Liquid Wealth and Consumption Smoothing of Typical Labor Income Shocks

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Outline

1. Identification (Methods)
2. Data: Bank Account Transactions from 50 million Households
3. Identification (Empirics)
4. The Consumption Response to Typical Income Shocks

Outline

Environment, object of interest

Classic permanent-transitory (log) income process:

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\begin{aligned}
y_{it} &= z_{it} + \varepsilon_{it} \qquad \leftarrow \text{transitory shock} \\
z_{it} &= z_{i,t-1} + \eta_{it} \qquad \leftarrow \text{permanent shock}
\end{aligned}
$$

Notes: strong assumption with testable predictions. Can also do more general auto-regressive process instead.

Consumption (e.g. Blundell, Pistaferri, and Preston 2008; Blundell, Low, and Preston 2013):

$$\Delta c_{it} = \beta_\eta \eta_{it} + \beta_\varepsilon \varepsilon_{it} + \zeta_{it}$$

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Two Approaches For Recovering β_ε in Prior Literature

(1) Quasi-experimental windfalls

- Pros: exogenous, probe identifying assumptions using event study methods
- Cons: small sample sizes constrain precision, limited external validity for some questions

(2) Covariance restrictions within structural model (Hall and Mishkin 1982; Blundell, Pistaferri, and Preston 2008)

- Pros: captures typical variation, clear theoretical interpretation
- Cons: includes endogenous variation, identifying assumptions may seem harder to test

⇒ Our method: bridge that builds on strengths of both approaches

- Use covariance restrictions to isolate transitory, typical shocks
- Use quasi-experimental methods to isolate exogenous shocks & evaluate identification

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Building on Structural Covariance Restriction Approach

Maintain environment from two slides ago.

Assume income shocks are IID $(\eta_{it}, \varepsilon_{it}) \sim IID$ and $\eta_{i,t} \perp \varepsilon_{it} \quad \forall t$

Assume consumption error is exogenous $\zeta_{i,t} \perp (\eta_{i,t+s}, \varepsilon_{i,t+s}) \quad \forall s$

Result HM-BPP (Hall and Mishkin 1982, Blundell Pistaferri and Preston 2008)

$$\hat{\beta}_{\varepsilon,HM-BPP} \equiv \frac{\text{cov}\left(\Delta c_{it}, -\Delta y_{i,t+1}\right)}{\text{cov}\left(\Delta y_{it}, -\Delta y_{i,t+1}\right)} = \frac{\text{cov}\left(\Delta c_{it}, \varepsilon_{it}\right)}{\text{var}\left(\varepsilon_{it}\right)} = \frac{\beta_\varepsilon \sigma_\varepsilon^2}{\sigma_\varepsilon^2} = \beta_\varepsilon$$

Approach also used in many more recent papers (e.g. Crawley and Kuchler 2023, Commault 2022) ▸ Details

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DiD as a Bridge Between Covariance Restrictions and Natural Experiment

- Why does HM-BPP use $-\Delta y_{i,t+1}$ as an instrument to isolate transitory shock in t?
  - Next 2 slides a review for those familiar with "BPP"
  - Perhaps a bridge for audience more familiar with quasi-experimental methods

- To help build intuition, consider a discrete version of the HM-BPP instrument:

$$D_i^{HM-BPP} \equiv \mathbf{1}(-\Delta y_{i,t^*+1} > M_{-\Delta y})$$

where t^* is the period of interest and $M_{-\Delta y} \equiv median(-\Delta y_{i,t^*+1})$

- Builds on Lamadon, Mogstad, and Setzler (2022) who also construct DiD-based tests of covariance restrictions

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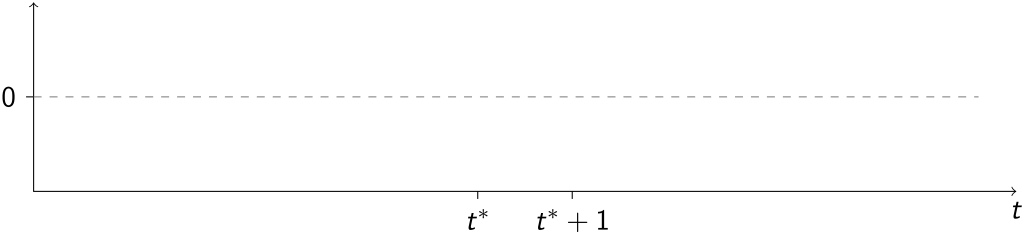
Expected Income Dynamics Using Binary Instrument

Recall that $\Delta y_{it+1} = \eta_{i,t+1} + \varepsilon_{it+1} - \varepsilon_{i,t}$. Consider a worker w/ $-\Delta y_{i,t^*+1} > M_{-\Delta y}$:

$$\downarrow \Delta y_{i,t^*+1} \quad \Rightarrow \quad \uparrow \varepsilon_{it^*} \quad \downarrow \varepsilon_{i,t^*+1} \quad \downarrow \eta_{i,t^*+1}$$



- At time t^*, worker *only* knows about ε_{it}. This is the ideal RCT.

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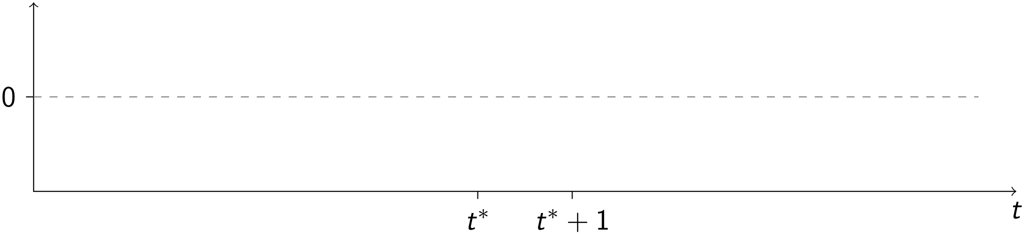

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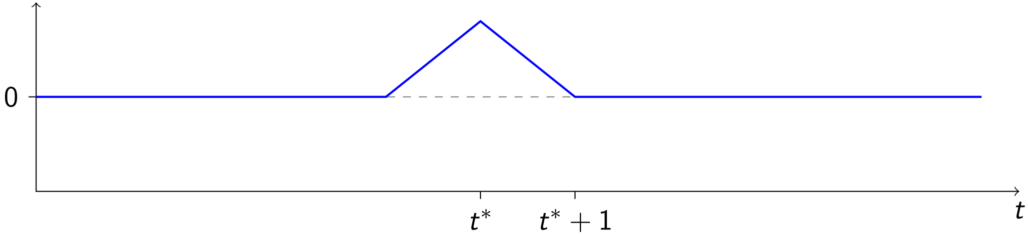

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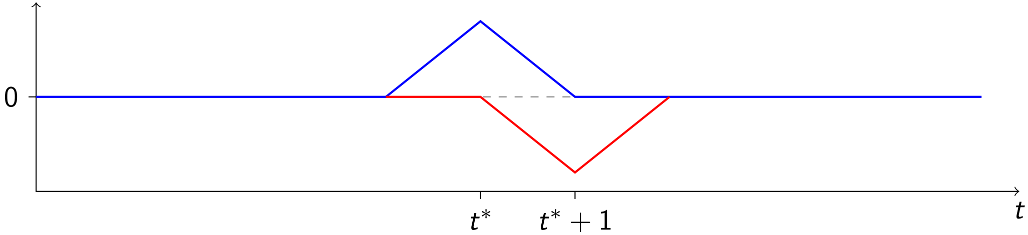

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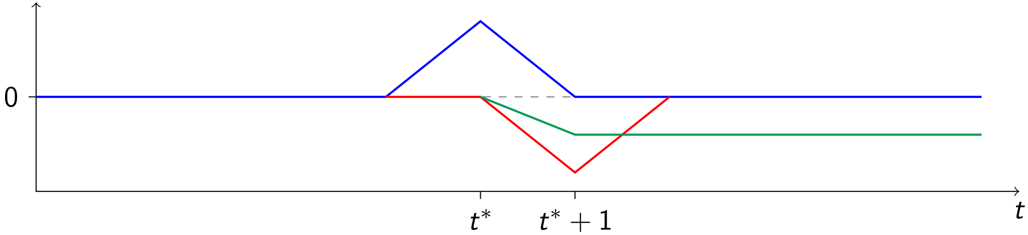

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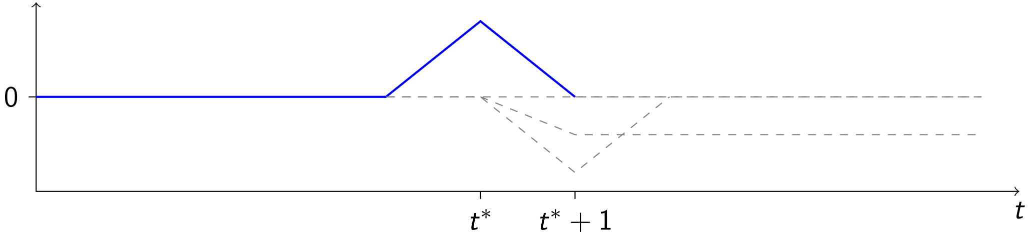

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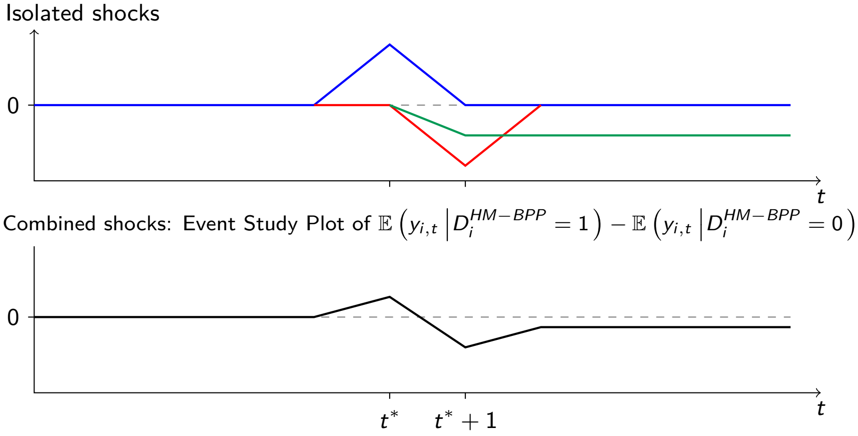
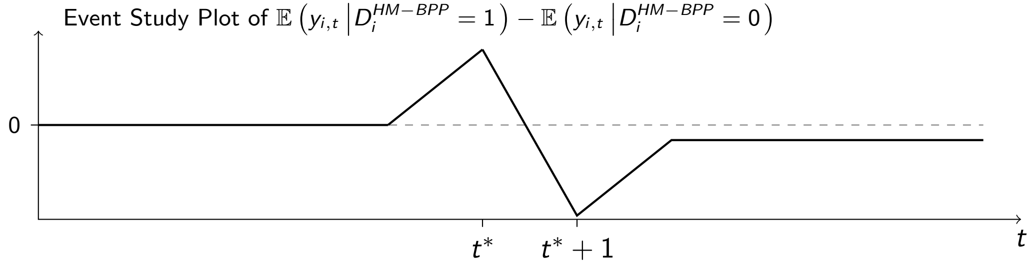


Five Testable Predictions of HM-BPP Assumptions (“Heartbeat”)



Testable predictions for income, can be evaluated using standard event study methods:

(1) Parallel pre-trends: No normalized difference between treatment and control before t^*

(2) First stage: Positive difference at t^*

(3) Negative post-trends: Negative difference at $t^* + 1$

(4) Negative post-trends: Negative difference (smaller) after $t^* + 1$

Fifth prediction: parallel *consumption* pre-trends

Combining Covariance Restrictions + Instrument for Exogeneity

- While the HM-BPP estimator isolates transitory shocks, there may still be concerns of endogeneity when a worker's income is a function of their own labor supply decisions
- Solution: use pay change of co-workers as IV to purge endogenous labor supply decisions
- **key result:**

$$\hat{\beta}_{\text{HM-BPP-Co}} \equiv \frac{\operatorname{cov}(\Delta c_{ijt}, -\Delta y_{j(-i,t+1),t+1})}{\operatorname{cov}(\Delta y_{ijt}, -\Delta y_{j(-i,t+1),t+1})} = \beta_\varepsilon$$

- Isolates exogenous shocks using pay change of co-workers' at firm j
- Isolates transitory shocks using income change from t to $t+1$
- HM-BPP requires strong assumptions, but these assumptions have five testable predictions that can be evaluated transparently using standard event study methods

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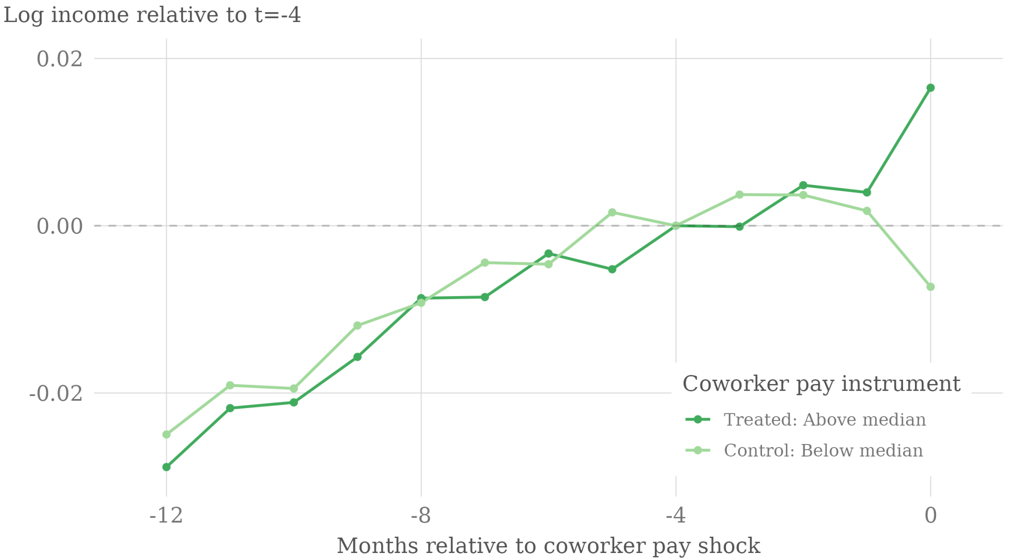
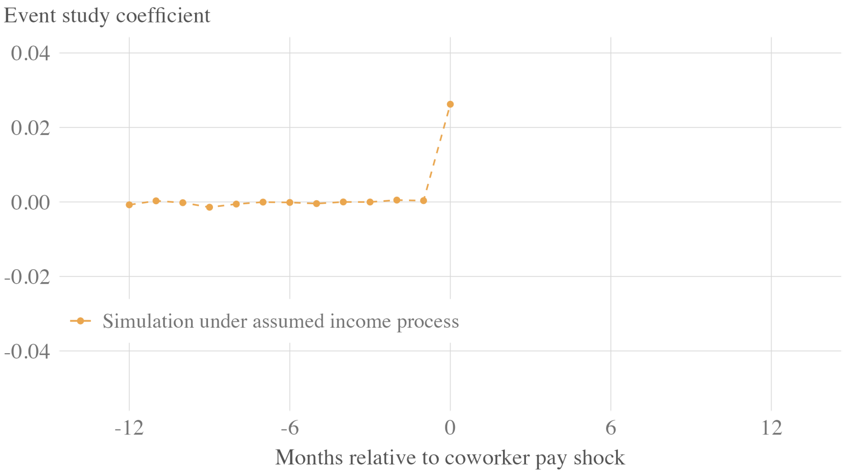
Binary income event study (pre-trends only)



Binary income event study (pre-trends and post-trends), i.e. "Heartbeat"



$$y_{i,t^*+s} = \sum_{k=-12, k\neq -4}^{12} \rho_k \times \mathbf{1}\{k = t^* + s\} \times D_{i,t^*} + \phi_s + \nu_{i,t^*+s}$$

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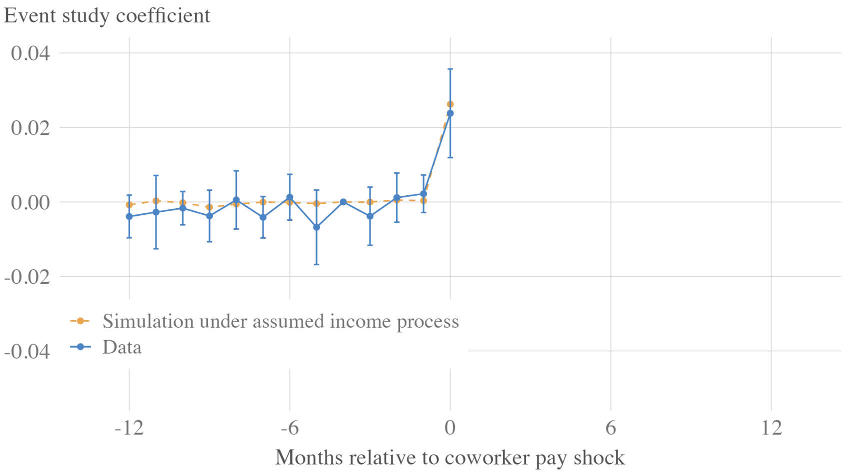

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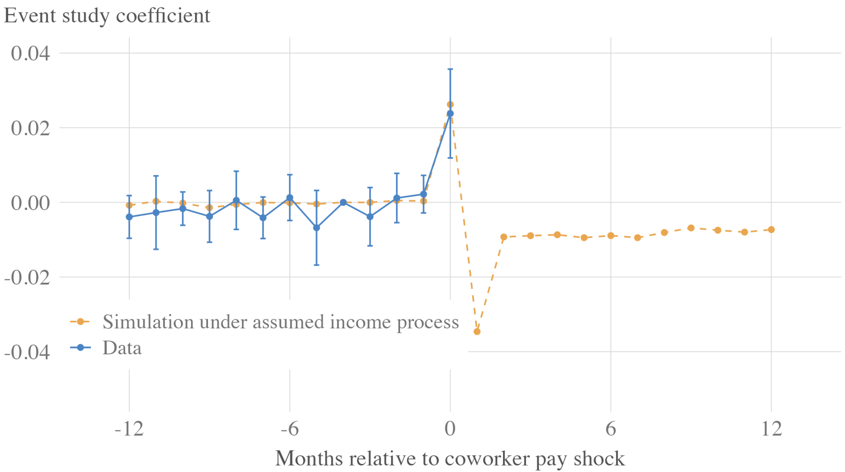

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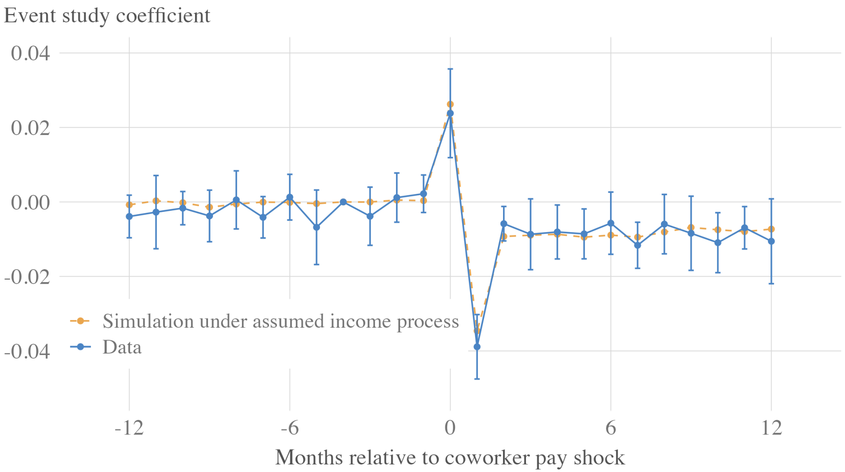

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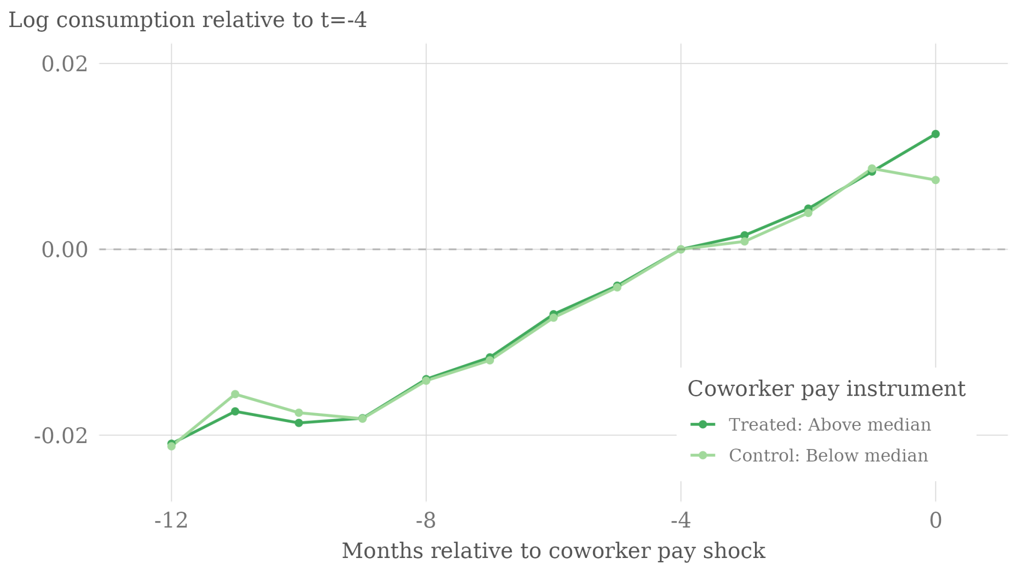
Consumption pre-trends



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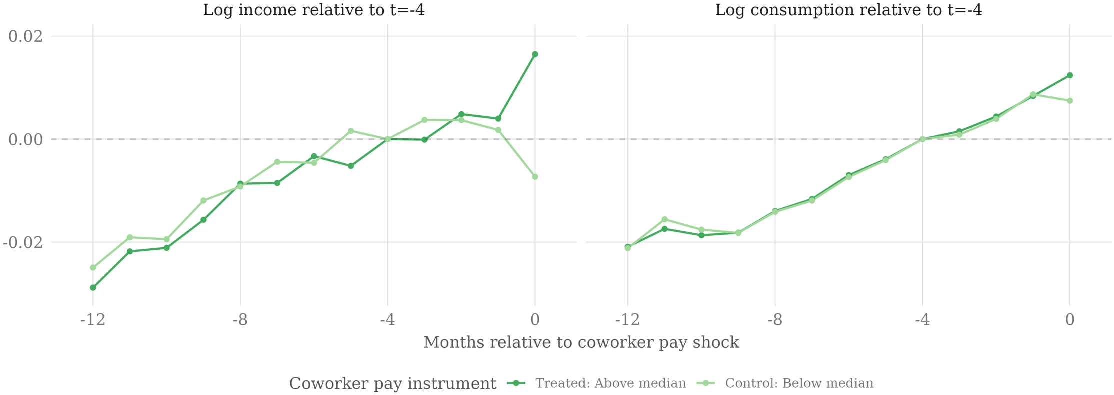
The Consumption Response to Typical Labor Income Shocks

(1) **Overall estimate**
(2) Heterogeneity by liquidity
(3) Heterogeneity by predictability *(Skip for today)*
(4) Quantification of welfare cost *(Skip for today)*

Impact of Income on Consumption From Binary Event Study



- Wald estimate: elasticity $= \frac{\text{relative } \%\Delta c}{\text{relative } \%\Delta y} = \frac{0.5\%}{2.1\%} = 0.24$ Binary event study Continuous event study

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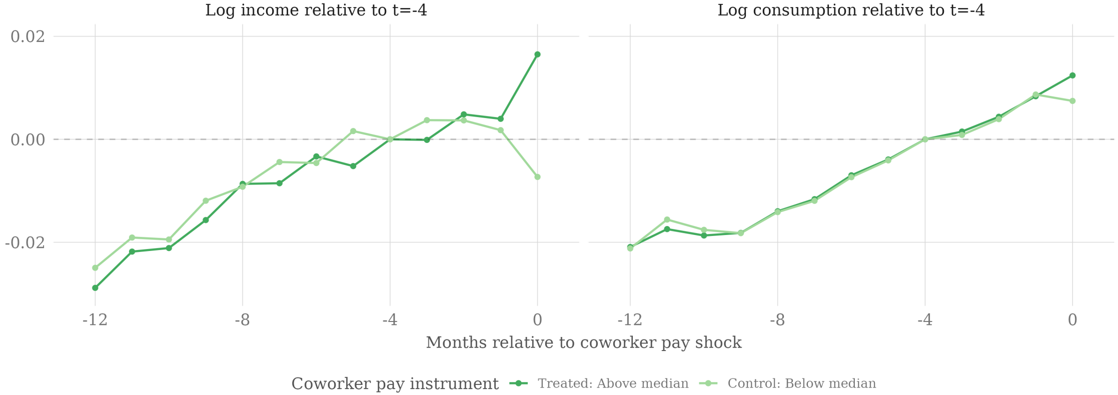

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Binary event study
Continuous event study

Impact of Income on Consumption Using Continuous Instrument

	Dependent Variable: Δ Log Non-Durable Consumption
	(1)
Δ Log Income	0.221
	(0.016)
(Δ Log Income) x Checking	
Coworker Instrument	Period-Ahead Pay Per Check
Seasonal Adjustment	Yes
Type of Income Variation Captured by Instrument	
New Transitory Shock	Y
Predictable Reversion of Transitory Shock	
Permanent Shock	
Predictable Recurring Annual Changes	
Predictable Pay Schedule Variation	

- Friedman (1957) would not predict this. Also responsive to Cochrane (1989).

Worker instrument

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- But existing estimates imprecise
- New generation of models: high MPCs for everyone [Lian 2023 AERI, Ilut and Valchev 2023 QJE, Bianchi et al 2023 RESTUD]
- Finding: sharp negative gradient as in benchmark models. Consistent with Baker et al. (2023).

Figure: Marginal Propensity to Consume by Asset Buffer

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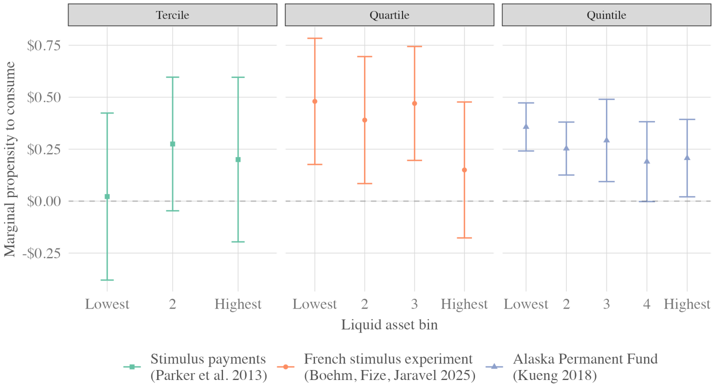

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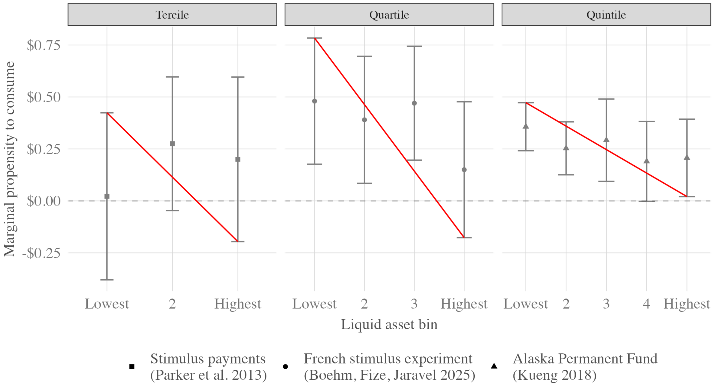

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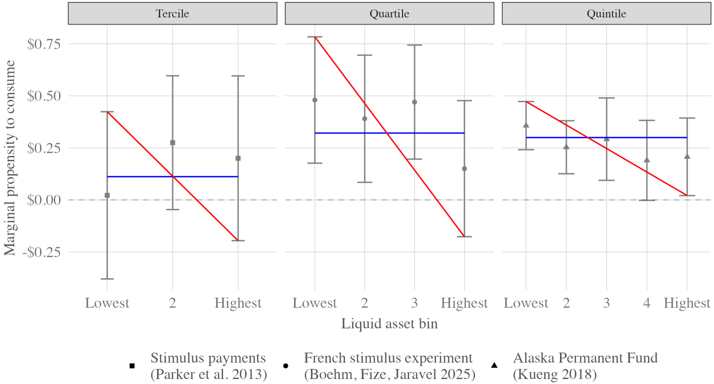

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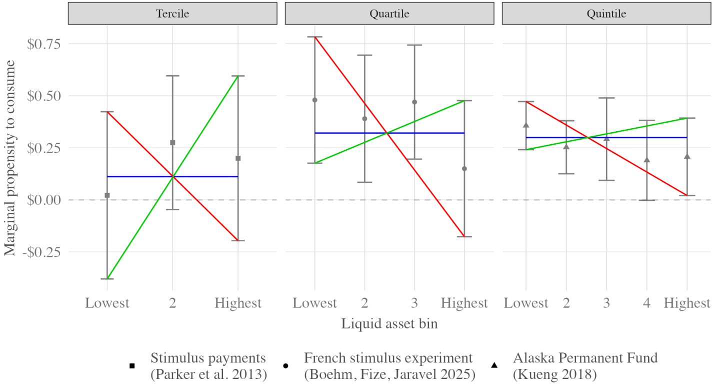

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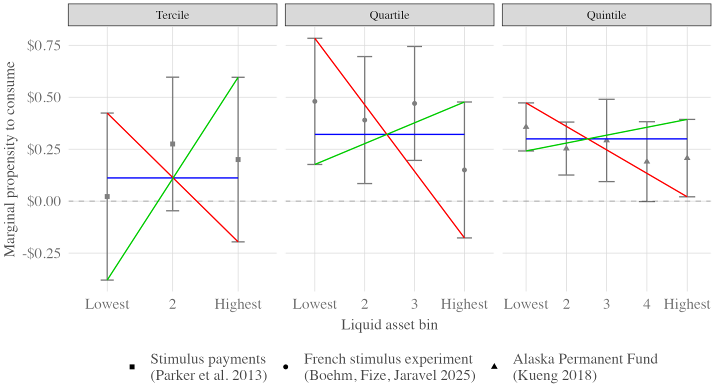

- Benchmark models: high MPCs for low wealth hhs [Aiyagari 1994, Laibson et al. 2024, Kaplan and Violante 2014]
- But existing estimates imprecise
- New generation of models: high MPCs for everyone [Lian 2023 AERI, Ilut and Valchev 2023 QJE, Bianchi et al 2023 RESTUD]
- Finding: sharp negative gradient as in benchmark models. Consistent with Baker et al. (2023).

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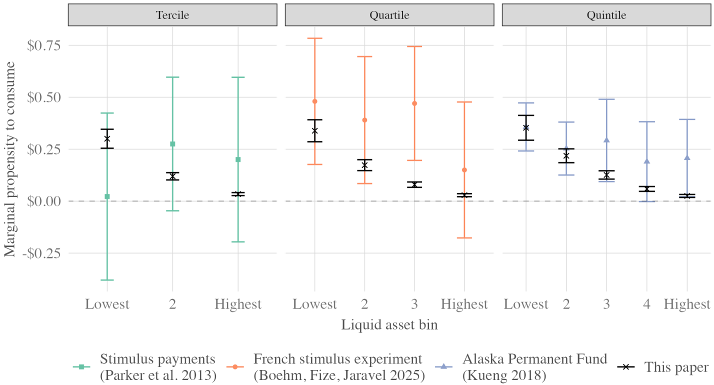
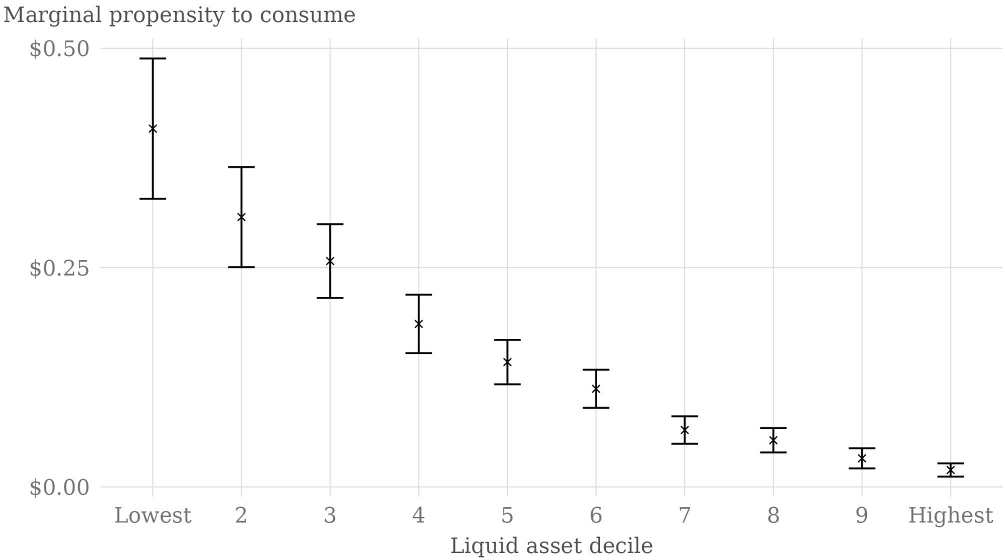


Figure: MPC by Decile of Liquid Assets



The Consumption Response to Typical Labor Income Shocks

(1) Overall estimate
(2) Heterogeneity by liquidity
(3) **Heterogeneity by predictability *(Skip for today)***
(4) **Quantification of welfare cost *(Skip for today)***

Conclusion

Methods: identify exogenous, transitory, unpredictable shocks to labor income

- Quasi-experimental methods (event study, coworker instrument)
- Covariance restrictions (coherent theoretical interpretation)

Finding: consumption sensitive to monthly labor income shocks

- Implies large welfare cost from transitory income volatility

Why is consumption sensitive to income?

- Tight negative correlation between MPC and liquidity
  - Supports "low-liquidity" interpretations over "high-wealth high-MPC" models
- Sensitivity persists even in welfare-relevant settings
  - Inconsistent with some "near-rationality" interpretations of consumption sensitivity

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Econometrics Summary

Steps to isolate a transitory, exogenous, unpredictable shock to labor income

1. Use income changes from period-forward
2. Use co-worker instrument
3. Remove predictable variation by seasonally adjusting and using pay per paycheck

For this instrument, all five testable predictions of HM-BPP appear to be satisfied.

main estimating equations:

$$\Delta c_{it} = \alpha + \beta \Delta y_{it} + \zeta_{it}$$

$$\Delta y_{it} = \phi - \rho \Delta y_{j(-i,t),t+1} + \nu_{it}$$

Rest of talk is empirical results.

Income continuous instrument | Consumption binary instrument | Consumption continuous instrument | First stage and reduced form
Second stage | Quarterly MPC by assets | Summary statistics | First stage table | Consumption elasticity robustness

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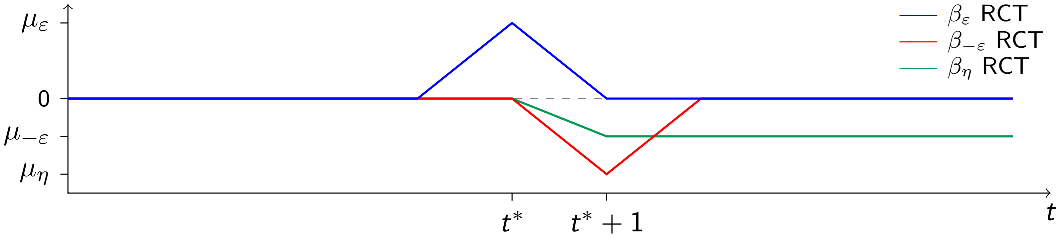
Three Experiments



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Covariance Restrictions

Can replace IID and Consumption Exogeneity assumptions with:

$$\text{cov}\left(\Delta c_{it}, \eta_{i,t+1}\right) = \text{cov}\left(\Delta c_{it}, \varepsilon_{i,t+1}\right) = 0$$

Kaplan and Violante (2010) refers to these as "No Foresight" assumptions ▸ Back

Assumptions for Identification

- Assumption IID2:

$$(\eta^w_{it}, \varepsilon^w_{it}) \sim IID;$$

$$\eta^w_{i,t} \perp \varepsilon^w_{i,t} \quad \forall t;$$

$$(\eta^f_{j(i,t),t}, \varepsilon^f_{j(i,t),t}) \sim IID;$$

$$\eta^f_{j(i,t),t} \perp \varepsilon^f_{j(i,s),t} \quad \forall t$$

- Addumption CE2:

$$\zeta_{i,t} \perp (\eta^f_{j(i,t+1),t+s}, \varepsilon^f_{j(i,t+s),t+s}) \quad \forall s$$

and if $j(i, t+1) = j(i', t+1)$ then

$$\zeta_{i,t} \perp (\eta^w_{i',t+s}, \varepsilon^w_{i',t+s}) \quad \forall s$$

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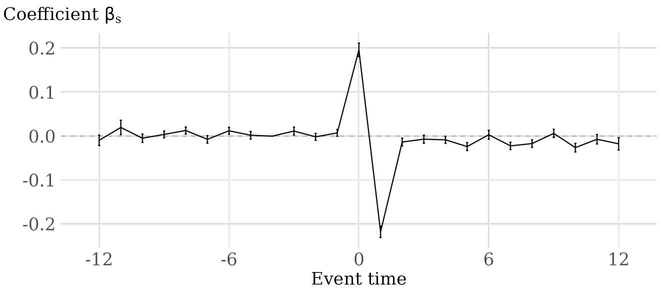
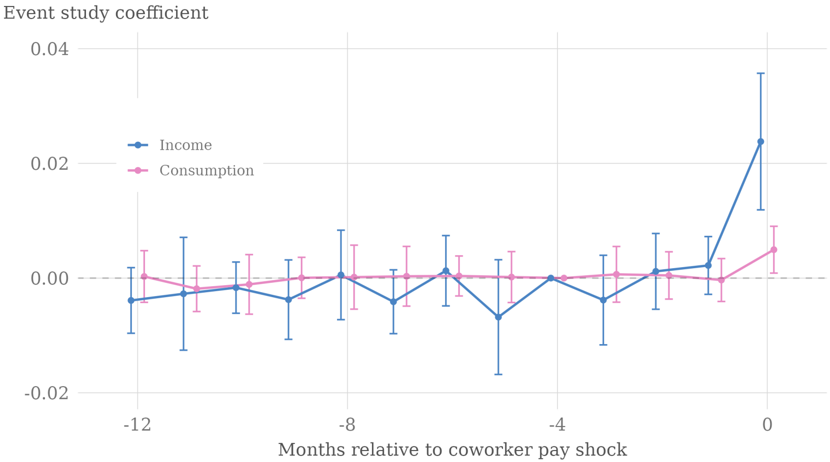
Continuous Instrument Income Event Study

Figure: Dynamic DiD Around Continuous Instrument Realization



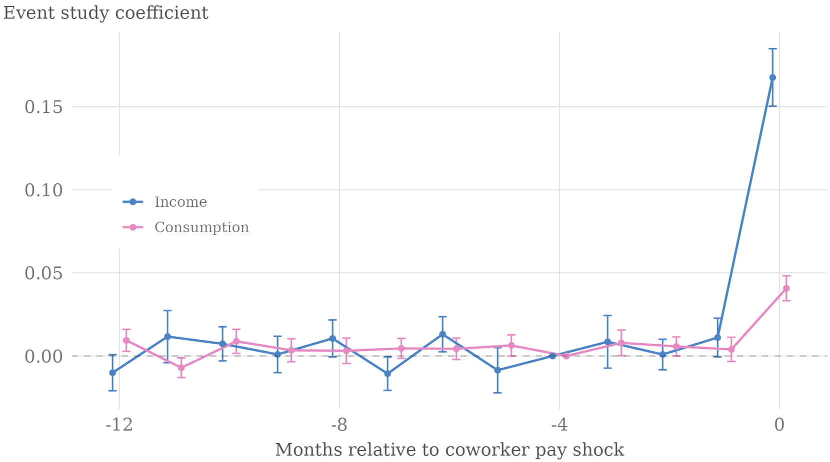
▸ Back

Binary income and consumption event study



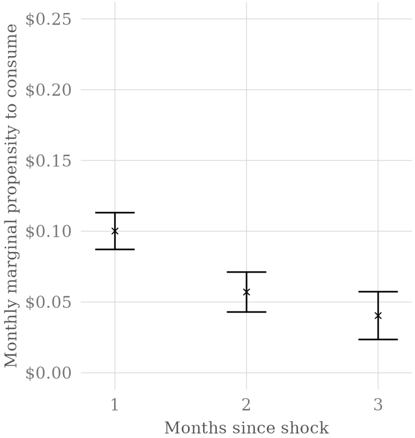
▸ Back to econometrics ▸ Back to event study

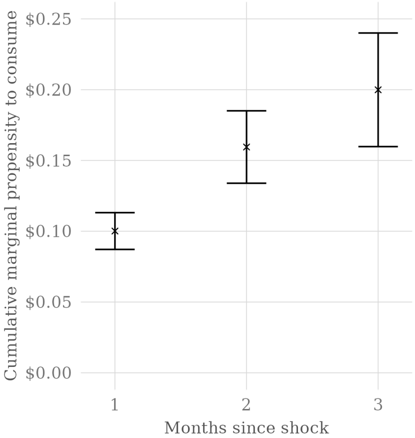
Continuous income and consumption event study



▸ Back to econometrics ▸ Back to event study

Dynamic and Cumulative MPCs





▸ Identification

Estimating a Dynamic Consumption Response

We extend the consumption function to allow for a response to lagged transitory shocks:

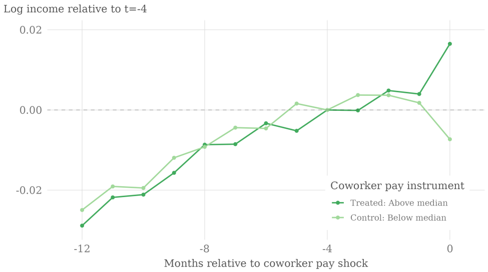
$$\Delta c_{i,t} = \beta_\eta \eta_{i,t} + \beta_{\varepsilon,0}\varepsilon_{i,t} + \beta_{\varepsilon,1}\varepsilon_{i,t-1} + \beta_{\varepsilon,2}\varepsilon_{i,t-2} + \beta_{\varepsilon,3}\varepsilon_{i,t-3} + \zeta_{i,t}$$
$$\beta_{\varepsilon,3} = -(\beta_{\varepsilon,0} + \beta_{\varepsilon,1} + \beta_{\varepsilon,2})$$

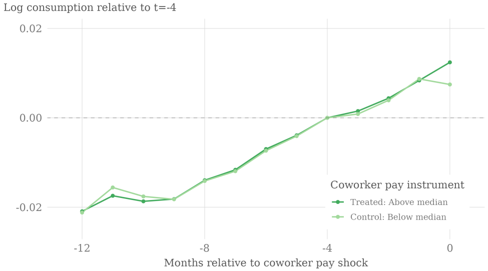
The constraint on $\beta_{\varepsilon,3}$ limits the impact of a transitory shock to three periods. Under assumptions IID and CE, the coefficients are identified as follows:

$$\beta_{\varepsilon,0} = \frac{\mathrm{cov}(\Delta c_{i,t}, -\Delta y_{i,t+1})}{\mathrm{cov}(\Delta y_{i,t}, -\Delta y_{i,t+1})}$$
$$\beta_{\varepsilon,1} = \frac{\mathrm{cov}(\Delta c_{i,t}, \Delta y_{i,t-1} + \Delta y_{i,t-2} + \Delta y_{i,t-3})}{\mathrm{cov}(\Delta y_{i,t}, -\Delta y_{i,t+1})}$$
$$\beta_{\varepsilon,2} = \frac{\mathrm{cov}(\Delta c_{i,t}, \Delta y_{i,t-2} + \Delta y_{i,t-3})}{\mathrm{cov}(\Delta y_{i,t}, -\Delta y_{i,t+1})}$$

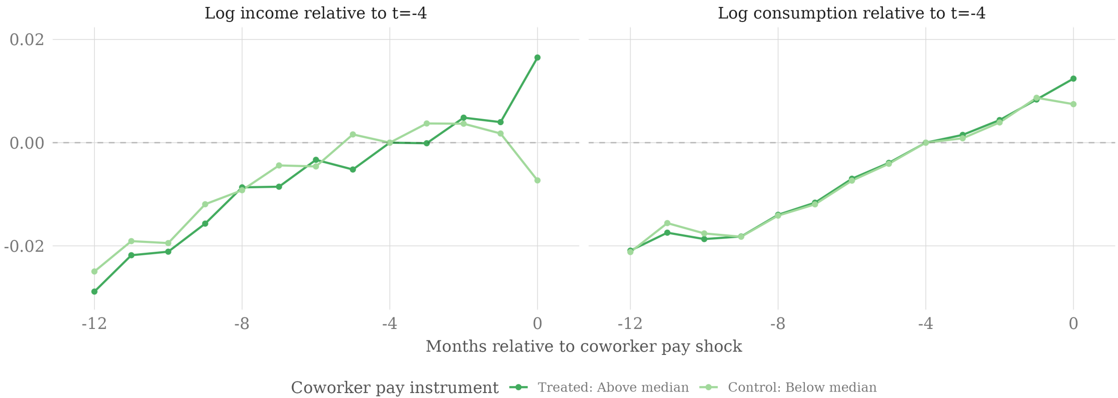
▸ Back

Time Paths of Income and Consumption



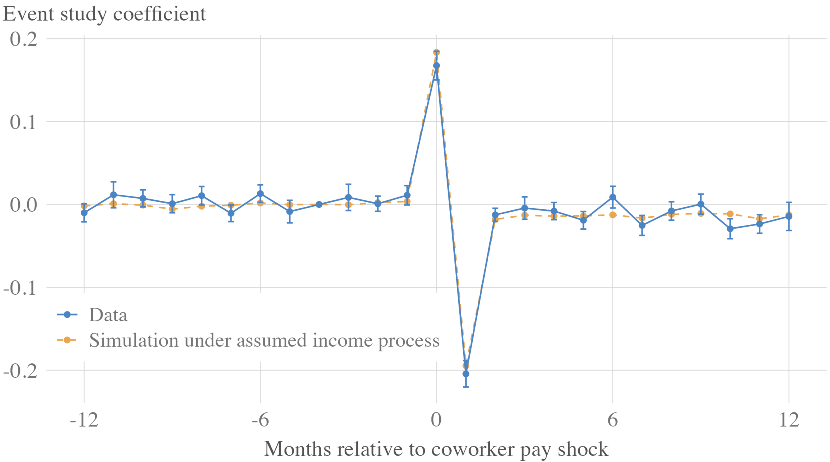


Time Paths of Income and Consumption



Additional Exhibits

Continuous Instrument Income Event Study



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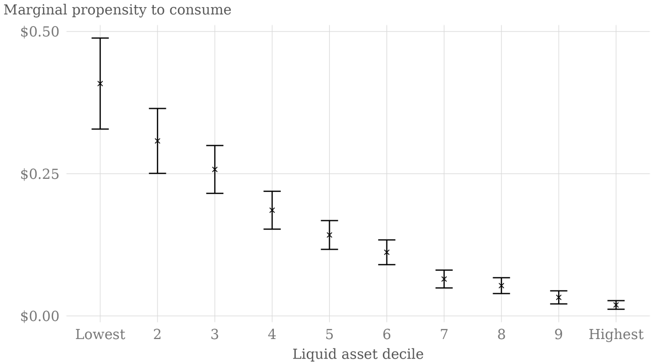
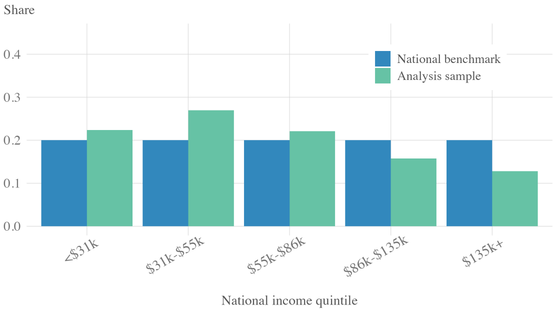
MPC by Decile of Liquid Assets

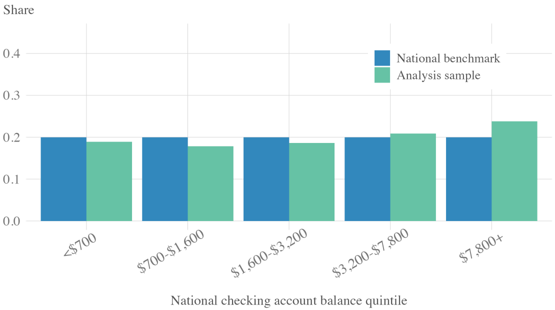


Distribution of Income and Checking Balance in Public Data vs Analysis Sample

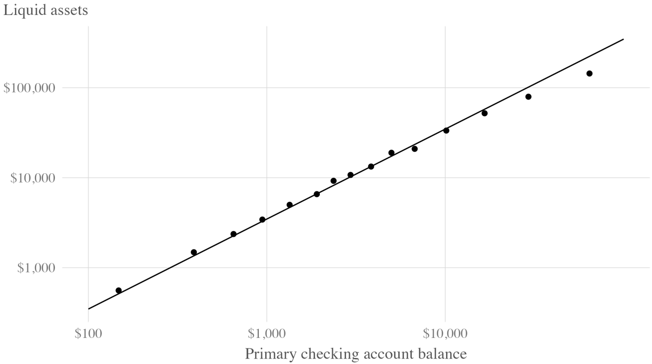
(a) Income



(b) Checking Account Balance

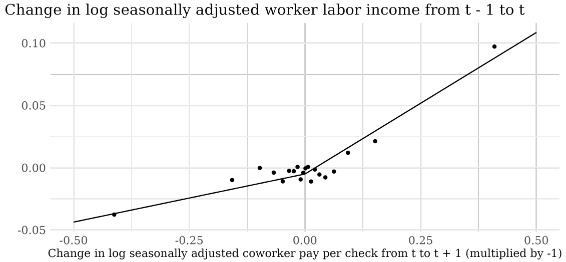


Liquid Assets and Checking Account Balances

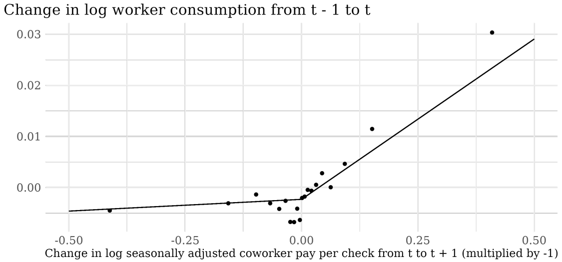


First Stage and Reduced Form Binscatters

(a) First Stage



(b) Reduced Form



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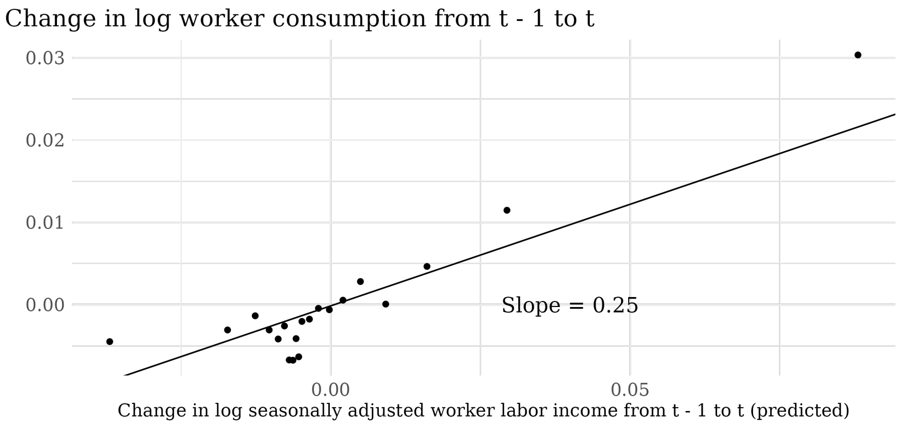
Binscatters cont.



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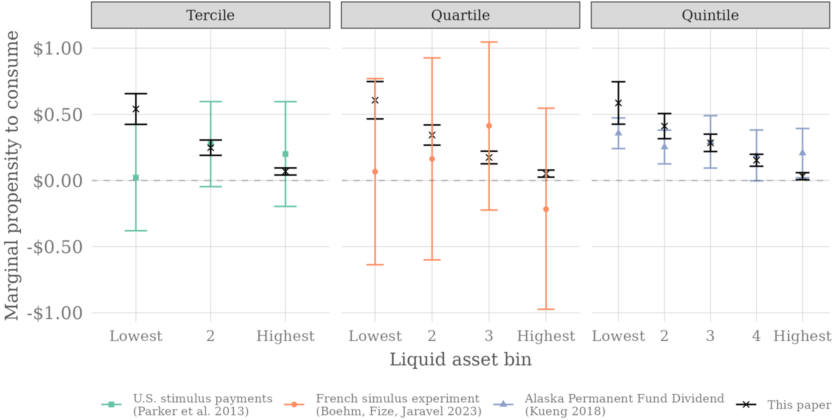
Heterogeneity in Quarterly MPCs by Liquid Assets



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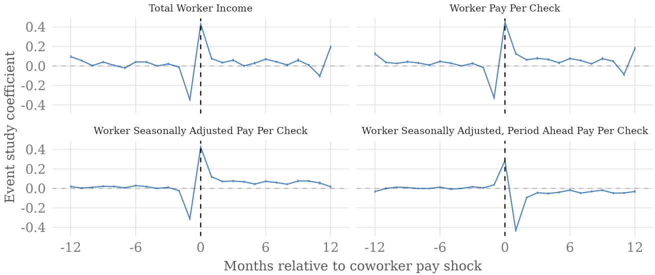
Income Event Study Around Realizations of Different Worker Instruments



Summary Statistics for Main Analysis Sample

Panel A: Household-Level Variables	Raw Data			Winsorized Data		
	Mean	Median	Std. Dev	Mean	Median	Std. Dev
Household Labor Income	$5,281	$3,918	$10,177	$4,801	$3,918	$3,277
Nondurable Consumption	$2,389	$1,740	$7,800	$2,094	$1,740	$1,521
Checking Account Balance	$9,220	$2,415	$30,073	$6,548	$2,415	$9,790
Checking Buffer Ratio	11.7	1.3	1,560.7	5.1	1.3	9.0
Panel B: Job-Level Variables						
Job Labor Income	$4,117	$3,198	$9,142	$3,715	$3,198	$2,482
Coworker Labor Income	$3,685	$3,360	$2,616	$3,524	$3,360	$1,416
Number of Households: 1,327,214						
Number of Household-Employer-Months: 27,881,033						

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First Stage for Various Specifications

	Dependent Variable: Δ Log Income			
	(1)	(2)	(3)	(4)
Δ Log Instrument	0.153 (0.007)	0.369 (0.011)	0.508 (0.007)	0.713 (0.006)
Coworker Instrument	Period-Ahead Pay Per Check	Pay Per Check	Pay Per Check	Total Pay
Seasonal Adjustment	Yes	Yes	No	No
Type of Income Variation Captured by Instrument				
New Transitory Shock	Y	Y	Y	Y
Predictable Reversion of Transitory Shock		Y	Y	Y
Permanent Shock		Y	Y	Y
Predictable Recurring Annual Changes			Y	Y
Predictable Pay Schedule Variation				Y

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Summary Statistics for Distribution of Shock Sizes in First Stage Regression

Statistic	Coworker	Instrumented Worker
Mean	-0.002	0.001
Median	-0.001	0.001
5th Percentile	-0.209	-0.031
25th Percentile	-0.041	-0.005
75th Percentile	0.037	0.007
95th Percentile	0.202	0.032
Standard Deviation	0.171	0.026
Mean (Absolute Value)	0.085	0.013
Median (Absolute Value)	0.039	0.006

First-Stage for Multiple Datasets

Periodicity	Data Source	First stage	
		Coef	(SE)
Paycheck	Bank account	0.15	(0.007)
	Payroll	0.17	(0.01)
	Time clock	0.14	(0.005)
Monthly	Bank account	0.71	(0.006)
	Payroll	0.63	(0.01)
	Time clock	0.80	(0.002)
Quarterly	Bank account	0.58	(0.008)
	Payroll	0.90	(0.01)
	Time clock	0.81	(0.004)
	Tax, WA, Lachowska et al. (2022)	0.56 to 0.65	(0.01 to 0.02)
	Tax, 7 states, CWBH	0.42 to 0.61	(0.01 to 0.03)

Monthly and Cumulative MPCs

	Month 1	Month 2	Month 3
Monthly MPC	0.100	0.057	0.040
	(0.007)	(0.007)	(0.009)
Cumulative MPC	0.100	0.159	0.200
	(0.007)	(0.013)	(0.020)

Consumption Elasticity Using Various Expenditure Categories

Dependent Variable: Δ Log	(1)	(2)
Nondurable Consumption		
Δ Log Income	0.218	0.273
	(0.015)	(0.019)
(Δ Log Income) x Checking		−0.509
		(0.050)
Strict Nondurables		
Δ Log Income	0.151	0.191
	(0.011)	(0.014)
(Δ Log Income) x Checking		−0.381
		(0.040)
Non-Work Related		
Δ Log Income	0.262	0.305
	(0.020)	(0.022)
(Δ Log Income) x Checking		−0.542
		(0.061)
Groceries		
Δ Log Income	0.221	0.252
	(0.016)	(0.019)
(Δ Log Income) x Checking		−0.624
		(0.060)

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Quarterly MPX and MPC Estimates Using Method of Laibson, Maxted, and Moll (2022)

	Estimate
Estimated Nondurable MPX	0.20
	(0.02)
Implied Total MPX	0.72
	(0.07)
Implied Notional MPC	0.23
	(0.02)

Impact of Income on Consumption - With Time-by-Location Fixed Effects

	Dependent Variable: Δ Log Non-Durable Consumption					
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Log Income	0.221	0.274	0.218	0.267	0.211	0.260
	(0.015)	(0.018)	(0.014)	(0.006)	(0.014)	(0.017)
(Δ Log Income) x Checking		−0.475		-0.475		−0.475
		(0.047)		(0.021)		(0.046)
Coworker Instrument	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check
Seasonal Adjustment	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	None	None	State-by-year	State-by-year	State-by-quarter	State-by-quarter
FEs Interacted with Assets	No	No	No	Yes	No	No

Impact of Income on Consumption - Asset Level Control

	Dependent Variable: Δ Log Non-Durable Consumption				
	(1)	(2)	(3)	(4)	(5)
Δ Log Income	0.221	0.289	0.193	0.205	0.116
	(0.015)	(0.022)	(0.010)	(0.009)	(0.003)
(Δ Log Income) x Checking level		−0.526	−0.343	−0.367	−0.150
		(0.059)	(0.026)	(0.023)	(0.006)
Coworker Instrument	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check	Pay Per Check	Pay Per Check	Total Pay
Seasonal Adjustment	Yes	Yes	Yes	No	No
Type of Income Variation Captured by Instrument					
New Transitory Shock	Y	Y	Y	Y	Y
Predictable Reversion of Transitory Shock			Y	Y	Y
Permanent Shock			Y	Y	Y
Predictable Recurring Annual Changes				Y	Y
Predictable Pay Schedule Variation					Y

MPC by Asset Buffer Quartile and Average MPC

	Quartile 1	Quartile 2	Quartile 3	Quartile 4	All
MPC	0.339	0.173	0.079	0.029	0.100
	(0.027)	(0.013)	(0.007)	(0.004)	(0.007)
Inputs					
Elasticity	0.482	0.317	0.183	0.105	0.221
	(0.038)	(0.025)	(0.015)	(0.014)	(0.015)
Mean Nondurable Consumption	\$2,633	\$2,579	\$2,434	\$1,911	\$2,389
Mean Labor Income	\$3,750	\$4,724	\$5,612	\$7,037	\$5,281
Liquid Asset Statistics					
Median Checking Account Balance	\$485	\$1,536	\$3,739	\$13,353	\$2,415
Median Checking Account Buffer	0.28	0.82	2.21	12.13	1.31

MPC by Asset Level Quartile

	Quartile 1	Quartile 2	Quartile 3	Quartile 4	All
MPC	0.335	0.177	0.086	0.035	0.100
	(0.034)	(0.015)	(0.007)	(0.004)	(0.007)
Inputs					
Elasticity	0.520	0.328	0.196	0.101	0.221
	(0.053)	(0.028)	(0.016)	(0.012)	(0.015)
Mean Nondurable Consumption	$1,873	$2,286	$2,507	$2,890	$2,389
Mean Labor Income	$2,911	$4,251	$5,715	$8,246	$5,281
Liquid Asset Statistics					
Median Checking Account Balance	$404	$1,471	$3,802	$15,340	$2,415
Median Checking Account Buffer	0.30	0.82	2.00	9.58	1.31

MPC by Asset Buffer Decile

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
MPC	0.408	0.308	0.257	0.186	0.142	0.112	0.065	0.053	0.033	0.019
	(0.041)	(0.029)	(0.021)	(0.017)	(0.013)	(0.011)	(0.008)	(0.007)	(0.006)	(0.004)
Inputs										
Elasticity	0.519	0.459	0.423	0.333	0.277	0.237	0.153	0.144	0.107	0.092
	(0.052)	(0.043)	(0.035)	(0.030)	(0.025)	(0.024)	(0.019)	(0.019)	(0.019)	(0.018)
Mean Nondurable Consumption	$2,670	$2,610	$2,599	$2,591	$2,560	$2,517	$2,417	$2,262	$2,033	$1,635
Mean Labor Income	$3,395	$3,891	$4,271	$4,640	$4,989	$5,334	$5,698	$6,114	$6,680	$7,795
Liquid Asset Statistics										
Median Checking Account Balance	$260	$600	$956	$1,405	$1,994	$2,813	$4,104	$6,442	$11,164	$25,566
Median Checking Account Buffer	0.15	0.32	0.51	0.74	1.08	1.59	2.49	4.38	9.47	35.80

Monthly and Quarterly MPCs by Asset Buffer Quantiles

Terciles / Quartiles / Quintiles			Deciles		
	Monthly	Quarterly		Monthly	Quarterly
Tercile 1	0.300	0.540	Decile 1	0.408	0.670
	(0.023)	(0.059)		(0.041)	(0.120)
Tercile 2	0.120	0.248	Decile 2	0.308	0.516
	(0.009)	(0.029)		(0.029)	(0.087)
Tercile 3	0.034	0.068	Decile 3	0.257	0.482
	(0.004)	(0.014)		(0.021)	(0.064)
Quartile 1	0.339	0.607	Decile 4	0.186	0.352
	(0.027)	(0.072)		(0.017)	(0.056)
Quartile 2	0.173	0.344	Decile 5	0.142	0.336
	(0.013)	(0.039)		(0.013)	(0.045)
Quartile 3	0.079	0.174	Decile 6	0.112	0.240
	(0.007)	(0.024)		(0.011)	(0.040)
Quartile 4	0.029	0.052	Decile 7	0.065	0.139
	(0.004)	(0.014)		(0.008)	(0.033)
Quintile 1	0.353	0.586	Decile 8	0.053	0.162
	(0.030)	(0.082)		(0.007)	(0.028)
Quintile 2	0.218	0.411	Decile 9	0.033	0.045
	(0.017)	(0.048)		(0.006)	(0.023)
Quintile 3	0.126	0.285	Decile 10	0.019	0.023
	(0.010)	(0.033)		(0.004)	(0.015)
Quintile 4	0.059	0.153			
	(0.006)	(0.023)			
Quintile 5	0.025	0.032			
	(0.004)	(0.014)			

Impact of Income on Consumption Using Worker Rather than Coworker Instrument

	Dependent Variable: Δ Log Non-Durable Consumption					
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Log Income	0.155	0.169	0.114	0.126	0.112	0.120
	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)
(Δ Log Income) × Checking		−0.273	−0.244	−0.271	−0.232	−0.237
		(0.010)	(0.005)	(0.006)	(0.004)	(0.004)
Worker Instrument	Period-Ahead Pay Per Check	Period-Ahead Pay Per Check	Pay Per Check	Pay Per Check	Total Pay	OLS: Worker all Labor Income
Seasonal Adjustment	Yes	Yes	Yes	No	No	No
Type of Income Variation Captured by Instrument						
New Transitory Shock	Y	Y	Y	Y	Y	Y
Predictable Reversion of Transitory Shock			Y	Y	Y	Y
Permanent Shock			Y	Y	Y	Y
Predictable Recurring Annual Changes				Y	Y	Y
Predictable Pay Schedule Variation					Y	Y

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