The Recent Decline in Employment Dynamics
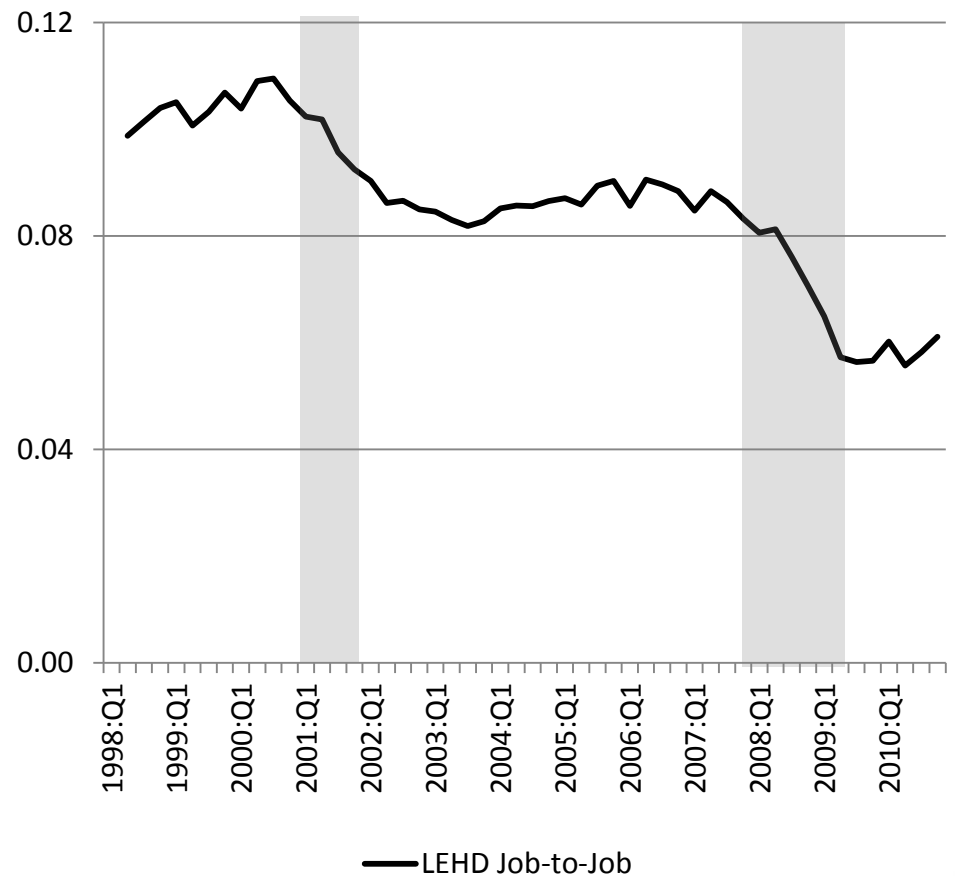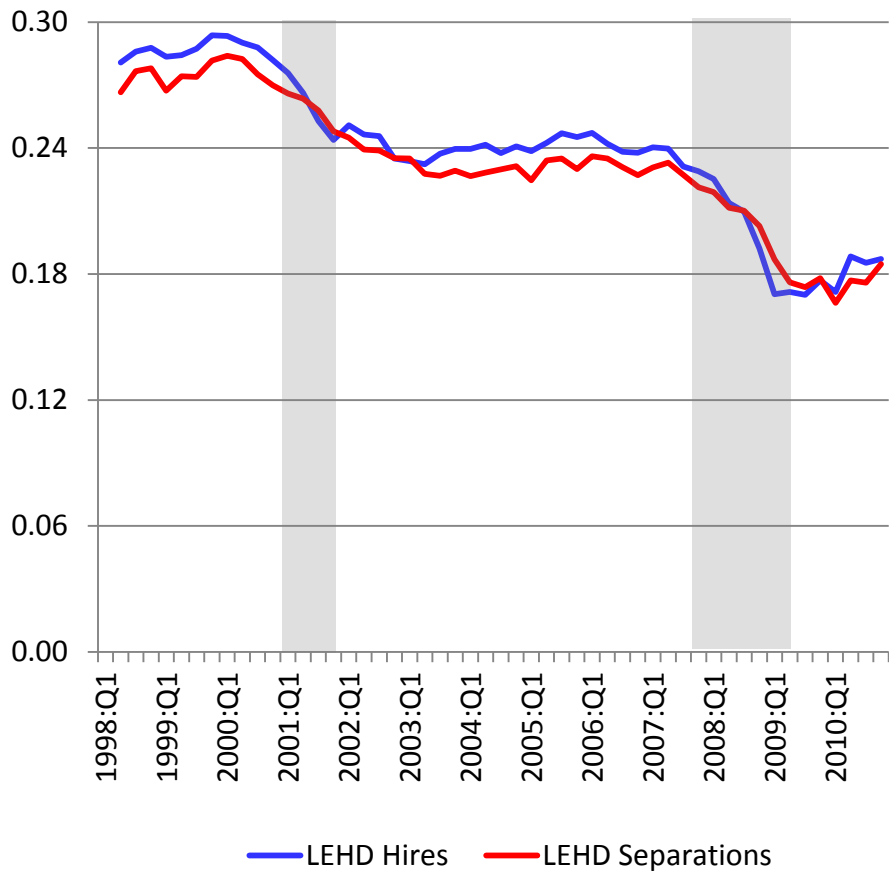
Henry R. Hyatt

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LED Partnership Workshop: June 13, 2013

Employment Dynamics

LEHD Hires — LEHD Separations

LEHD Job-to-Job

United States Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
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Employment Dynamics

Measure	Source	Rate in 1998 *	Rate in 2010	Proportionate Decline
Hires	LEHD	28.1%	18.7%	-38%
Separations	LEHD	26.6%	18.5%	-36%
Job Creation	LEHD	7.7%	5.5%	-33%
Job Destruction	LEHD	6.4%	5.1%	-23%
Job-to-Job flows	LEHD	9.9%	6.1%	-47%

Employment Dynamics

Measure	Source	Rate in 1998 *	Rate in 2010	Proportionate Decline
Hires	LEHD	28.1%	18.7%	-38%
	JOLTS*	14.1%	10.6%	-28%
	CPS	19.4%	17.3%	-11%
Separations	LEHD	26.6%	18.5%	-36%
	JOLTS*	14.3%	10.1%	-34%
	CPS	19.1%	17.2%	-10%
Job Creation	LEHD	7.7%	5.5%	-33%
	BED	8.3%	6.6%	-23%
Job Destruction	LEHD	6.4%	5.1%	-23%
	BED	7.6%	6.1%	-22%
Job-to-Job flows	LEHD	9.9%	6.1%	-47%
	CPS	7.9%	4.6%	-53%

Are the Declines Important?

High levels of employment dynamics are associated with higher economic growth

    -- Schumpeterian creative destruction

    -- Businesses & workers seeking their most productive match

    -- International comparisons

Much wage growth occurs at job change (Topel & Ward)

The recent decline may be worrisome

    -- declining innovation or declining labor market flexibility?

But declining dynamics can also be good

    -- reduced uncertainty or increased job stability?

Today's Presentation

1) The data

2) Are the declines due to changing composition of the workforce or businesses?

  example: ↓ young workers & ↑ older workers → ↓ dynamics

  example: ↓ business births & ↑ older firms → ↓ dynamics

3) Some identities

  How are the various measures of dynamics related?

Four Data Sources

● Longitudinal Employer-Household Dynamics (LEHD)

    Hires & Separations, Job Creation & Destruction, Job-to-Job

● Business Employment Dynamics (BED)

    Job Creation & Job Destruction

● Job Openings and Labor Turnover Survey (JOLTS)

    Hires & Separations

● Current Population Survey (CPS)

    Hires & Separations, Job-to-Job

Quarterly Seasonally-Adjusted Data
All data, except LEHD job-to-job flows, is publicly available

LEHD: 1998:Q2 – 2010:Q4

Source: Cornell Virtual RDC (H&S, JC & JD), 30 states

Hyatt & McEntarfer (job to job flows)

BED: 1992:Q3 – 2012:Q1

Source: BLS website

JOLTS: 2001:Q1 – 2012:Q3 (monthly converted to quarterly)

Source: BLS website

CPS: 1995:Q4 – 2012:Q3 (monthly converted to quarterly)

Source: Federal Reserve website

Thanks to Bruce Fallick for special tabulations

Measuring Changing Composition

Employment dynamics at time t (Y_t) can be written as:
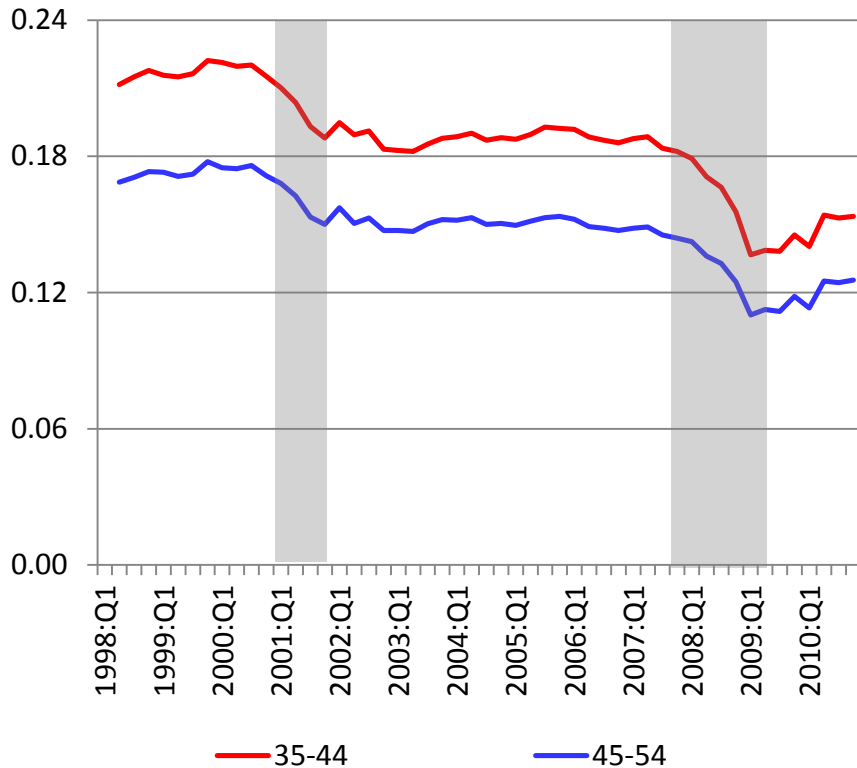
$$Y_t = \Sigma_i Y_{it} S_{it}$$

where "i" indexes groups (worker age, firm size, …) and S_i is the employment share of the group

A standard decomposition that examines the decline of Y_t over time is:

$$\Delta Y_t = \Sigma_i \Delta Y_{it} S_{i\bullet} + \Sigma_i Y_{i\bullet} \Delta S_{it}$$

Within group effect

Composition effect

A Decomposition Example

Hires Rates, by Age

Employment Shares, by Age

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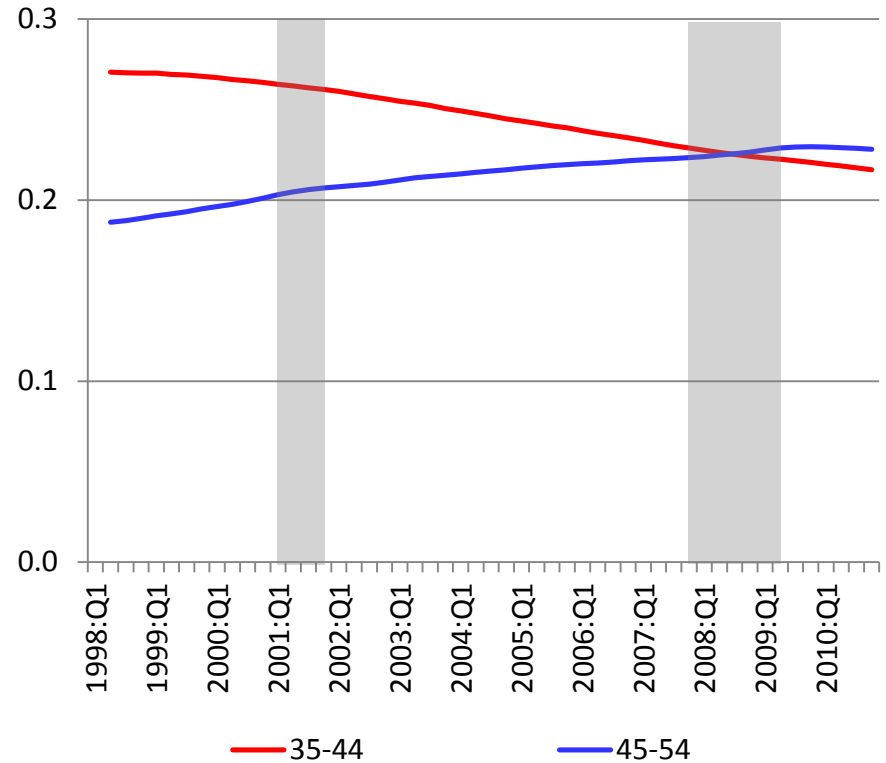
Compositional Changes in the U.S. Labor Market (2000 to 2010)

● The aging of the workforce (the baby boom)

   35-44 year olds ↓ 4.5%, 55-64 year olds ↑ 4.9%

● More highly educated workforce

   High School grads & dropouts ↓ 4.9%, College grads ↑ 6.0%

● Share of workers at small businesses has declined

   Firm Size <20 ↓ 1.7%, Firm Size ≥500 ↑ 2.2%

● Changing industry composition

   Manufacturing ↓ 4.6%, Education & Health Services ↑ 4.2%

Hires & Separations
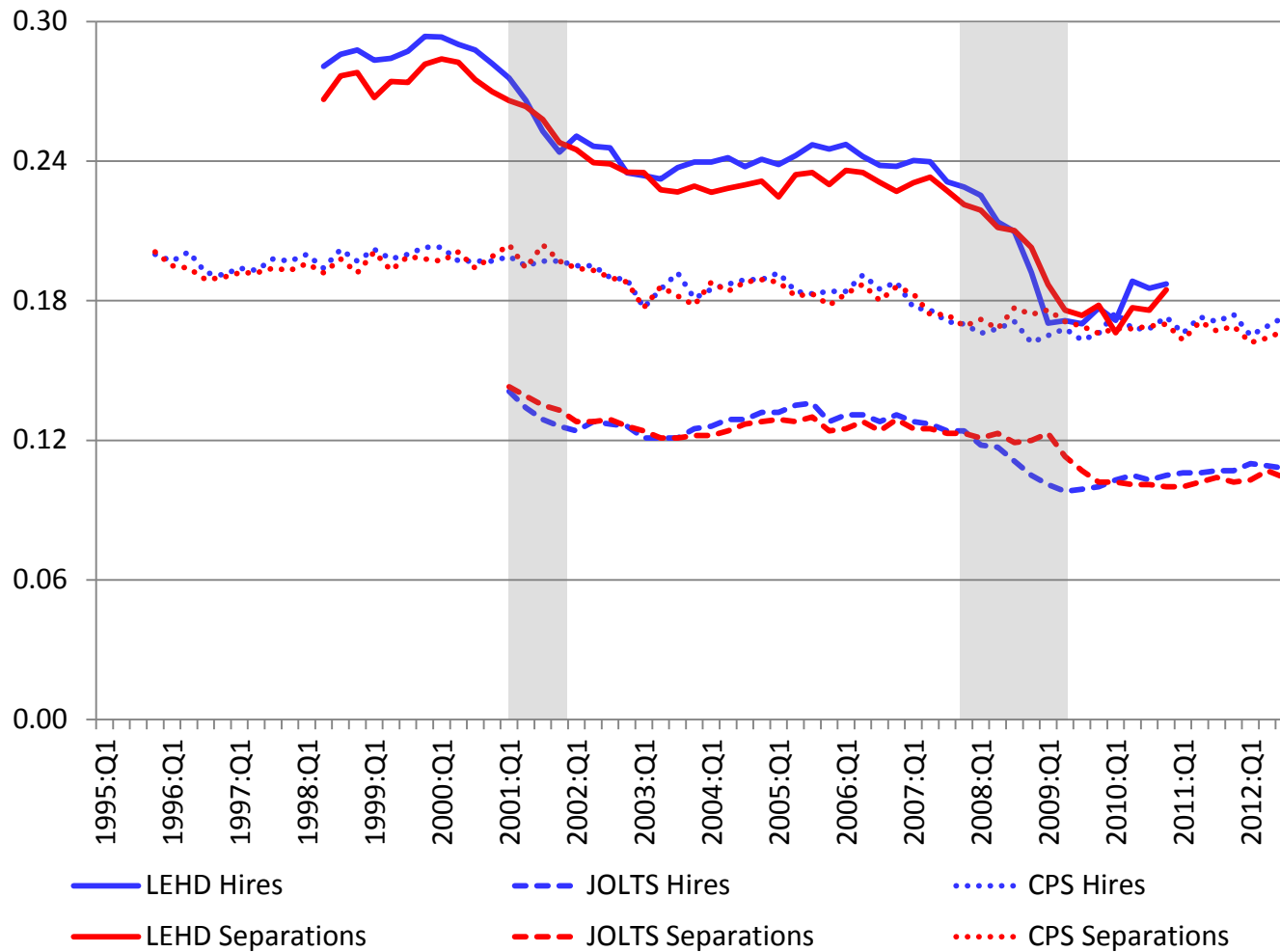
Hires and Separations

	LEHD Hires	LEHD Separations	JOLTS Hires	JOLTS Separations	CPS Hires	CPS Separations
2001:Q1	.276	.266	.141	.143	.199	.204
2010:Q4	.187	.185	.106	.101	.173	.172
Change	-.089	-.081	-.035	-.042	-.026	-.032

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% of change explained by changing individual characteristics:

	LEHD Hires	LEHD Separations	JOLTS Hires	JOLTS Separations	CPS Hires	CPS Separations
Age	12.6%	11.2%			23.3%	15.0%
Gender	0.2%	0.2%			-0.3%	-0.3%
Race & Ethnicity	-1.8%	-1.7%				
Education	-0.4%	-0.4%			23.2%	25.4%

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Education	-0.4%	-0.4%			23.2%	25.4%
% of change explained by changing business characteristics:						
Industry	-6.3%	-5.8%	-2.6%	-1.4%	-4.4%	-3.5%
Firm Size	2.4%	2.3%				
Establishment Size			-0.7%	-0.7%		
Firm Age	8.4%	7.5%				

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Firm Size	2.4%	2.3%				
Establishment Size			-0.7%	-0.7%		
Firm Age	8.4%	7.5%				

Why the Education Results Differ

Emp Shares by Education (LEHD data)
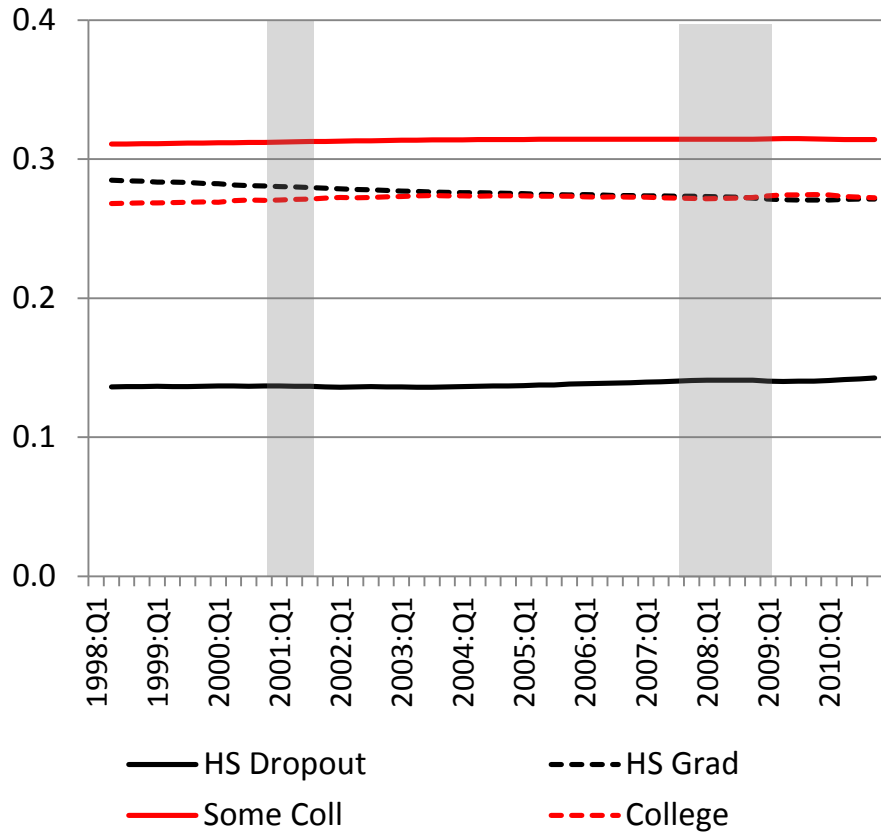
Emp Shares by Education (CPS data)

Legend: HS Dropout, HS Grad, Some Coll, College
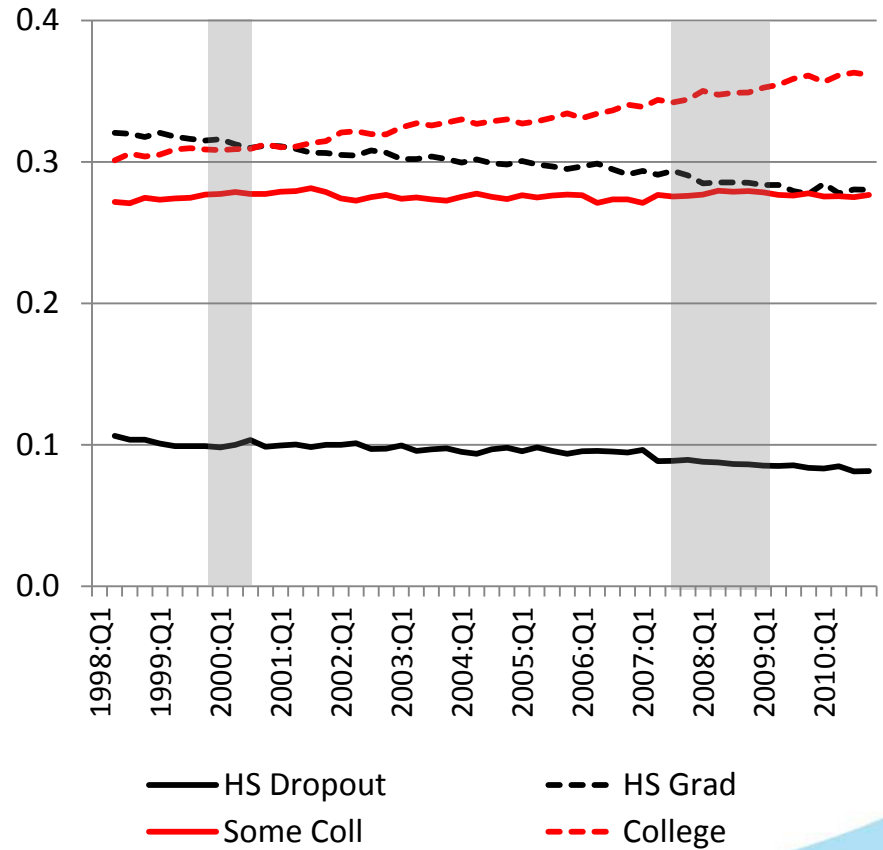
Job Creation & Job Destruction
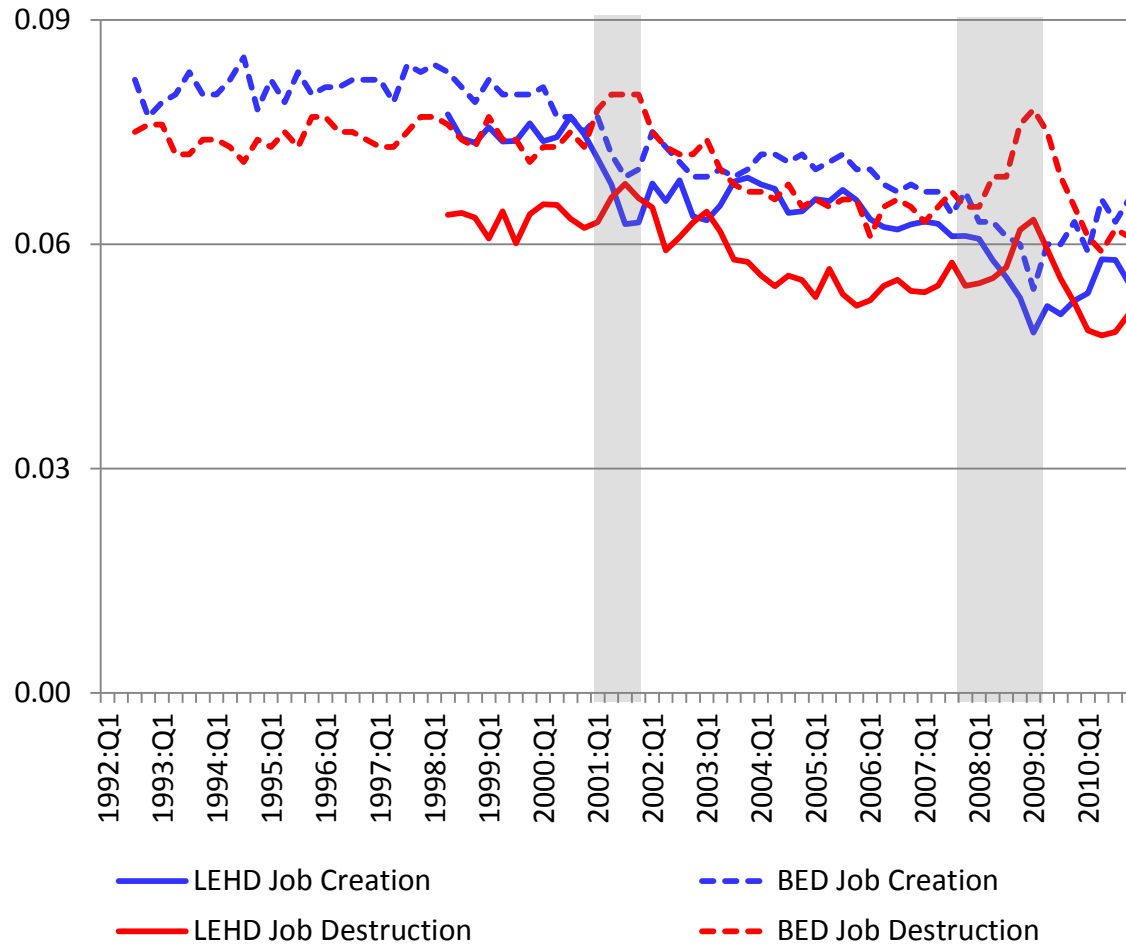
Job Creation & Job Destruction

	LEHD Job Creation	LEHD Job Destruction	BED Job Creation	BED Job Destruction
1998:Q2	.077	.064	.083	.076
2010:Q4	.055	.051	.066	.061
Change	-.022	-.013	-.017	-.015
% of change explained by changing business characteristics:				
Industry	-7.2%	-9.7%	-9.0%	-5.9%
Firm Size	9.6%	13.1%	5.8%	6.3%
Firm Age	18.9%	14.4%		

Job-to-Job Flows
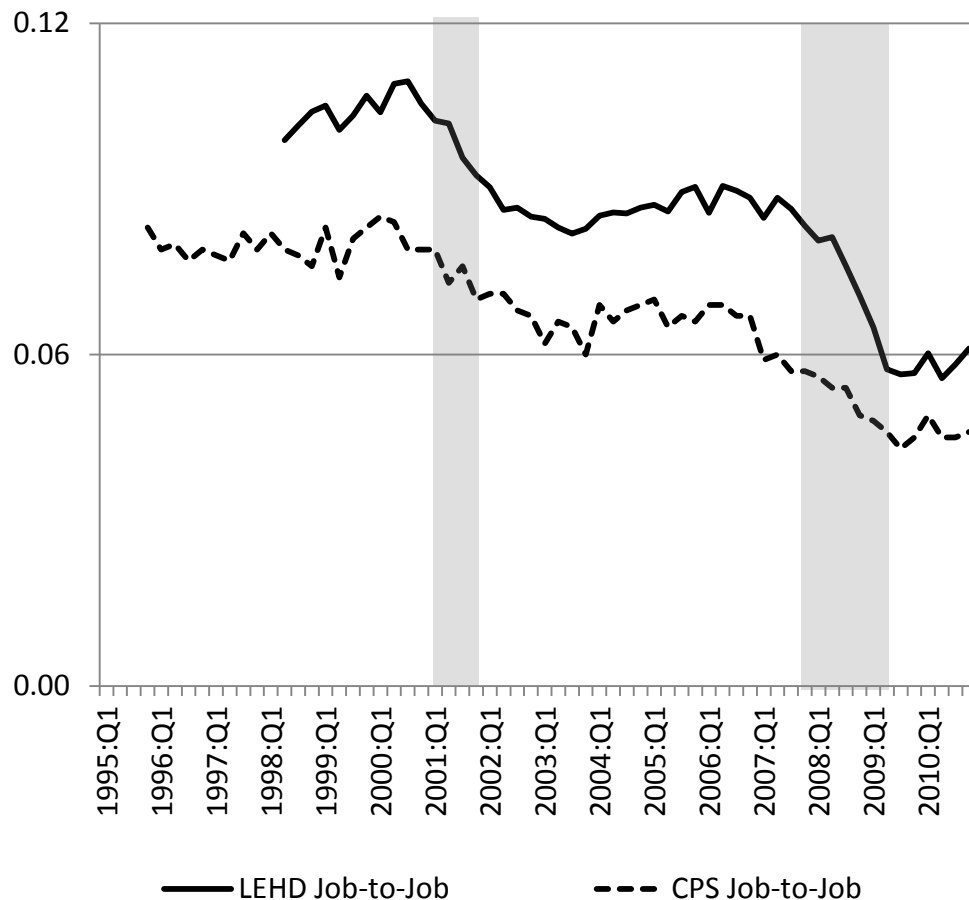
Job-to-Job Flows

	LEHD Job-to-Job	CPS Job-to-Job
1998:Q2	.099	.079
2010:Q4	.061	.046
Change	-.038	-.033

% of change explained by changing individual characteristics:

	LEHD	CPS
Age	21.0%	9.0%
Gender	0.3%	0.0%
Race & Ethnicity	-0.6%	
Education	-0.2%	2.9%

% of change explained by changing business characteristics:

	LEHD	CPS
Industry	-1.3%	-1.1%
Firm Size	2.8%	
Firm Age	7.6%	

Summary of the Decompositions

● The changing composition of any single worker or business characteristic explains no more than 25% of declining employment dynamics

-- worker age, education, & firm age most important

● If effects are additive, changing composition explains:

~ 40% of declining hires and separations

~ 30% of declining job creation & job destruction

~ 30% of declining job-to-job flows

Gross Worker & Job Flows

Estimate a decomposition with another characteristic of the establishment: the establishment's growth rate "g"

Decomposition: $\Delta Y_t = \Sigma_g \Delta Y_{gt} S_{g\bullet} + \Sigma_g Y_{g\bullet} \Delta S_{gt}$

NOTE: for Y={JC & JD), ΔY_{gt}=0 by definition and 100% of declining JC & JD will be due to changes in the employment share (ΔS_{gt}) across the establishment growth rate distribution

Gross Worker & Job Flows

	LEHD Job Creation	LEHD Job Destruct
1998:Q2	.072	.065
2010:Q4	.052	.052
Change	-.020	-.013

% of change explained by changing business characteristics:

g (55 bins)	99.8%	100.3%

ΔS_{gt}, by g
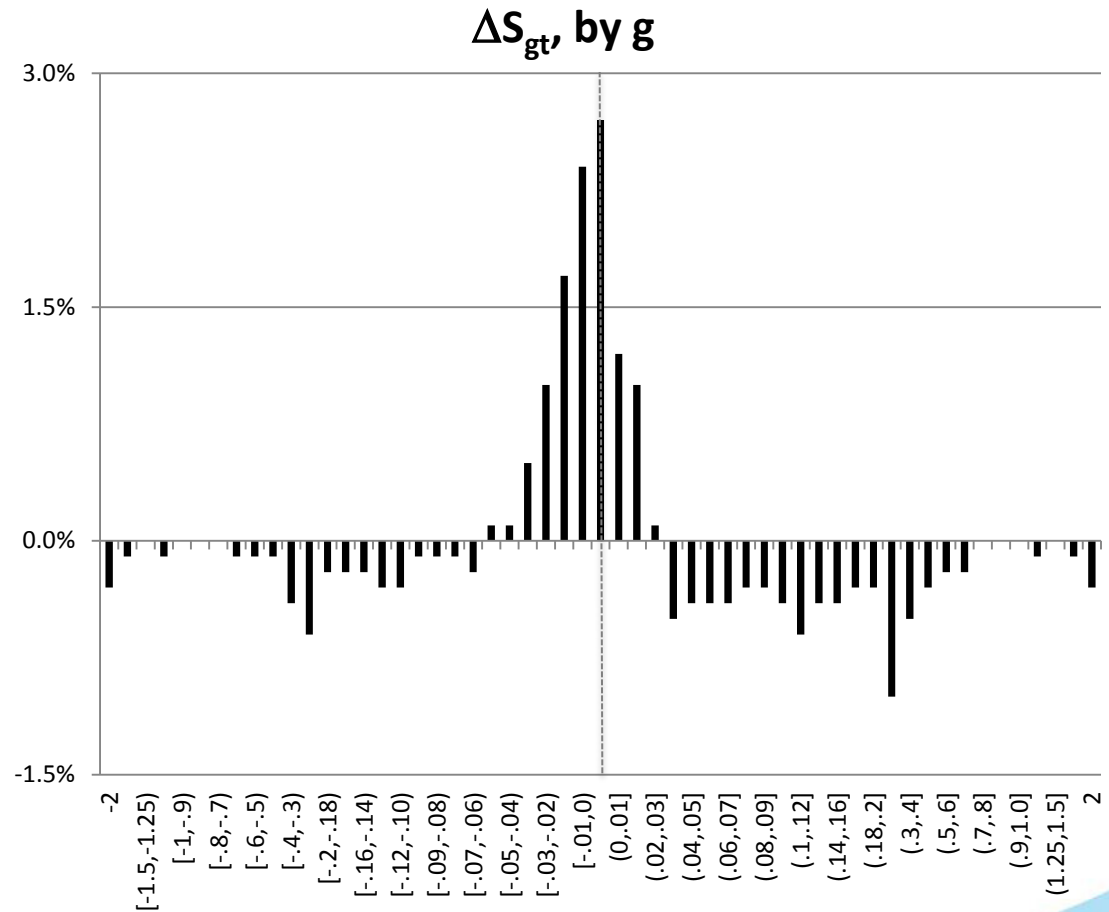
Gross Worker & Job Flows

	LEHD Hires	LEHD Separat
1998:Q2	.267	.260
2010:Q4	.175	.175
Change	-.092	-.084
% of change explained by changing business characteristics:		
g (55 bins)	37.3%	32.0%

The narrowing distribution of establishment growth rates "g" explains about a third of declining hires and separations

Whatever factors are driving the decrease in JC & JD, there are additional independent factors driving the decline in H & S

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Worker Flows & Job-to-Job Flows

In the simplest conceptual model:

    Hires = Employment Inflows + Job-to-Job Flows

    Separations = Employment Outflows + Job-to-Job Flows

Estimating this identity with the LEHD is more complicated:

    Hires and Separations are measured with all jobs

    Job-to-Job Flows is measured across dominant jobs

Need to modify the identity:

    Hires = Emp Inflows + Job-to-Job Flows + (Non-Dominant Jobs)

    Seps = Emp Outflows + Job-to-Job Flows + (Non-Dominant Jobs)

Importance of Non-Dominant Jobs

	1998:Q4	2010:Q3	Decline
Total Hires, LEHD	.288	.185	-.103
Single Quarter Jobs	.114	.060	-.054
Two Quarter Jobs	.067	.041	-.026
Three+ Quarter Jobs	.107	.084	-.023
Single Quarter Jobs	40%	32%	52%
Two Quarter Jobs	23%	22%	25%
Three+ Quarter Jobs	37%	45%	22%

In 1998:Q4, 40% of all hires were into jobs that lasted less than a quarter. This fell to 32% by 2010:Q3.

This decline in short-duration jobs explains over half of the decline in hires.

Conclusions

1) Employment dynamics have declined from the mid-1990s to the early 2010s

   -- All measures {H, S, JC, JD, job-to-job}

   -- In all four datasets (LEHD, BED, JOLTS, CPS)

   -- These declines are concentrated in recessions

2) Empirical Findings:

   -- Composition changes in worker and business characteristics can explain only some of the decline (worker age, education, firm age)

   -- JC & JD falling (mechanically) because of a narrowing distribution of establishment growth rates

   -- This narrowing distribution only explains one-third of declining H & S

   -- Disappearance of short duration jobs helps explain declining H & S

Further Information

"The Recent Decline in Employment Dynamics"

Henry R. Hyatt and James R. Spletzer

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