Cyclical Labor Market Flows and Productivity-Enhancing Reallocation

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January 2021

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Productivity Dispersion and Worker Flows

Core findings in the literature:

- Large and persistent differences in productivity even within narrowly defined industries.
- High pace of job and worker flows

Connection? Cyclicality?

- Cleansing (Davis and Haltiwanger (1990), Caballero and Hammour (1994) and Mortensen and Pissarides (1994))
  - Job destruction at low productivity jobs increases in recessions.
  - Evidence in support in Foster, Grim and Haltiwanger (2016)
- Sullying (Barlevey (2002), Moscarini and Postel-Vinay (2016))
  - Job ladder collapses in recessions with increased fraction of workers at lower paying, lower productivity jobs.
  - Evidence in support using firm wage ladder in Haltiwanger, Hyatt, Kahn, and McEntarfer (HHKM, 2017)
- Recent structural models of sorting (Lise and Robin (2017)) have both sullying and cleansing.

Our contribution

We use new firm productivity data linked to employer-employee data to decompose net employment growth across the firm productivity distribution into two components:

- Worker reallocation across firms via job-to-job moves
- Worker flows in and out of employment

As cross check, we use AKM decomposition to measure firm premium. In search and matching models, this will be closely related to firm productivity.

- We compare and contrast the patterns of worker flows for firms classified by productivity and by AKM firm premia.

Data

- LEHD data, private UI-covered employment
- 28 states, 1998-2015
- Integrate with RE-LBD on firm level (log) gross real output per worker.
- AKM: $y_{ijt} = \theta_i + \phi_j + X'_{it}\beta + \eta_{it}$. Use ϕ_j to rank firms.
- Use HHKM (2017) 'within/adjacent' quarter approach for J-to-J. HHKM find patterns are robust to alternatives.

Decomposing net employment growth into poaching and hiring from nonemployment

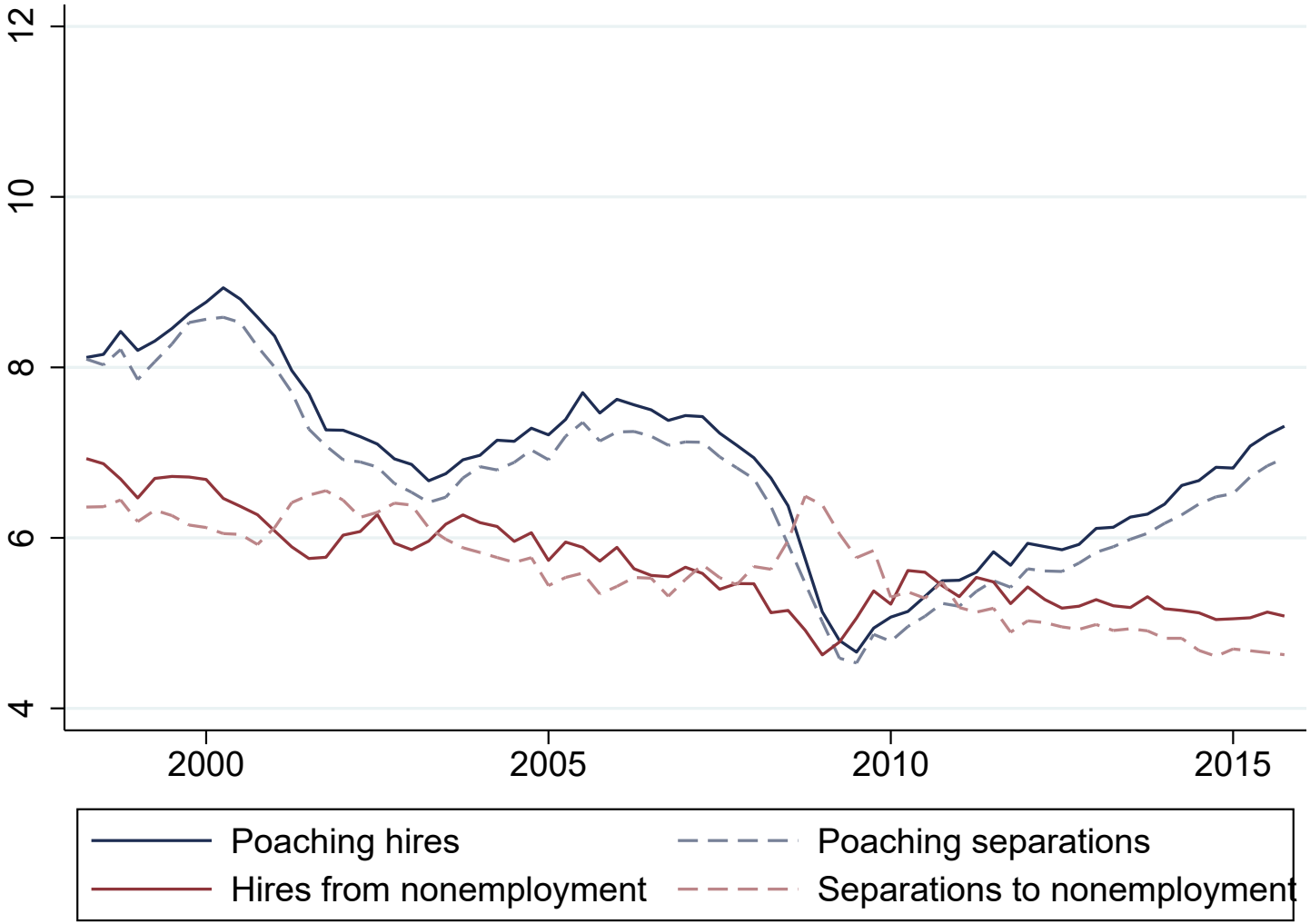
We start with the following simple identity:

$$\begin{aligned} NetJobFlows(NJF) &= H - S \\ &= (H_p + H_n) - (S_p + S_n) \\ &= (H_p - S_p) + (H_n - S_n) \end{aligned}$$

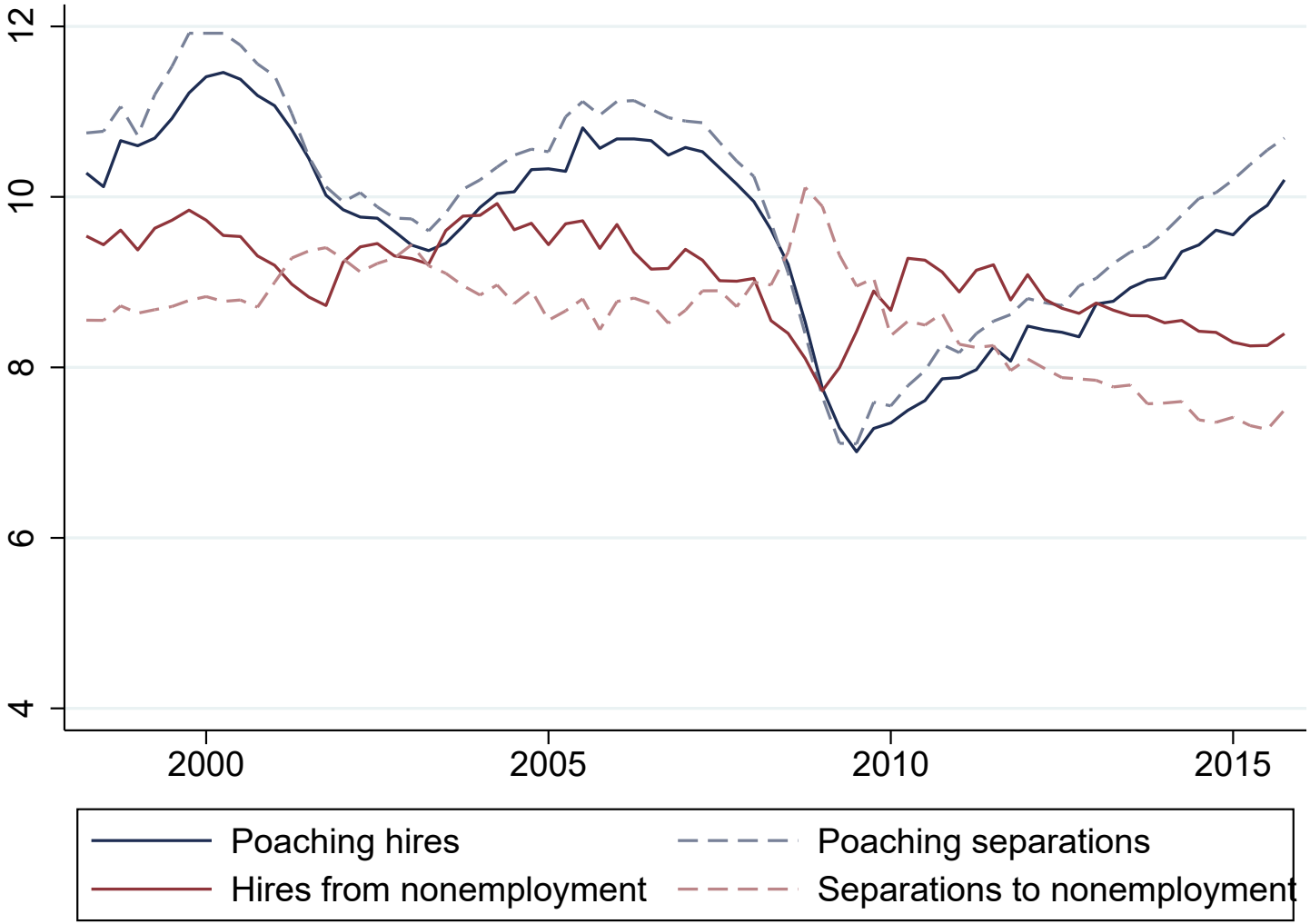
Then, aggregate over firms by type (e.g. high prod/low prod):

Net employment growth at high productivity =
Net employment poached from less productive firms
+ Net flows from nonemployment.

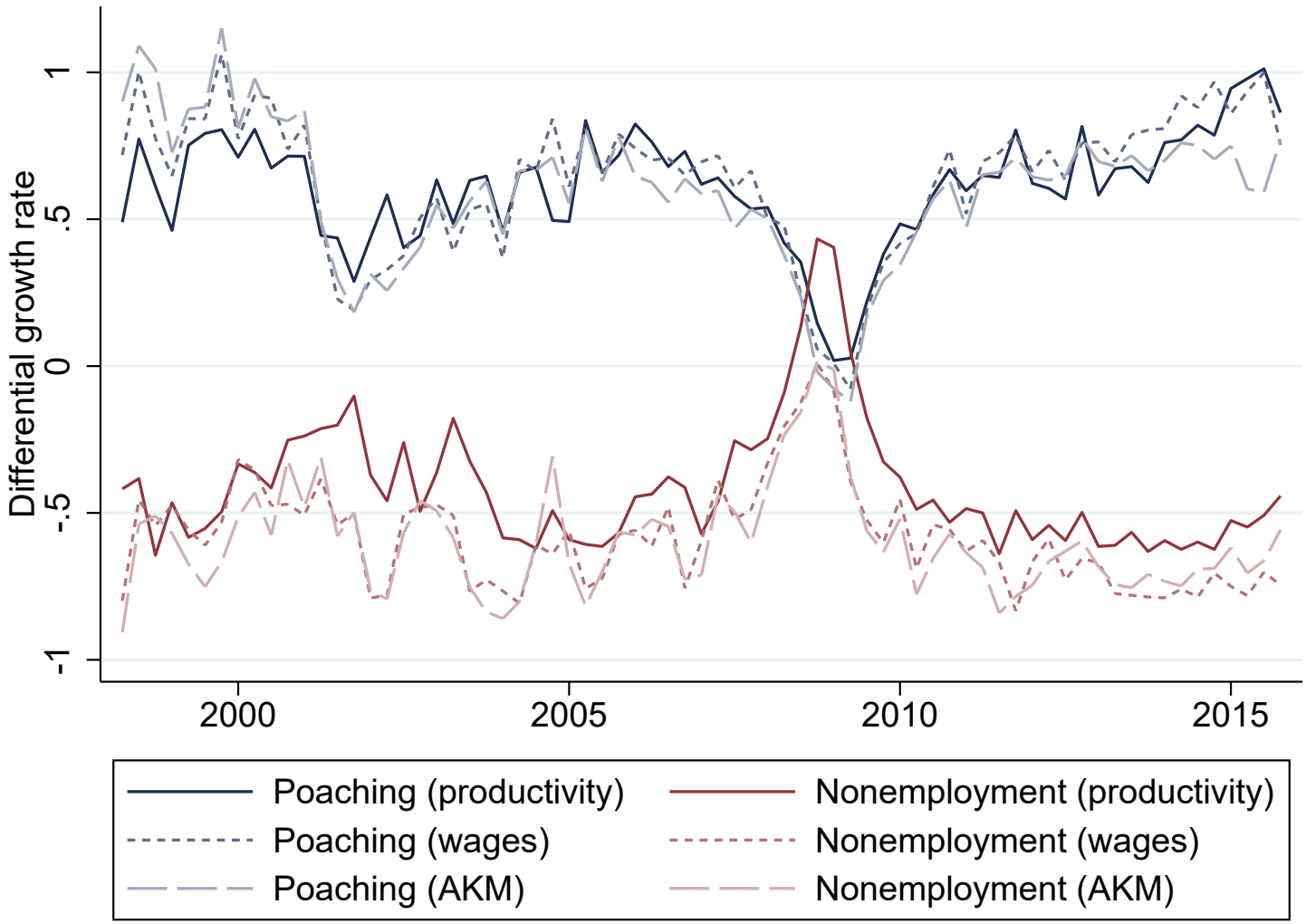
Worker Flows for High Productivity Firms



Worker Flows for Low Productivity Firms



Net Job Flows Decomp by Firms Ranked by Productivity, AKM Firm Premium and Avg Earnings Per Worker



Cyclicality of high vs. low, national regressions

Table 2: Unemployment and Differential Net Flows

	Change in the unemployment rate		
	(1)	(2)	(3)
A. Net Job flows			
high-low differential	-0.288	-0.401	-0.378
	(0.0695)	(0.0693)	(0.0658)
linear time-trend	-0.006	-0.003	-0.001
	(0.0024)	(0.0019)	(0.0019)
B. Poaching Job flows			
high-low differential	-0.437	-0.541	-0.554
	(0.0416)	(0.0578)	(0.0523)
linear time-trend	0.0000	-0.000	-0.004
	(0.0009)	(0.0010)	(0.0011)
C. Nonempoyment Job flows			
high-low differential	0.1484	0.1406	0.1757
	(0.0619)	(0.0308)	(0.0317)
linear time-trend	-0.006	-0.002	0.0024
	(0.0019)	(0.0011)	(0.0011)
Definition of Job Ladder	productivity	wages	AKM fixed effect

Accounting Decomposition

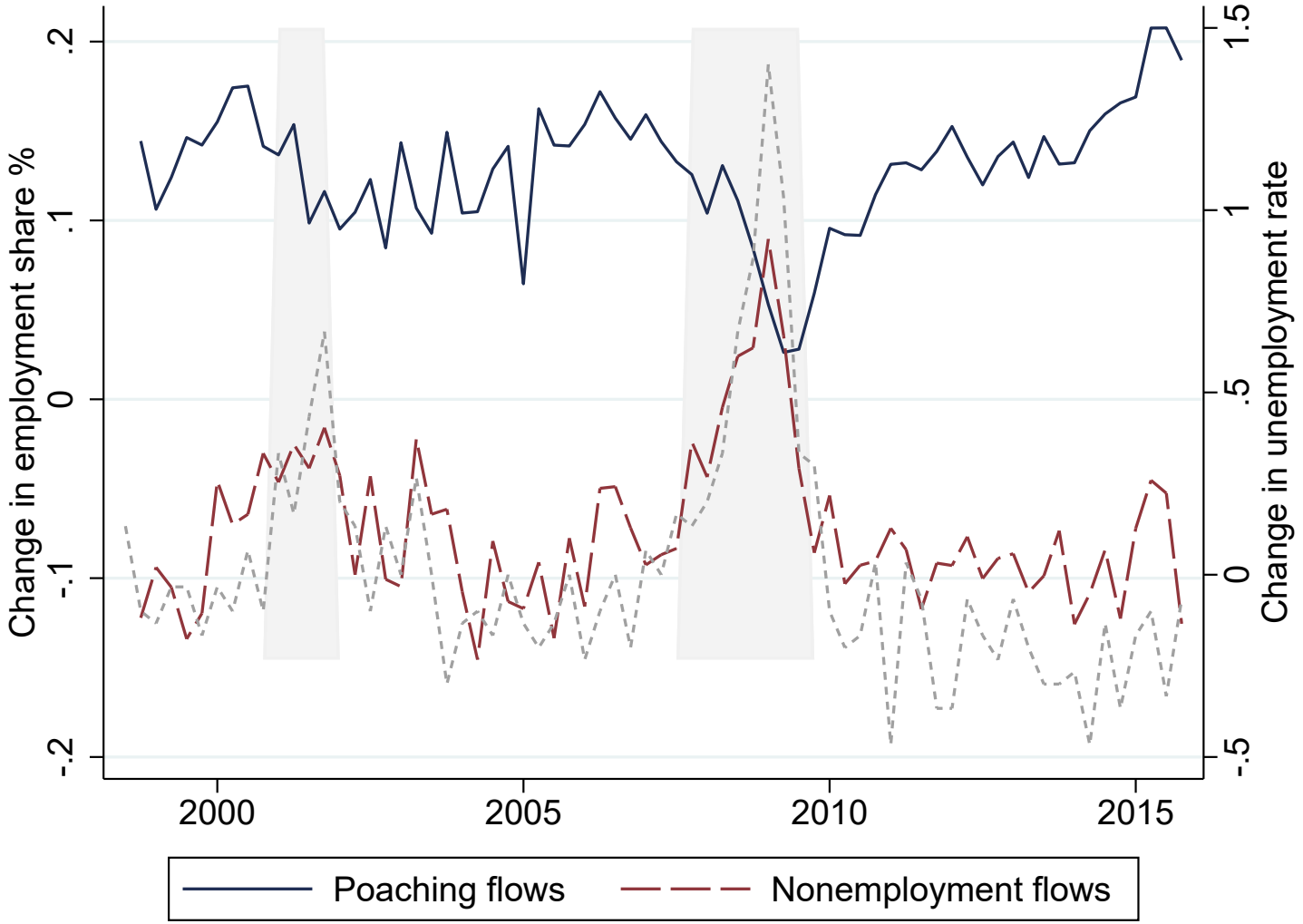
Change in share of emp. at high-type firms: $\Delta\theta_t^h = \tilde{\lambda}_t^h + \tilde{\delta}_t^h + \tilde{\epsilon}_t^h$

$$\Delta P_t = \underbrace{(\tilde{R}_{t-1}^h - \tilde{R}_{t-1}^l)\Delta\theta_t^h}_{\text{Worker Reallocation}} + \theta_t^l \Delta\tilde{R}_t^l + \theta_t^h \Delta\tilde{R}_t^h + \Delta\left(\sum_k [\theta_t(k)\bar{P}_t(k)]\right)$$

$$\underbrace{(\tilde{R}_{t-1}^h - \tilde{R}_{t-1}^l)\Delta\theta_t^h}_{\text{Worker Reallocation}} = \underbrace{(\tilde{R}_{t-1}^h - \tilde{R}_{t-1}^l)\tilde{\lambda}_t^h}_{\text{Poaching}} + \underbrace{(\tilde{R}_{t-1}^h - \tilde{R}_{t-1}^l)\tilde{\delta}_t^h}_{\text{Nonemployment}} + \underbrace{(\tilde{R}_{t-1}^h - \tilde{R}_{t-1}^l)\tilde{\epsilon}_t^h}_{\text{Residual}}$$

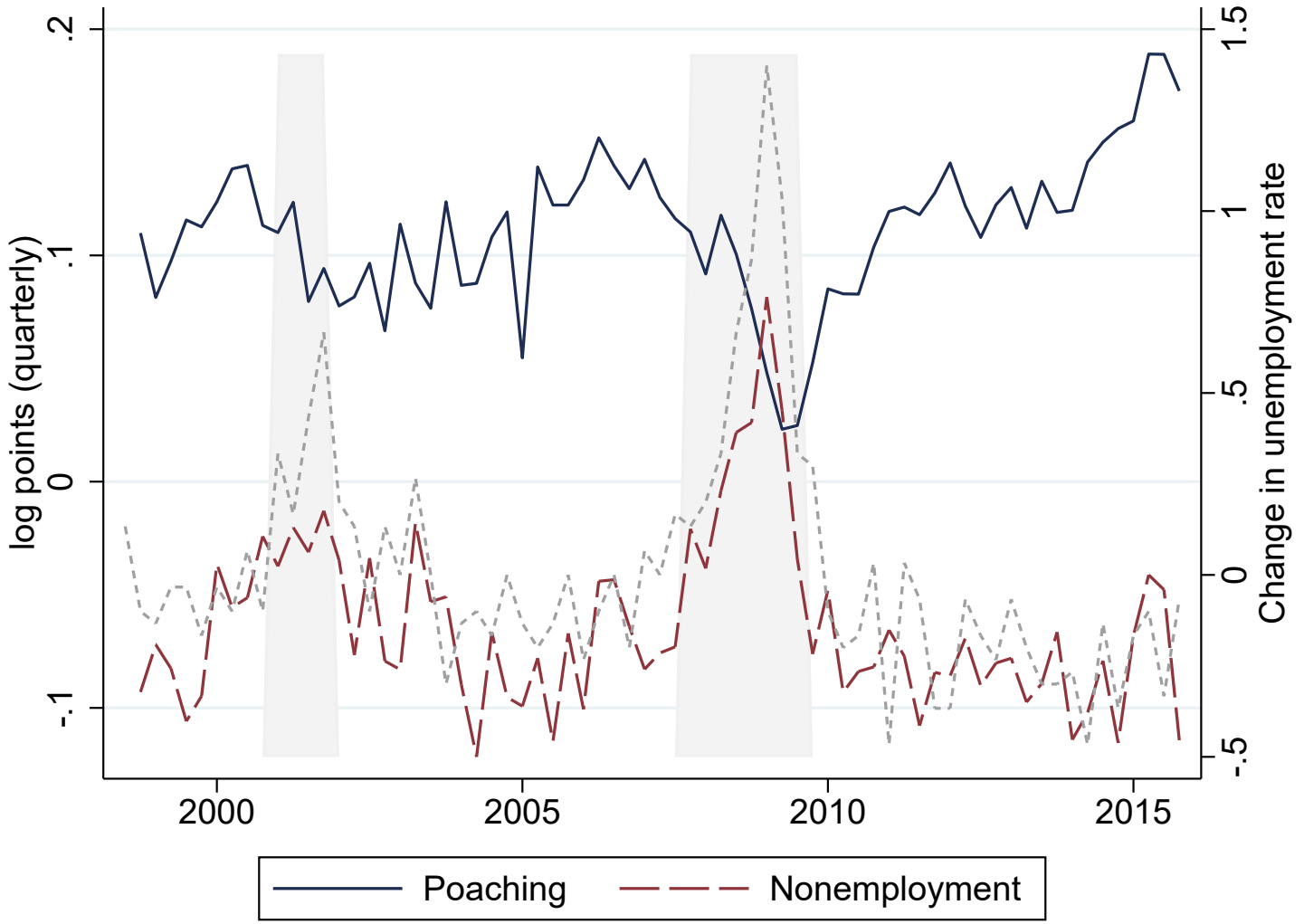
Implement for direct measure of productivity and indirect measure (AKM firm premium).

Decomp of Changing Employment Share



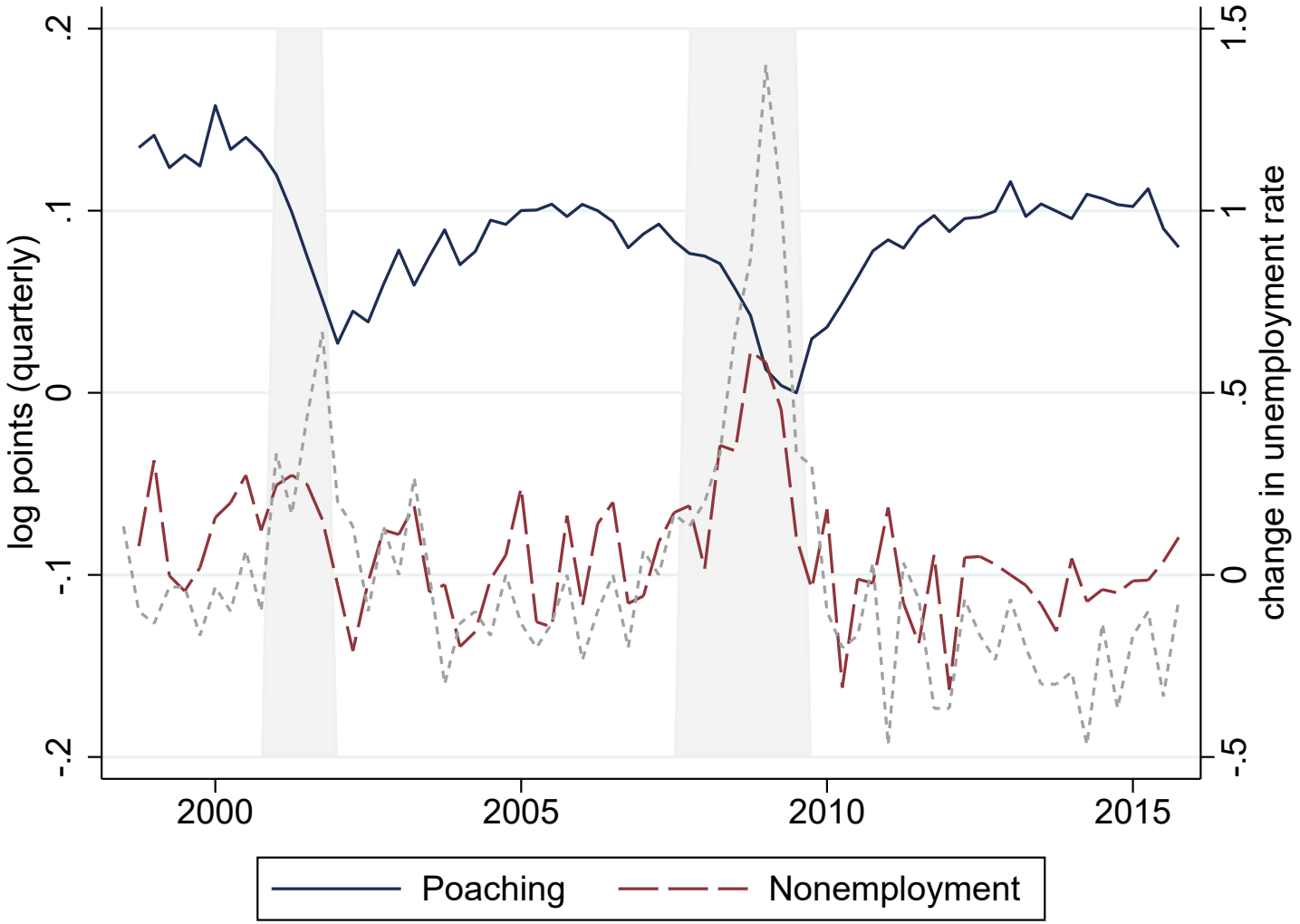
Contribution of net nonemployment flows leads net poaching.

Productivity Decomp (within ind prod)



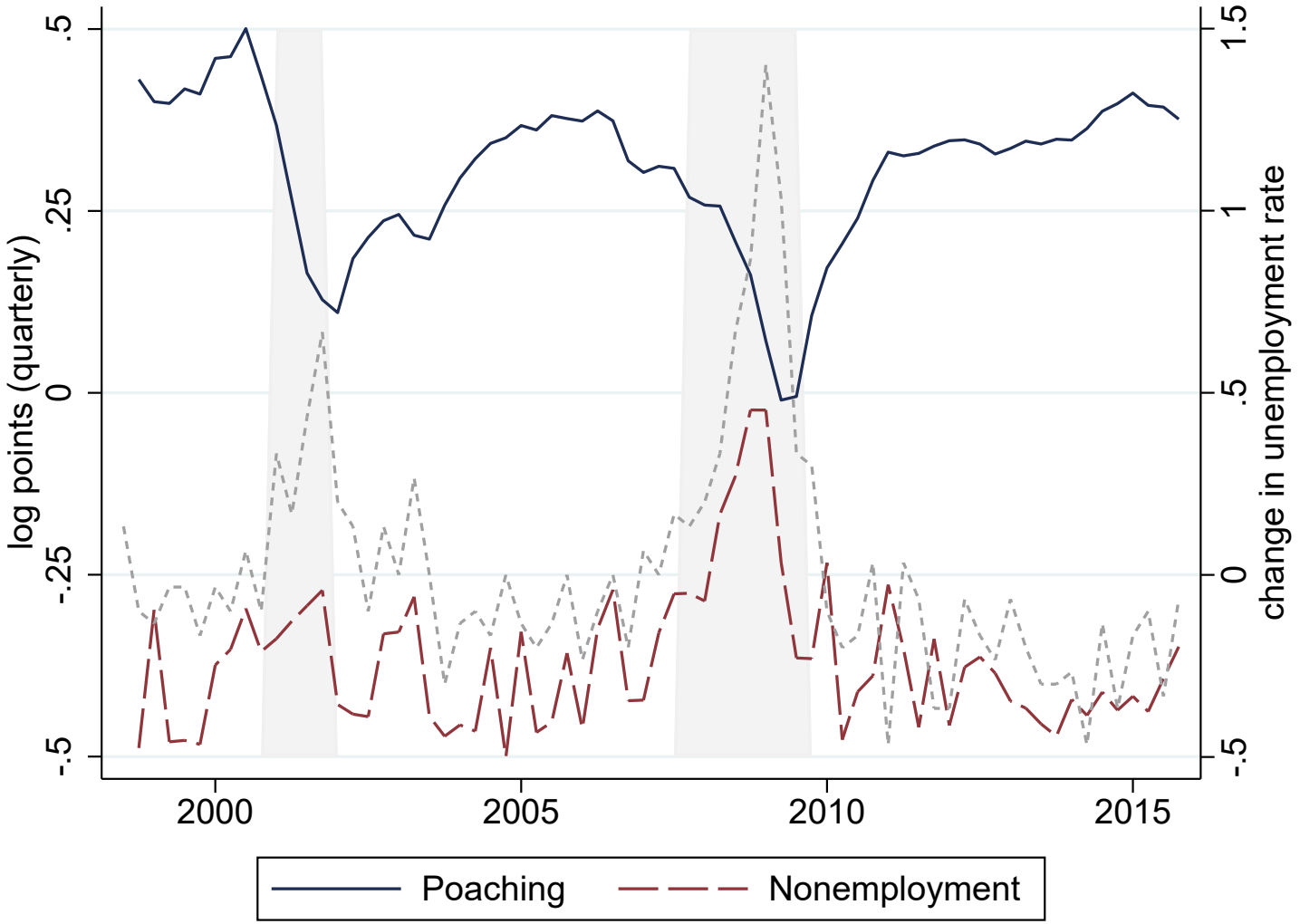
Net poaching: .1 (avg), 0.13 (2006:1); 0.04,0.02,0.02, 0.05 (2009:1-4). Net NE: -0.067 (avg), -.1 (2006:1); 0.08, 0.03,-0.03, -0.08 (2009:1-4). BLS=0.5.

AKM Firm Premium Decomp (within ind)



Net poaching: .09 (avg), 0.1 (2006:1) 0.04 (2008:4), 0 (2009:3) Net NE: -0.09 (avg), -.12 (2006:1), 0.02 (2008:4), -0.07 (2009:3).

AKM Firm Premium Decomp (within & between ind)



Net poaching: .3 (avg), 0.37 (2006:1), 0.16 (2008:4) 0 (2009:3). Net NE: -0.37 (avg), -.46 (2006:1), -0.02 (2008:4), -0.36 (2009:3)

Cyclicality of Gains from Productivity

Table 3: Productivity Gains from Job Flows Over the Cycle

	Cyclical Indicator		
	(1)	(2)	(3)
A. Net Job Flows			
Change in Unemployment Rate	0.040	0.010	0.005
	(0.015)	(0.016)	(0.043)
Unemployment Rate Deviations	-0.023	-0.027	-0.085
	(0.005)	(0.005)	(0.013)
B. Poaching Job Flows			
Change in Unemployment Rate	-0.052	-0.062	-0.225
	(0.009)	(0.009)	(0.029)
Unemployment Rate Deviations	-0.023	-0.021	-0.073
	(0.004)	(0.004)	(0.013)
C. Nonemployment Job Flows			
Change in Unemployment Rate	0.092	0.072	0.230
	(0.009)	(0.010)	(0.026)
Unemployment Rate Deviations	0.001	-0.006	-0.012
	(0.006)	(0.005)	(0.015)
Definition of Job Ladder	productivity	AKM (within ind)	AKM (within/between ind)

Conclusion

- Job-to-job moves reallocate workers from less productive to more productive firms
- Net non-employment flows are on average increasing share of low productivity firms.
- Both cleansing and sullying effects present in recessions.
  - Separations to NE spike at low prod firms.
  - Poaching by high prod firms declines.
- Cleansing leads sullying within recession.
- Sullying lingers after recession.