Income Dynamics and Rent Sharing of Coworking Couples

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28 August 2024

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    - ▶ Though firms do not know the exact value of the amenity, they should use **as much information as possible**
    - ▶ Alternatively, they may be constrained from doing so by e.g. fairness concerns
    - ▶ The degree to which firms treat observably different workers differently is an **empirical question**

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- Do firms exploit **observable information** about workers when **setting wages**?

This Paper

- I test this hypothesis by studying **coworking couples** (CWC) in Norway
  - ▶ Firms can **generally observe when two employees are married**
  - ▶ CWC are **less mobile**, perhaps because of amenity from working together
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- I find large differences in rent sharing for **coworking women** in particular
  - ▶ While **both** coworking husbands and wives are **less mobile**, only wives receive lower income growth
  - ▶ Pattern may stem from gender differences in the **valuation of the coworking amenity**

▶ Literature

The Norwegian Data

- **Households:** Panel of all Norwegian residents + tax records: 1993-2015
  - ▶ Demographics: gender, age, marital status (and ID of spouse), etc.
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  - ▶ In sample, 8.3% of dual-employed couples are coworking

Summary Statistics   Trends

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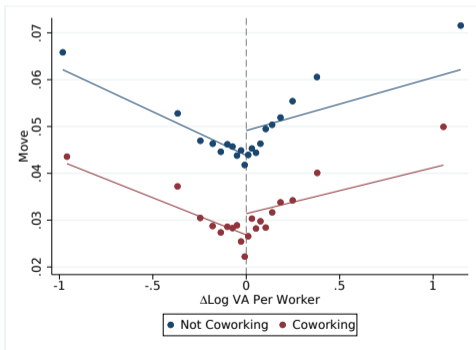- Measure firm performance shocks as innovations to **log value added per worker**

▶ Summary Statistics   ▶ Trends

Coworking Couples are Less Mobile

Job-to-Job Transition

(a) Men
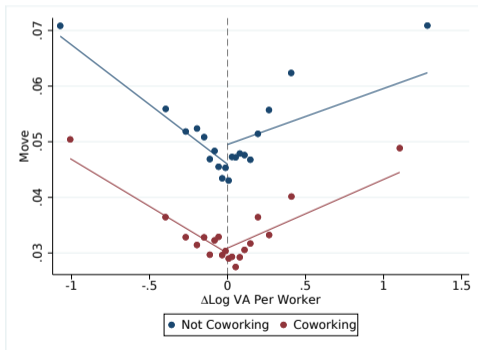
(b) Women

▸ Any Job Ended

Estimating Rent Sharing Schedules

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$$\Delta y_{it} = \beta_0 CWC_{it} + \sum_q (\beta_1^q q_{it}^{\Delta VA} + \beta_2^q q_{it}^{\Delta VA} \times CWC_{it}) + X_{it}'\delta + \varepsilon_{it}$$

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- Normalization: omit $q = 10$, so rent sharing relative to the top decile

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▸ Binscatters   ▸ Elasticity

Results: Coworking Women Drive Observed Differences

Estimated Rent Sharing Schedules
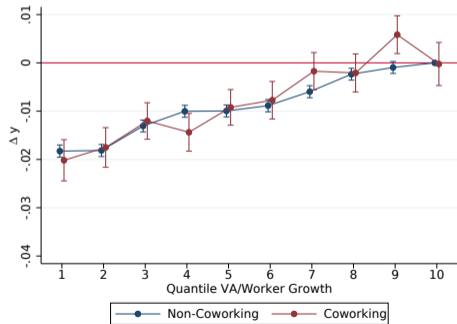
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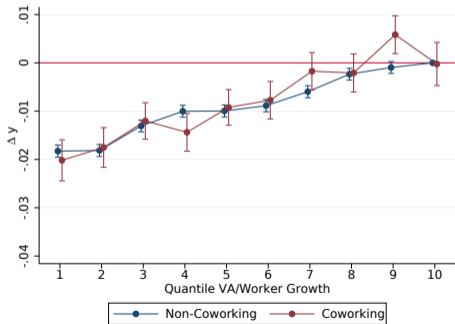(a) Men

▸ Binscatters   ▸ Elasticity

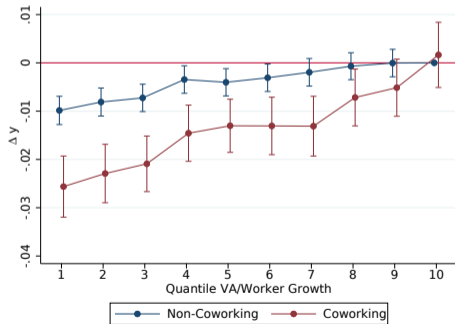# Results: Coworking Women Drive Observed Differences

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    - ▶ From focusing on stayers ▸ Go
    - ▶ From sorting into coworking ▸ Go
    - ▶ From differences in match quality ▸ Go

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- Evidence for the monopsony explanation for rent sharing: **job mobility is bargaining power**

- Both coworking husbands and wives are **less mobile**, yet only wives see **lower income growth**. Why?

Why Only Wives?

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- One possible reason: employers believe, rightly or wrongly, that the wife is **more likely to follow** the husband if he quits, so that they lose two employees instead of one

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- One possible reason: employers believe, rightly or wrongly, that the wife is **more likely to follow** the husband if he quits, so that they lose two employees instead of one

- What would rationalize this behavior? One possibility: gender differences in the **valuation of the coworking amenity**
  - ▶ Intuition: neither spouse can **force the other to quit**, but they can **unilaterally destroy the amenity** by quitting themselves
  - ▶ If wives value the amenity more, they may choose to take a pay cut rather than switch jobs: firms can **retain both workers** by cutting the pay of the wife

A Stylized Game I

- Suppose husbands do not value coworking at all, while wives value it at a. Both value household income:

$$u^H = (y^H + y^W) \quad u^W = (y^H + y^W) + a$$

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- Spouses play a non-cooperative game where each can stay or switch

A Stylized Game II

Case 1: Firm offers -1 to both spouses

Wife

Husband		Switch	Stay
	Switch	$(0, 0)$	$(-1, -1)$
	Stay	$(-1, -1)$	$(-2, -2 + a)$

Nash Equilibrium: (Switch, Switch). Wife would prefer (Stay, Stay), but she cannot force Husband to play Stay.

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Case 2: Firm offers ε to husband, -2 to wife

		Wife	
		Switch	Stay
Husband	Switch	$(0, 0)$	$(-2, -2)$
	Stay	$(\varepsilon, \varepsilon)$	$(-2 + \varepsilon, -2 + \varepsilon + a)$

Nash Equilibrium: (Stay, Stay). Husband would prefer (Stay, Switch) or even (Switch, Switch), but he cannot force Wife to play Switch!

Empirical Evidence: Gender Differences in "Double Quits"

Mobility After Coworking Spouse Leaves

	(1)	(2)	(3)
	Move	Move	Move
	b/se	b/se	b/se
Wife Was Stayer	0.041***	0.041***	0.041***
	(0.004)	(0.004)	(0.004)
Yrs Since Move	No	Yes	Yes
Controls	No	No	Yes
R-Sq	0.002	0.051	0.090
Mean Dep. Var	0.4	0.4	0.361
Observations	197,747	197,747	183,428

Note: Standard errors in parentheses, clustered at the couple level. Sample of initially coworking spouses where one spouse leaves the plant, in the 5 years after the leave event. Controls for age fixed effects, education, location of both spouses, number of kids under 13, and year.

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Conclusion

- **Empirical evidence** for the theoretical prediction that worker mobility is important in firm wage setting decision

- Though may not observe workers' propensity to move, they should use **as much information as possible**

- **Mobility is insurance** against negative wage shocks, both **directly** and **indirectly**

- Policy implications:
    - ▶ Giving workers information about outside options has a **large impact** on bargaining power: implications for, e.g. salary disclosure laws
    - ▶ As does **reduced frictions** to job search
    - ▶ Joint decision-making of couples can lead to **gender gaps**

Thank You!

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Literature

- **Rent Sharing:** Guiso, Pistaferri, and Schivardi (2005); Card, Cardoso, and Kline (2016); Friedrich et al. (2019); Kline et al. (2019), Cho and Krueger (2022); Garin and Silverio (2022); Lamadon et al. (2022)
  - ▶ **Contribution:** Nonlinear rent sharing structures; show firm response to worker observables

- **Income Growth (Job-to-Job Mobility, Promotions):** Burdett and Mortensen (1998); Gibbons and Waldman (1999); van der Klaauw and Dias da Silva (2011); Frederiksen, Halliday, and Koch (2016); Bronson and Thoursie (2021); Blanco et al. (2022)
  - ▶ **Contribution:** Highlight relationship between internal and external growth

- **Economic Consequences of Coworking Couples:** Zinovyeva and Tverdostup (2021)
  - ▶ **Contribution:** Novel facts; consequences for household income risk and growth

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Summary Statistics, Dual-Continuer Households

Summary Statistics

	Non-Coworking			Coworking		
	Mean	Median	Variance	Mean	Median	Variance
Δ HH Inc	.0321	.0292	.0189	.0263	.0255	.0366
Δ Wife Inc	.0368	.0296	.0913	.0282	.0266	.117
Δ Husband Inc	.0269	.0248	.052	.0217	.0212	.0808
Age Wife	43.1	43	71.5	43.8	44	71.5
Age Husband	45.3	46	72.2	46.3	47	70.9
HH Inc (1000 2011 USD)	155	141	5,132	154	140	5,694
Wife Inc (1000 2011 USD)	59	55.5	923	61.7	58	1,105
Husband Inc (1000 2011 USD)	95.7	83.2	3,444	92.2	80.8	3,219
Wife Plant Size	387	52	1,494,540	546	41	3,186,796
Husband Plant Size	376	55	2,127,185	525	34	3,125,160
Kids Under 5	.375	0	.546	.354	0	.541
Kids Under 13	.968	1	1.18	.914	0	1.23
Observations	4,844,057					

Note: Summary statistics for dual-continuer households with both spouses aged 25-60. Income levels deflated using Norwegian CPI and converted to 2011 USD. ‹ Back
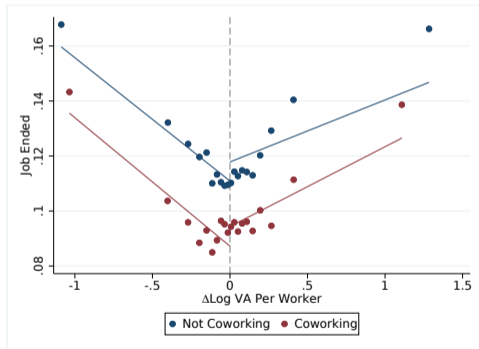
8% of Couples in Norway are Coworking
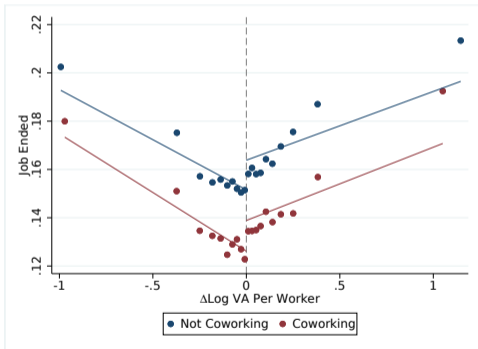

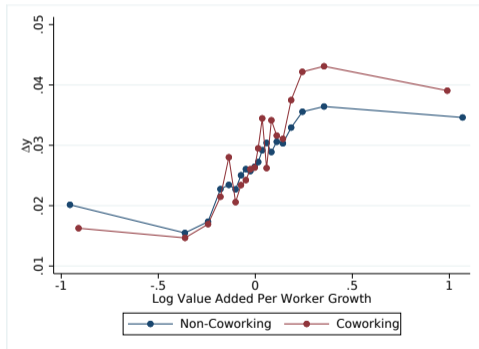Share of Coworking Couples by Year (Dual-Employed)
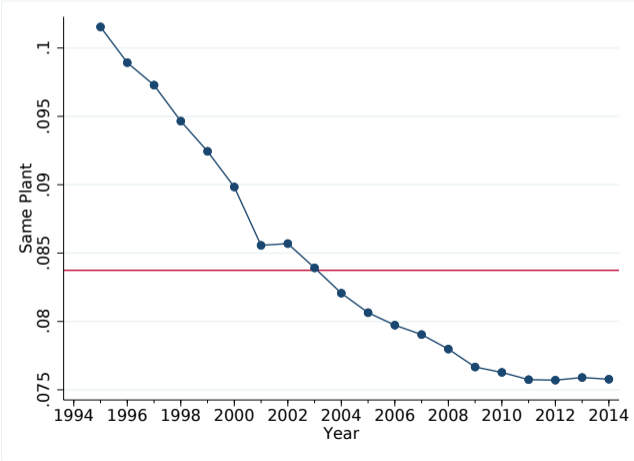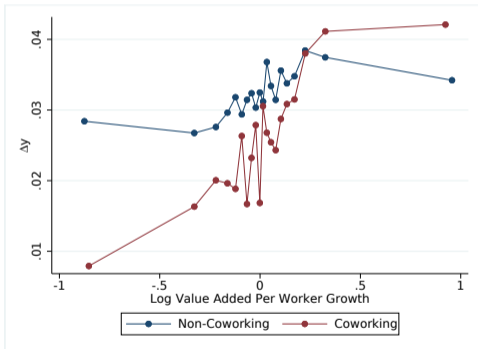
Any Job Ended

(a) Men

(b) Women

Rent Sharing, Individual Income

(a) Men   (b) Women

◂ Back

Rent Sharing, Individual Income

(Log)Linear Pass-Through Estimates

	(1) Δy_{it} b/se	(2) Δy_{it} b/se	(3) Δy_{it} b/se
ΔVA_{jt}	0.025***	0.029***	0.028***
	(0.001)	(0.001)	(0.001)
Controls	No	Yes	Yes
Plant FE	No	No	Yes
R-Sq	0.000	0.050	0.077
Mean Dep. Var	.018	.018	.0181
Observations	5,162,546	5,162,278	5,158,329

Note: Standard errors in parentheses, clustered at the couple level. Controls for age fixed effects, education, location of both spouses, number of kids under 13, and year. Sample of continuers in plants with at least 10 employees last year. ΔVA is the log growth of value-added per worker at the firm level. ◂ Back

Selection Bias: Stayers

- **Selection bias** is a concern when estimating rent sharing using stayers
  - ▶ Suppose for a given ΔVA, firms offer a **distribution** of raises Δy
  - ▶ Especially bad offers may induce workers to leave–Δy for stayers is **not the offer distribution**
  - ▶ As we have seen, coworking couples are less mobile
  - ▶ The observed differences in rent sharing may reflect **not only different firm offers**, but **differences in worker mobility**

A Statistical Model

- Suppose the latent "offered" raise is given by

$$\Delta y_{it}^* = b(\Delta VA_{j(i,t)t}, CWC_{it}) + X_{it}'\delta + \varepsilon_{it}$$

- We observe the raise for stayers only if the worker stays:

$$\Delta y_{it} = \Delta y_{it}^* \times \mathbb{1}\{S_{it}^* \geq 0\}$$

$$S_{it}^* = b(\Delta VA_{j(i,t)t}, CWC_{it}) + Z_{it}'\gamma + \nu_{it}$$

- S_{it}^* The latent utility of staying
- Account for the fact that coworking couples are less likely to move
- Instruments for selection
  - ▶ Mass layoff/churn events: **gross and net mobility** from firm $\leq -30\%$
  - ▶ Changes in the outside option: **employment and earnings growth in a worker's gender-education-industry-county cell**
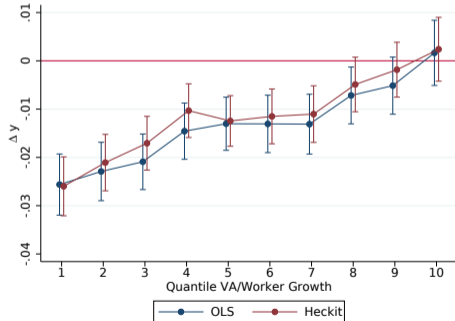
Selection-Corrected Estimates

Figure: Rent Sharing Schedules for Coworking Couples, Heckit

(a) Men
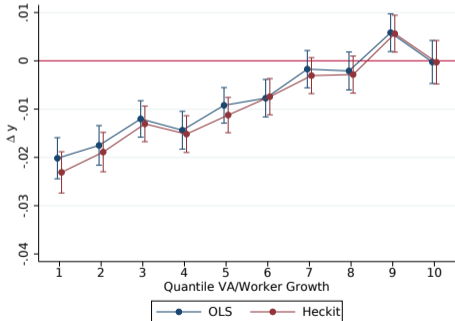
(b) Women

Selection Bias: Who Chooses to be in a Coworking Couple?

- Could women who choose to cowork with their spouse be systematically **less productive**?
- One test: compare the **pre-marriage** income growth of women who end up marrying a coworker and those who don't

Selection: Married Coworker

	Δy b/se	Δy b/se	Δy b/se
Married Coworker	0.009***	0.008***	0.010***
	(0.001)	(0.001)	(0.002)
Controls	No	Yes	Yes
Plant-Year FE	No	No	Yes
Mean Dep. Var	.0741	.0741	.0771
Observations	846,602	846,433	581,286

Selection Bias: Differences in Match Quality

- Could coworking women be accepting **lower quality** matches in order to work together?
- Compare income growth of coworking women who were **joined by their spouse**: Generalized DID

$$\Delta y_{it} = \alpha_i + \gamma_t + X_{it}'\delta + \beta \text{Coworking}_{it} \times \text{Post}_{it} + \varepsilon_{it}$$

Selection: Income Growth for Incumbent Women

	Δy_{it}	Δy_{it}
	b/se	b/se
Coworking $\times$ Post Join	-0.012***	-0.006***
	(0.002)	(0.002)
Controls	No	Yes
Mean Dep. Var	.0369	.0369
Observations	3,438,500	3,438,403