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Why Are Married Women Working So Much?*

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ABSTRACT

We study the large observed changes in labor supply by married women in the United States over 1950–1990, a period when labor supply by single women has hardly changed at all. We investigate the effects of changes in the gender wage gap, technological improvements in the production of nonmarket goods and potential inferiority of these goods on understanding this change. We find that small decreases in the gender wage gap can explain simultaneously the significant increases in the average hours worked by married women and the relative constancy in the hours worked by single women, and single and married men. We also find that technological improvements in the household have—for realistic values—too small an impact on married female hours and the relative wage of females to males. Some specifications of the inferiority of home goods match the hours patterns, but have counterfactual predictions for wages and expenditure patterns.

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1. Introduction

In the last fifty years, there have been dramatic changes in the United States in the hours allocated to market production as a function of sex and marital status. The most striking change is the almost threefold increase in the hours worked by married women. This has occurred over a period in which married men's hours have declined slightly and those of single individuals, both women and men, have been virtually unchanged. (See Figure 1A.) Our objective in this paper is to study the validity of three alternative hypotheses for why these changes have occurred: i) that the changes are a result of improvements in the technology for producing home goods, ii) that they follow from overall income growth if home goods are inferior, and iii) that they are a result of a reduction in the gender wage gap.

To this end, we construct a dynamic general equilibrium model of the macroeconomy that differs only minimally from standard models with home production and savings. (See Benhabib, Rogerson and Wright (1991) and McGrattan, Rogerson and Wright (1997).) These changes include the explicit distinction between single (both female and male) and married households (and the women and men in such a household) and specific decisions about human capital accumulation. All agents care about both home and market goods as well as the leisure of the parties in the household. We assume that both home and market goods require quality adjusted labor (time augmented with human capital) to be produced. These agents interact, as price takers, in aggregate markets for labor, capital, investment and market consumption.

Using this model, we examine the validity of the three hypotheses for the changes in hours of work. We find that a reduction in the gender wage gap is the most successful of the three. Our results show that improvements in home technologies are not successful in accounting for the data. Some extreme forms of home good inferiority (satiation) do have limited success, but these forms bring with them a host of other, counterfactual, predictions.

We show that for technology to have some impact on market hours, home and market goods must be either highly substitutable or highly complementary. Otherwise, a change in home technologies affects only the level of home consumption. If home and market goods are substitutes,

as McGrattan, Rogerson, and Wright (1997) and Rupert, Rogerson, and Wright (2000) estimate, then improvements in home technologies actually cause market hours by married women to decrease rather than increase. The reason is simple: if a married woman can produce substitute goods more efficiently at home, then more time is spent in home production. If home and market goods are complementary, then hours increase with improvements in home technologies. Even in this

Table 2. Numerical Experiments

Description	Experiment	Non-benchmark parameters
Cheaper Home Investment with	q falls, $q_{2000}/q_{1950} = .23$	$\tau_{dt} = .27$
Moderate elasticity		$\psi_2 = -.75$
Larger elasticity		$\psi_2 = -4$
Improved Home Technology	A^2 rises, $A^2_{2000}/A^2_{1950} = 5$	$\psi_2 = -.75, \lambda_f = .2, \psi_1 = .68, \psi_3 = .52, \kappa_1 = \zeta_1 = .097, \kappa_2 = \zeta_2 = .001$
Inferior Home Goods	$c^2 \leq c^*$ binds	$c^* = .049$
Fall in Discrimination with	τ_d falls	
Benchmark parameters	$\tau_{d\,2000}/\tau_{d\,1950} = .72$	
Equal utility weights	$\tau_{d\,2000}/\tau_{d\,1950} = .53$	$\lambda_f = .5, \psi_1 = .63, \psi_3 = .65, \kappa_1 = \zeta_1 = .23, \kappa_2 = \zeta_2 = .31$
No human capital	$\tau_{d\,2000}/\tau_{d\,1950} = .46$	$\kappa_i = \zeta_i = .001, \tau_{d,1950} = .48, \psi_1 = .71, \psi_3 = .45$
Market-only human capital	$\tau_{d\,2000}/\tau_{d\,1950} = .47$	$\kappa_2 = \zeta_2 = .001, \kappa_1 = \zeta_1 = .047, \tau_{d,1950} = .42, \psi_1 = .76, \psi_3 = .47$
Sector-specific capital	$\tau_{d\,2000}/\tau_{d\,1950} = .50$	$\kappa_2 = \zeta_1 = .001, \kappa_1 = \zeta_2 = .1, \tau_{d,1950} = .40, \psi_1 = .72, \psi_3 = .47$
Married men subsidized	$\tau_{d\,2000}/\tau_{d\,1950} = .50$	$\psi_1 = .62, \psi_3 = .58, \kappa_1 = \zeta_1 = .24, \kappa_2 = \zeta_2 = .20$
No singles discrimination	$\tau_{d\,2000}/\tau_{d\,1950} = .72$	$\tau_{\ell,fs} = \tau_{\ell,ms}$

Table 3. Effects of Changes in Home Technology‡

	1950 Results					1990 Results					
	Hours per Week				Wage Ratio	Hours per Week				Wage Ratio	Share, Home Inv.
	MF	MM	SF	SM	(%)	MF	MM	SF	SM	(%)	(1950=100)
Data	8.2	41.3	29.0	31.6	51	22.7	38.3	29.0	30.2	69	85
Models:											
Cheaper Home Investment											
with Moderate Elasticity	13.1	41.7	30.3	34.0	44	15.4	41.2	30.1	34.2	45	122
with Larger Elasticity	19.4	40.7	30.5	33.9	47	22.6	39.9	30.6	34.6	48	109
Inferior Home Goods	9.9	41.3	28.9	33.9	51	16.6	38.9	27.1	32.8	55	87
Improved Home Technology	5.5	39.9	27.1	27.6	59	22.7	38.1	30.8	32.2	68	76

Table 4. Effects of Fall in Discrimination‡

	1950 Results					1990 Results					
	Hours per Week				Wage Ratio	Hours per Week				Wage Ratio	Share, Home Inv.
	MF	MM	SF	SM	(%)	MF	MM	SF	SM	(%)	(1950=100)
Data	8.2	41.3	29.0	31.6	51	22.7	38.3	29.0	30.2	69	85
Models:											
Benchmark	8.0	41.1	28.0	34.1	51	21.5	36.9	30.0	31.7	69	95
Equal utility weights	8.2	41.3	27.1	32.8	52	17.1	39.3	30.0	30.9	68	98
No human capital	8.4	41.4	25.1	35.1	52	20.4	38.2	31.9	32.7	68	84
Market-only human capital	8.2	41.3	27.1	35.9	50	23.1	37.6	32.6	33.2	68	84
Sector-specific capital	8.2	41.3	27.9	35.9	51	22.7	37.6	32.8	33.4	68	84
Married men subsidized	8.0	41.1	27.3	33.2	51	19.3	38.4	30.8	30.1	68	94
No singles discrimination	10.0	41.1	34.2	34.2	69	22.6	37.7	32.7	32.7	82	96

‡ MF=married females, MM=married males, SF=single females, SM=single males.