

SEARCH AND MULTIPLE JOBHOLDING

Etienne Lalé

Université du Québec à Montréal,
CIRANO and IZA

Preliminary and incomplete

CIRANO Macro Workshop, 26 November 2018

INTRODUCTION

- ▶ Multiple jobholding remains poorly documented and not well understood. Partly this is due to the fact that multiple jobholders make up a small share of employment

- ▶ Empirical evidence (e.g. Paxson & Sicherman [JoLE, '94]) suggest that multiple jobholding plays an important role in shaping labor market trajectories

INTRODUCTION

- ▶ Multiple jobholding remains poorly documented and not well understood. Partly this is due to the fact that multiple jobholders make up a small share of employment

- ▶ Empirical evidence (e.g. Paxson & Sicherman [JoLE, '94]) suggest that multiple jobholding plays an important role in shaping labor market trajectories

This paper: We develop a quantitative general equilibrium theory of multiple jobholding

INTRODUCTION

Theory: DMP model with hours, search off- and on-the-job, and multiple jobholding

Applications: Determinants and macroeconomic implications of multiple jobholding

INTRODUCTION

Theory: DMP model with hours, search off- and on-the-job, and multiple jobholding

- ▷ An ‘empirically reasonable’ full-time/part-time margin
- ▷ cf. Borowczyk-Martins and Lalé [WP, '18] ‘The rise of part-time employment’

Applications: Determinants and macroeconomic implications of multiple jobholding

INTRODUCTION

Theory: DMP model with hours, search off- and on-the-job, and multiple jobholding

- ▷ Jobs are *ex ante* homogeneous, *i.e.* no job is inherently secondary
- ▷ Workers bargain with their employers

Applications: Determinants and macroeconomic implications of multiple jobholding

INTRODUCTION

Theory: DMP model with hours, search off- and on-the-job, and multiple jobholding

- ▷ Jobs are *ex ante* homogeneous, *i.e.* no job is inherently secondary
- ▷ Workers bargain with their employers

Applications: Determinants and macroeconomic implications of multiple jobholding

- ▷ Quantitatively, the model provides a very good account of multiple jobholding

INTRODUCTION

Theory: DMP model with hours, search off- and on-the-job, and multiple jobholding

- ▷ Jobs are *ex ante* homogeneous, *i.e.* no job is inherently secondary
- ▷ Workers bargain with their employers

Applications: Determinants and macroeconomic implications of multiple jobholding

- ▷ Micro: Returns to scale in the flow cost of working matter a lot
- ▷ Macro: Secular decline in multiple jobholding contributed to reducing search frictions

INTRODUCTION

1. **Labor supply and multiple jobholding:** Shishko & Rostker [AER, '76], Krishnan [ReStat '90], Paxson & Sicherman [JoLE, '94], Renna & Oaxaca [IZA, '06]
 - 1.1 **Hours changes within vs. across jobs:** Altonji & Paxson [JHR '92], Blundell, Brewer & Francesconi [JoLE, '08], Borowczyk-Martins & Lalé [AEJ Macro, '19]
2. **Changing U.S. labor market dynamism:** Hyatt & Spletzer [JoLE, '13], Davis & Haltiwanger [NBER, '14], Lalé [MLR, '15], Hyatt & Spletzer [LE, '17]
3. **The rise of alternative work arrangements:** Katz & Krueger [AER P&P '17, ILRR, '19], Chen, Chevalier, Rossi & Oehlsen [NBER '17], Mas & Pallais [AER, '17]

OUTLINE

THE ECONOMY

EQUILIBRIUM

CALIBRATION

EXPERIMENTS

CONCLUSION

I. The economy

THE ECONOMY

Workers

▶ Maximize

$$\mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t (c_t^m + c_t^h)$$

- ▶ $c_t^m = \text{wage}(s)$, $c_t^h = \text{home production}$
- ▶ ω_j : fixed costs of working, $j = 1, 2$

▶ Home production

$$z_t g(1 - h_t)$$

- ▶ z_t : idiosyncratic and stochastic
- ▶ $g(\cdot)$ has the standard form

$$g(1 - h_t) = \frac{(1 - h_t)^{1 - \frac{1}{\gamma}} - 1}{1 - \frac{1}{\gamma}}$$

THE ECONOMY

Employers

- ▶ Match productivity

$$y_t f(h_t)$$

where y_t is stochastic

- ▶ $f(\cdot)$ maps market hours onto labor services

$$f(h_t) = \begin{cases} (1 - \psi) h_t & \text{if } h_t < \bar{h} \\ (1 - \psi) h_t + \psi & \text{if } h_t \geq \bar{h} \end{cases}$$

$\psi > 0$ will bunch hours at \bar{h}

- ▶ Cf. Prescott, Rogerson & Wallenius [RED, '09], Chang, Kim, Kwon & Rogerson [IER, '19]

THE ECONOMY

Search frictions

- ▶ Standard CRS matching function

- ▶ Unemployed and SJH-ers face probabilities

$$\lambda_{0,t} = \theta_t q(\theta_t) \text{ and } \lambda_{1,t} = s_e \lambda_{0,t}.$$

where $0 < s_e < 1$

- ▶ MJH-ers do not search for jobs ($s_e = 0$)

- ▶ On meeting, y_t is drawn from a distribution F_0

THE ECONOMY

Key assumptions

1. Outside job offer → the worker either moves to the new employer, becomes a *multiple jobholder*, or she chooses to discard these two options
2. If multiple jobholding → the worker commits to staying with the *primary employer* until either the first match breaks up or until she gives up her second job
3. A multiple jobholder uses the primary job as her outside option when she bargains with the *secondary employer*

II. Equilibrium

ASSET VALUES, SURPLUS AND BARGAINING

Asset values

- ▶ Workers: $N(z)$, $E(y_1, z)$, $E(y_1, y_2, z)$
- ▶ Employers: $J(y_1, z)$, $J_1(y_1, y_2, z)$, $J_2(y_1, y_2, z)$

Join match surplus

- ▶ Single jobs

$$S(y_1, z) = J(y_1, z) + E(y_1, z) - N(z)$$

- ▶ Multiple jobs

$$S(y_1, y_2, z) = J_2(y_1, y_2, z) + E(y_1, y_2, z) - E(y_1, z)$$

ASSET VALUES, SURPLUS AND BARGAINING

Asset values

- ▶ Workers: $N(z)$, $E(y_1, z)$, $E(y_1, y_2, z)$
- ▶ Employers: $J(y_1, z)$, $J_1(y_1, y_2, z)$, $J_2(y_1, y_2, z)$

Join match surplus

- ▶ Single jobs

$$S(y_1, z) = J(y_1, z) + E(y_1, z) - N(z)$$

- ▶ Multiple jobs

$$S(y_1, y_2, z) = J_2(y_1, y_2, z) + E(y_1, y_2, z) - E(y_1, z)$$

Wage bargaining

- ▶ $(1 - \phi)(E(y_1, z) - N(z)) = \phi J(y_1, z)$
- ▶ $(1 - \phi)(E(y_1, y_2, z) - E(y_1, z)) = \phi J_2(y_1, y_2, z)$

HOURS WORKED

Single jobholders

- ▶ $y_{\bar{h}}(z)$ defined by

$$y_{\bar{h}}(z)f(h(y_{\bar{h}}(z), z)) + zg(1 - h(y_{\bar{h}}(z), z)) = y_{\bar{h}}(z)f(\bar{h}) + zg(1 - \bar{h})$$

- ▶ Hours schedule

$$h(y_1, z) = \begin{cases} \bar{h} & \text{if } y_{\bar{h}}(z) \leq y_1 < \tilde{y}(z) \\ 1 - \left(\frac{z}{(1-\psi)y_1}\right)^\gamma & \text{otherwise} \end{cases}$$

HOURS WORKED

Single jobholders

- ▶ $y_{\bar{h}}(z)$ defined by

$$y_{\bar{h}}(z)f(h(y_{\bar{h}}(z), z)) + zg(1 - h(y_{\bar{h}}(z), z)) = y_{\bar{h}}(z)f(\bar{h}) + zg(1 - \bar{h})$$

- ▶ Hours schedule

$$h(y_1, z) = \begin{cases} \bar{h} & \text{if } y_{\bar{h}}(z) \leq y_1 < \tilde{y}(z) \\ 1 - \left(\frac{z}{(1-\psi)y_1}\right)^\gamma & \text{otherwise} \end{cases}$$

Multiple jobholders

- ▶ $y_{\bar{h}}(y_1, z)$ defined by

$$\begin{aligned} y_{\bar{h}}(y_1, z)f(h(y_1, y_{\bar{h}}(y_1, z), z)) + zg(1 - h(y_1, z) - h(y_1, y_{\bar{h}}(y_1, z), z)) \\ = y_{\bar{h}}(y_1, z)f(\bar{h}) + zg(1 - h(y_1, z) - \bar{h}) \end{aligned}$$

- ▶ Hours schedule

$$h(y_1, y_2, z) = \begin{cases} \bar{h} & \text{if } y_{\bar{h}}(y_1, z) \leq y_2 < \tilde{y}(y_1, z) \\ 1 - h(y_1, z) - \left(\frac{z}{(1-\psi)y_2}\right)^\gamma & \text{otherwise} \end{cases}$$

BELLMAN EQUATIONS

Policy functions (Proposition 1)

1. Positive surplus

$$\begin{aligned} p(y_1, z) &= \mathbb{1} \{J(y_1, z) > 0\} \\ &= \mathbb{1} \{S(y_1, z) > 0\} \end{aligned}$$

2. Leaving the current employer

$$\begin{aligned} \ell(y_1, y_2, z) &= \mathbb{1} \{ \max \{E(y_2, z), N(z)\} > p(y_1, z) \max \{E(y_1, z), E(y_1, y_2, z)\} + (1 - p(y_1, z))N(z) \} \\ &= \mathbb{1} \{ p(y_2, z)S(y_2, z) > p(y_1, z)(S(y_1, z) + d(y_1, y_2, z)S(y_1, y_2, z)) \} \end{aligned}$$

3. Taking on a second job

$$\begin{aligned} d(y_1, y_2, z) &= \mathbb{1} \{E(y_1, y_2, z) - E(y_1, z) > 0\} \\ &= \mathbb{1} \{S(y_1, y_2, z) > 0\} \end{aligned}$$

BELLMAN EQUATIONS

Single jobs

$$S(y_1, z) = y_1 f(h(y_1, z)) + z g(1 - h(y_1, z)) - (N(z) + \omega_1) + \beta \left(S_e^+(y_1, z) + S_j^+(y_1, z) \right. \\ \left. + \int \left(\int \left(1 - \lambda_1 \int \ell(y'_1, y'_2, z') dF_0(y'_2) \right) p(y'_1, z') S(y'_1, z') \right) dF(y'_1 | y_1) \right) dG(z' | z) \right)$$

where

$$S_e^+(y_1, z) = \int \left(N(z') + \phi \lambda_1 \int \int (\ell(y'_1, y'_2, z') p(y'_2, z') S(y'_2, z') + (1 - \ell(y'_1, y'_2, z')) \right. \\ \left. \times p(y'_1, z') d(y'_1, y'_2, z') S(y'_1, y'_2, z')) dF_0(y'_2) dF(y'_1 | y_1) \right) dG(z' | z)$$

and

$$S_j^+(y_1, z) = \lambda_1 \int \int \int ((1 - \ell(y'_1, y'_2, z')) p(y'_1, z') d(y'_1, y'_2, z') (J_1(y'_1, y'_2, z') \\ - (1 - \phi) S(y'_1, z'))) dF_0(y'_2) dF(y'_1 | y_1) dG(z' | z)$$

BELLMAN EQUATIONS

Multiple jobs

$$\begin{aligned} S(y_1, y_2, z) = & y_2 f(h(y_1, y_2, z)) + z g(1 - h(y_1, z) - h(y_1, y_2, z)) - \omega_2 \\ & - (\phi S(y_1, z) + N(z) + \omega_1 - w_1(y_1, z)) + \beta \left(S_e^+(y_1, y_2, z) + \int \left(\int \int p(y'_1, z') \right. \right. \\ & \quad \times d(y'_1, y'_2, z') S(y'_1, y'_2, z') dF(y'_1|y_1) dF(y'_2|y_2) \\ & \left. \left. + \left(\int (1 - p(y'_1, z')) dF(y'_1|y_1) \right) \left(\int p(y'_2, z') S(y'_2, z') dF(y'_2|y_2) \right) \right) dG(z'|z) \right) \end{aligned}$$

where

$$S_e^+(y_1, y_2, z) = \int \left(N(z') + \phi \int p(y'_1, z') S(y'_1, z') dF(y'_1|y_1) \right) dG(z'|z)$$

BELLMAN EQUATIONS

Primary employer

$$J_1(y_1, y_2, z) = y_1 f(h(y_1, z)) - w_1(y_1, z) + \beta \int \int p(y'_1, z') \left((1 - \phi) S(y'_1, z') + \int (d(y'_1, y'_2, z')) \right. \\ \left. \times (J_1(y'_1, y'_2, z') - (1 - \phi) S(y'_1, z')) dF(y'_2 | y_2) \right) dF(y'_1 | y_1) dG(z' | z)$$

Nonemployed

$$N(z) = \beta \int \left(N(z') + \lambda_0 \phi \int p(y'_1, z') S(y'_1, z') dF_0(y'_1) \right) dG(z' | z)$$

FREE ENTRY CONDITION

Free entry

$$\frac{\kappa}{q(\theta)} = \beta(1 - \phi) \left(\int \int p(y'_1, z') S(y'_1, z') dF_0(y'_1) dG(z'|z) \frac{\mu_0(z)}{\bar{\mu}_0 + s_e \bar{\mu}_1} dz \right. \\ \left. + \int \int \int S_j^+(y'_1, y'_2, z') dF_0(y'_2) dF(y'_1|y_1) dG(z'|z) \frac{s_e \mu_1(y_1, z)}{\bar{\mu}_0 + s_e \bar{\mu}_1} dy_1 dz \right)$$

where

$$S_j^+(y_1, y_2, z) = \ell(y_1, y_2, z) p(y_2, z) S(y_2, z) \\ + (1 - \ell(y_1, y_2, z)) p(y_1, z) d(y_1, y_2, z) S(y_1, y_2, z)$$

EQUILIBRIUM

Equilibrium (Proposition 2)

- ▶ Given θ , the list of asset values $S(y_1, z)$, $S(y_1, y_2, z)$, $J_1(y_1, y_2, z)$ exists and is unique
- ▶ From θ , $p(y_1, z)$, $\ell(y_1, y_2, z)$, $d(y_1, y_2, z)$ we obtain endogenous:
 - ▶ job finding
 - ▶ job separation
 - ▶ job-to-job transitions
 - ▶ MJH flows

III. Calibration and validation

EMPIRICAL COUNTERPARTS

Data

- ▶ Monthly CPS data from 1994 to 2016
- ▶ Part-time work, job-to-job transitions and multiple jobs

Framework

- ▶ The labor market in period t is described by

$$s_t = \left[\underbrace{F_M \quad P_M}_M \quad \underbrace{F_S \quad P_S}_S \quad N \right]'_t$$

- ▶ s_t is governed by a first-order Markov chain: $s_t = X_t s_{t-1}$
- ▶ The elements of X_t are outflow transition probabilities

CALIBRATION

Specification

- ▶ Match productivity

$$y' = (1 - \rho_y) \mu_y + \rho_y y + \varepsilon'$$

- ▶ Home productivity

$$z' = \begin{cases} z & \text{with proba } \rho_z \\ \sim N(\mu_z, \sigma_z^2) & \text{otherwise} \end{cases}$$

- ▶ Frictions

$$q(\theta) = M\theta^{-\alpha}$$

- ▶ Frisch elasticity is

$$\gamma \frac{1-h}{h}$$

CALIBRATION

Table 1: Parameter values

	Parameter	Value		
A. Parameters set externally				
	subjective discount factor	β	0.9951	
	threshold for full-time work	\bar{h}	0.4	
	match productivity, unconditional mean	μ_y	1.0	
	match productivity, persistence	ρ_y	0.975	
	elasticity of job filling w.r.t. tightness	α	0.5	
	bargaining power of workers	ϕ	0.5	
	matching efficiency	M	0.70	
B. Parameters set internally				
			$\gamma = 0.125$	$\gamma = 0.250$
	home productivity, mean	μ_z	0.085	0.440
	home productivity, persistence	ρ_z	0.907	0.932
	home productivity, standard deviation	σ_z	0.046	0.228
	productivity gap at \bar{h} hours	ψ	0.109	0.139
	vacancy posting cost	κ	0.254	0.087
	match productivity, standard deviation	σ_e	0.698	0.417
	on-the-job search relative efficiency	s_e	0.340	0.351
	fixed cost of working, job 1	ω_1	0.293	0.249
	fixed cost of working, job 2	ω_2	0.473	0.296

VALIDATION

Table 2: Targeted data vs. model-generated moments

	Data	Model		
		$\gamma = 0.125$	$\gamma = 0.250$	$\gamma = 0.375$
A. Labor market stocks				
multiple jobholding share	5.70	5.67	5.72	5.75
part-time employment share	17.5	17.1	17.1	17.3
mass point at 40 hours	57.8	58.7	57.7	59.3
B. Labor market flows				
job-finding rate	45.0	44.7	45.3	45.1
job separation rate	3.50	3.39	3.55	3.68
job-to-job transition rate	2.30	2.41	2.37	2.42
full-time to part-time rate	4.70	4.75	4.68	4.81
C. Other moments				
average hours per worker	38.5	39.0	38.4	38.1
job creation cost	7.60	7.98	7.73	6.80

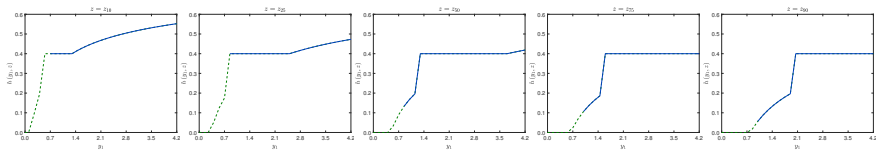
VALIDATION

Table 3: Multiple jobholding flows: Data vs. model

	Data	Model		
		$\gamma = 0.125$	$\gamma = 0.250$	$\gamma = 0.375$
A. MJH inflows				
F_S to M	1.87	1.53	1.75	1.83
P_S to M	3.61	3.52	3.73	3.69
N to M	0.16	0.00	0.00	0.00
B. MJH outflows				
F_M to S	30.0	27.3	28.7	27.7
F_M to N	0.56	0.27	0.57	0.30
P_M to S	34.2	35.3	36.2	37.4
P_M to N	1.81	1.42	2.21	1.73

WORKINGS OF THE MODEL

A. Single jobholding



B. Multiple jobholding

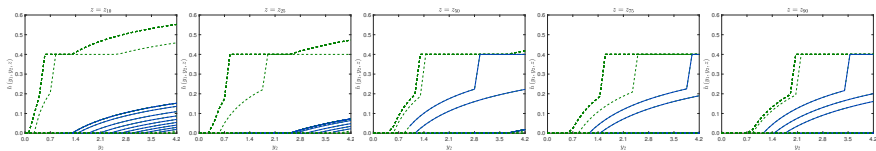
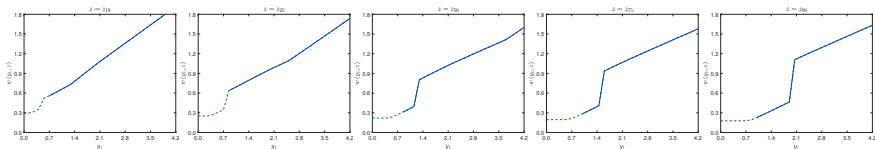


Figure 1: Hours worked during single and multiple jobholding

WORKINGS OF THE MODEL

A. Single jobholding



B. Multiple jobholding

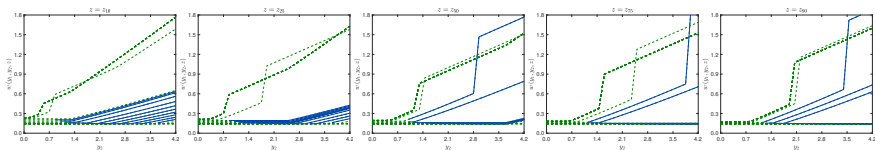


Figure 2: Wages during single and multiple jobholding

WORKINGS OF THE MODEL

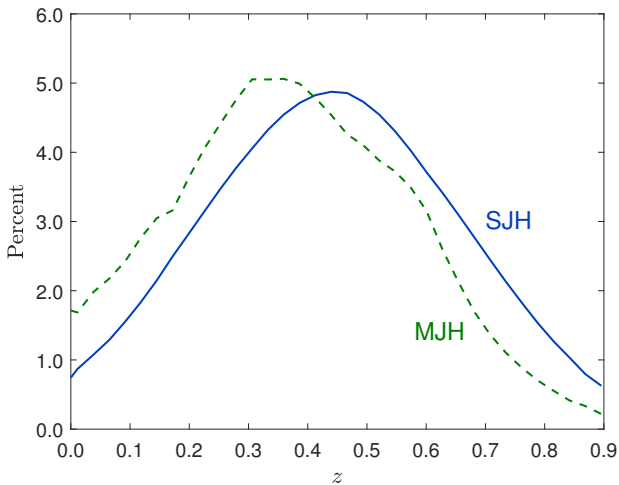


Figure 3: Distribution of home productivity among SJH-ers and MJH-ers

IV. Numerical experiments

MICRO-DETERMINANTS

Experiments

- ▶ Role of various frictions in the decisions to take on and give up jobs
 - ▶ Short run
 - ▶ Long run (understanding \neq across markets)
- ▶ Role of the hours constraint
- ▶ Sources of the decline in multiple jobholding

MICRO-DETERMINANTS

Table 4: Elasticity of worker transition probabilities

	$E \rightarrow E$	$F_S \rightarrow M$	$P_S \rightarrow M$	$F_M \rightarrow S$	$P_M \rightarrow S$
A. Short run					
ω_1	0.10	-0.20	-0.33	0.06	0.35
ω_2	0.03	-3.08	-3.38	1.58	0.89
s_e	0.73	0.01	0.43	0.34	0.08
M	0.90	0.67	0.31	0.27	0.38
B. Long run					
ω_1	-0.09	-0.04	-0.45	0.00	0.30
ω_2	0.07	-2.88	-3.32	1.51	0.90
s_e	0.52	0.14	0.55	0.17	-0.03
M	0.91	0.72	0.29	0.27	0.37

MICRO-DETERMINANTS

Table 5: Sources of the decline in multiple jobholding

	Base	κ_1 (+69%)		κ_2 (+7%)		s_e (-40%)		M (-60%)	
		Alt.	Δ (%)	Alt.	Δ (%)	Alt.	Δ (%)	Alt.	Δ (%)
A. Hours									
hours per worker	38.4	40.6	5.62	38.4	-0.12	38.4	-0.09	36.5	-4.84
F_s to P_s	4.91	3.53	-28.1	4.96	1.01	4.88	-0.55	6.27	27.6
P_s to F_s	20.8	25.2	21.2	20.8	0.13	20.4	-1.99	18.6	-10.8
B. Employment									
job-finding	45.3	24.0	-47.0	45.3	0.02	44.2	-2.51	25.0	-44.7
job separation	3.55	5.24	47.7	3.63	2.36	4.23	19.1	2.92	-17.9
job-to-job, all	2.37	1.78	-25.1	2.34	-1.11	1.55	-34.8	1.47	-38.1
job-to-job, SJH-ers	2.00	1.40	-30.0	2.03	1.48	1.22	-38.9	1.24	-38.1
nonemployment	7.27	17.7	143	7.41	2.01	8.71	19.8	10.4	42.8
vacancies	0.39	0.46	20.6	0.39	0.66	0.28	-27.9	0.41	6.77

MICRO-DETERMINANTS

Table 6: Effects of the hours constraint ψ

	$\gamma = 0.125$			$\gamma = 0.250$			$\gamma = 0.375$		
	$\psi > 0$	$\psi = 0$	Δ (%)	$\psi > 0$	$\psi = 0$	Δ (%)	$\psi > 0$	$\psi = 0$	Δ (%)
A. Hours									
hours per job	37.7	36.3	-3.71	36.1	34.3	-5.10	35.8	34.8	-2.91
hours per worker	39.0	36.9	-5.28	38.4	35.5	-7.68	38.1	35.6	-6.70
hours per MJH-er	39.4	38.9	-1.00	38.7	41.1	6.18	45.8	50.9	19.0
B. Employment									
multiple jobholding	5.67	3.34	-41.2	5.72	2.64	-53.8	5.75	1.43	-75.2
job-finding	44.7	42.8	-4.27	45.3	38.9	-14.4	45.1	30.5	-32.3
job separation	3.39	3.67	8.18	3.55	4.22	18.9	3.68	4.97	35.0
job-to-job transition	2.41	2.26	-6.15	2.37	2.04	-13.9	2.42	1.88	-22.5
nonemployment	7.05	7.86	11.5	7.27	9.75	34.1	7.54	13.9	84.5

MACRO IMPLICATIONS

Experiments

- ▶ Equilibrium allocations with vs. without multiple jobholding
 - ▶ Long run effects
 - ▶ Decomposing the impact on search frictions
- ▶ Inference on preferences and technology
- ▶ Efficiency of multiple jobholding

MACRO IMPLICATIONS

Table 7: The economy with vs. without multiple jobholding

	$\gamma = 0.125$			$\gamma = 0.250$			$\gamma = 0.375$		
	MJH	MJH	Δ (%)	MJH	MJH	Δ (%)	MJH	MJH	Δ (%)
A. Hours									
hours per job	37.7	39.2	3.99	36.1	37.8	4.78	35.8	37.6	4.84
hours per worker	39.0	38.9	-0.13	38.4	38.2	-0.51	38.1	37.8	-0.60
B. Employment									
job-finding	44.7	48.0	7.37	45.3	45.9	1.21	45.1	45.0	-0.26
job separation	3.39	3.84	13.2	3.55	4.15	16.9	3.68	4.31	17.2
job-to-job, all	2.41	2.34	-2.71	2.37	2.20	-7.00	2.42	2.28	-5.97
job-to-job, SJH-ers	2.01	2.34	16.1	2.00	2.20	9.89	2.07	2.28	9.91
nonemployment	7.05	7.35	4.32	7.27	8.24	13.4	7.54	8.70	15.4
C. Output									
output per job	0.43	0.47	9.05	0.36	0.40	11.8	0.36	0.41	12.8
output per worker	0.45	0.47	4.73	0.38	0.40	6.17	0.38	0.41	6.93
vacancies	0.49	0.52	4.78	0.43	0.48	11.4	0.45	0.50	12.6
total output	0.36	0.37	3.06	0.31	0.32	3.09	0.32	0.33	3.37

MACRO IMPLICATIONS

Table 8: Decomposition of the effects of multiple jobholding

	$\gamma = 0.125$	$\gamma = 0.250$	$\gamma = 0.375$
A. Output per worker			
$/total$ { employment	[18.3, 19.7]	[18.1, 19.0]	[18.8, 19.8]
distrib empl	[80.2, 81.7]	[81.0, 81.8]	[80.1, 81.2]
total (/baseline)	4.73	6.17	6.93
B. Vacancies			
$/total$ { meeting	[42.9, 57.6]	[44.0, 59.0]	[45.9, 63.4]
matching meeting	[72.5, 80.3]	[76.6, 82.8]	[84.09, 89.8]
surplus matching	[-28.4, -13.2]	[-35.6, -26.8]	[-48.3, -35.6]
total (/baseline)	4.78	11.4	12.6

MACRO IMPLICATIONS

The planner's problem

- ▶ Only benefit of MJH is in exploiting the discontinuity in $f(\cdot)$
- ▶ This entails making an individual work $2\bar{h}$ hours
- ▶ However, for most individuals z is too high to devote $2\bar{h}$ hours to market work
- ▶ Preliminary results suggest that efficient multiple jobholding rates are ~ 0.5 percent

Conclusion

CONCLUSION

- ▶ We develop a quantitative general equilibrium theory of multiple jobholding
- ▶ The 25-year steady decline in multiple jobholding is likely caused by more convex costs of working a second job
- ▶ While some worry that this decline heralds a less-flexible labor market, our model predicts that it has increased job creation and improved welfare