BEHAVIORAL MICROSIMULATION OF A DUAL INCOME TAX REFORM: A MIXED-LOGIT APPROACH

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ABSTRACT

Simulation studies of the economic impact of dual income taxes are almost always based on general equilibrium models. They assume one representative household. Their results are sensitive to one behavioral parameter, the labor supply elasticity, which is assumed to be given a priori — instead of being estimated.

This paper shows how to model the labor supply incentive effects of a Dual Income Tax reform based on a sample of thousands of households representative for the population in Germany and using flexible mixed logit simulation estimators.

INTRODUCTION

The Dual Income Tax (DIT) remains a hot topic worldwide. Its possible advantages and drawbacks are discussed not only in the European Nordic countries which have introduced them some years ago, but also in the rest of Europe (see e.g. Genser and Reutter, 2007), in Japan (Morinobu, 2004), and in Canada (Sørensen, 2007). Also in Germany, economists and policy makers consider a dual income tax as an option for a fundamental tax reform. Recently, the German Council of Economic Experts (2008) published an expertise commissioned by the German Ministry of Finance. This report strongly favors the introduction of a Dual Income Tax reform.

Previous economic research on the impact of this proposal has concentrated on long-run effects and is mainly based on general equilibrium simulation models. The results of these exercises are largely robust with respect to the choice of the behavioral elasticities, with one important exemption: the labor supply elasticity. Actually, the labor supply elasticity is the only behavioral parameter that is crucial for the long run effects of a DIT. (See e.g. Radulescu (2007) for Germany, or Keuschnigg and Dietz (2007), p. 204, for Switzerland.) General equilibrium simulation studies assume that the household sector can be modelled by a traditional Ramsey model with only *one* single "representative" agent characterized by only *one* labor supply elasticity. Population based microeconometric analyses (pathbreaking: Blundell et al., 1998) show, however, that in the population labor supply elasticities vary widely depending on gender, number of children, regional and other factors. This suggests to supplement existing macroeconomic DIT studies by microeconometric simulation analyses.

The main contribution of the present paper is a simulation analysis of the incentive effects of the most recent DIT proposal for Germany based on a behavioral microeconometric model. It is the only evaluation of the behavioral effects of the income tax amendment EStG-E proposed by the Council of Economic Experts based on a mixed logit approach. This is an improvement to previous studies using a traditional conditional logit model and older data sets (Bach and Steiner, 2007; Wagenhals and Buck, 2009), because the conventional IIA assumption implicit in the traditional model is strongly rejected by the data.

The rest of the paper is organized as follows. The next section describes the data: the generation of the base data set, the definition of the tax base, with special reference to the calculation of capital income and labor income, and the tax schedule used. Then, two sections describe discrete choice models for single persons as well as for cohabiting and married couples. They provide mixed logit estimation and calibration techniques and present empirical results. The last section concludes.

DATA

Base Data Set

My base data set is drawn from the 2005 wave of the German Socio-Economic Panel (GSOEP). I merge some retrospective data from the 2006 wave, such that the base data set refers to 2005, the same fiscal year the German Council of Economic Advisors reform proposal refers to.

Choice alternatives are generated using GMOD, a tax-benefit microsimulation model for Germany developed by the author. GMOD calculates personal income taxes, social security contributions and benefits. It allows for the standard benefits and tax concessions such as housing benefits and child-benefits, allowances for child-raising, child-raising leave and maternity as well as assistance for education or vocational training. Furthermore, it accounts for tax abatements for dependent children and for the education of dependent children, for child-care, tax credits for single parents, maintenance payments and

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income-splitting for married couples.

Tax Base

A dual income tax differentiates between capital and labor income and taxes these differently. So I have to derive two tax bases, one for capital income, and one for other sources of household income, called "labor income".

Currently, GMOD calculates seven sources of income, because the current German Income Tax Law (Einkommensteuergesetz, EStG) levies one tax schedule on the sum of income from the following exhaustive list of seven sources of income: (1) income from agriculture and forestry (§13 EStG), (2) income from trade or business (§15 EStG), (3) income from independent personal services (§18 EStG), (4) income from dependent personal services, i.e. wages, salaries and retirement benefits of civil servants (§19 EStG), (5) income from investment of capital (§20 EStG), (6) income from rentals and royalties (§21 EStG), and (7) other income designated in §22 EStG, e.g. notational return on investment of a pension from statutory pensions insurance. Gross earnings from all of these sources are calculated by GMOD based on information available in my base data set described above, on the German income tax law and on income tax directives. Net income from the first three sources is calculated on the accrual basis and called "profit-based income". Net income from the other four sources is defined as the excess of total receipts over income-related expenses.

According to the German Income Tax Law (EStG-E) as proposed by the German Council of Economic Experts (2008), there will be four categories of income (see §2 EStG-E): (1) income from business activities (§13, §15 and §18 EStG-E), (2) income from employment (§19 EStG-E), (3) capital income (§20, §21, and §22 EStG-E), and (4) derived income (§23 EStG-E).

To map the traditional seven sources of income to the new categories capital and labor income I proceed as follows: (1) Income from business activities corresponds to traditional "profit based income". (2) Income from employment corresponds to the traditional income from dependent personal services. (3) Income from capital assets is derived from traditional income from capital investments (§20 EStG) and income from rentals and royalties (§21 EStG). (4) Derived income corresponds to traditional "other income" designated in §22 EStG. In my base data set, I do not have information on income from private sale transactions mentioned in §22 EStG-E, so I have to ignore it. I assume that the cash method of accounting is used with respect to income from business activities and decompose profits in a capital and a labor share. Labor income is calculated by adding income from employment, the labor share in profits and derived income. Capital income consists in income from capital investments and the interest share of profits.

The labor income tax base includes wages, salaries (including the employers' calculatory salaries) and civil pensions. The capital income tax base includes business profits, dividends, capital gains, interest and rental income. Taxable labor income and taxable capital income are obtained by subtracting personal allowances and other deductions from the respective tax base. The savings allowance of 750 Euro for the income from capital investments (§20 Section 4 EStG) will be abolished (SVR et al. 2006:109ff.).

The decomposition of profit-based income in a capital and a labor share is the crux of the DIT. The calculatory salary, i.e. the labor income of the self-employed, is hard for an individual to measure and even harder for tax authorities to verify. I use the following trick: First, I estimate a Mincer-type wage function based on observable characteristics on the sub-sample of wage earners. In my data I observe determinants of wages for all individuals. Therefore, I am able to predict the calculatory salary for all self-employed individuals. Finally, I derive their capital income as the residual. (See Wagenhals and Buck, 2009, for details about this decomposition approach.) In my view, this approach improves upon the procedure of using an arbitrary sharing rule (see e.g. Gottfried and Witczak (2009)). In any case, due to data constraints, I did not have the option to compute calculatory salaries for the self-employed as residual profits.

Tax Schedule

The dual income tax combines a progressive tax schedule for labor income with a flat tax rate on capital income.

I assume that labor income is taxed according to the current income tax schedule (§32 a EStG), and that capital income is taxed with a rate of 25 percent (including the solidarity surcharge). To avoid legal concerns and a potential deterioration with respect to the current legal position I follow the Council of Economic Experts and use a stretched tax scale: The taxation of capital income is incorporated in the tax schedule in terms of a proportional zone. The length of this zone depends on the amount of taxable capital income.

Figure 1 compares the marginal tax schedule (based on §32 a EStG) with the DIT schedule (based on §32 a EStG-E) for taxpayers with fixed taxable capital incomes of 10,000, 20,000 and 30,000 Euro.

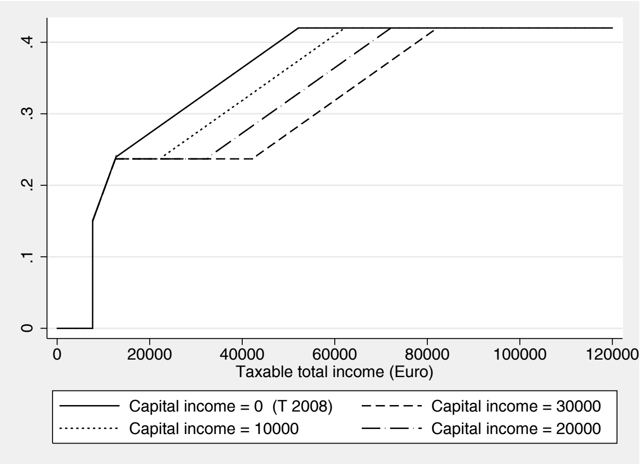
LABOR SUPPLY OF SINGLE PERSONS

To quantify the labor supply incentives of a DIT introduction, I use a discrete choice structural labor supply model. The basic idea is to replace the budget set of a household with a finite number of points, and optimize over this set of points. I first set out the theory, estimation and simulation results for single persons. In the following Section, I turn to persons living in couples.

Theory

I represent any individual's choice set by a six-state labor supply regime and approximate actual hours per week

Figure 1: Marginal Tax Rates



Source: Own calculations.

h^a by hours levels $h \in \mathscr{H} := \{0, 10, 20, 30, 40, 50\}$ applying the following rounding rule

$$\begin{aligned} h &= 0 \text{ if } h^a < 5 \\ &= 10 \text{ if } 5 \leq h^a < 15 \\ &\dots \\ &= 50 \text{ if } h^a \geq 45. \end{aligned}$$

For all elements h in the choice set $\mathscr{H}$ I use GMOD to calculate household net incomes as

$$c(h) = wh + \mu - T(h, w, \mu \mid \mathbf{x}) \tag{1}$$

where w denotes the gross wage rate, μ is income from sources other than employment and $T(\cdot)$ is the tax-benefit function conditional on a vector of observed characteristics $\mathbf{x}$. I assume that preferences can be represented by a utility function U and that individuals act as if to maximize utility

$$\max_{h \in \mathscr{H}} U(c(h), \bar{h} - h \mid \mathbf{x}) \tag{2}$$

subject to the budget constraint

$$c(h) \leq wh + \mu - T(h, w, \mu \mid \mathbf{x}) \tag{3}$$

where $\bar{h}$ denotes total time endowment.

To obtain random utilities, I add state-specific random errors $e(h)$ to utilities for all states $h \in \mathscr{H}$. This gives random utilities

$$U^*(h) := U(c(h), \bar{h} - h \mid \mathbf{x}) + e(h) \tag{4}$$

If the state-specific random errors are i.i.d. Type I extreme value distributed, then the probability P of working h^j hours is

$$P(h = h^j \mid \mathbf{x}) = \frac{\exp[U(c(h), \bar{h} - h \mid \mathbf{x})]}{\sum_{h^k \in \mathscr{H}} \exp[U(c(h^k), \bar{h} - h^k \mid \mathbf{x})]} \tag{5}$$

For the specification of the utility function, I follow the tradition started by Keane and Moffitt (1998) and choose a flexible form quadratic direct utility function. Written in terms of individual consumption $c = c(h)$ and leisure $l := \bar{h} - h$ I obtain

$$U(c, l) = \alpha_{cc} c^2 + \alpha_{ll} l^2 + \alpha_{cl} cl + \beta_c c + \beta_l l$$

where $\alpha_{cc}, \alpha_{ll}, \alpha_{cl}, \beta_c$ and β_l denote unknown parameters. I assume that preferences vary through taste-shifters on income and leisure coefficients:

$$\begin{aligned} \beta_c &= \gamma_{c_0} + \mathbf{x}\gamma_{\mathbf{c}} \\ \beta_l &= \gamma_{l_0} + \mathbf{x}\gamma_{\mathbf{l}} \end{aligned}$$

where $\gamma_{c_0}, \gamma_{\mathbf{c}}, \gamma_{l_0}$ and $\gamma_{\mathbf{l}}$ denote unknown coefficients and $\mathbf{x}$ is a (row) vector of individual characteristics, including age, region of residence, number of children in different age brackets, and (following van Soest, 1995) dummy variables for part-time categories in order to capture the disutility of inflexible arrangements.

I deal with unobserved wage rates by estimating the expected market wage rates conditional on observed characteristics. I first estimate a reduced form participation equation, get the Mill's rate and use it in a Mincer-type wage equation to correct for sample selection bias. I use the estimates of this sample selection model to draw wage rates for non-workers, conditional on observed characteristics. Due to the nonlinear nature of the labor supply model, replacing wage rates by their predictions leads to inconsistent estimates, even if the wage predictions themselves are unbiased. To account for this, wage rate prediction errors are incorporated as additional unobserved error terms.

Estimation of the unknown preference parameters is based on a mixed logit model proposed by McFadden and Train (2000). Under mild regularity conditions, it can approximate the choice probabilities of any discrete choice model derived from random utility maximization as closely as desired. Under the assumption that the income coefficients are normally distributed and all other coefficients are fixed I proceed by maximum simulated likelihood.

Simulation. Before the tax reform, for all individuals and all states $h \in \mathscr{H}$ I obtain net incomes

$$c_0(h) = wh + \mu - T_0(h, w, \mu \mid \mathbf{x})$$

After the tax reform, I get

$$c_1(h) = wh + \mu - T_1(h, w, \mu \mid \mathbf{x})$$

To simulate labor supply responses, I evaluate utilities $U(c(h), \bar{h} - h \mid \mathbf{x})$ over the net incomes $c_0(h)$ and $c_1(h)$ for all hours alternatives $h \in \mathscr{H}$. I allocate each individual to the utility maximum under each scenario and obtain

$$h_{0(\cdot)} = \arg\max_{h \in \mathscr{H}} U(c_0(h), \bar{h} - h \mid \mathbf{x})$$

$$h_{1(\cdot)} = \arg\max_{h \in \mathscr{H}} U(c_1(h), \bar{h} - h \mid \mathbf{x})$$

Finally, I simulate labor supply responses by comparing $h_{0(\cdot)}$ and $h_{1(\cdot)}$ for each individual. To this end, I follow the calibration procedure described by Creedy and Kalb (2005, page 720 et seq.). For each household I repeatedly draw a vector of unobserved utility components from a Type I extreme value distribution such that utility is maximized at the observed hours category. I then calculate post reform incomes, compute the new utility maximizing choice and allocate each person to the most probable state following each random draw. For each individual, this exercise is repeated 100 times. This generates a distribution of post-reform hours worked, conditional on the observed pre-reform hours. Finally, I build transition tables by allocating each observation to the cell which yields maximum utility for each draw.

Empirical Results

Sample Selection. The starting point for my sample is the base data file described above. First, I concentrate on single adult respondents. I exclude persons younger than 25 or older than 55 years of age, persons in education, pensioners, persons doing compulsory community or military services, persons receiving profit incomes only and civil servants. After dropping persons with missing observations of crucial variables, I receive a sample with 1,116 single men and another sample with 1,312 single women.

Estimation. The main preference parameter estimates for single men and single women are given in Table 1. The estimated parameter values are consistent with economic theory. The marginal utility of net income and of leisure are statistically significant at least at the five percent level, they are positive and declining with income. The interaction effect between leisure and income is practically zero. Not surprisingly, there is less desire to work if an individual is handicapped, or if there is a nursing case in the family. For single mothers, there is less desire to work, the effect being smaller for older children. The main difference between male and female preferences is the role of children: While the number of children in different age groups has the expected sign and magnitude for women, these variables were not significant for men and so were dropped.

In Table 1 I do not report the estimates of the part-time dummies for part-time choice opportunities. For men and women, they all are negative and highly significant. This reflects the fact that low demand for part-time workers requires more effort to find part-time employment. Furthermore, all estimated standard errors of the random coefficients were highly significant. This suggests considerable unobserved heterogeneity of preferences. The traditional conditional logit approach is strongly rejected.

Simulation. Tables 2 and 3 present the simulation results for the labor supply of single persons. The last column gives the distribution of labor supply before the reform, the last row refers to the distribution after the reform. The numbers inside the matrix are row percentages.

My results suggest that — in a short run partial equilibrium view — the DIT reform suggested by the German Council of Economic Experts (2008) will generate only small labor supply reactions. For single persons, on average, they will be slightly positive.

LABOR SUPPLY OF COUPLES

Theory

For married or cohabiting couples I allow for joint decision making. Each partner may account for the decision of the other partner when deciding on hours worked. I assume that each household member selects one of six regimes: non-participation or one of five employment states $\hbar \in \mathscr{H} = \{0, 10, 20, 30, 40, 50\}$ (the elements denoting hours per week). Thus, the choice set for couples is $\mathscr{H} \times \mathscr{H}$. Actual individual working hours observed in the data are rounded (as above) to fit the elements in this set.

I assume that preferences of a couple may be represented by a flexible quadratic utility function

$$\begin{aligned} U(c, l_f, l_m) &= \alpha_{cc}c^2 + \alpha_{mm}l_m^2 + \alpha_{ff}l_f^2 \\ &+ \alpha_{cm}cl_m + \alpha_{cf}cl_f + \alpha_{fm}l_f l_m \\ &+ \beta_c c + \beta_m l_m + \beta_f l_f \end{aligned}$$

Here $l_m := \bar{h} - h_m$, $l_f := \bar{h} - h_f$; l denotes leisure and h hours worked of male (m) or female (f) persons, while c denotes their joint net income. The α and β coefficients are unknown population parameters. The sign of α_{fm} indicates whether male and female leisure are substitutes or complements. Similar to the case of single persons, some preference parameters depend on personal, household and other characteristics. Supplementing representative household utility I add stochastic terms accounting for state specific errors and finally derive the probability of choosing any consumption-leisure combination in the set of feasible household decisions. Estimation proceeds via mixed logit and simulation by calibration as described above. I derive household gross earnings assuming state invariant male and female gross wage rates, and calculate the corresponding state specific net household income for each hours combination in the choice set $\mathscr{H} \times \mathscr{H}$ using GMOD and my base data set described above.

Empirical Results

Sample Selection. Starting point for my analysis is again the base data file described above, now concentrating on couples. I apply the sample selection criteria as described for singles to both partners and obtain a sample of 2,015 couples.

Table 1: Estimated Preference Parameters, Singles

	Single Men	Single Women
Income	0.0680	0.183^{**}
	(0.0363)	(0.0630)
Income^2	-0.000264	-0.00291^{*}
	(0.000403)	(0.00121)
Leisure	0.371^{***}	0.842^{***}
	(0.0806)	(0.123)
Leisure^2	-0.00287^{***}	-0.00469^{***}
	(0.000399)	(0.000496)
Leisure*income	-0.00128	-0.00233^{**}
	(0.000653)	(0.000779)
Leisure*age	-0.00425	-0.0159^{**}
	(0.00361)	(0.00536)
Leisure*age^2	0.0000545	0.000205^{**}
	(0.0000464)	(0.0000682)
Leisure*(East Germany?)	0.0218^{*}	-0.00203
	(0.00872)	(0.00982)
Leisure*(Nursing case in family?)	0.0126	-0.00950
	(0.0240)	(0.0215)
Leisure*foreign?	0.0297^{**}	-0.0209
	(0.0112)	(0.0190)
Leisure*(high education?)	-0.0355^{**}	-0.0289^{**}
	(0.0113)	(0.0104)
Leisure*(low education?)	0.0229^{**}	0.0300^{*}
	(0.00848)	(0.0147)
Leisure*handicapped?	0.0363^{**}	0.00161
	(0.0133)	(0.0226)
Leisure*(no. of kids under 6)		0.0700^{***}
		(0.0122)
Leisure*(no. of kids age 6-16)		0.0358^{***}
		(0.00662)
SD		
Income	0.0902^{***}	0.154^{***}
	(0.0225)	(0.0307)
Observations	1116	1312

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Labor Supply Transition Matrix for Single Men

	Post-reform hours						
Pre-reform hours	0	10	20	30	40	50	% (row)
0	16.55	0.00	0.01	0.26	0.56	0.20	17.59
10	0.00	2.12	0.00	0.04	0.05	0.08	2.29
20	0.00	0.00	1.79	0.01	0.02	0.04	1.85
30	0.00	0.00	0.00	17.43	0.20	0.13	17.77
40	0.01	0.00	0.00	0.01	42.05	0.24	42.30
50	0.00	0.00	0.00	0.00	0.03	18.18	18.21
% (column)	16.56	2.12	1.79	17.75	42.91	18.87	100.00

Source: Own calculations. Any summing errors are due to rounding.

Table 3: Labor Supply Transition Matrix for Single Women

Pre-reform hours	Post-reform hours 0	10	20	30	40	50	% (row)
0	17.54	0.07	1.27	3.32	2.78	0.21	25.19
10	0.04	4.02	0.18	0.66	0.53	0.08	5.51
20	0.04	0.02	8.49	0.46	0.42	0.08	9.50
30	0.17	0.00	0.02	20.72	0.30	0.05	21.27
40	0.17	0.02	0.03	0.05	31.77	0.02	32.05
50	0.14	0.01	0.10	0.09	0.08	6.07	6.49
% (column)	18.11	4.13	10.09	25.29	35.88	6.50	100.00

Source: Own calculations. Any summing errors are due to rounding.

Estimation. The main preference parameter estimates for married and cohabiting couples are given in Table 4. The estimated parameter values are consistent with economic theory. The marginal utility of both partners' leisures and the marginal utility of net income are highly significant, positive and declining with income. The interaction effect between male and female leisure is statistically not different from zero and practically unimportant. Not surprisingly, there is less desire to work for mothers, the effect being smaller for older children.

Due to space restrictions, in Table 4 I do not report the estimates of the part-time dummies for part-time choice opportunities. For both sexes, they all are negative and highly significant. As in the case of singles, this reflects the fact that low demand for part-time workers requires more effort to find part-time employment. Again, all estimated standard errors of the random coefficients were highly significant. As for singles, this suggests considerable unobserved heterogeneity of preferences of couples. Again, the traditional conditional logit approach is strongly rejected.

Simulation. Tables 5 and 6 show that the partial equilibrium impact of the reform proposal on the labor supply of couples is small. Positive incentives are most likely for women in couples, and here especially married females.

If I finally aggregate over persons living as singles and living in couples we find a positive incentive effect. If for the moment we accept the SVR et al. (2006) finding of an 1.1 percent reform-induced increase in labor demand, annual working time will — on average — increase. This effect, combined with the smaller tax burden on capital income, is reflected in an increasing aggregate net income.

CONCLUSION

My main concern has been to evaluate the incentive effects of the DIT reform proposed by the German Council of Economic Experts (2008). Instead of invoking the assumption of *one* given labor supply elasticity as current general equilibrium simulation models do, I estimate these elasticities. Based on a mixed logit simulation estimation, I find that labor supply incentive effects are small, but — on average — positive. Effects are most pronounced for married women.

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Table 4: Estimated Preference Parameters, Couples

	Coefficient	Std. Err.
Income	0.0644^{**}	(0.0197)
Income^2	0.0000154	(0.0000644)
Female's leisure	0.486^{***}	(0.108)
(Female's leisure)^2	-0.00364^{***}	(0.000661)
Male's leisure	0.268^{*}	(0.107)
(Male's leisure)^2	-0.00319^{***}	(0.000315)
(Female's leisure)*(male's leisure)	-0.000448	(0.000282)
(Female's leisure)*(female's*age)	-0.00333	(0.00360)
(Female's leisure)*(female's*age)^2	0.0000542	(0.0000450)
(Female's leisure)*(East Germany?)	-0.0434^{***}	(0.00763)
(Female's leisure)*(no. of kids under 6)	0.0701^{***}	(0.0101)
(Female's leisure)*(no. of kids aged 6-16)	0.0301^{***}	(0.00492)
(Female's leisure)*(nursing case in family?)	0.0346	(0.0181)
(Female's leisure)*(married?)	0.0320^{**}	(0.0108)
(Male's leisure)*(male's*age)	0.00514	(0.00470)
(Male's leisure)*(male's*age)^2	-0.0000484	(0.0000555)
(Male's leisure)*(East Germany?)	0.00857	(0.00881)
(Male's leisure)*(no. of kids under 6)	0.00257	(0.00715)
(Male's leisure)*(no. of kids aged 6-16)	0.000312	(0.00439)
(Male's leisure)*(nursing case in family?)	0.0181	(0.0126)
(Male's leisure)*(married?)	-0.0158	(0.0110)
SD		
Income	0.0745^{**}	
	(0.0233)	
Sample Size	2015	
Log-likelihood	-14161577	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: A question mark means that the variable is binary, coded 1 for a "Yes" and 0 for a "No".

Table 5: Labor Supply Transition Matrix for Men in Couples

	Post-reform hours						
Pre-reform hours	0	10	20	30	40	50	% (row)
0	9.41	0.00	0.01	0.03	0.08	0.06	9.59
10	0.00	0.48	0.00	0.00	0.00	0.00	0.49
20	0.00	0.00	1.00	0.00	0.01	0.00	1.02
30	0.03	0.00	0.00	16.38	0.10	0.10	16.61
40	0.08	0.00	0.02	0.12	50.31	0.13	50.66
50	0.04	0.00	0.01	0.05	0.18	21.35	21.62
% (column)	9.55	0.49	1.05	16.58	50.68	21.65	100.00

Source: Own calculations. Any summing errors are due to rounding.

Table 6: Labor Supply Transition Matrix for Women in Couples

	Post-reform hours						
Pre-reform hours	0	10	20	30	40	50	% (row)
0	33.78	0.14	0.26	0.19	0.24	0.02	34.63
10	0.02	10.88	0.05	0.07	0.02	0.00	11.05
20	0.01	0.00	15.71	0.02	0.06	0.00	15.82
30	0.01	0.02	0.03	16.63	0.07	0.04	16.81
40	0.00	0.00	0.01	0.02	17.96	0.04	18.04
50	0.00	0.00	0.01	0.01	0.01	3.62	3.66
% (column)	33.83	11.05	16.07	16.95	18.37	3.73	100.00

Source: Own calculations. Any summing errors are due to rounding.

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