Worker Flows in Canada

The Promises and Pitfalls of Using Job Tenure for Measuring Employer-to-Employer Flows

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Introduction

- Measures of economic health focus on worker stocks
- Changes in worker stocks are driven by worker flows between:
  - Employment
  - Unemployment
  - Out of the labor force
- Flows provide additional information
- Symbiotic relationship with search theory
- E.g. Inflows vs outflows for unemployment variation
- Employer-to-employer (job-to-job) flows:
  - Tend to move workers to more productive firms and higher paid positions
  - Inform whether recessions are 'cleansing' vs 'scarring'
  - Have been linked to secular declines in geographic mobility

Research Question

- What is the length of a short duration for identifying flows?
- Are employer-to-employer flows accurately estimated using the Canadian Labour Force Survey?
- How have worker flows evolved over time?

Key Results and Contributions

- Undocumented changes to question (job tenure) that identifies employer-to-employer (EE) flows
  - Only negligible changes to wording
  - Possibly an issue of how question is interpreted
- Biases EE flows downwards since they are missing 'rehires'
- Estimate of missing component is large
  - About 4% of employed workers during 2010s
- Show that substantial proportion of transitions report two-month durations
- Demonstrate how to adjust duration-based flows to be comparable with panel-based flows

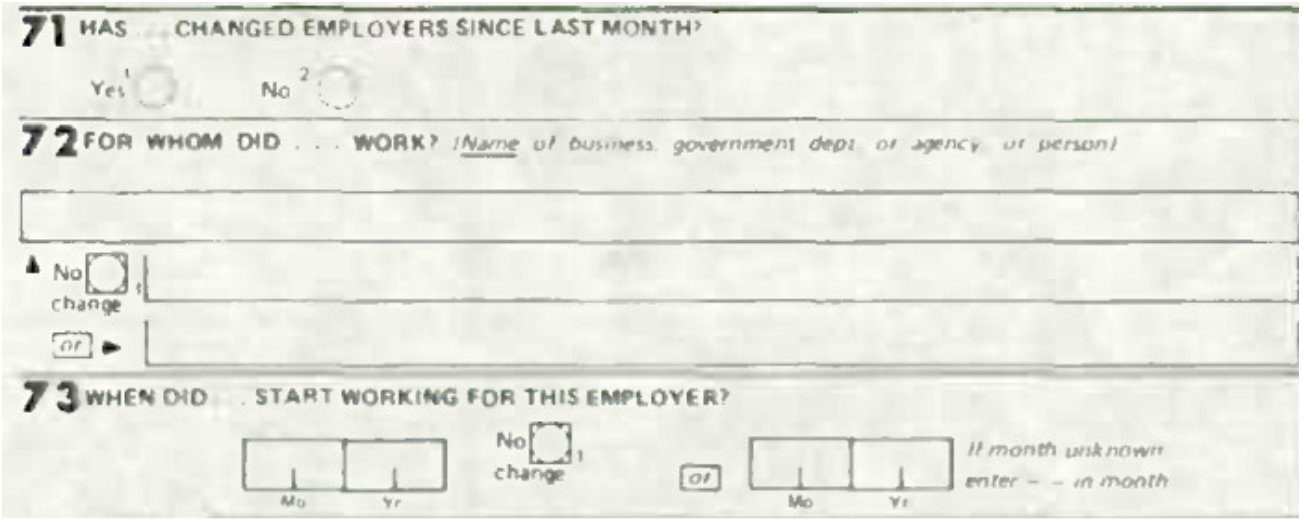
Literature Review

- EE flows (Fallick and Fleischman, 2004; Mazumder, 2007; Bjelland et al., 2011; Brochu and Green, 2013)
- Data errors in US surveys (Fujita and Moscarini, 2017; Fujita et al., 2024)
- Secular trends in EE and geographic mobility (Hyatt and Spletzer, 2013; Davis and Haltiwanger, 2014; Molloy et al., 2011, 2016, 2017; Fujita et al., 2024)
- LFS job tenure used to measure EE and job duration (Green and Riddell, 1997; Heisz, 1999; Picot and Heisz, 2000; Picot et al., 2000; Heisz, 2005; Brochu and Zhou, 2009; Brochu, 2013; Brochu and Green, 2013; Brochu et al., 2020; Brochu and Créchet, 2022; Thomson et al., 2018; Lluis and McCall, 2019; Plesca and Summerfield, 2020; St-Denis and Hollister, 2024)

Data

- Canadian Labour Force Survey (LFS) restricted microdata
  - Tracks households for up to six months
  - Sample: 1976-2022
  - Job tenure: supposed to measure length of in-progress job spell
- 1997 questionnaire redesign
  - Phased in between Sep and Dec 1996
  - Began collection of wage, union, job permanence
  - Reordered and reworded questions
- 1990 redefined questions on education and martial status
- 1987 began collection of occupation

Job Tenure Question


71 HAS ... CHANGED EMPLOYERS SINCE LAST MONTH?

Yes 1 No 2

72 FOR WHOM DID ... WORK? (Name of business, government dept. or agency, or person)

No change 1

OR

73 WHEN DID ... START WORKING FOR THIS EMPLOYER?

Mo Yr

No change 1

OR

Mo Yr

If month unknown enter – – in month

114 **For whom did ... work?**

115 **What kind of business, industry or service was this?**

116 **What kind of work was ... doing?**

117 **What were ...”s most important activities or duties?**

118 **When did ... start working [at name of employer]?**

If not last month, go to 130

119 **Was that before or after Sunday [date following last reference week)?**

go to 130

Methodology

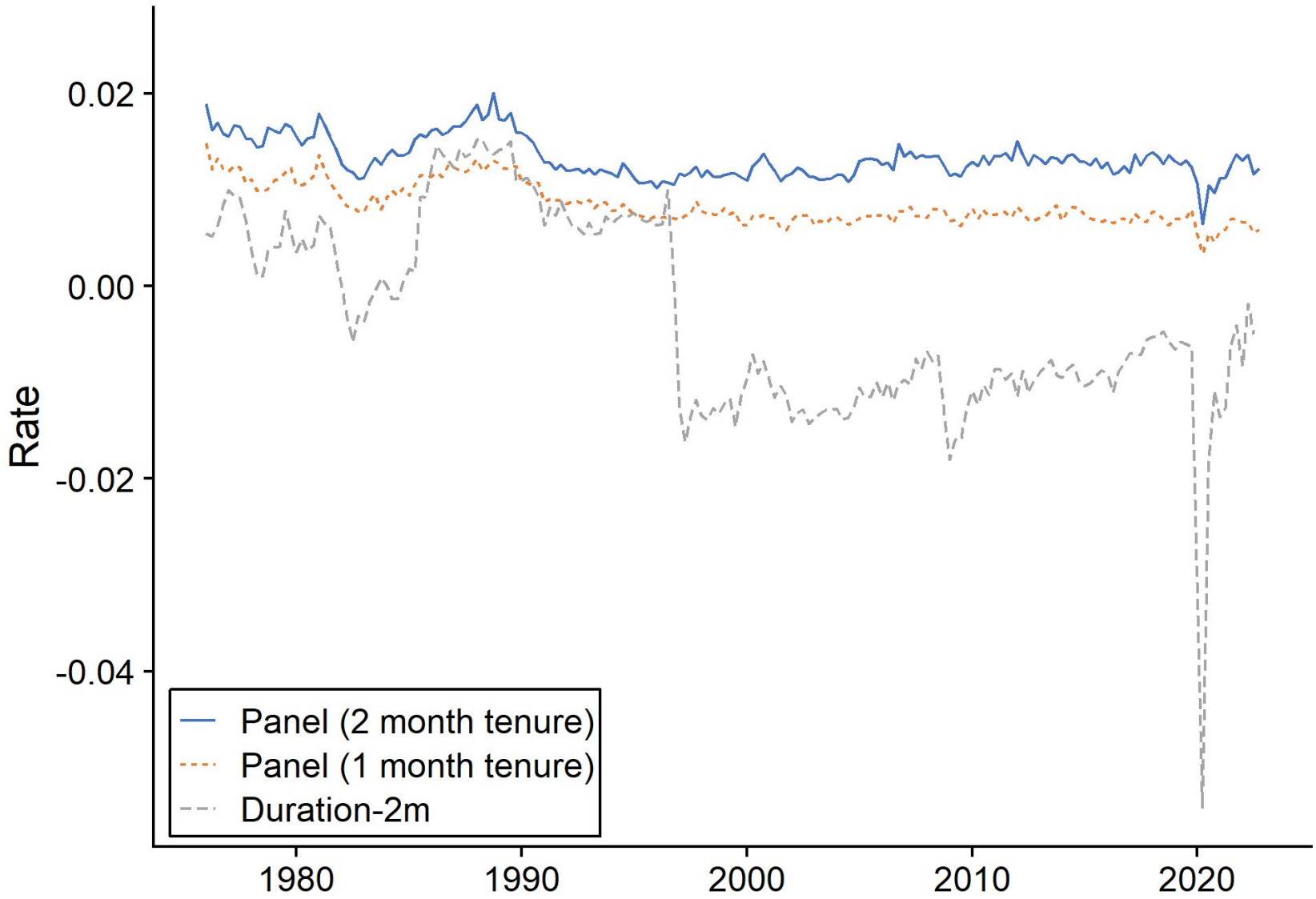
- Measure flows by:
  1. Using two-month-long mini-panels
  2. Using duration, stocks, and accounting identities
- Method to construct mini-panels is discussed in-depth by Brochu and Green (2013) in an appendix
- EE are then identified using short job tenures
- Minor contribution: EE can also be estimated without panel data *in principle*

$$E_{t+1} = E_t + NE_t - EU_t - EO_t$$

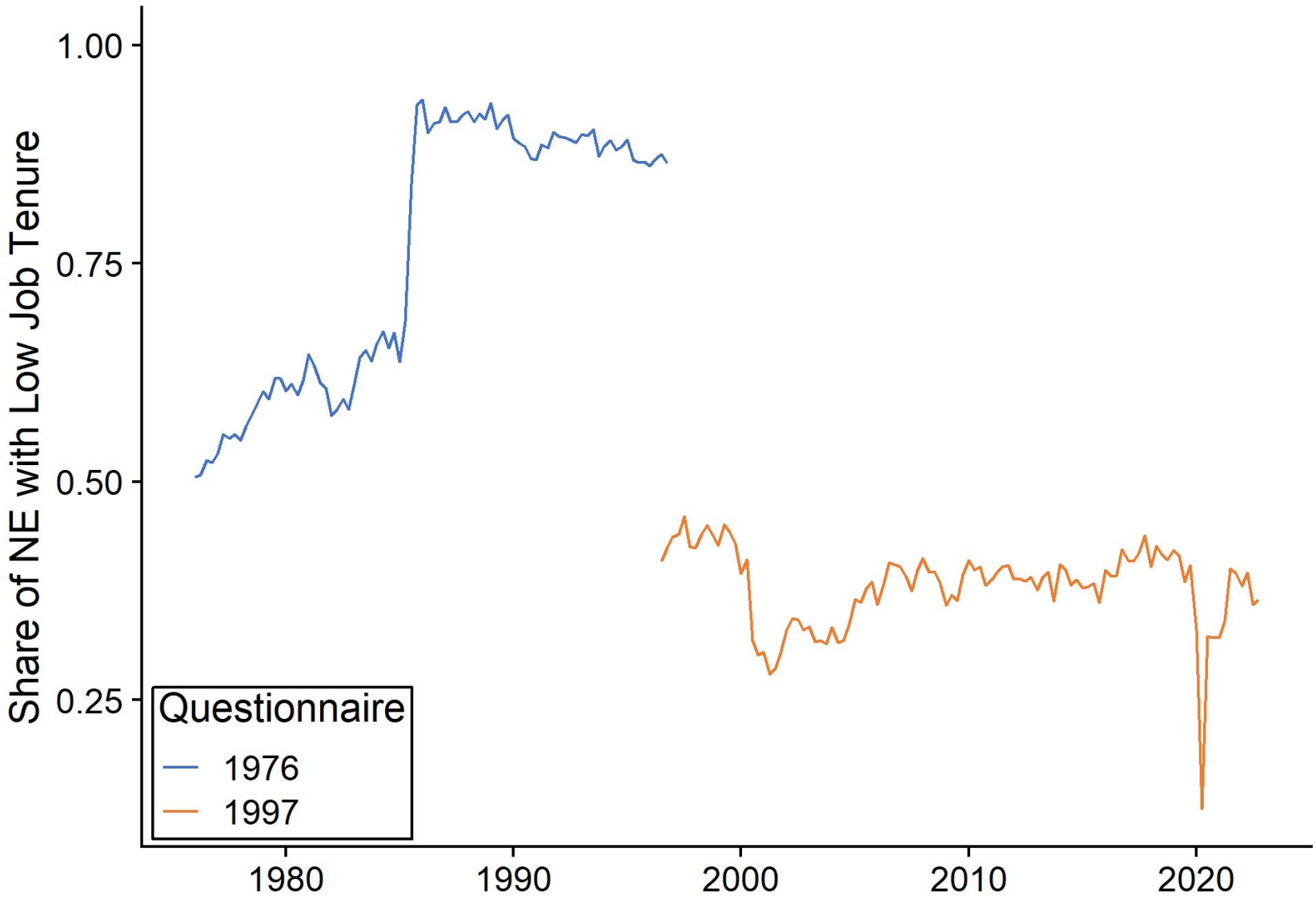
$$H_t = NE_t + EE_t$$

- All results deseasonalized using US Census Bureau's X-13 and averaged by quarter

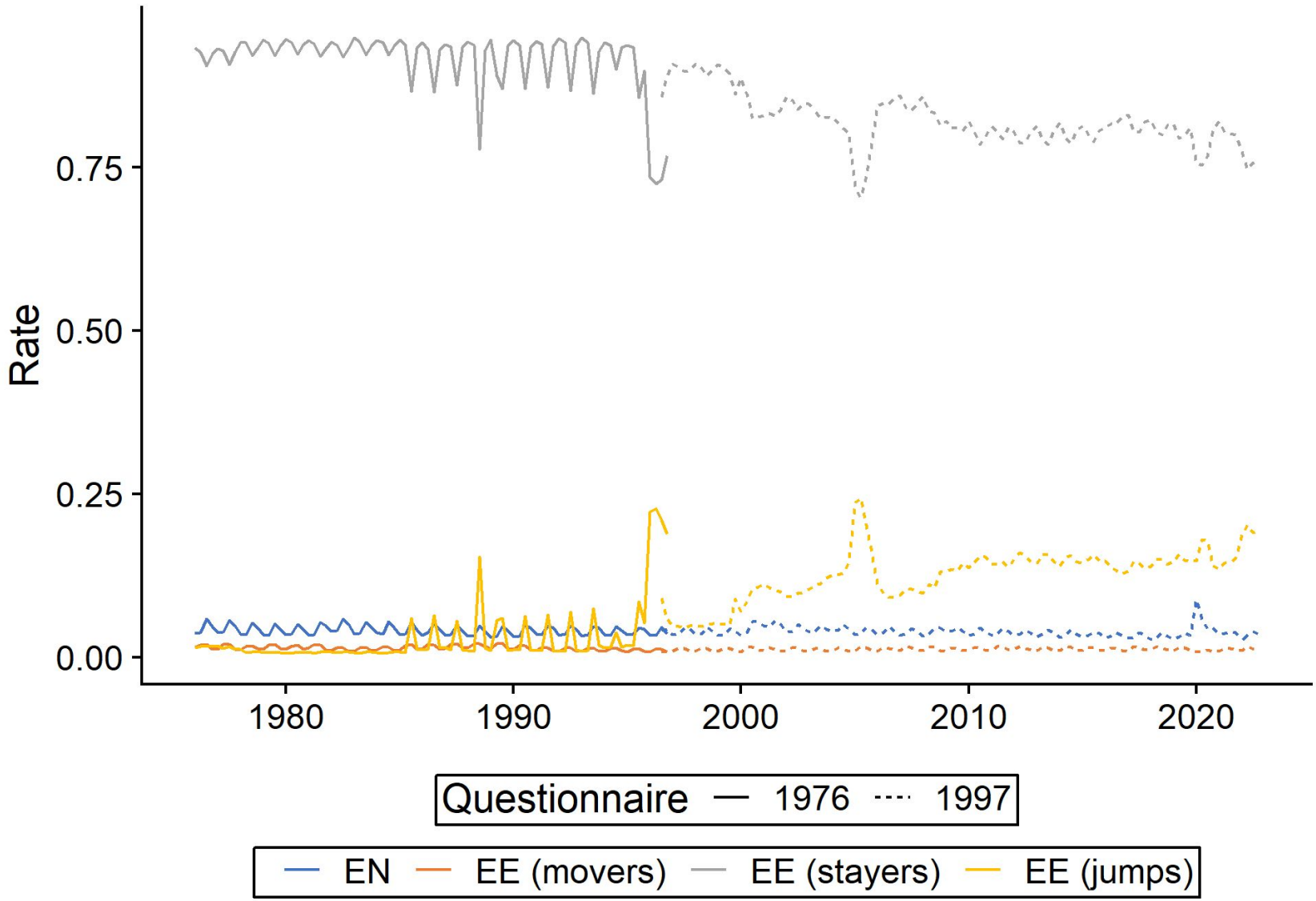
Employer-to-Employer Flows



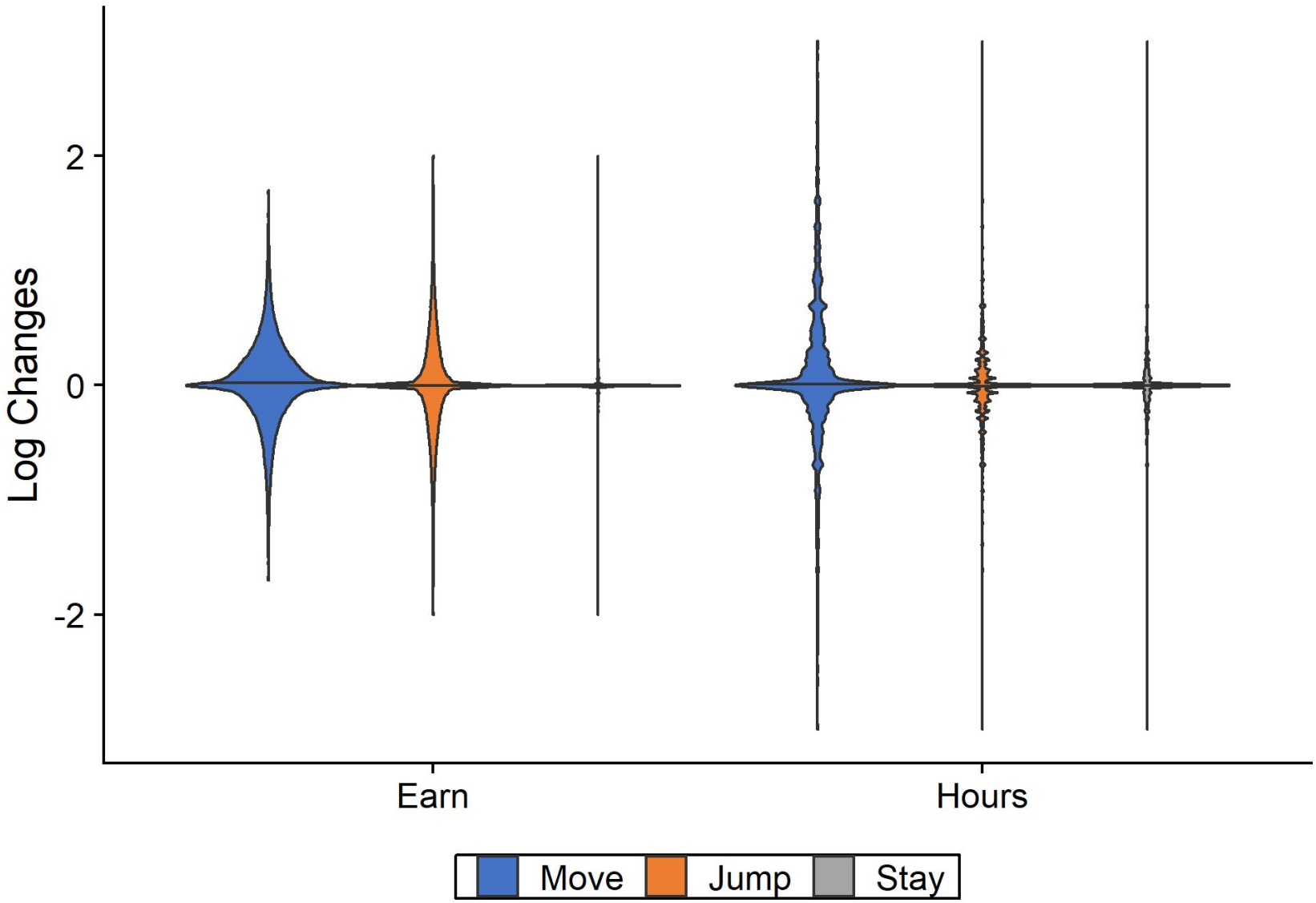
Share of NE with Job Tenure $\leq$ Two Months



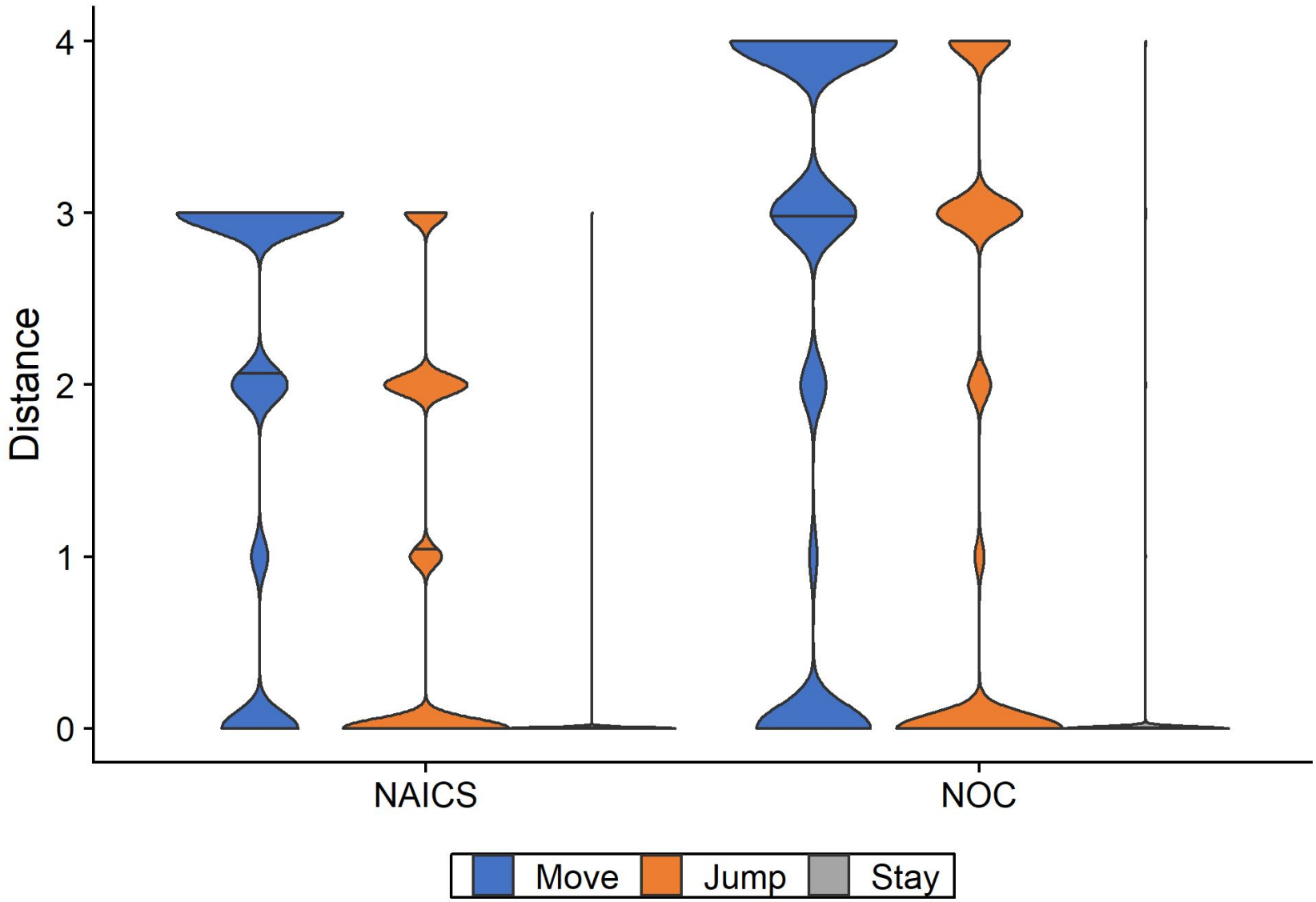
Employment Flows



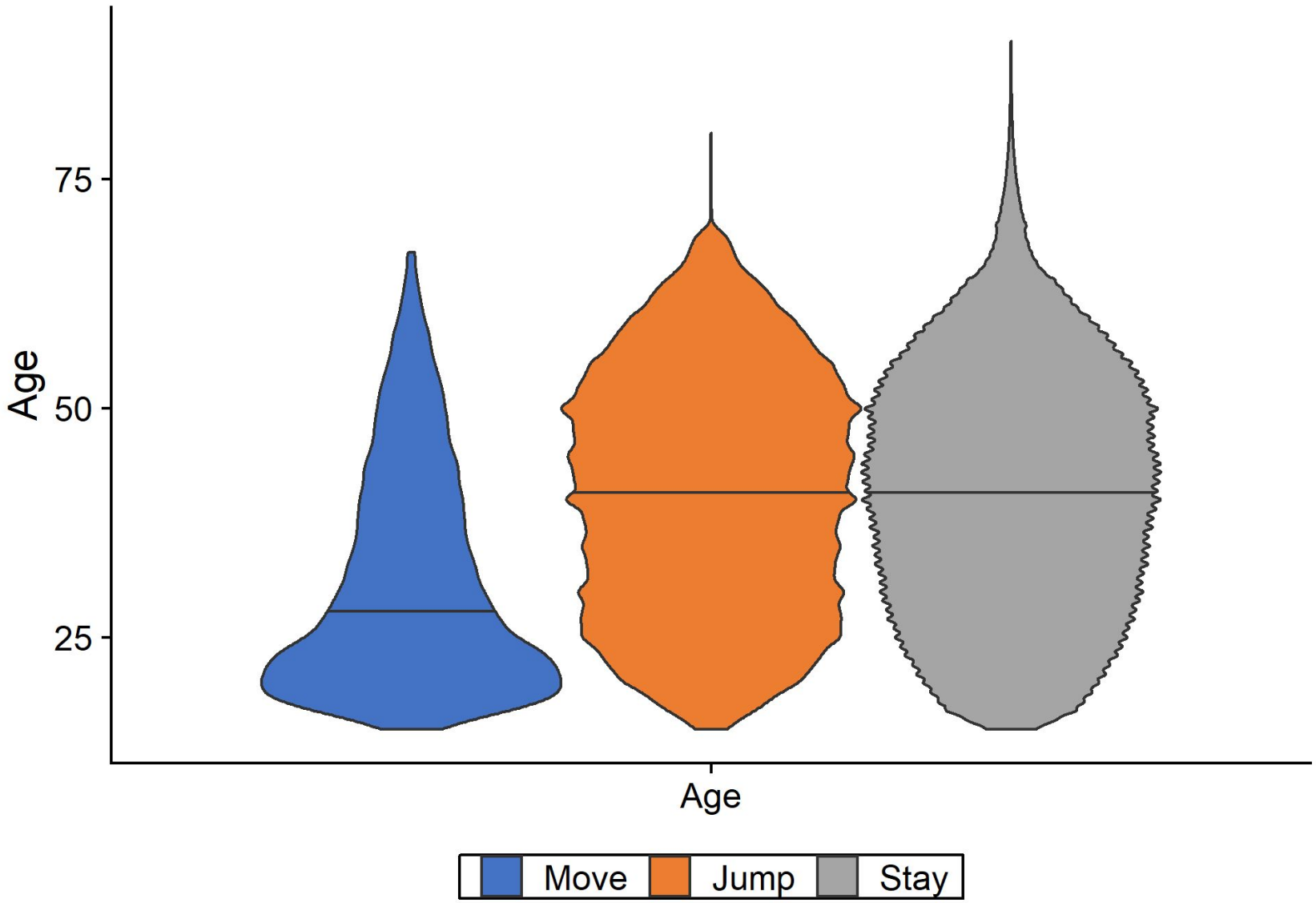
Log Real Earnings and Log Usual Hours Changes



Industry and Occupation Changes

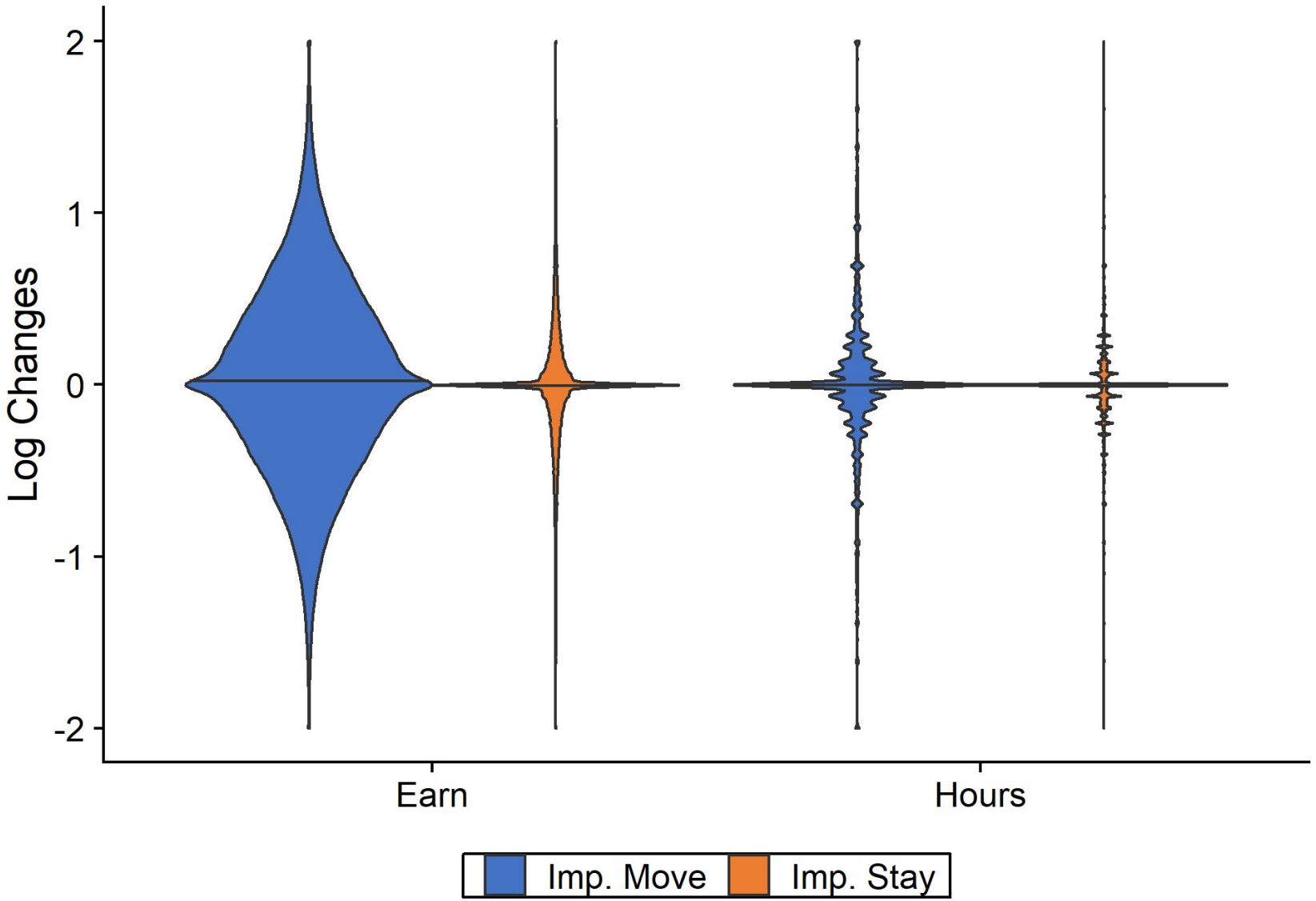


Age Density

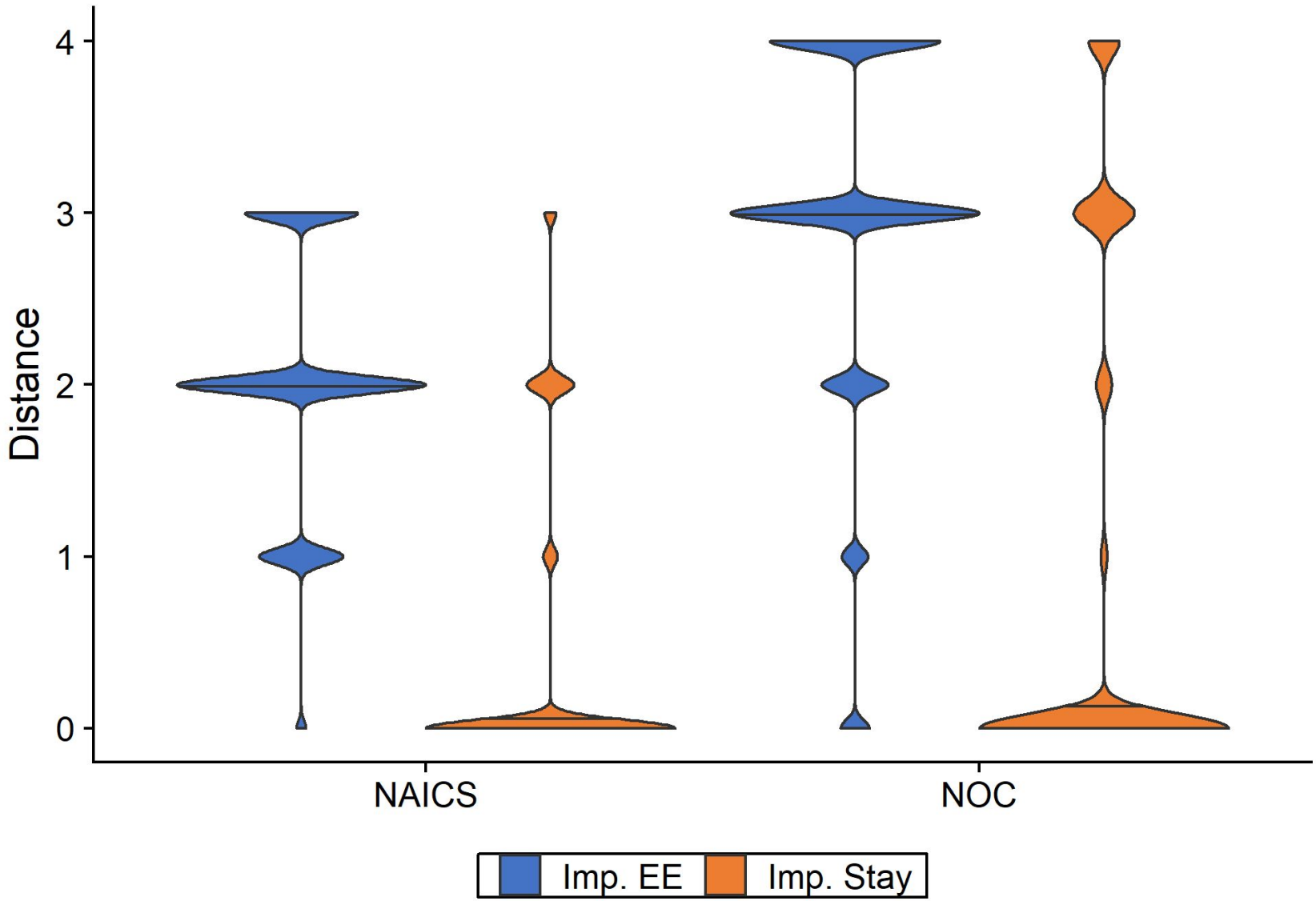


Imputed EE

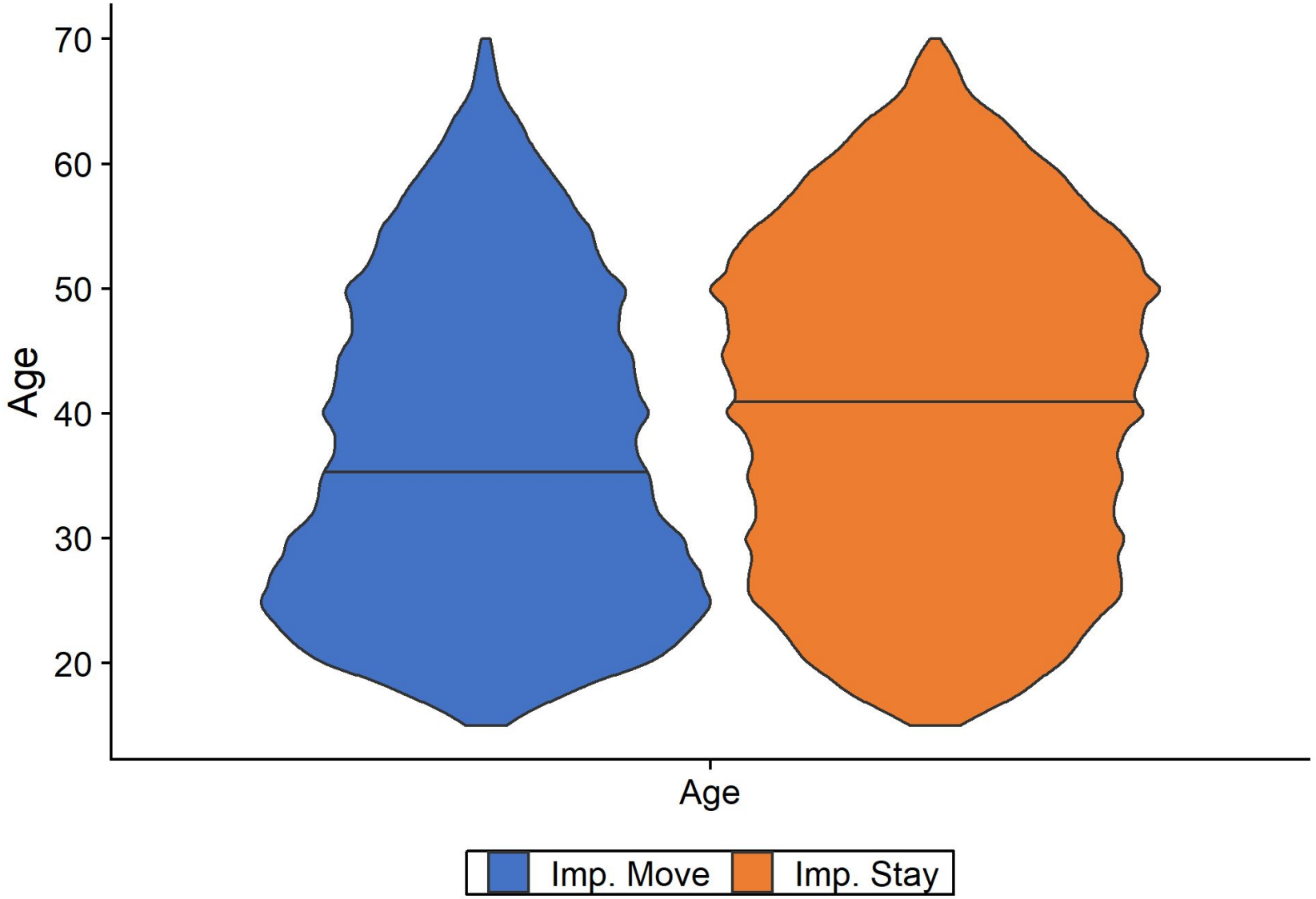
Log Earnings and Log Hours Changes, Imputed EE



Industry and Occupation Changes, Imputed EE



Age Density, Imputed EE



Conclusion

- I show several undocumented 'inconsistencies' in the job tenure variable of the Canadian LFS
- This variable is used to identify employer-to-employer flows
- Overall effect biases EE flows downwards because 'rehires' are missed
- Use imputation methods to estimate missing EE 'rehires' after 1997
- EE 'rehires' are substantial

Questions?

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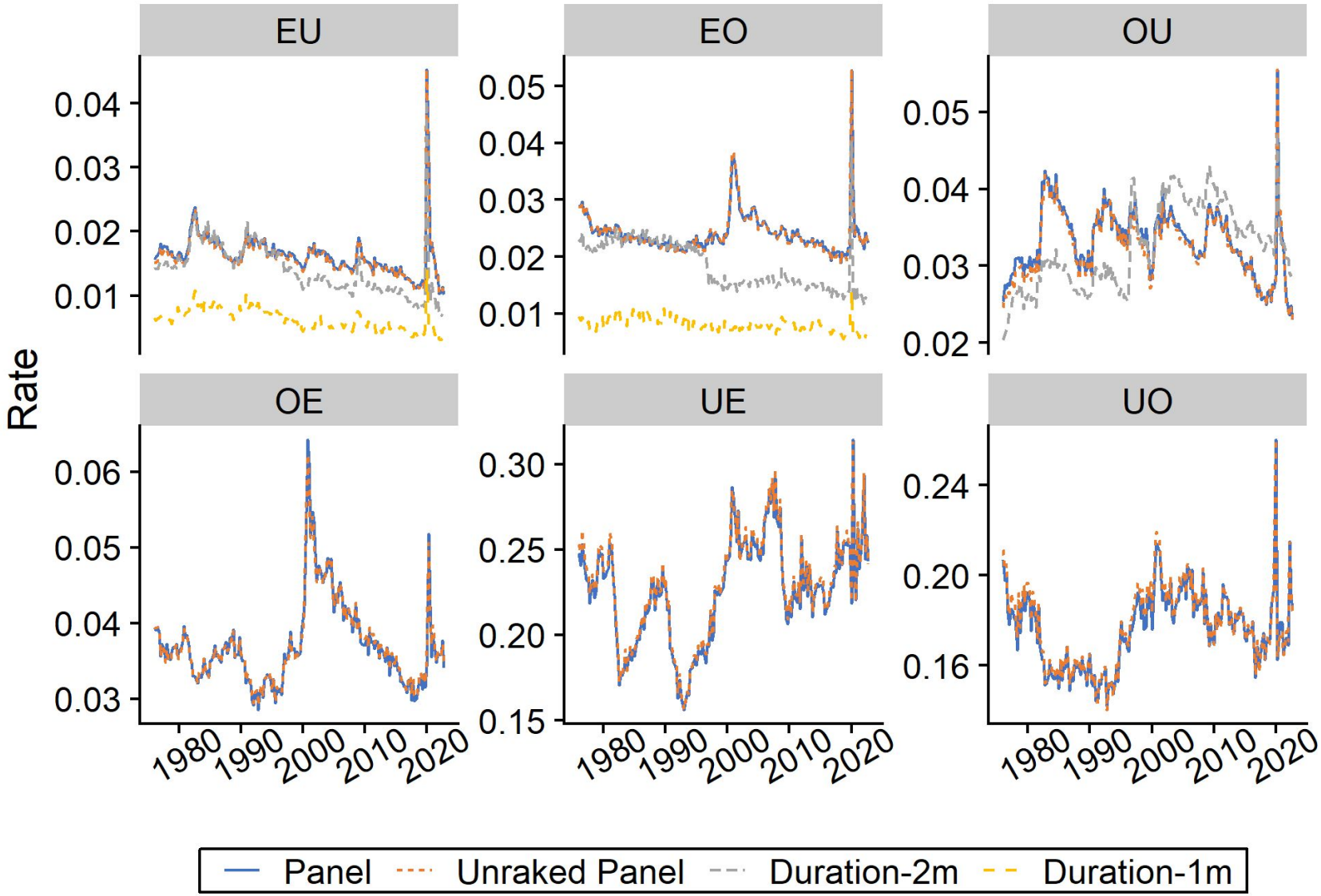
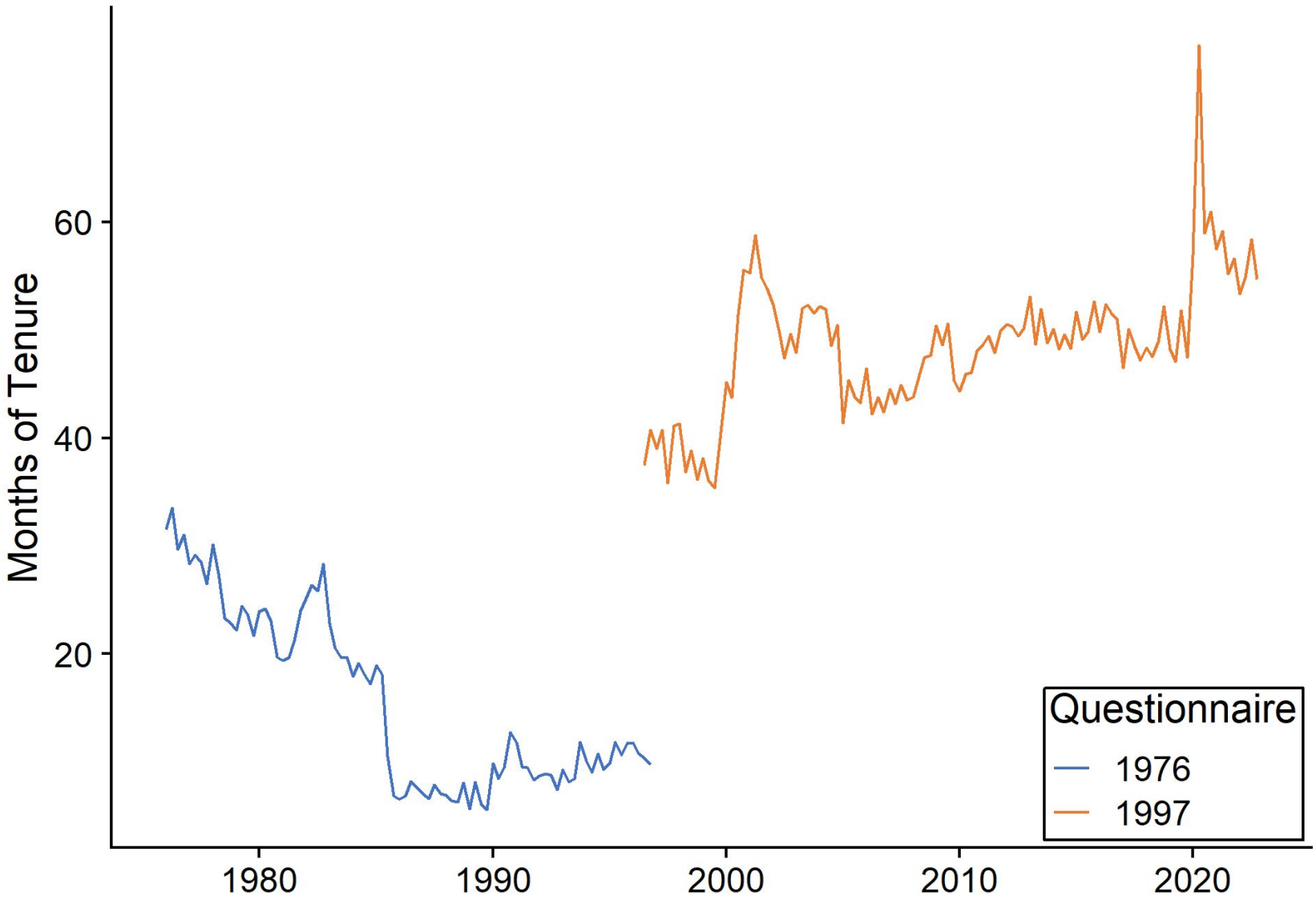
Theory

- Symbiotic relationship with theory
- Darby et al. (1986) study of estimation of unemployment inflows and outflows likely motivated Diamond-Mortensen-Pissarides models that exogenize hiring
- Shimer (2012) updated study motivated newer models that endogenize hiring (e.g. Hagedorn and Manovskii, 2008)
- Job ladder models (e.g. Moscarini and Postel-Vinay, 2016, 2018) motivated by studies of EE flows

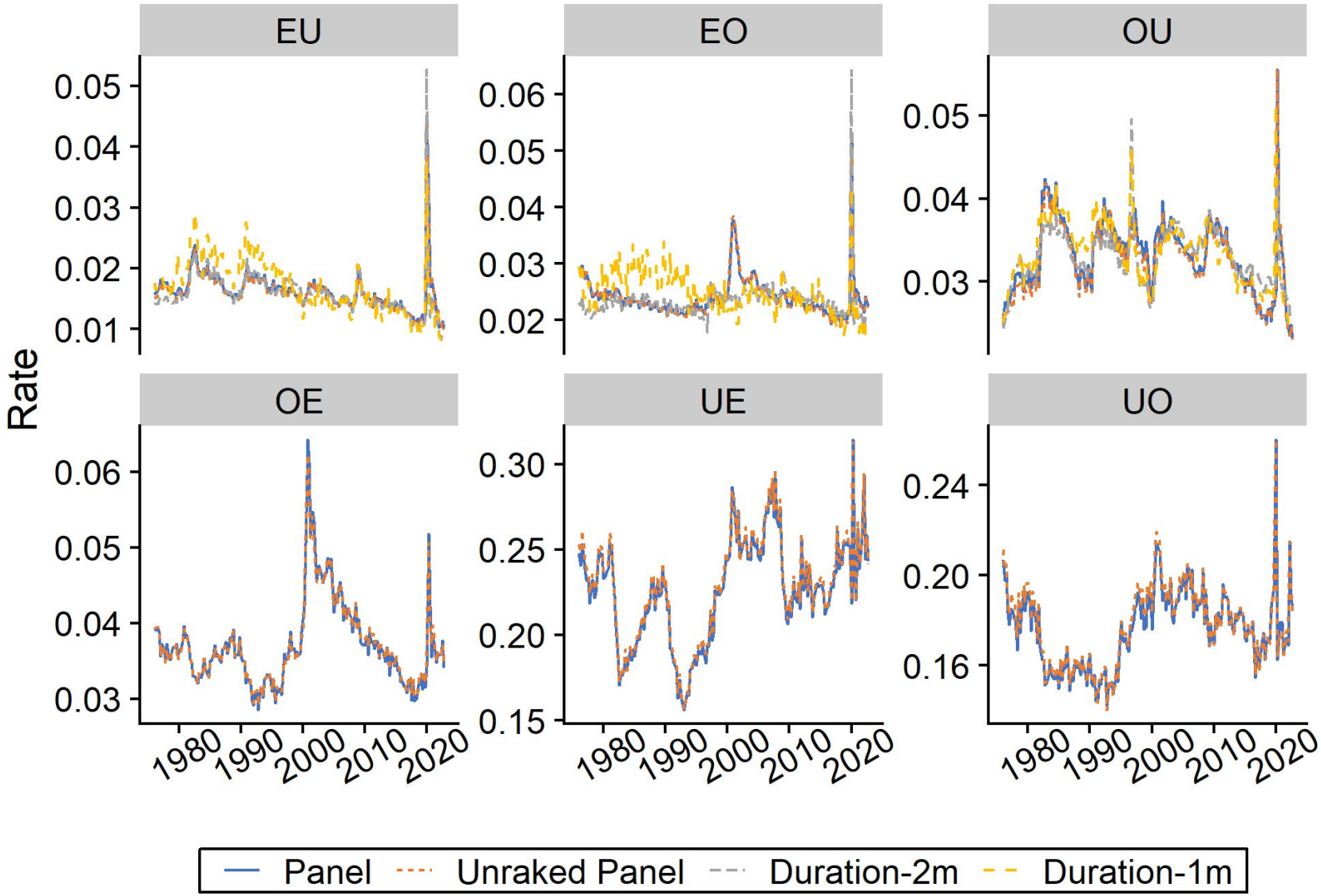
Flows Between States



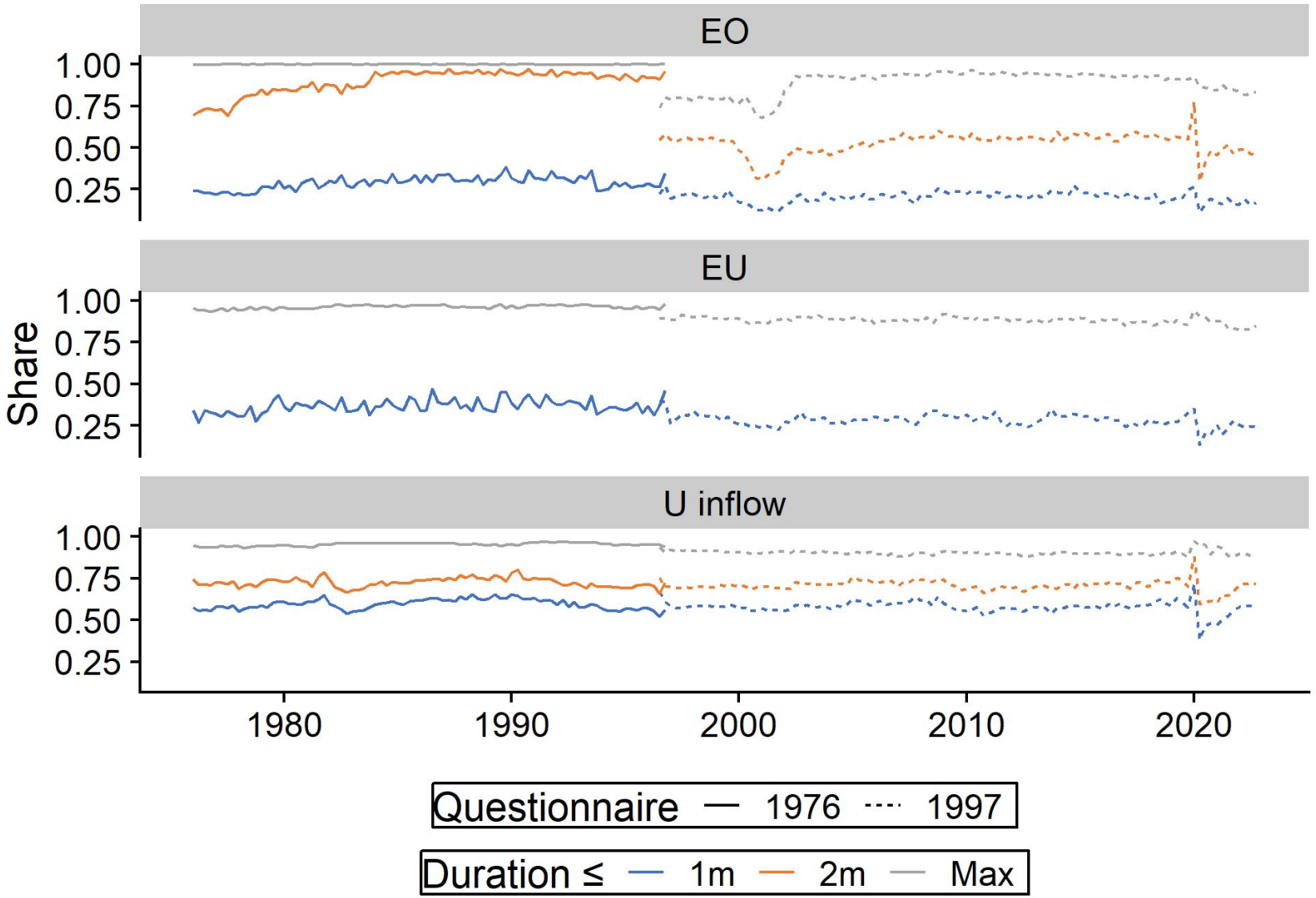
Average Job Tenure of NE



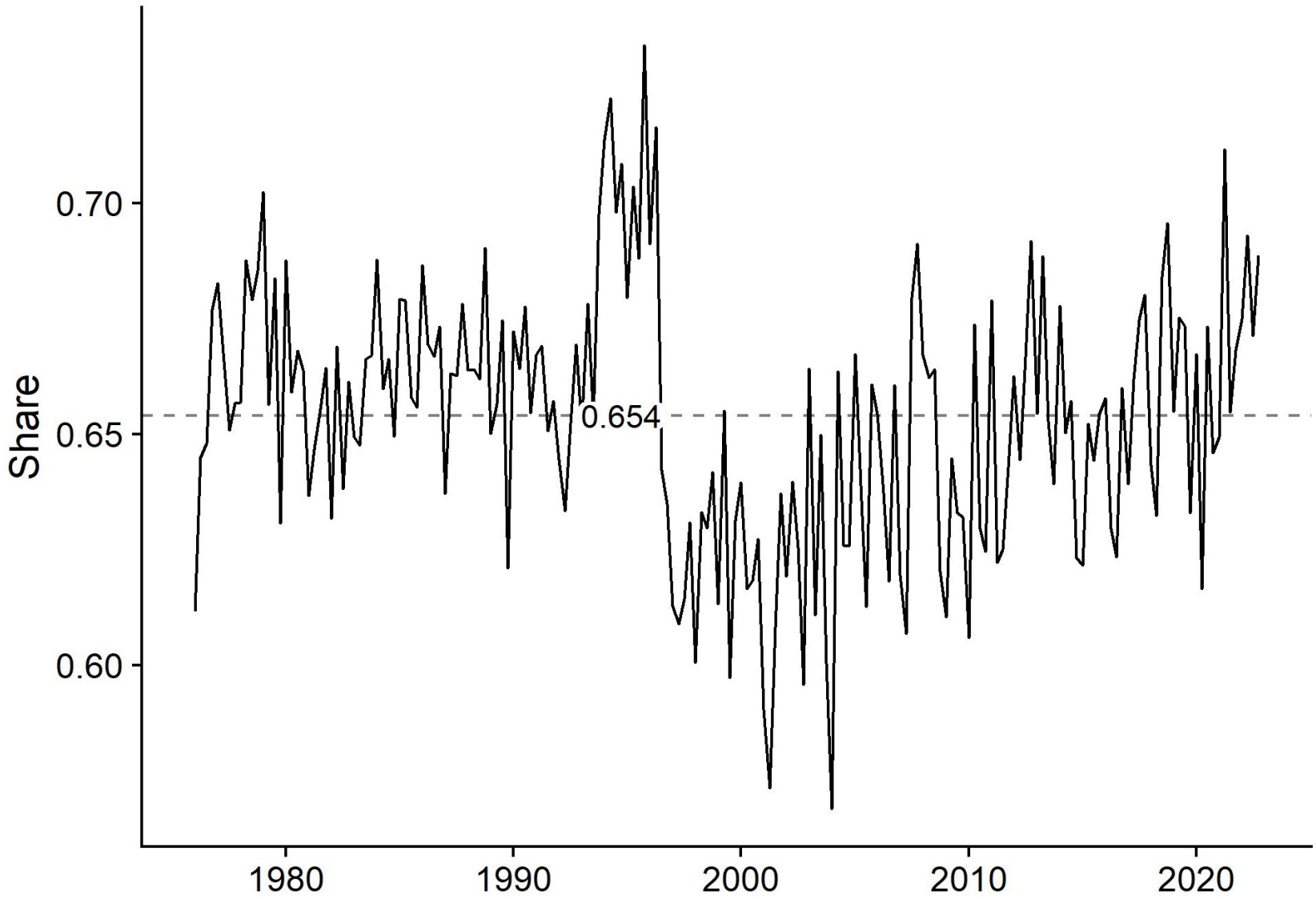
Flows Between States, Scaled



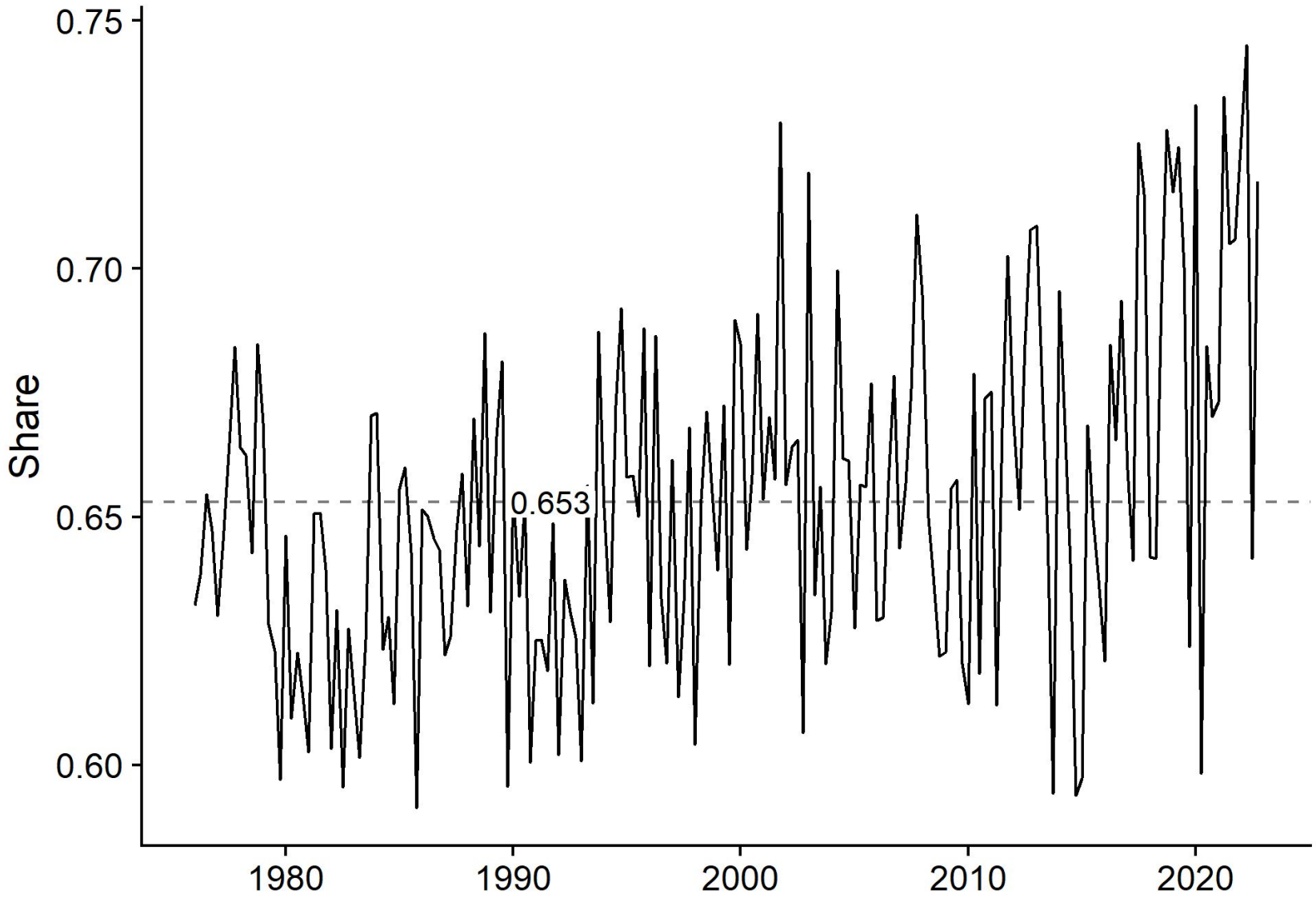
Share of Flows Detectable By Duration



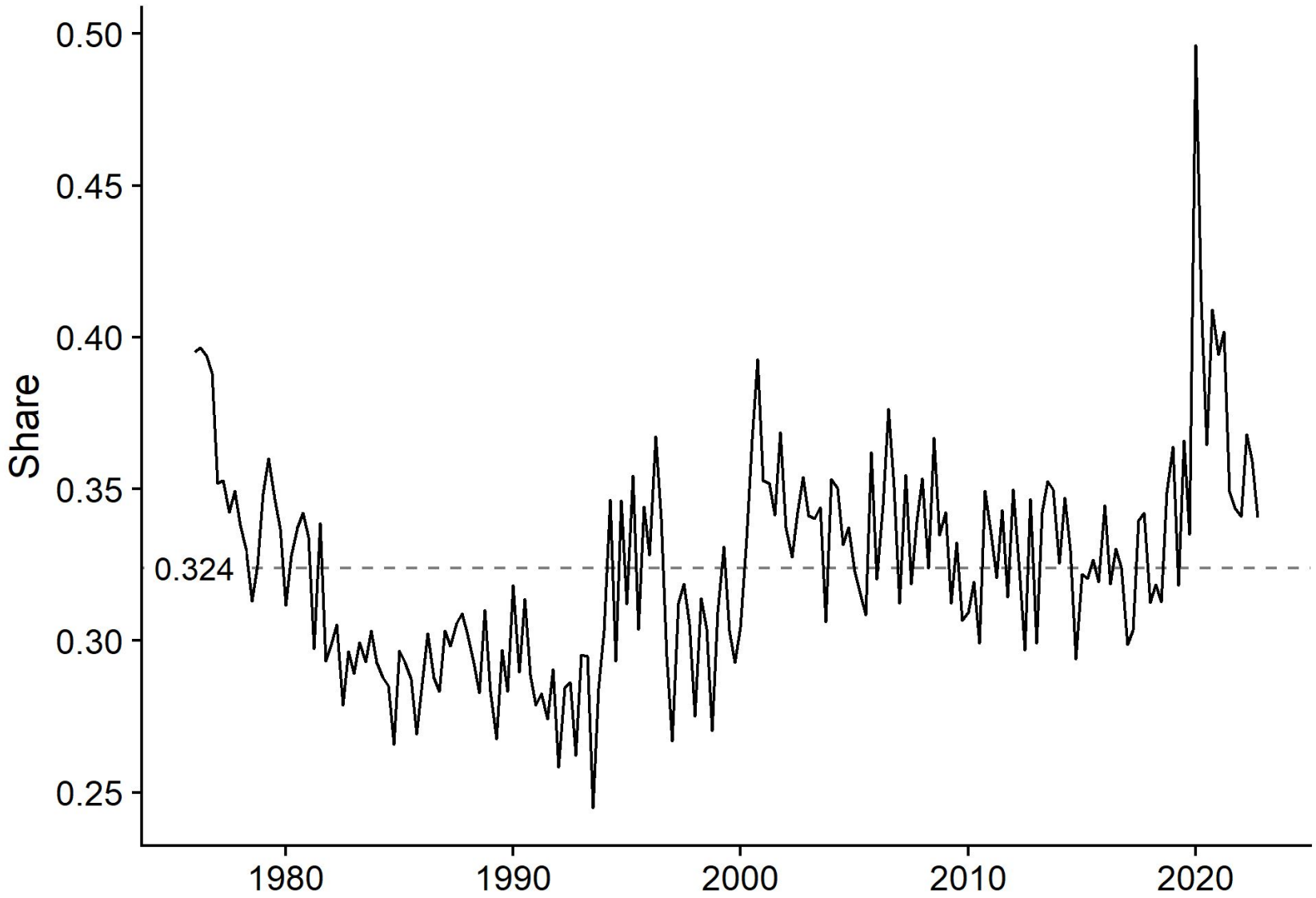
EO with 2m Joblessness Durations



EU with 2m Joblessness Durations



Unemp Inflows with Two Month Joblessness Durations



Hiring Wage Regression

Variables	
UE	0.1427**
	(0.0640)
EE Move	0.5929***
	(0.0909)
Imp. EE	0.1487*
	(0.0867)
OE × Layoff × Job Tenure	0.0163***
	(0.0019)
UE × Layoff × Job Tenure	0.0142***
	(0.0016)
OE × Quit × Job Tenure	0.0151***
	(0.0017)
UE × Quit × Job Tenure	0.0115***
	(0.0026)
Imp. EE × Job Tenure	0.0264***
	(0.0011)
Fit statistics	
Observations	1,000,000
R^2	0.52948
Within R^2	0.08197