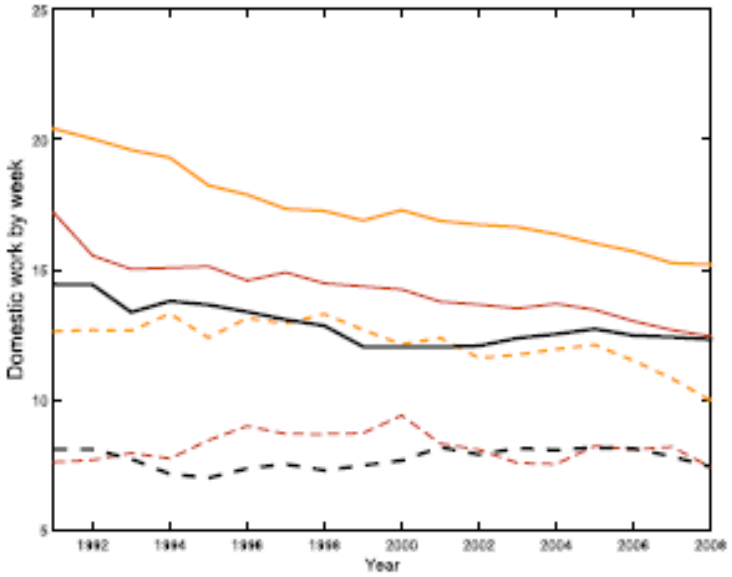


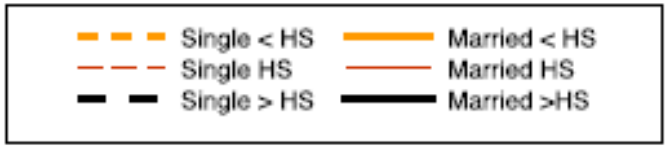
Figure 1: Time use trends, Cont'd



(c) Women, market hours



(d) Women, non-market hours/week



Family Values

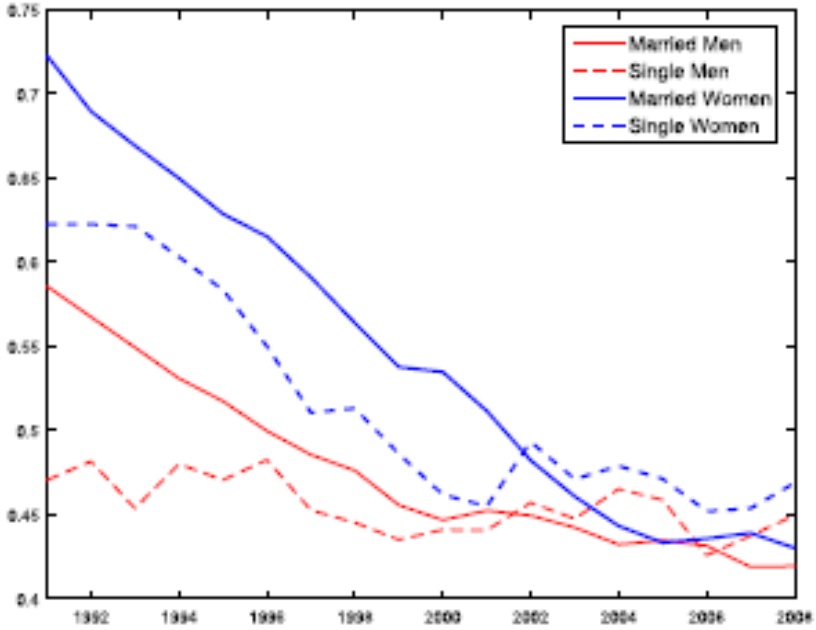
- In a recent paper, Bertrand, Kamenica, and Pan (2015) observed that "among married couples in the US, the distribution of the share of household income earned by the wife drops sharply at $\frac{1}{2}$."

- Figure 3(a) shows the distribution of the female wage share $\left(\frac{w_f}{w_m+w_f}\right)$ in the BHPS data.

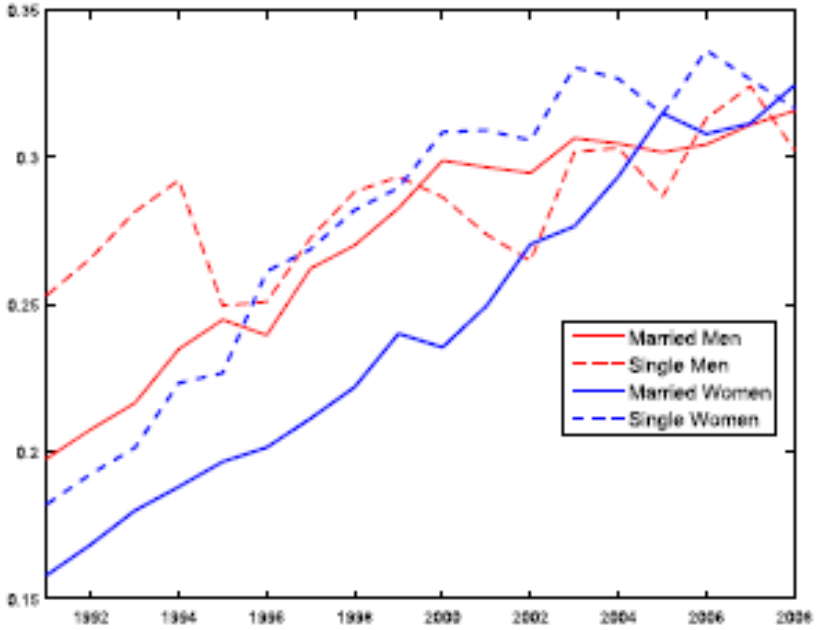
- It is symmetric with a mode between 0.4 and 0.5. The distribution moves a little to the right over time, becoming a bit more equal (i.e., symmetric around 0.5).

- The distribution of the female share of labor earnings $\left(\frac{w_f h_f}{w_m h_m+w_f h_f}\right)$ is, however, similar to Bertrand et al.'s U.S. estimate (interestingly, more so in 1991–1993 than later in 2006–2008).

Figure 2: Composition changes in education and wages

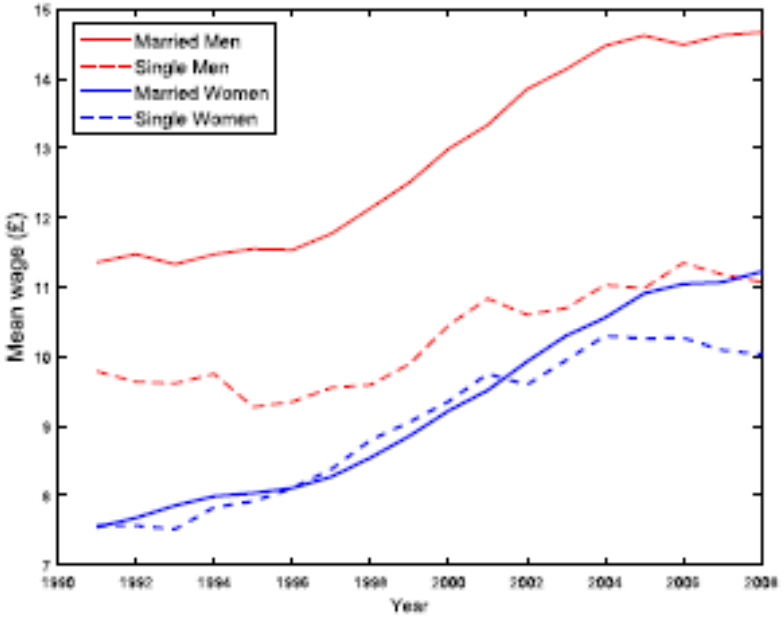


(a) Share with O-level or less

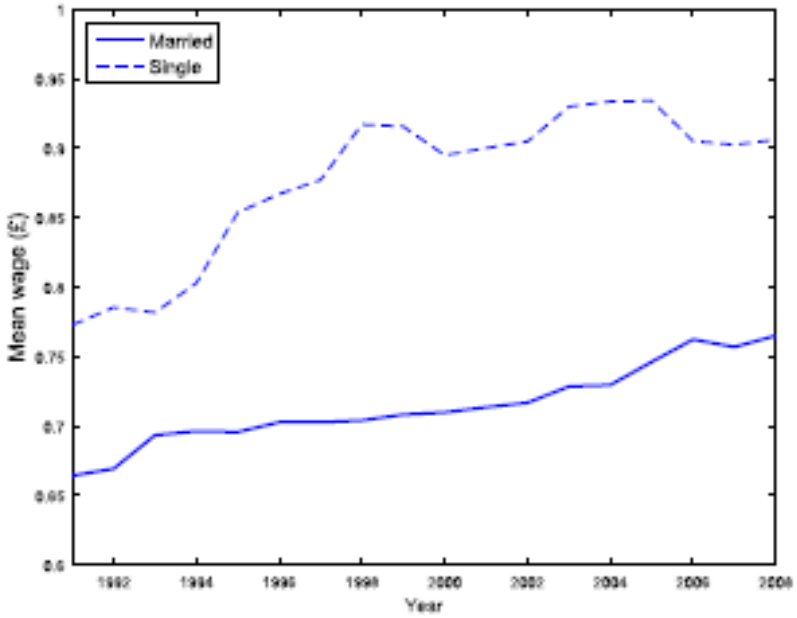


(b) Share of higher educated

Figure 2: Composition changes in education and wages, Cont'd

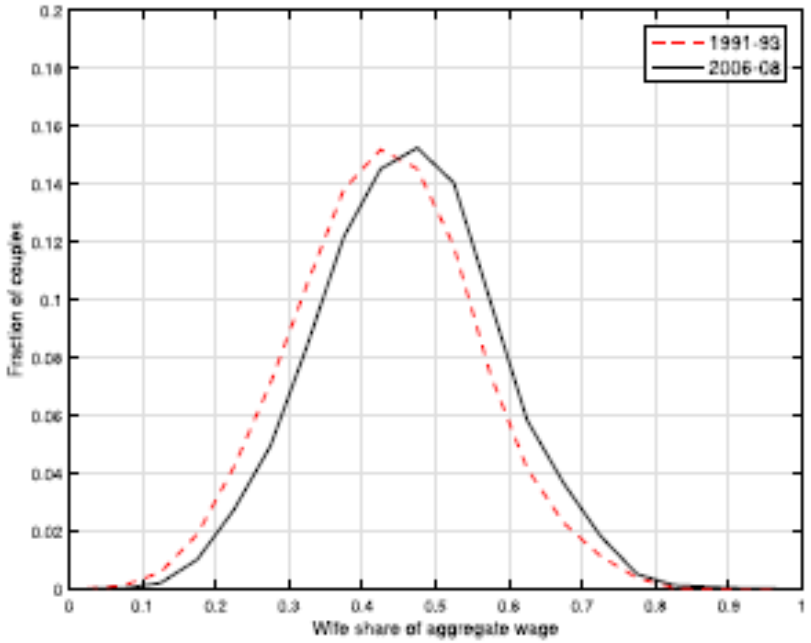


(c) Mean wages (£)

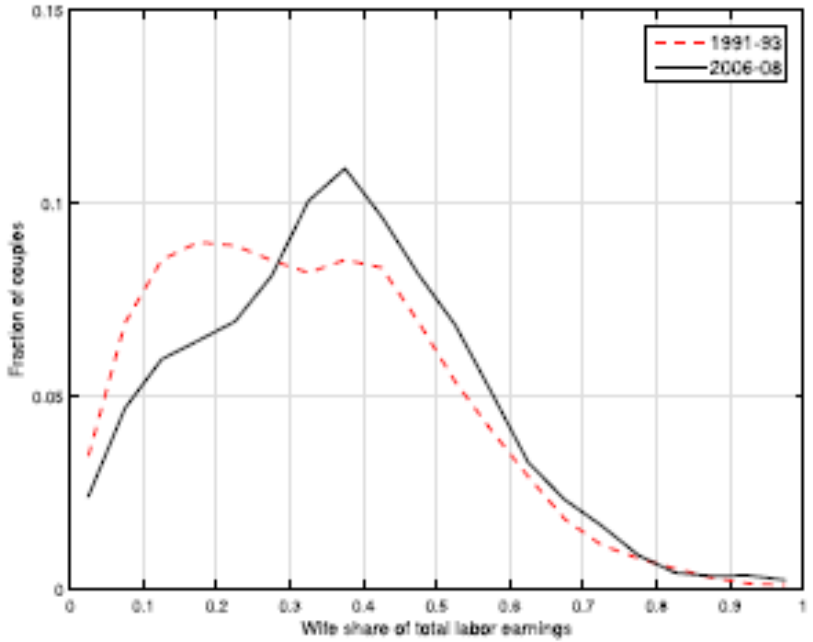


(d) Female/male wage ratio

Figure 3: Distribution density of wages and earnings ratios



(a) Wage ratio, $\frac{w_f}{w_f + w_m}$

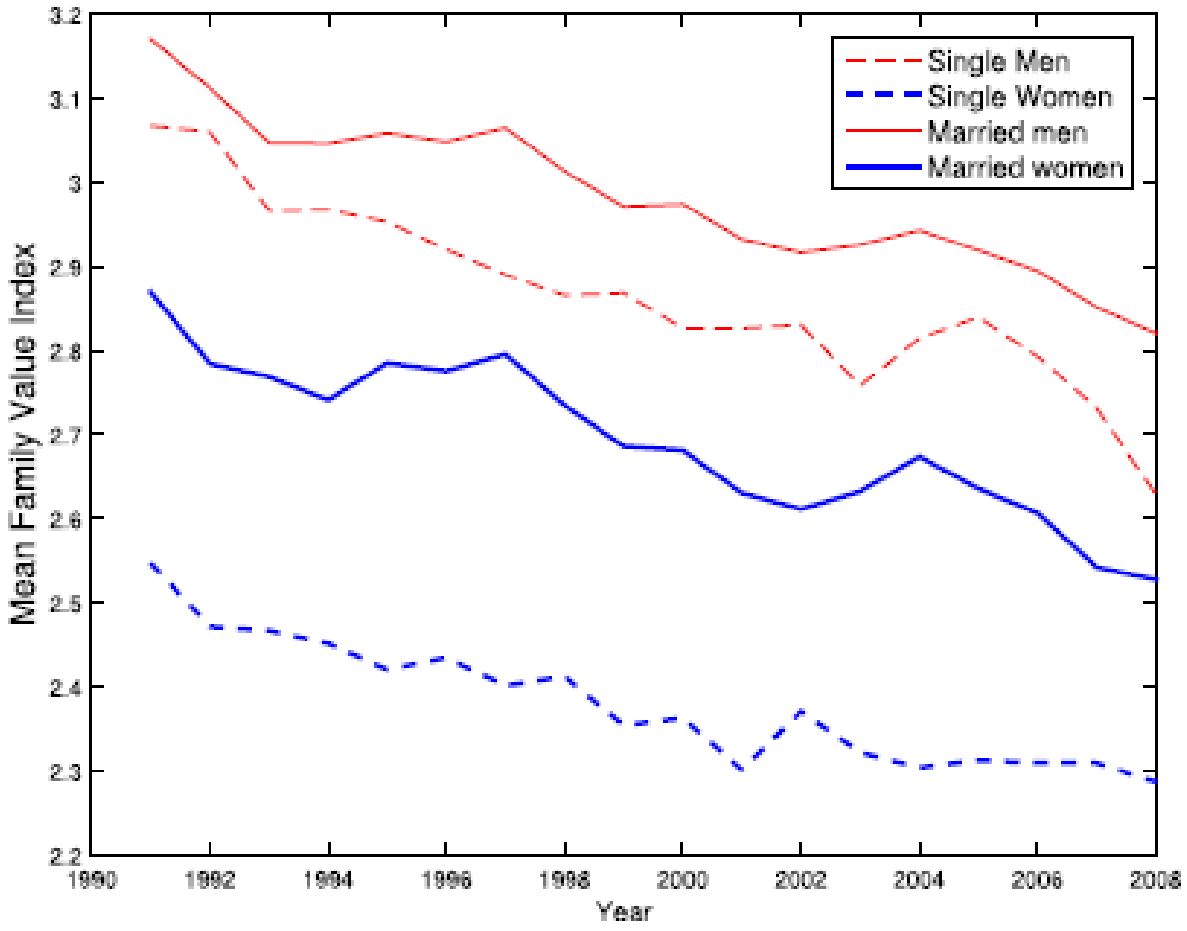


(b) Labor earnings ratio, $\frac{w_f h_f}{w_f h_f + w_m h_m}$

Table 1: Family Values Index

Question	Loading
Pre-school child suffers if mother works	−0.24
Family suffers if mother works full-time	−0.25
Woman and family happier if she works	0.16
Husband and wife should both contribute	0.14
Full-time job makes woman independent	0.12
Husband should earn, wife stay at home	−0.21
Children need father as much as mother	−0.05
Employers should help with childcare	0.12
Single parents are as good as couples	0.17
Adult children should care for parents	−0.07
Divorce better than unhappy marriage	0.12
Attendance at religious services	−0.07
Cohabiting is always wrong	−0.16

Table 1: Family Values Index, Cont'd



- One might worry that the responses to the BHPS questions could be just another way of measuring time uses.

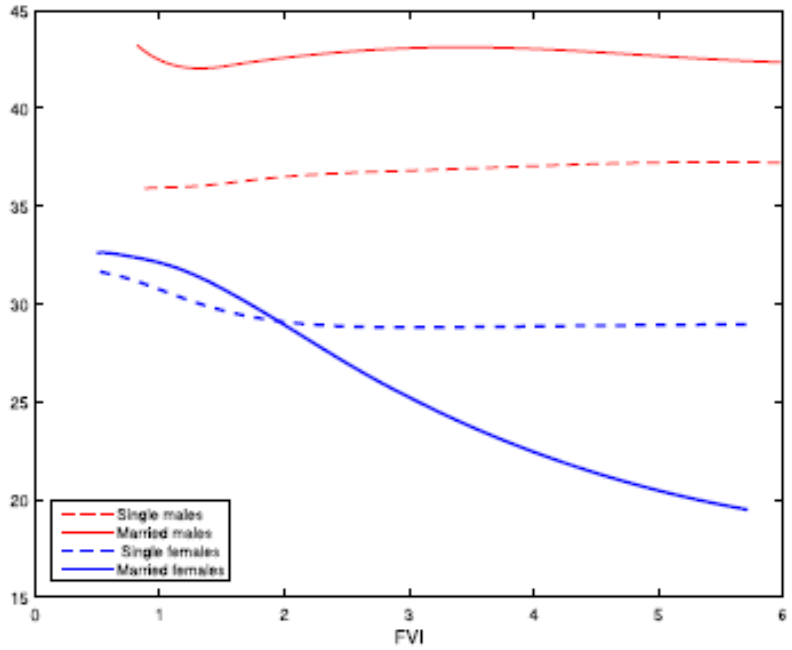
- However, it is likely that by the time men and women have reached the age of looking for a partner and of choosing an organization of the household, childhood and adolescence have imprinted representations in their minds that these simple survey questions allow us to measure.

- We want to know how people match on social attitudes, and how different attitudes associate with different time uses.

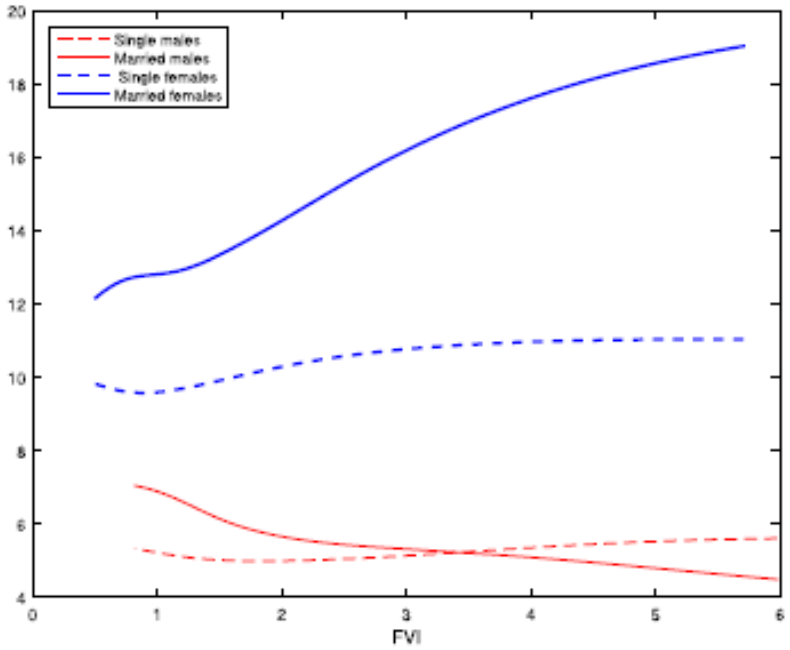
- Men are found to be more conservative than women, and couples are more conservative than singles (see the figure next to Table I).4 There is a common, steady negative trend, but it is not extremely pronounced (less than half a point in 18 years on a 1-to-5 scale).

- Figure 4 shows how family values determine the market and non-market hours of married men and women. The effect is stronger for married women's labor supply and for married men and women's work in household. For singles, there is no sizable effect.

Figure 4: Time Uses by Family Values



(a) Market hours by FVI

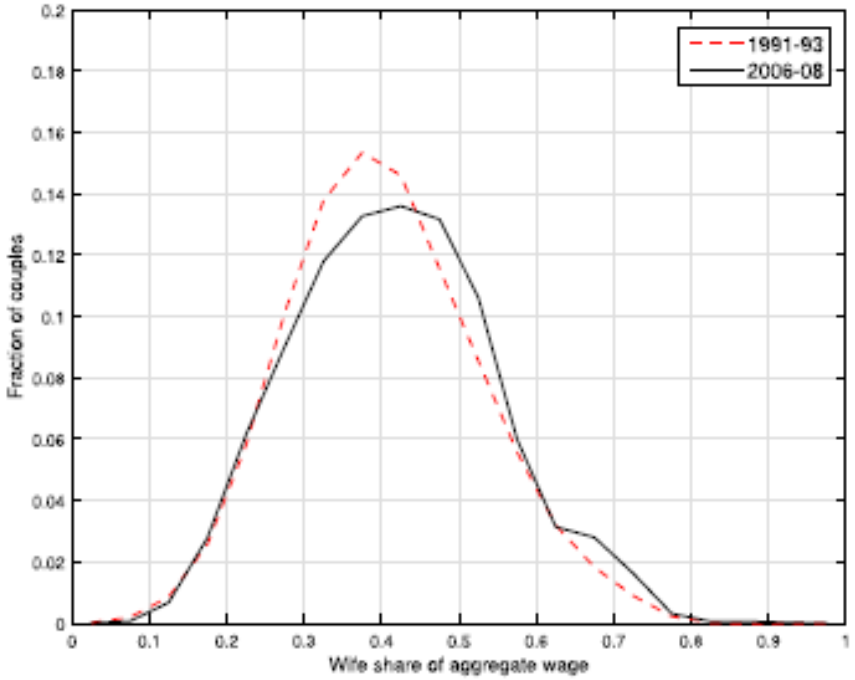


(b) Non-market hours by FVI

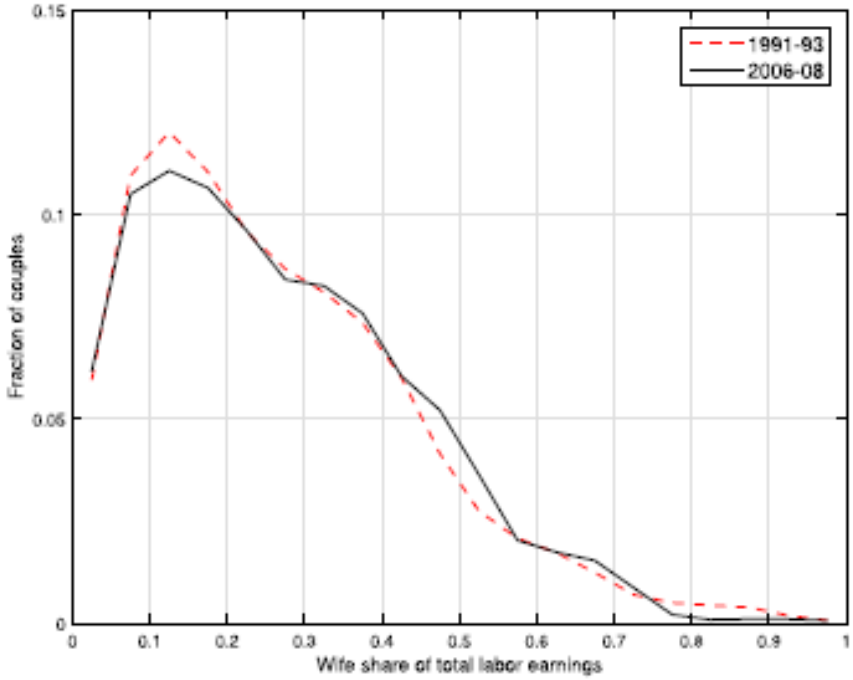
- The distributions of female wage and earnings ratios vary with family values.
- In Figure 5, we display the kernel densities of wage and earnings ratios conditional on male and female FVIs being above or below their respective medians.
- All wage ratios are symmetric, but couples with both spouses conservative have a lower and more dispersed wage ratios.
- Their distribution of earnings ratios is also much more concentrated to the left.
- At the other extreme, couples with both spouses liberal have a perfectly symmetric distribution of wage ratios, more concentrated around a mode that is closer to 0.5, and their distribution of earnings ratios is the most symmetric of all.

Figure 5: Distribution densities of wage and earnings ratios by family values

(1) Wage ratio, $\frac{w_f}{w_f+w_m}$

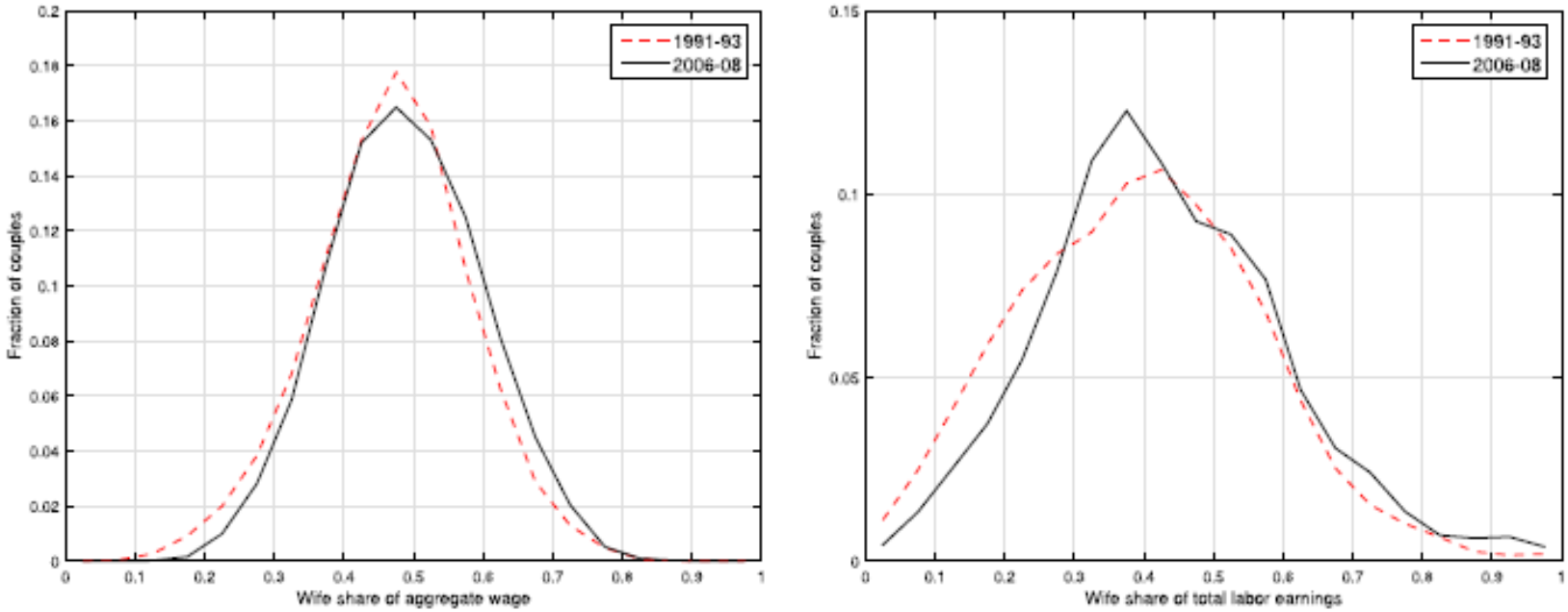


(2) Labor earnings ratio, $\frac{w_f h_f}{w_f h_f+w_m h_m}$



(a) Conservative wives and husbands

Figure 5: Distribution Densities of Wage and Earnings Ratios by Family Values, Cont'd



(b) Liberal wives and husbands

4. Model

4.1. The Marriage Market

4.2. Preferences and Home Production

- Individuals draw utility from private consumption c (the numeraire), private leisure e, and the public good q.

- Labor supply is $h = 1 - e - d$, normalizing to 1 the total amount of time available per week to any individual.

- Let R, R_m, R_f denote the budget expenditures allocated to private consumption and leisure by singles and married males and females.

- For a single of type i, whose wage is w_i, the budget constraint is

$$c + w_i e = w_i(1 - d) \equiv R. \tag{4.1}$$

- For a married couple of male-female type (i, j), we allow for intrahousehold transfers t_m, t_f, that can be positive or negative, such that

$$c_m + w_i e_m = w_i(1 - d_m) - t_m \equiv R_m, \qquad c_f + w_j e_f = w_j(1 - d_f) - t_f \equiv R_f. \tag{4.2}$$

4.3. Marriage Contracts

- The present values W_m and W_f of a marriage contract to the male and female spouses for any given choice of (u_m, u_f) follow the Bellman equation,

$$rW_m = u_m + \delta \int [\max\{V_i^0, V_m^1(z')\} - W_m] \, dG(z'), \tag{4.4}$$

where r is the time discount rate. The second term of the right-hand side is the option value of divorce after a shock to the match-specific component.

If a bliss shock z' accrues, then either the match continuation value $V_m^1(z')$ is greater than the value of singlehood V_i^0 and the match continues, or it is lower and there is a divorce.

- Marriage utilities u_m, u_f depend on controls d_m, d_f, t_m, t_f as

$$u_m = \psi_i[w_i(1 - d_m) - t_m, q, d_m], \qquad u_f = \psi_j[w_j(1 - d_f) - t_f, q, d_f], \tag{4.5}$$

for $q = zF_{ij}^1(d_m, d_f)$ and these controls are chosen so as to maximize the Nash bargaining criterion

$$[W_m - V_i^0]^\beta [W_f - V_j^0]^{1-\beta}, \tag{4.6}$$

- Last, the present value of singlehood satisfies the Bellman equation,

$$rV_i^0 = u_i^0 + \lambda \iint [V_m^1(i, j, z) - V_i^0] WtM(i, j, z) n_f(j)\, \mathrm{d}G(z)\, \mathrm{d}j, \qquad (4.8)$$

where $u_i^0 = \max_{d \le 1} \psi_1[w_i(1-d), F_i^0(d)]$ and $n_f(j)$ denotes singles' expectations about type distributions in the future.

4.4. Steady State

- Calculating the value of being single requires forecasting the chance of meeting a partner of any type in the future.
- Assuming that the economy is in a steady state easily solves the expectation formation problem.
- In steady state, flows in and out of the stocks of married couples of each type must exactly balance each other out.
- This means that, for all (i, j),

$$\delta(1 - \alpha_{ij})m(i, j) = \lambda n_m(i) n_f(j) \alpha_{ij}. \qquad (4.9)$$

- Now, making use of the accounting restrictions,

$$\ell_m(i) = n_m(i) + \int m(i, j)\, \mathrm{d}j, \qquad \ell_f(j) = n_f(j) + \int m(i, j)\, \mathrm{d}i, \tag{4.10}$$

and replacing $m(i, j)$ by its value from (4.9).

- The equilibrium measures of singles, $n_m(i), n_f(j)$, are solutions to the following fixed-point system:

$$n_m(i) = \frac{\ell_m(i)}{1 + \frac{\lambda}{\delta} \int n_f(j) \frac{\alpha(i, j)}{1 - \alpha(i, j)}\, \mathrm{d}j}, \qquad n_f(j) = \frac{\ell_f(j)}{1 + \frac{\lambda}{\delta} \int n_m(i) \frac{\alpha(i, j)}{1 - \alpha(i, j)}\, \mathrm{d}i}. \tag{4.11}$$

5. Equilibrium Solution with Transferable Utility

- In this section, we solve the equilibrium under a particular specification of preferences that allows to simplify the algebra and avoids complicated numerical solving.

- We assume that the indirect utility is of the form

$$\psi_i(R, q, d) = q\frac{R - A_i}{B_i}, \tag{5.1}$$

where $A_i \equiv A_i(w_i)$ and $B_i \equiv B_i(w_i)$ are individual-specific differentiable, increasing, and concave functions of the wage w_i.

- Demands then follow from the indirect utility function by application of Roy's identity:

$$e = -\frac{\partial\psi_i/\partial R}{\partial\psi_i/\partial w_i} = A_i' + \frac{B_i'}{B_i}(R - A_i), \qquad c = R - w_i e. \tag{5.2}$$

5.1. Recursivity

- The first-order conditions of the Nash bargaining problem with respect to domestic production are

$$\frac{1}{w_i}\frac{\partial \ln F_{ij}^1(d_m, d_f)}{\partial d_m} = \frac{1}{w_j}\frac{\partial \ln F_{ij}^1(d_m, d_f)}{\partial d_f} = \frac{1}{R_m - A_i + R_f - A_j},$$

where $R_m - A_i + R_f - A_j$ is *net total private expenditure*, that is, what is left of total family income $w_i + w_j$ to be spent on private consumption and leisure after spending $w_i d_m + w_j d_f + t_m + t_f$ on home production, above and beyond the minimal expenditure $A_i + A_j$.

5.2. Transferability

- In Appendix A, we show that the first-order conditions of the Nash bargaining problem with respect to transfers imply the following rent-sharing conditions:

$$B_i\left[V_m^1(z) - V_i^0\right] = \beta S_{ij}(z), \qquad B_j\left[V_f^1(z) - V_j^0\right] = (1-\beta) S_{ij}(z), \tag{5.3}$$

where the match surplus $S_{ij}(z)$ solves

$$(r+\delta) S_{ij}(z) = z F_{ij}^1 X_{ij} - B_i r V_i^0 - B_j r V_j^0 + \delta \int S_{ij}(z')^+ \, \mathrm{d}G(z'). \tag{5.4}$$

- By integrating equation (5.4), we obtain that $\bar{S}_{ij}$ solves

$$(r+\delta)\bar{S}_{ij} = F_{ij}^1 X_{ij} \mathcal{G}\left(\frac{B_i r V_i^0 + B_j r V_j^0 - \delta \bar{S}_{ij}}{F_{ij}^1 X_{ij}}\right). \tag{5.5}$$

- The matching probability becomes

$$\alpha_{ij} \equiv \Pr\left\{S_{ij}(z) > 0\right\} = 1 - G\left(\frac{B_i r V_i^0 + B_j r V_j^0 - \delta \bar{S}_{ij}}{F_{ij}^1 X_{ij}}\right) \tag{5.6}$$

$$= 1 - G\left[\mathcal{G}^{-1}\left(\frac{(r+\delta)\bar{S}_{ij}}{F_{ij}^1 X_{ij}}\right)\right]. \tag{5.7}$$

- The first equality results from equation (5.4) and the second one uses equation (5.5).

- Moreover, equation (4.8) for the value of singlehood becomes

$$B_i r V_i^0 = B_i u_i^0 + \lambda\beta \int \overline{S}_{ij} n_f(j)\,\mathrm{d}j, \qquad B_j r V_j^0 = B_j u_j^0 + \lambda(1-\beta) \int \overline{S}_{ij} n_m(i)\,\mathrm{d}i, \qquad (5.8)$$

respectively for single men and women.

5.3. Transfers

- The first equality results from equation (5.4) and the second one uses equation (5.5).

- Moreover, equation (4.8) for the value of singlehood becomes

$$B_i r V_i^0 = B_i u_i^0 + \lambda\beta \int \overline{S}_{ij} n_f(j)\,\mathrm{d}j, \qquad B_j r V_j^0 = B_j u_j^0 + \lambda(1-\beta) \int \overline{S}_{ij} n_m(i)\,\mathrm{d}i, \qquad (5.8)$$

respectively for single men and women.

6. Specification, Identification, and Estimation

6.1. Parametric Specification

Meeting Rates

- The meeting function is Cobb–Douglas: $\lambda(N_m, N_f) = \xi(N_m N_f)^{-1/2}$

Preferences

- Males' indirect utility for consumption and leisure is such that

$$A_i = a_{0i} + a_{1i} w_i + \frac{1}{2} a_{2i} w_i^2, \qquad \ln B_i = b_i \ln w_i. \tag{6.1}$$

- Leisure expenditure follows from equation (5.2) as

$$w_i e_m = a_{1i} w_i + a_{2m} w_i^2 + b_i (R_m - A_i), \qquad R_m = w_i (1 - d_m) - t_m, \tag{6.2}$$

- Consumption is then

$$c_m = R_m - w_i e_m = a_{0i} - \frac{1}{2} a_{2m} w_i^2 + (1 - b_i)(R_m - A_i). \qquad (6.3)$$

6.2. Identification

- The details of the identification proof are relegated to Appendix B.
- We assume that we observe the time uses, marital status, and characteristics of the whole population of men and women over a fixed period of time in which the economy is in a steady state (i.e., the distributions remain fixed over time because divorces offset new marriages).
- Although identification may hold under far less restrictive assumptions, we only discuss identification under the preceding parametric restrictions.

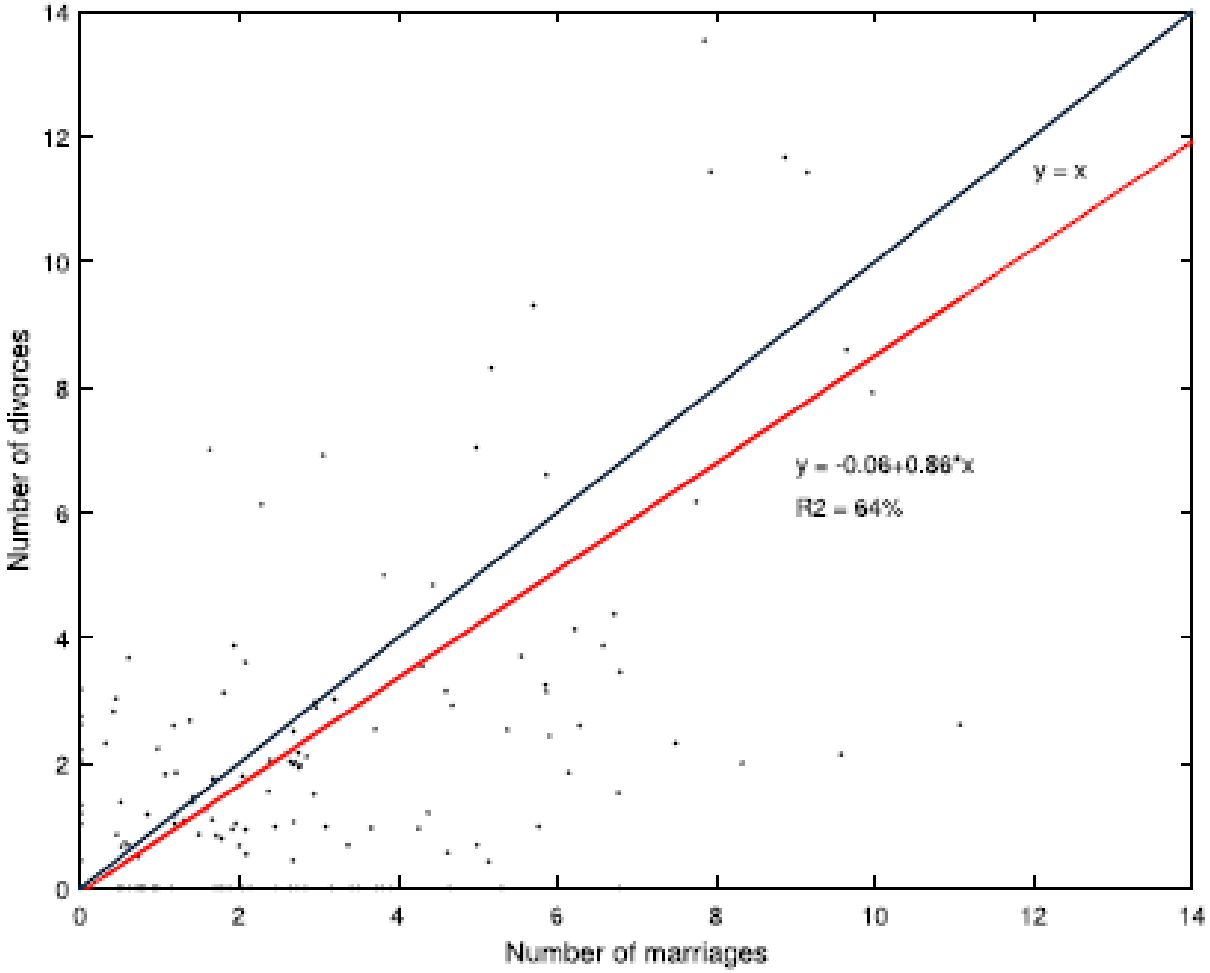
6.3. Estimation Strategy

- We use household data on time uses, gender, wages, family values, and education covering the period 1991–2008.
- We drop all individual observations corresponding to young individuals aged less than 22 and older individuals aged more than 50.
- We split the whole sample into six 3-year periods: 91–93, 94–96, 97–99, 00–02, 03–05, 06–08.
- We assume that each sub-sample is a draw from a steady-state economy characterized by different distributions of male and female types.
- By contrast, structural parameters are assumed to remain the same throughout the entire observation period.
- That is, we expect the model to fit the data both in cross-sections and across time.

- The number of new marriages (or cohabitations) of type (i, j) per unit of time is linked to λ and a_{ij} by the relation

$$MF(i, j) = \lambda n_m(i) n_f(j) \alpha_{ij}. \qquad (6.11)$$

Figure 6: Link between new marriages and divorces by periods and match types



7. Empirical Results

Table 2: Sorting By Education And Wages

		Female								
		1991–1993			2000–2002			2006–2008		
		<HS	HS	>HS	<HS	HS	>HS	<HS	HS	>HS
Male	<HS	0.49	0.31	0.21	0.49	0.42	0.23	0.47	0.46	0.26
	HS	0.34	0.35	0.23	0.41	0.42	0.26	0.44	0.47	0.32
	>HS	0.21	0.17	0.39	0.24	0.32	0.42	0.18	0.33	0.43

(a) By education

Table 2: Sorting By Education And Wages, Cont'd

		Female											
		1991–1993				2000–2002				2006–2008			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Male	Q4	0.51	0.49	0.41	0.30	0.59	0.47	0.42	0.31	0.58	0.49	0.46	0.36
	Q3	0.50	0.48	0.42	0.32	0.49	0.44	0.41	0.34	0.49	0.46	0.44	0.36
	Q2	0.45	0.44	0.41	0.35	0.45	0.42	0.40	0.35	0.45	0.44	0.43	0.36
	Q1	0.37	0.37	0.38	0.37	0.38	0.38	0.38	0.36	0.39	0.39	0.39	0.35

(b) By *FVI*

Table 2: Sorting By Education And Wages, Cont'd

		Female											
		1991–1993				2000–2002				2006–2008			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Male	Q4	0.50	0.49	0.48	0.42	0.52	0.50	0.48	0.44	0.59	0.55	0.52	0.44
	Q3	0.43	0.44	0.43	0.39	0.50	0.49	0.48	0.45	0.51	0.49	0.47	0.40
	Q2	0.41	0.42	0.41	0.37	0.40	0.42	0.42	0.41	0.41	0.42	0.41	0.35
	Q1	0.29	0.31	0.31	0.30	0.25	0.28	0.30	0.31	0.27	0.30	0.30	0.27

(c) By wage quartile

Figure 7: Matching probability by female wage ratio (1991–2008 mean)

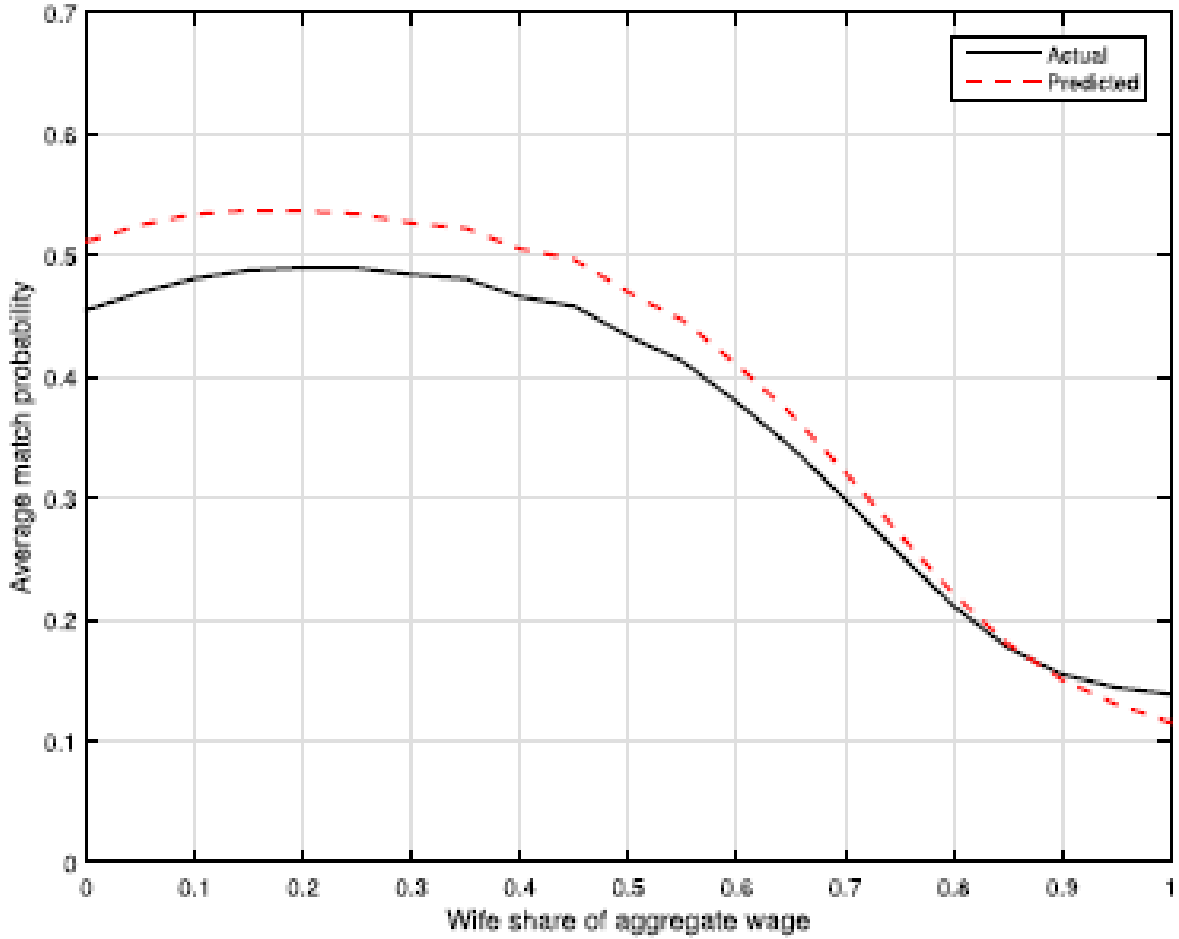


Table 3: Estimated Preference and Home Production Parameters

Preferences		
$a_{0f}[Ed=L]$	−21.46	*(7.80)*
$a_{0m}[Ed=L]$	−26.63	*(8.09)*
$a_{0f}[Ed=H]$	−12.74	*(5.01)*
$a_{0m}[Ed=H]$	−13.58	*(5.50)*
$a_{0f}[FVI]$	0.7455	*(0.7355)*
$a_{0m}[FVI]$	0.6168	*(0.6101)*
$a_{1f}[Ed=L]$	0.4403	*(0.0175)*
$a_{1m}[Ed=L]$	0.3939	*(0.0197)*
$a_{1f}[Ed=H]$	0.4350	*(0.0215)*
$a_{1m}[Ed=H]$	0.3812	*(0.0258)*
$a_{1f}[FVI]$	0.0184	*(0.0046)*
$a_{1m}[FVI]$	−0.0001	*(0.0050)*
a_{2f}	−0.0031	*(0.0007)*
a_{2m}	−0.0008	*(0.0005)*
$b_f[Ed=L]$	0.0303	*(0.0119)*
$b_m[Ed=L]$	0.0345	*(0.0122)*
$b_f[Ed=H]$	0.0721	*(0.0248)*
$b_m[Ed=H]$	0.0940	*(0.0340)*
$b_f[FVI]$	−0.0023	*(0.0020)*
$b_m[FVI]$	−0.0000	*(0.0021)*

Home production, singles		
$D_f^0[Ed=L]$	0.0524	*(0.0177)*
$D_m^0[Ed=L]$	0.0467	*(0.0188)*
$D_m^0[Ed=H]$	0.0481	*(0.0142)*
$D_f^0[Ed=H]$	0.0363	*(0.0142)*
$D_f^0[FVI]$	0.0096	*(0.0041)*
$D_m^0[FVI]$	0.0031	*(0.0039)*
K_f^0	0.0177	*(0.0070)*
K_m^0	0.0002	*(0.0034)*
Home production, couples		
$D_f^1[Ed=L]$	0.0701	*(0.0105)*
$D_m^1[Ed=L]$	0.0660	*(0.0095)*
$D_f^1[Ed=H]$	0.0564	*(0.0094)*
$D_m^1[Ed=H]$	0.0708	*(0.0085)*
$D_f^1[FVI]$	0.0159	*(0.0029)*
$D_m^1[FVI]$	−0.0073	*(0.0025)*
$C[constant]$	37.14	*(10.05)*
$C[FVI_f]$	−1.251	*(0.787)*
$C[FVI_m]$	−3.896	*(1.180)*
$C[Ed_f=L]$	−4.023	*(2.328)*
$C[Ed_m=L]$	−9.105	*(3.742)*
K_f^1	0.0183	*(0.0038)*
K_m^1	0.0056	*(0.0026)*

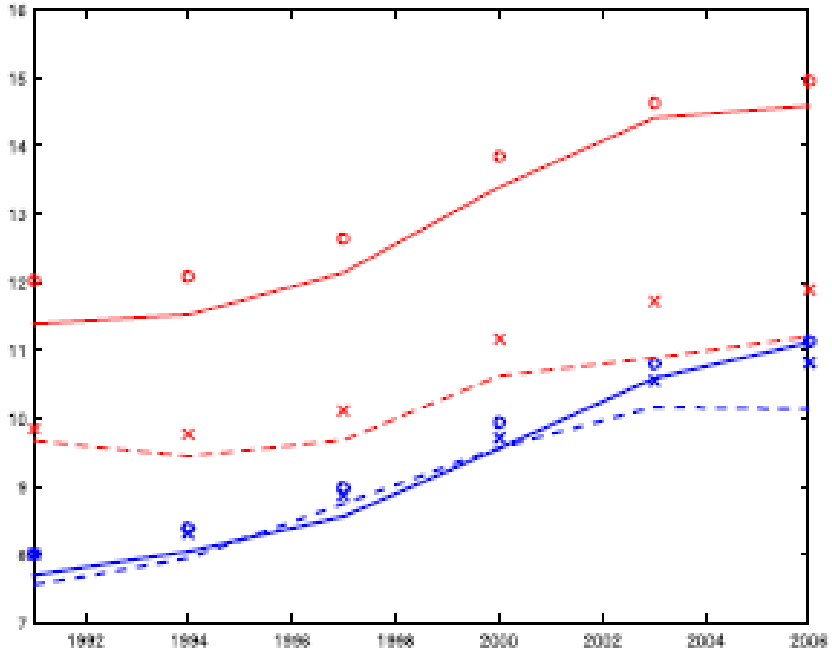
Table 4: Fit of Matching Probabilities (r_2 of Regression of Unconstrained on Predicted a_{ij})

	1991	1994	1997	2000	2003	2006	Mean
Nonparametric estimation of Z_{ij}	0.72	0.83	0.86	0.87	0.82	0.78	0.81
Quadratic projection of ln Z_{ij}	0.68	0.77	0.80	0.80	0.75	0.72	0.75
Quadratic projection of ln Z_{ij} without interactions	0.38	0.51	0.60	0.62	0.57	0.53	0.54
Quadratic projection of ln Z_{ij} with no interactions but...							
$w_m * w_f$	0.43	0.54	0.63	0.65	0.59	0.56	0.57
$FVI_m * FVI_f$	0.37	0.51	0.61	0.63	0.57	0.54	0.54
$Ed_m * Ed_f$	0.66	0.72	0.76	0.75	0.69	0.67	0.71
$w_m * Ed_f$	0.43	0.55	0.64	0.66	0.61	0.57	0.58
$w_f * Ed_m$	0.53	0.61	0.68	0.67	0.63	0.58	0.62
$w_m * FVI_f$	0.38	0.51	0.60	0.62	0.57	0.54	0.54
$w_f * FVI_m$	0.38	0.51	0.60	0.62	0.57	0.54	0.54
$FVI_f * Ed_m$	0.38	0.51	0.60	0.62	0.57	0.54	0.54
$FVI_m * Ed_f$	0.37	0.52	0.60	0.63	0.59	0.55	0.54

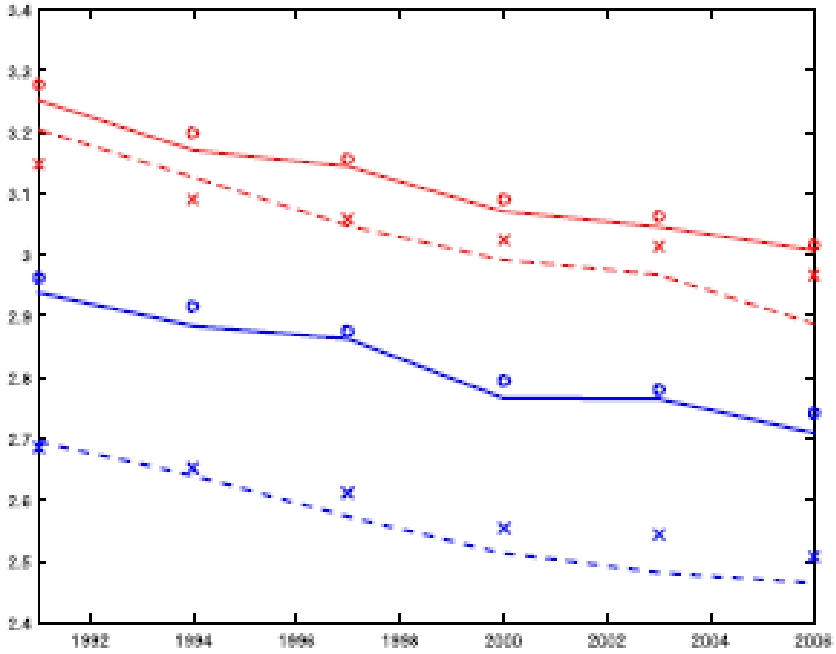
7.2. The Sharing Rule

- In Figure 10, we show the evolution of the sharing rule over the period, separately for various household types.
- There is evidence of compensating differentials in education.
- The husband gets a bigger share of the rent if he is less educated and if the wife is more educated.
- Note, however, that educated females always get less than the fair share.
- The only case where the wife gets more than the husband is for uneducated females married to educated males.
- Family values have little effect on income sharing. They affect work in household but not private income sharing.
- There are no compensating differentials in wages.

Figure 8: Fit of hours and selection

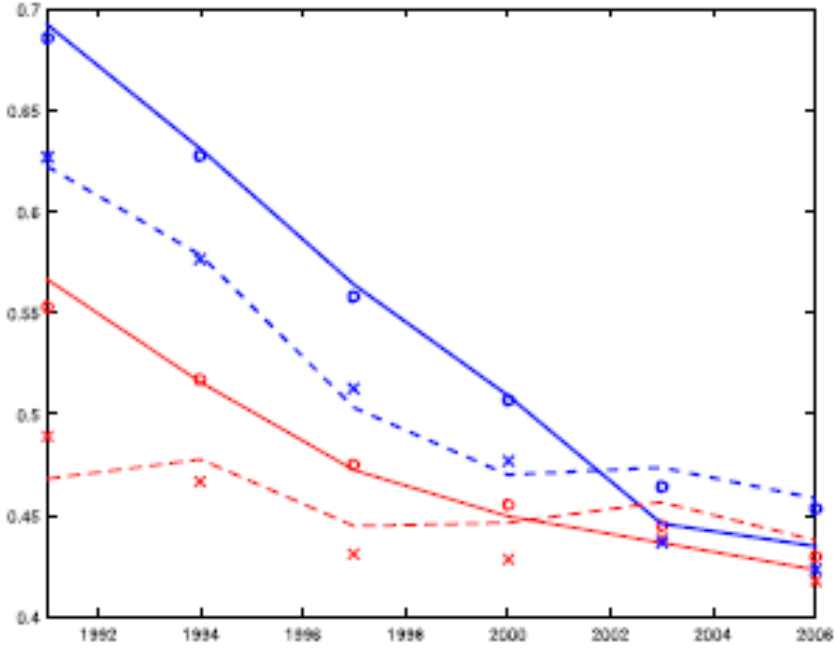


(a) Mean wage

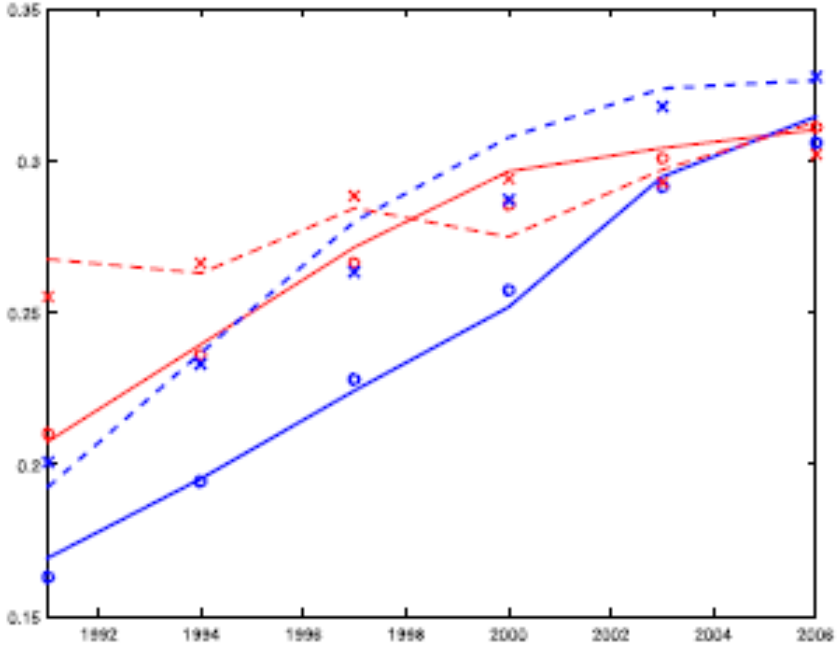


(b) Mean family values index

Figure 8: Fit of hours and selection, Cont'd

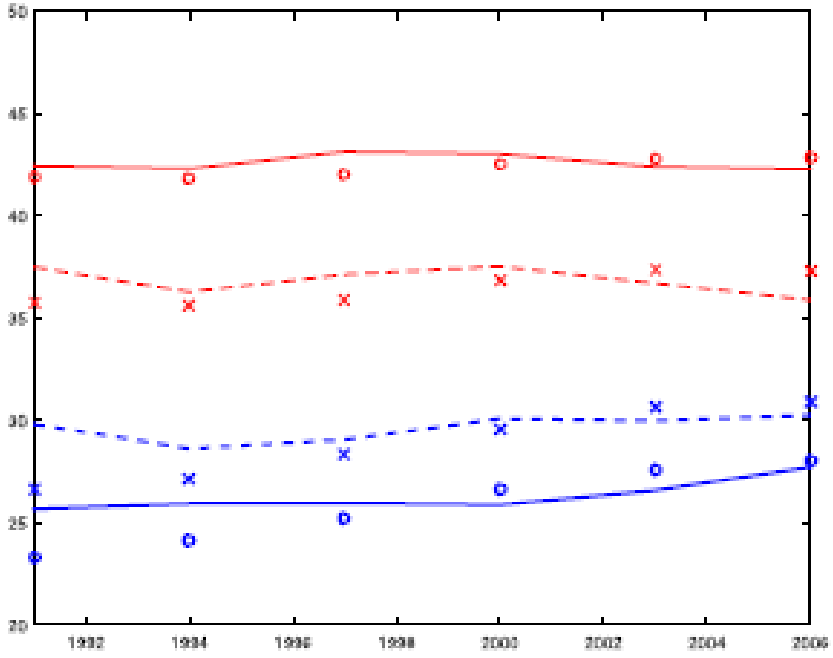


(c) Share of high school dropouts

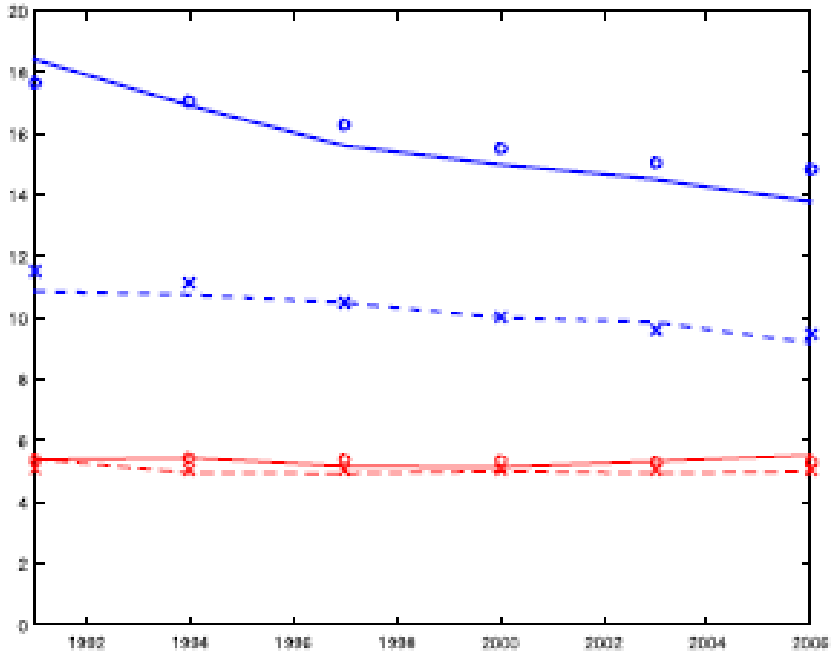


(d) Share of college educated

Figure 8: Fit of hours and selection, Cont'd



(e) Mean market hours



(f) Mean non-market hours

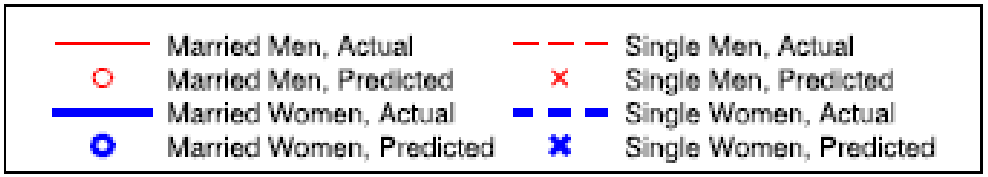
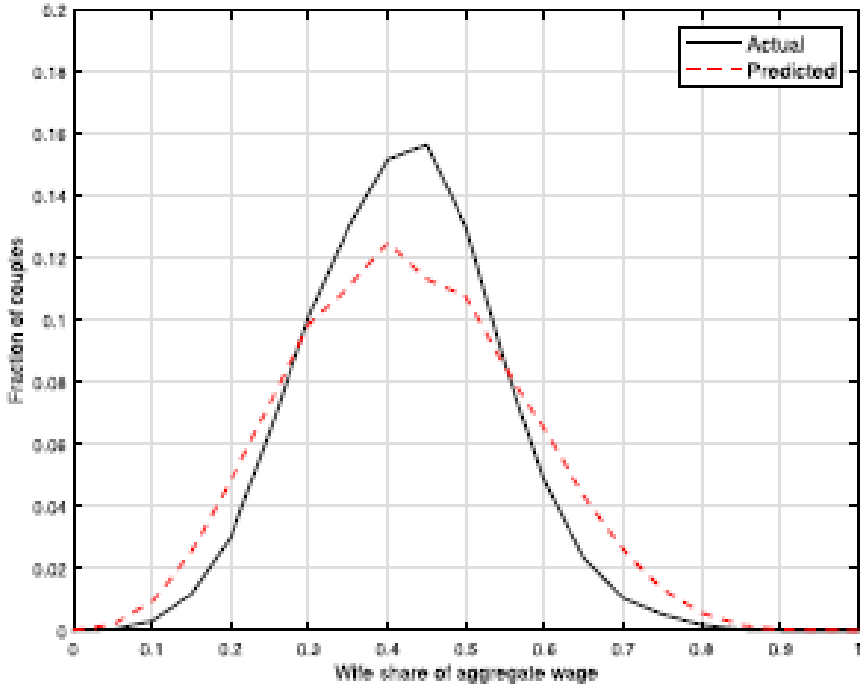
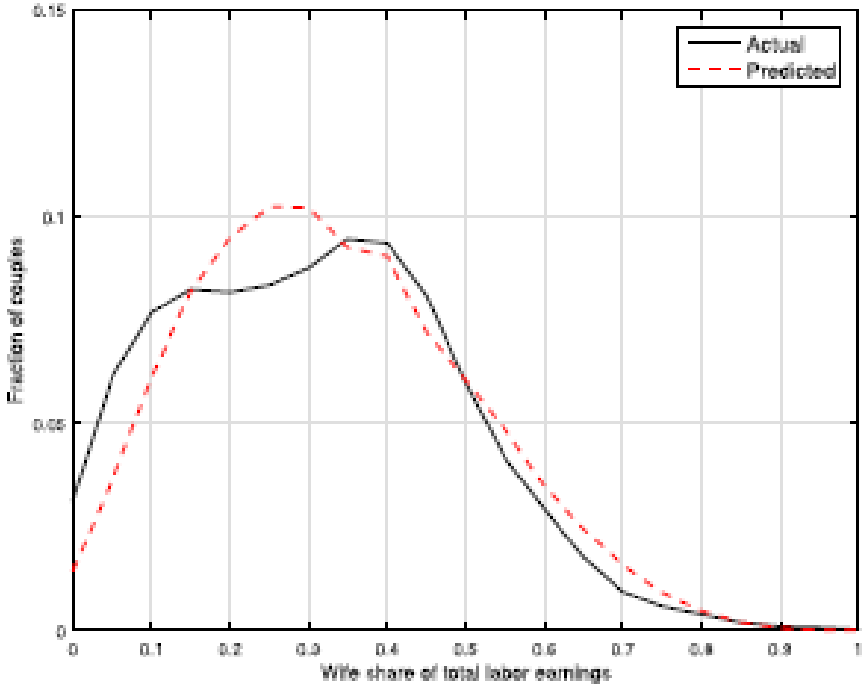


Figure 9: Fit of the distributions of wages and earnings ratios, 2000–2002

(1) Wage ratio, $\frac{w_f}{w_f+w_m}$

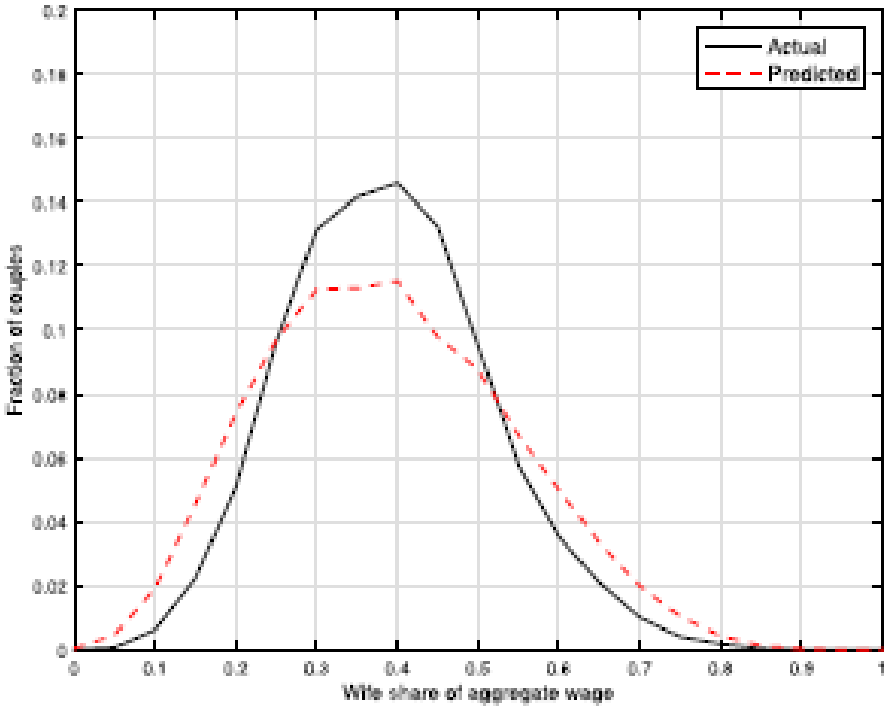


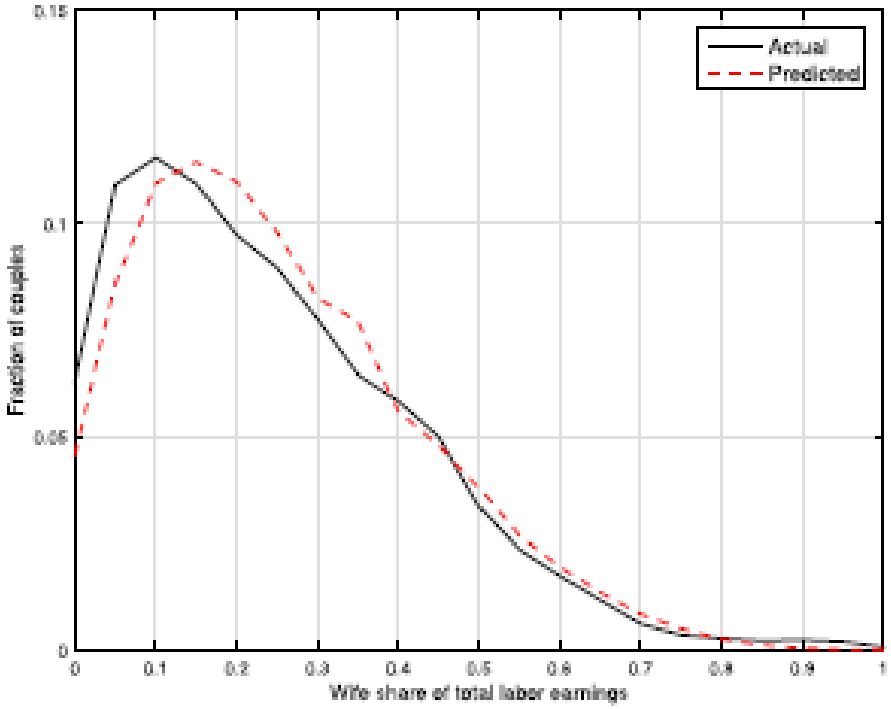
(2) Labor earnings ratio, $\frac{w_f h_f}{w_f h_f+w_m h_m}$



(a) All couples

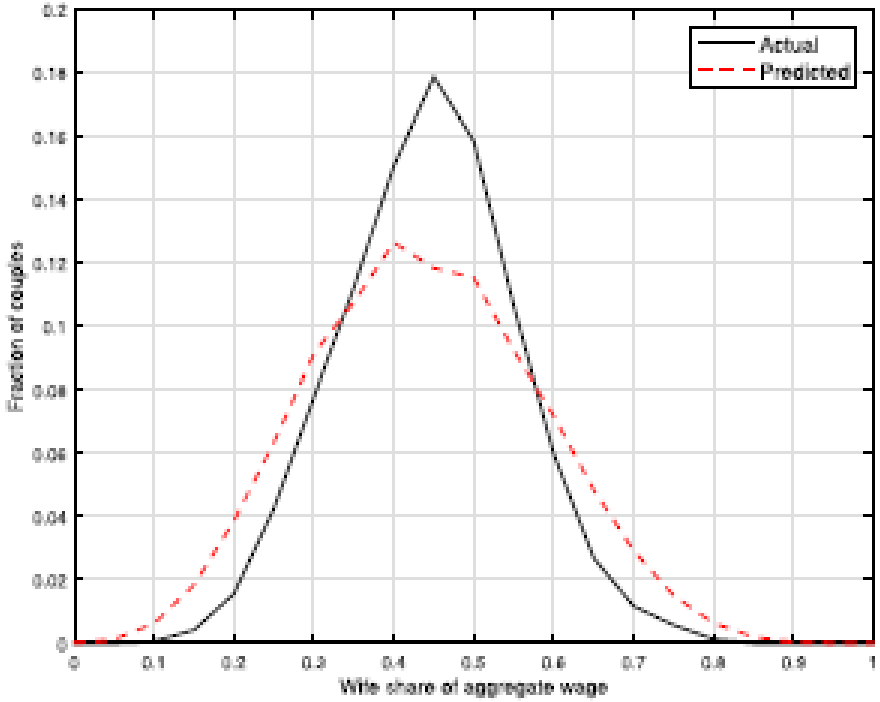
Figure 9: Fit of the distributions of wages and earnings ratios, 2000–2002, Cont'd

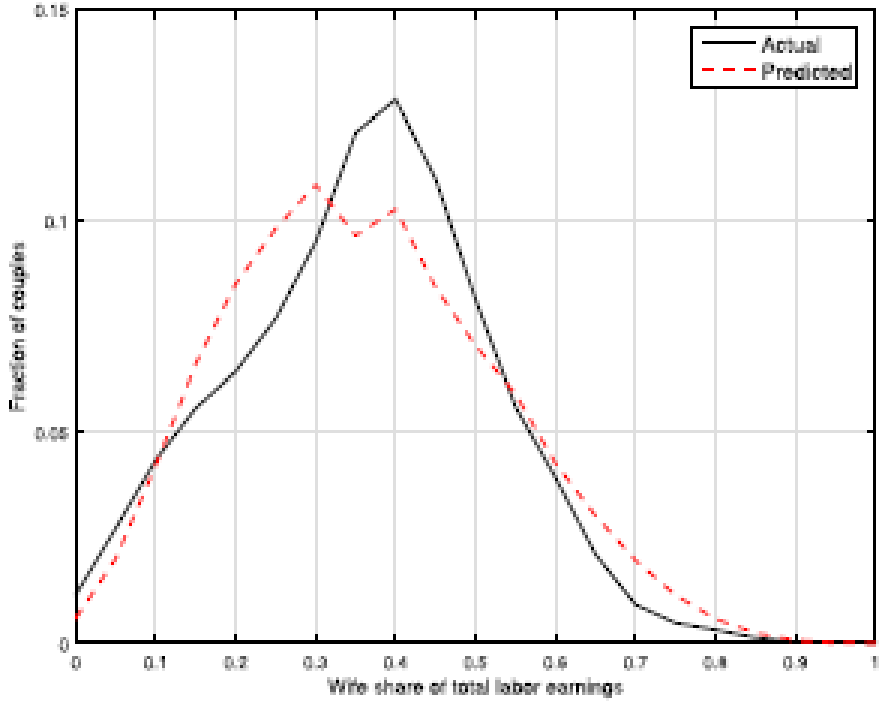




(b) Conservative wives and husbands

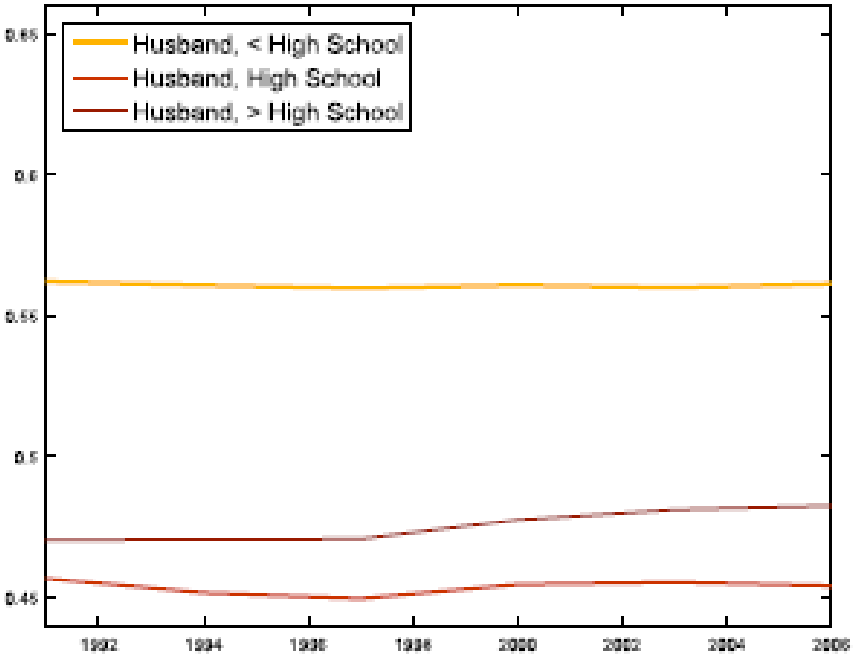
Figure 9: Fit of the distributions of wages and earnings ratios, 2000–2002, Cont'd



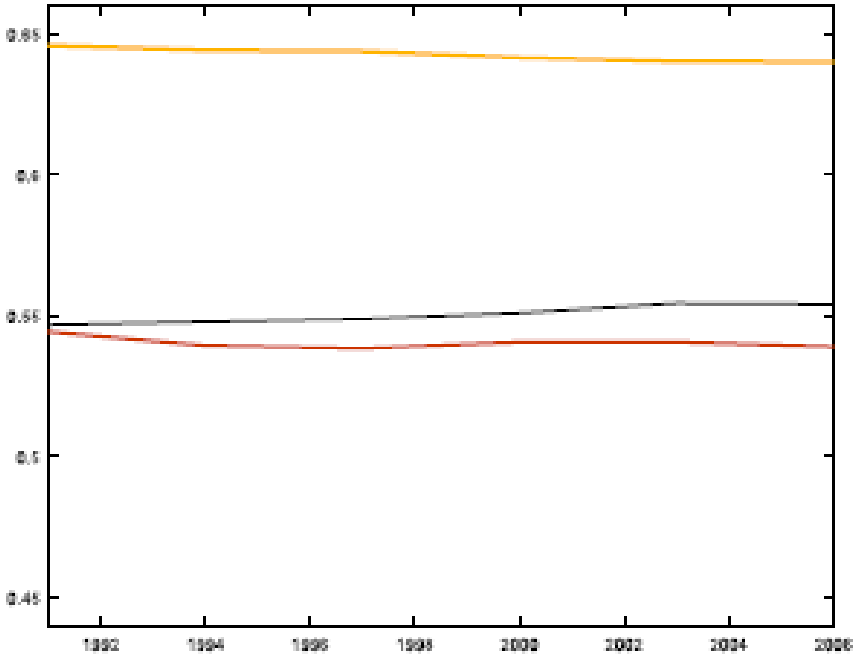


(c) Liberal wives and husbands

Figure 10: Mean sharing rule by type

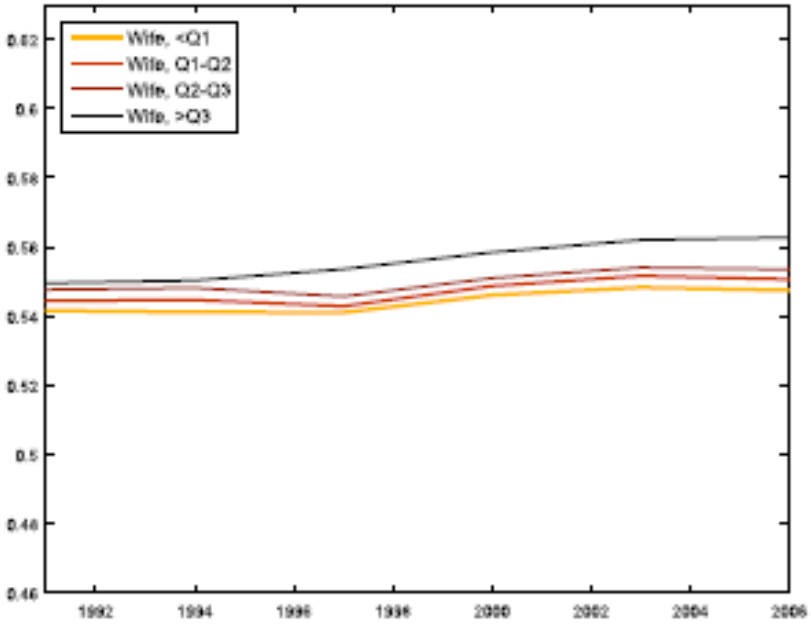


(a) Wife, high school dropout

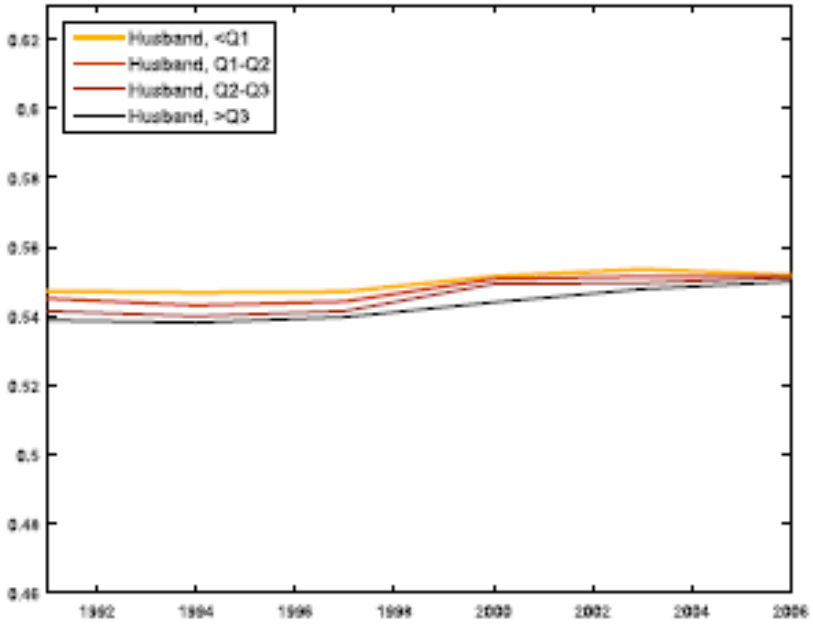


(b) Wife, high school or higher

Figure 10: Mean sharing rule by type, Cont'd

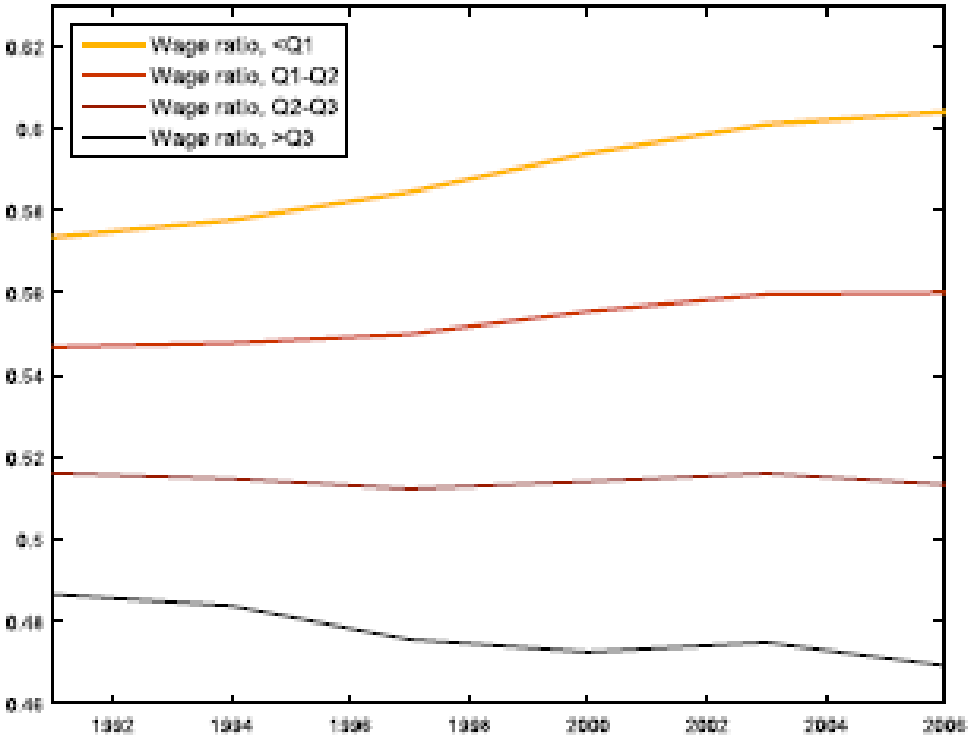


(c) By female spouse's FVI



(d) By male spouse's FVI

Figure 10: Mean sharing rule by type, Cont'd



(e) By female wage ratio

Table 5: Wage Elasticities

	Actual 2000-02	Baseline sim.	Equilibrium distributions				Fixed distributions			
			$\frac{\Delta w_m}{w_m} = 10\%$		$\frac{\Delta w_f}{w_f} = 10\%$		$\frac{\Delta w_m}{w_m} = 10\%$		$\frac{\Delta w_f}{w_f} = 10\%$	
Labor supply										
Married Men	42.99	42.49	43.02	1.3%	42.44	−0.1%	43.03	1.3%	42.39	−0.2%
Single Men	37.48	36.83	37.78	2.6%	36.78	−0.1%	37.70	2.4%	36.78	−0.1%
Married Women	25.86	26.63	26.46	−0.7%	27.64	3.8%	26.32	−1.2%	27.58	3.5%
Single Women	30.07	29.56	29.48	−0.3%	30.68	3.8%	29.89	1.1%	30.96	4.7%
Home production time										
Married Men	5.13	5.33	5.25	−1.5%	5.34	0.3%	5.24	−1.6%	5.35	0.4%
Single Men	5.00	5.04	5.04	−0.1%	5.04	0.0%	5.03	−0.2%	5.03	−0.1%
Married Women	14.99	15.52	15.64	0.8%	15.08	−2.9%	15.72	1.3%	15.11	−2.7%
Single Women	10.00	10.01	10.04	0.3%	9.73	−2.8%	9.88	−1.3%	9.61	−4.0%
Population										
# single men	1416	1468	1384	−5.7%	1466	−0.1%				
# single women	1452	1509	1458	−3.4%	1495	−0.9%				
# couples	3802	3745	3814	1.8%	3753	0.2%				

Table 5: Counterfactual Simulations

	Actual 2000-02	Baseline sim.	(1) No wage gap		(2) Same preferences		(3) Same domestic production		(4) $FVI = 1$ for all	
Labor supply										
Married Men	42.99	42.49	42.37	−0.3%	41.77	−1.7%	42.55	0.2%	43.24	1.8%
Single Men	37.48	36.83	36.71	−0.3%	36.87	0.1%	36.78	−0.1%	36.49	−0.9%
Married Women	25.86	26.63	29.27	9.9%	28.66	7.6%	35.77	34.3%	34.53	29.6%
Single Women	30.07	29.56	32.29	9.3%	30.00	1.5%	34.46	16.6%	30.64	3.7%
Home production time										
Married Men	5.13	5.33	5.37	0.8%	5.56	4.3%	5.35	0.5%	6.26	17.5%
Single Men	5.00	5.04	5.04	−0.1%	5.06	0.3%	5.04	0.1%	4.54	−9.8%
Married Women	14.99	15.52	14.35	−7.5%	16.45	6.0%	6.10	−60.7%	11.45	−26.2%
Single Women	10.00	10.01	9.30	−7.1%	10.63	6.2%	4.90	−51.0%	9.23	−7.8%
Population										
# single men	1416	1468	1475	0.5%	1258	−14.3%	1418	−3.4%	1586	8.0%
# single women	1452	1509	1498	−0.7%	1305	−13.5%	1457	−3.4%	1633	8.2%
# couples	3802	3745	3747	0.1%	3943	5.3%	3786	1.1%	3627	−3.2%

Figure 11: Counterfactual distributions of wages and earnings ratios, 2000–2002—No female home production advantage

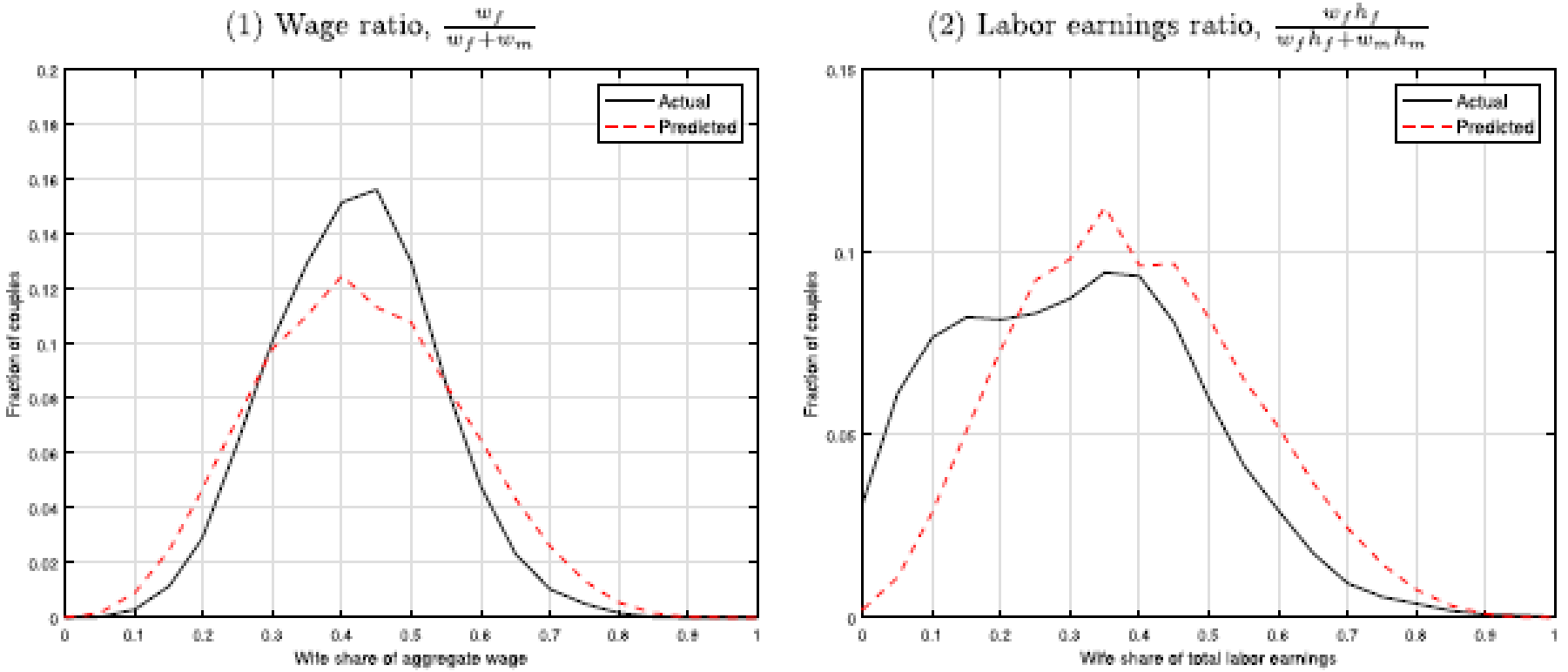
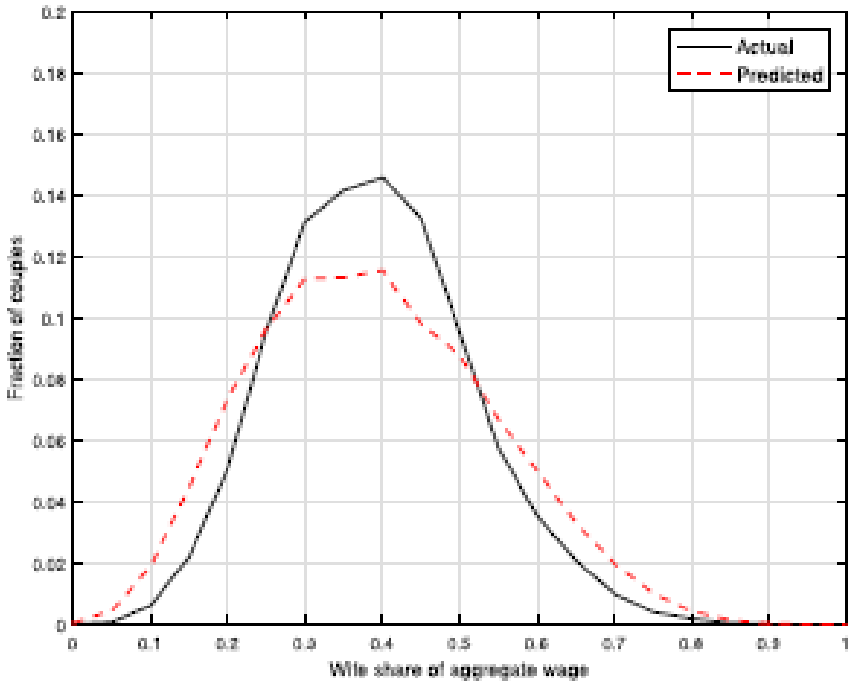
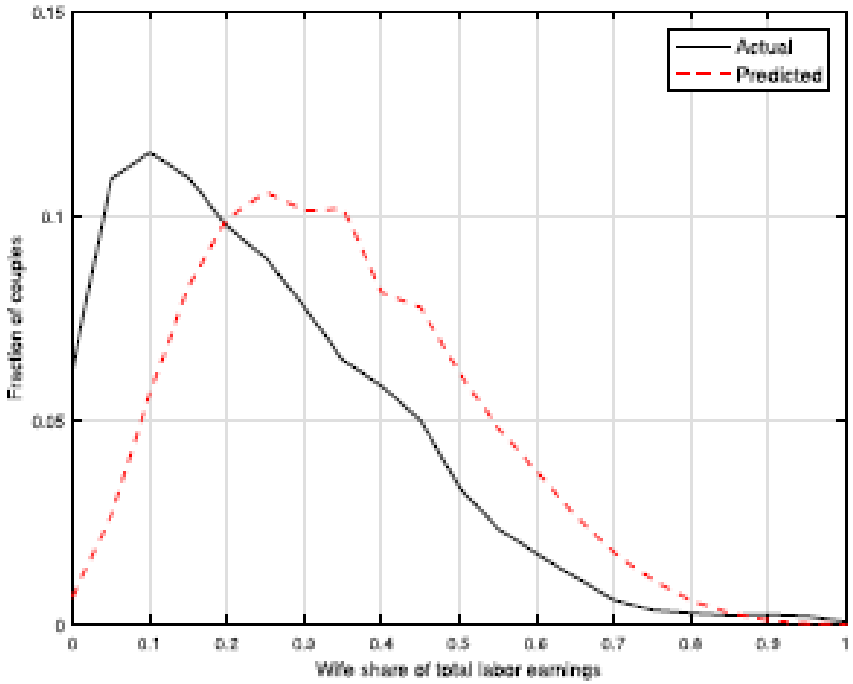


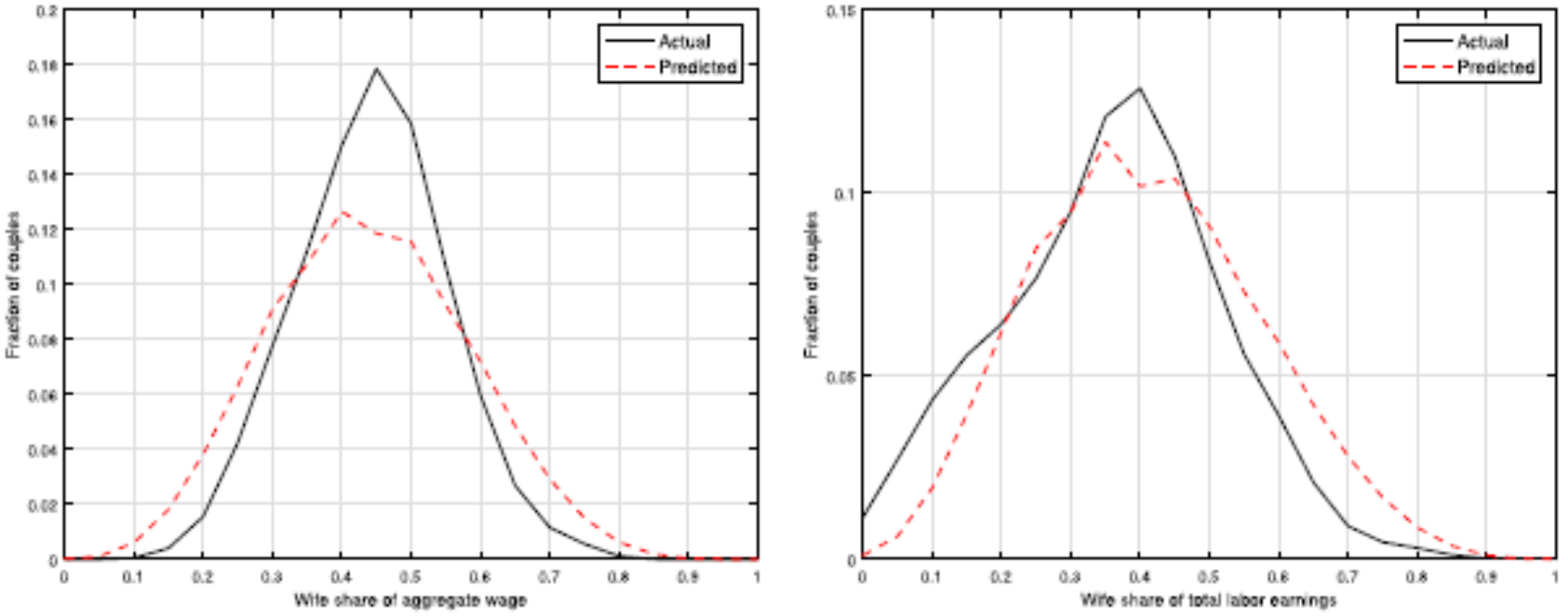
Figure 11: Counterfactual distributions of wages and earnings ratios, 2000–2002—No female home production advantage, Cont'd





(b) Conservative wives and husbands

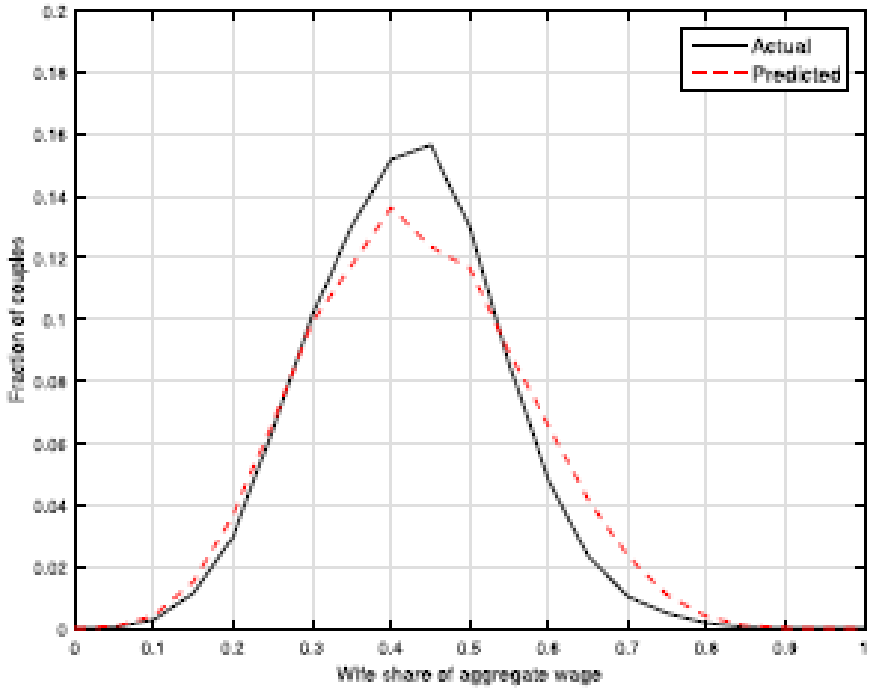
Figure 11: Counterfactual distributions of wages and earnings ratios, 2000–2002—No female home production advantage, Cont'd



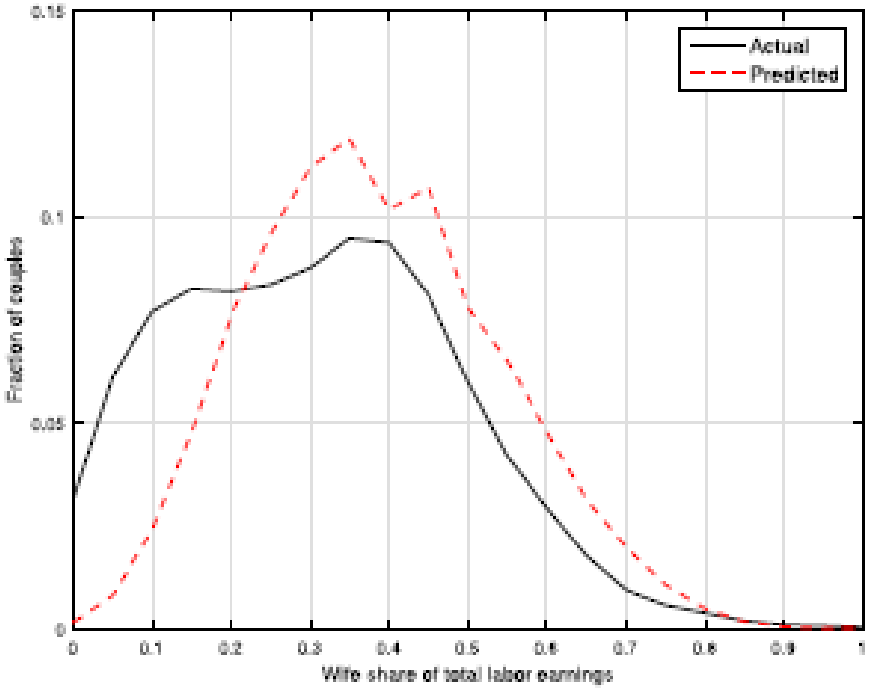
(c) Liberal wives and husbands

Figure 12: Counterfactual distributions of wages and earnings ratios, 2000–2002—All liberal

(1) Wage ratio, $\frac{w_f}{w_f+w_m}$



(2) Labor earnings ratio, $\frac{w_f h_f}{w_f h_f+w_m h_m}$



All couples