

# Internal and External Labor Markets and Declining Dynamism

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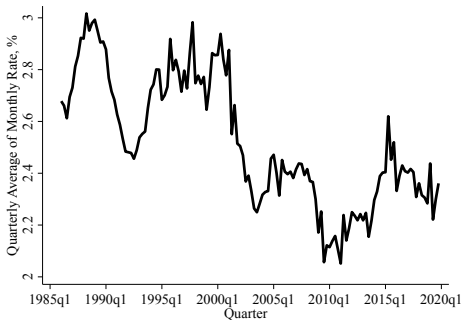
October 19, 2022

# Background

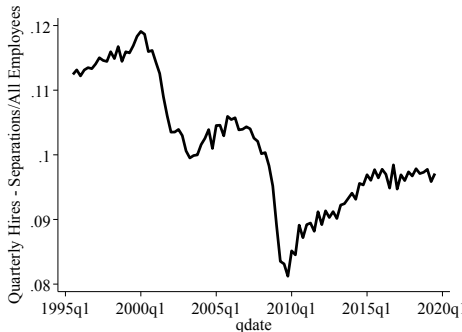
1. Declining employer-to-employer transitions rate and labor reallocation rates across firms

# Declining Labor Market Dynamism

## Employer-to-Employer Transitions Rate



## Worker Turnover Rate

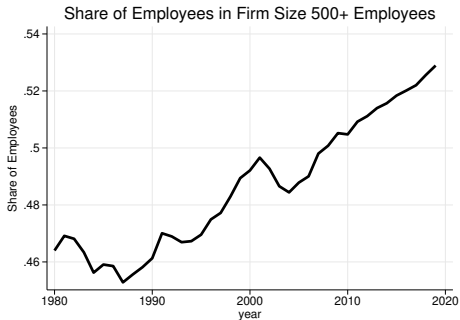
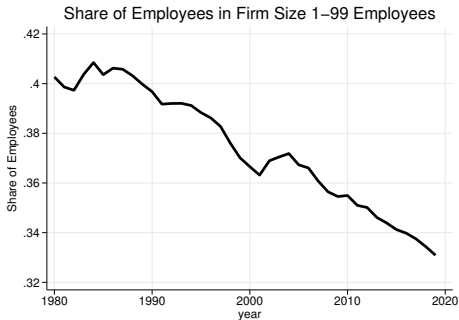


Source: Current Population Survey (Fujita, Moscarini and Postel-Vinay, 2022) and Quarterly Workforce Indicators

# Background

1. Declining employer-to-employer transitions rate and labor reallocation rates across firms
2. Employment composition has shifted towards large firms

# Shifting Worker Composition towards Large Firms



Source: Business Dynamics Statistics

# Background

1. Declining employer-to-employer transitions rate and labor reallocation rates across firms
2. Employment composition has shifted towards large firms
3. Large firms have internal job ladders

# Evidence of Internal Job Ladder in Large Firms

Show that job stayers in large firms realize:

- Increased likelihood of occupational switching
- Higher wage growth
- Higher wage growth, conditional on occupational switching
- Lower separation risk

# Background

1. Declining employer-to-employer transitions rate and labor reallocation rates across firms
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To what extent can accounting for *internal* labor market transitions offset or amplify the decline in *external* labor market dynamism?



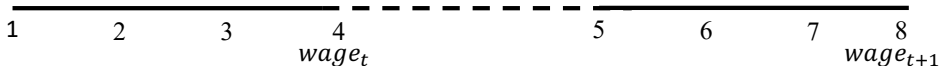
# Outline

- 1 Evidence of Internal Job Ladders in Large Firms
- 2 Evolution of Internal Job Ladders
- 3 Decomposing True Dynamism to Internal and External Job Moves

# Internal Job Ladders in Large Firms

# Measuring Within-Firm Mobility of Job Stayers

- Need: Wages and occupations of job stayers at different firm sizes
- Data: CPS Basic Monthly Survey



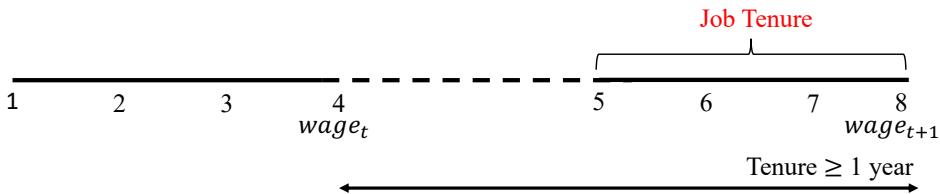
# Measuring Within-Firm Mobility of Job Stayers

- Need: Wages and occupations of job stayers at different firm sizes
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  - Job Tenure & Occupational Mobility Supplement (Jan/Feb, biennial)



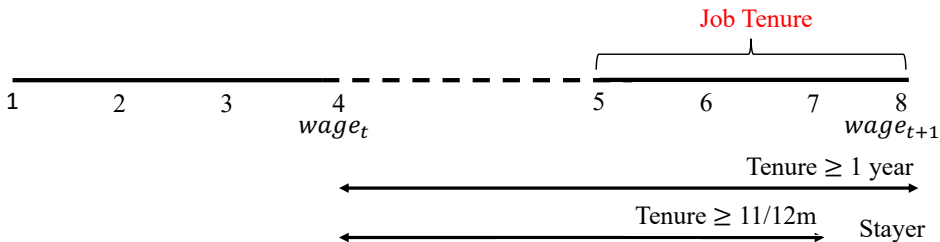
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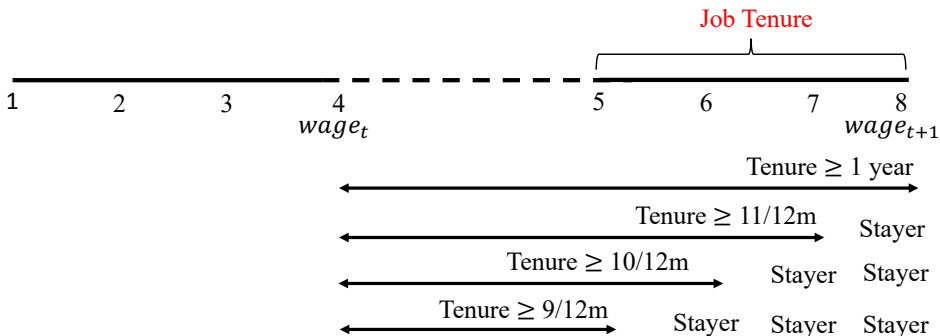
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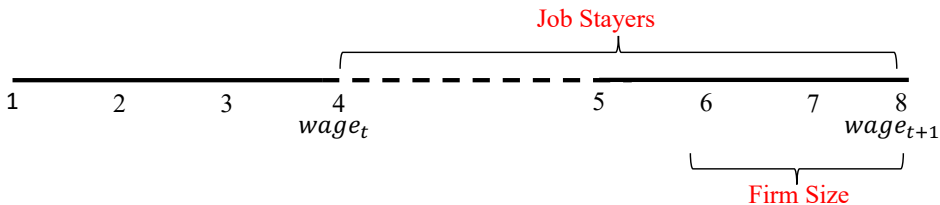
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# Measuring Within-Firm Mobility of Job Stayers

- Need: Wages and occupations of job stayers at different firm sizes
- Data: CPS Basic Monthly Survey
  - Job Tenure & Occupational Mobility Supplement (Jan/Feb, biennial)
  - Annual Social and Economic Supplement (March)





# Sample

- Period: Biennial, 1998 - 2020.
- Individuals: Full-time, privately employed with tenure  $\geq 1$  year.
- Sample size:
  - Job Stayer  $\cap$  Firm Size  $\approx 120,000$  individuals
  - Job Stayer  $\cap$  Firm Size  $\cap$  Wage Growth  $\approx 25,000$  individuals
  - Job Stayer  $\cap$  Firm Size  $\cap$  Wage Growth  $\cap$  Occupation Transition  $\approx 1200$  individuals
- Controls:
  - age, age<sup>2</sup>, log tenure, hours, married, male, marriedmale, three education categories, three race categories, whether Hispanic, whether paid hourly, state, unemployment rate.

# Higher Earnings Growth in Large Firms

	Growth in Real Weekly Earnings			Prob of Positive Weekly Earnings Growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Size: 100+ employees	0.0160*** (0.005)	0.0158*** (0.006)	0.0148** (0.006)	0.0318*** (0.008)	0.0312*** (0.008)	0.0303*** (0.008)
Constant	0.0445*** (0.014)	0.0673*** (0.018)	0.0638*** (0.022)	0.5167*** (0.018)	0.5180*** (0.023)	0.5007*** (0.029)
Controls	Y	Y	Y	Y	Y	Y
2-digit industry FE	N	Y	Y	N	Y	N
2-digit occupation FE	N	Y	N	N	Y	Y
4-digit occupation FE	N	N	Y	N	N	Y
N	25623	25623	25623	25623	25623	25623

- Job Stayers in large firms realize a 1.5 pp higher annual earnings growth, and are 3 pp more likely to realize an increase in earnings than job stayers in small firms.

Wage Growth

4-digit Occupations

# Higher Job-to-Job transitions within Large Firms

Dependent Variable: Whether the job stayer switched occupations over the year

	(1)	(2)	(3)
Firm Size: 100+ employees	0.0192*** (0.001)	0.0173*** (0.001)	0.0148*** (0.001)
Constant	0.0302*** (0.003)	0.0368*** (0.004)	0.0677*** (0.006)
Controls	Y	Y	Y
2-digit industry FE	N	Y	Y
2-digit occupation FE	N	Y	N
4-digit occupation FE	N	N	Y
N	120565	120565	120565

- Job Stayers in large firms are 1.5 - 2 pp more likely to change their occupation over a year. Q Text

# Higher Earnings Growth | J-J trans. in Large Firms

Sample: Job stayers who switched occupations over the year

	Growth in Real Weekly Earnings		Prob of Positive Earnings Growth	
	(1)	(2)	(3)	(4)
Firm Size: 100+ employees	0.0598** (0.030)	0.0631** (0.030)	0.0863** (0.038)	0.0924** (0.040)
Constant	0.0181 (0.041)	0.1091* (0.060)	0.5213*** (0.054)	0.5057*** (0.081)
Controls	Y	Y	Y	Y
2-digit Ind, Occ FE	N	Y	N	Y
N	1198	1198	1198	1198

- Job Stayers in large firms who switch occupations realize 6 pp higher earnings growth and are 9 pp more likely to receive an earnings increase.
- This accounts for about 15 percent of the overall wage growth of job stayers in large firms. [Details](#) [Wage Growth](#)

# Lower Separations Risk in Large Firms

Dependent Variable: Tenure (in log years)

	(1)	(2)	(3)
Firm Size: 100+ employees	0.152*** (0.005)	0.132*** (0.005)	0.123*** (0.005)
Constant	0.532*** (0.012)	0.434*** (0.015)	0.571*** (0.018)
Controls	Y	Y	Y
2-digit occupation FE	N	Y	N
2-digit industry FE	N	Y	Y
4-digit occupation FE	N	N	Y
N	136172	136172	136172

- Job Stayers in large firms realize a tenure that is 1.14 years higher than their small firm counterparts.

# Summary: Internal Job Ladder in Large Firms

Job stayers in large firms realize:

- Increased likelihood of occupational switching
- Higher pay growth, higher likelihood of realizing a pay increase
- Higher likelihood and realization of a pay growth, conditional on occupational switching
- Lower separation risk

How have these facts changed overtime?

# Evolution of Internal Job Ladders

# Evolution of Internal Ladders in Large & Small Firms

Dependent Variable: Whether the job stayer switched occupations over the year

	2000-2004		2014-18	
	(1)	(2)	(3)	(4)
Firm Size: 100+ employees	0.0205*** (0.002)	0.0183*** (0.002)	0.0148*** (0.002)	0.0138*** (0.002)
Constant	0.0208*** (0.006)	0.0332*** (0.008)	0.0263*** (0.006)	0.0315*** (0.008)
Controls	Y	Y	Y	Y
2-digit Ind, Occ FE	N	Y	N	Y
N	36833	36833	25386	25386

- The probability of making within-firm job-to-job transitions have declined overtime, more so for workers in large firms.

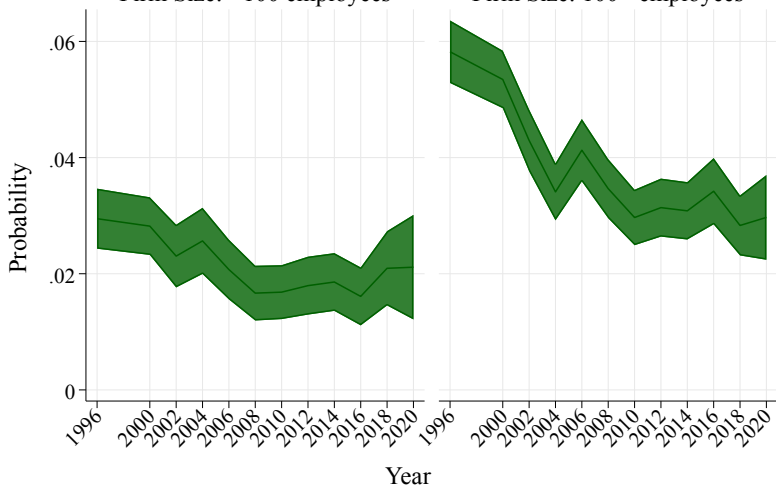


# Evolution of Internal Ladders in Large & Small Firms

Probability of switching occupations over the year

Firm Size: <100 employees

Firm Size: 100+ employees



Difference

# Evolution of Internal Ladders in Large & Small Firms

Dependent Variable: Probability of Positive Weekly Earnings or Hourly Wage Growth

	Prob of Positive Earnings Growth		Prob of Positive Wage Growth	
	2000-04 (1)	2014-18 (2)	2000-04 (3)	2014-18 (4)
Firm Size: 100+ employees	0.0273* (0.014)	0.0242 (0.017)	0.0532*** (0.014)	0.0277 (0.017)
Constant	0.4058*** (0.048)	0.8686*** (0.214)	0.3924*** (0.048)	0.9473*** (0.215)
Controls	Y	Y	Y	Y
2-digit Ind, Occ FE	Y	Y	Y	Y
N	7674	5349	7674	5349

- Large firm premium of probability of realizing a pay increase has vanished over time.

# Evolution of Internal Ladders in Large & Small Firms

Dependent Variable: Growth in Real Weekly Earnings and Hourly Wages

	Growth in Weekly Earnings		Growth in Hourly Earnings	
	2000-04 (1)	2014-18 (2)	2000-04 (3)	2014-18 (4)
Firm Size: 100+ employees	0.0103 (0.010)	0.0121 (0.013)	0.0179* (0.010)	0.0056 (0.013)
Constant	0.0228 (0.036)	0.3444** (0.167)	0.0009 (0.035)	0.3862** (0.162)
Controls	Y	Y	Y	Y
2-digit Ind, Occ FE	Y	Y	Y	Y
N	7674	5349	7674	5349

- No evidence of changing large firm pay-growth premium in the CPS.
- Evidence of decreasing large firm pay-level premium relative to small firms by 7 pp between 2000-2013 (Bloom et. al., 2018 using data from US SSA).

# **Decomposing True Dynamism to Internal and External Job Moves**

# Decomposition Framework

- Let firm types be  $j \in \{s, l\}$ , and employment share of small firms be  $\omega$ .
- Let  $p_j^k$  be the probability of making a  $k$ -type of job switch, where  $k \in \{i, x\}$  denotes an internal ( $i$ ) or external ( $x$ ) job switch by an employee of a given firm type  $j$ .
- Let the true measure of dynamism,  $j j^*$ , be the sum of all internal ( $j j^i$ ) and external ( $j j^x$ ) job moves.

# Static Decomposition

$$\begin{aligned}jj_t^* &= \omega_t(p_s^i + p_s^x) + (1 - \omega_t)(p_l^i + p_l^x) \\ &= \underbrace{\omega_t p_s^i + (1 - \omega_t) p_l^i}_{=jj_t^i} + \underbrace{\omega_t p_s^x + (1 - \omega_t) p_l^x}_{=jj_t^x}\end{aligned}$$

$$\begin{aligned}\frac{djj_t^*}{dt} &= \frac{djj_t^i}{dt} + \frac{djj_t^x}{dt} \\ &= \frac{d\omega_t}{dt}(p_s^i - p_l^i) + \frac{djj_t^x}{dt}\end{aligned}$$

Between 2000-2004 and 2014-18:

- $\frac{d\omega_t}{dt} = -0.03$
- $(p_s^i - p_l^i)$  ranges between  $-0.0147$  to  $-0.0192$
- $\frac{djj_t^x}{dt} = -1.45$  pp annual change
- Accounting for within-firm job switching *offsets* the decline in external job switching by about 0.06 pp.

# Dynamic Decomposition

$$jj_t^* = \omega_t p_{st}^i + (1 - \omega_t) p_{lt}^i + jj_t^x$$
$$\frac{djj_t^*}{dt} = \frac{d\omega_t}{dt} (p_{st}^i - p_{lt}^i) + \omega_t \frac{dp_{st}^i}{dt} + (1 - \omega_t) \frac{dp_{lt}^i}{dt} + \frac{djj_t^x}{dt}$$

Between 2000-2004 and 2014-18:

- $\omega_t = 0.34$
- $\frac{dp_{st}^i}{dt} = -0.17$  pp
- $\frac{dp_{lt}^i}{dt} = -0.62$  pp
- Accounting for the decline in within-firm job switching *amplifies* the decline in external job switching by 0.5 pp (28 percent).

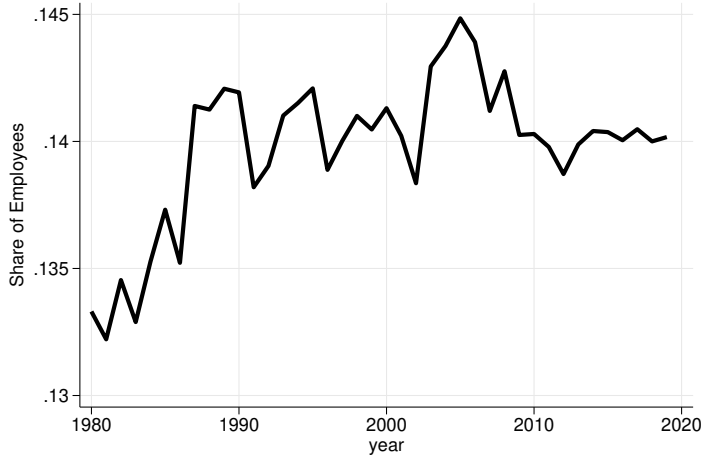
# Conclusion

- Job stayers in large firms relative to small firms realize:
  - Higher likelihood of occupational switching
  - Higher wage growth
  - Higher wage growth upon occupational switching
- Accounting for higher J2J transitions *within* firms partially offsets the decline in J2J transitions *across* firms
- However, J2J transitions *within* firms have declined over time
- Accounting for the declining nature of internal dynamism amplifies the overall decline in true dynamism
- Next: A model of internal and external job ladders to understand the determinants of declining internal dynamism



**Thank You!**

## Share of Employees in Firm Size 100–499 Employees



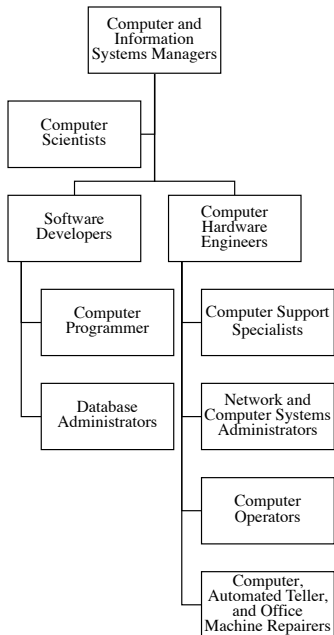
Source: Business Dynamics Statistics [back](#)

# Higher Wage Growth in Large Firms

	Growth in Real Hourly Wages			Prob of Positive Hourly Wage Growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Size: 100+ employees	0.0125** (0.005)	0.0138** (0.005)	0.0130** (0.006)	0.0378*** (0.008)	0.0378*** (0.008)	0.0351*** (0.008)
Constant	0.0369*** (0.013)	0.0554*** (0.018)	0.0512** (0.021)	0.5062*** (0.018)	0.4953*** (0.023)	0.4940*** (0.029)
Controls	Y	Y	Y	Y	Y	Y
2-digit industry FE	N	Y	N	N	Y	N
2-digit occupation FE	N	Y	Y	N	Y	Y
4-digit occupation FE	N	N	Y	N	N	Y
N	25623	25623	25623	25623	25623	25623

[Back: Earnings Growth](#)

- About 450 codes based on Census' 2010 classification scheme. [back](#)



# Questionnaire Text

Earlier you told me that you are now working as (fill: occupation from basic CPS). Were you doing the same kind of work a year ago, in January of (previous) year?

- Yes
- No
- Don't Know
- Refused
- No Response

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# Higher Wage Growth | J-J trans. in Large Firms

Sample: Job stayers who switched occupations over the year

	Growth in Real Hourly Wages		Prob of Positive Wage Growth	
	(1)	(2)	(3)	(4)
Firm Size: 100+ employees	0.0494* (0.029)	0.0574* (0.029)	0.0929** (0.039)	0.1028** (0.041)
Constant	-0.0200 (0.040)	0.0315 (0.062)	0.4755*** (0.054)	0.4109*** (0.080)
Controls	Y	Y	Y	Y
2-digit Ind, Occ FE	N	Y	N	Y
N	1196	1196	1196	1196

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# Decomposing Growth in Real Weekly Earnings

	Earnings Growth (1)	Job Switch (2)	Earnings Growth Switch (3)
Firm Size: 100+ employees	0.0107** (0.00469)	0.0137*** (0.00196)	0.0548* (0.0306)
Constant	0.302*** (0.102)	0.114*** (0.0412)	0.117 (0.560)
Controls	Y	Y	Y
2-digit Ind, Occ FE	Y	Y	Y
N	46082	40070	1198
$R^2$	0.00997	0.0186	0.125

- Fraction of Wage Growth account by Occupation Switching =  
 $(\text{Earnings Growth} \mid \text{Switch}) \times \frac{\text{Sample of Switchers}}{\text{Total Sample}} \times \frac{1}{\text{Overall Earnings Growth}}$

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# Evolution of Internal Ladders in Large & Small Firms

Probability of switching occupations over the year  
in large firms relative to small firms

