

Understanding Creative Destruction: Implications for Labor Markets

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Overview

- Healthy, market economies are dynamic
 - High pace of output and input reallocation
 - Churning of firms, jobs and workers is productivity enhancing
 - Market selection yields exit of less productive firms and establishments
 - Young and small businesses play a fundamental role in these dynamics
 - Young and small businesses have higher than average net growth rates and are much more volatile than large and mature businesses
 - Uncertainty, experimentation, learning and selection play an important role
 - These factors important both for advanced economies at technology frontier as well as emerging and transition economies
- Firm dynamics and worker outcomes closely linked
- Recent events remind us that healthy dynamism requires well functioning markets (including credit markets)

Motivating Questions

- What factors impact these dynamics?
- How do these dynamics differ across advanced, emerging and transition economies?
- What is the role of self-employment and the informal economy in these dynamics?
 - Can we learn anything about these questions from advanced economies?
- What are the implications for market structure and institutions?
 - Flexibility + Safety Net
 - What is optimal mix?
 - Does one size fit all?
- What can go wrong?

Evidence from U.S., Advanced, and Transition Economies

- U.S.: Longitudinal Business Database (LBD) for all employer businesses and ILBD which adds all nonemployer (e.g., sole proprietors without employees)
 - http://www.ces.census.gov/index.php/bds/bds_home
- WB firm level data project: Firm Dynamics for advanced, emerging and transition economies
- Specific country studies: E.g., Colombia

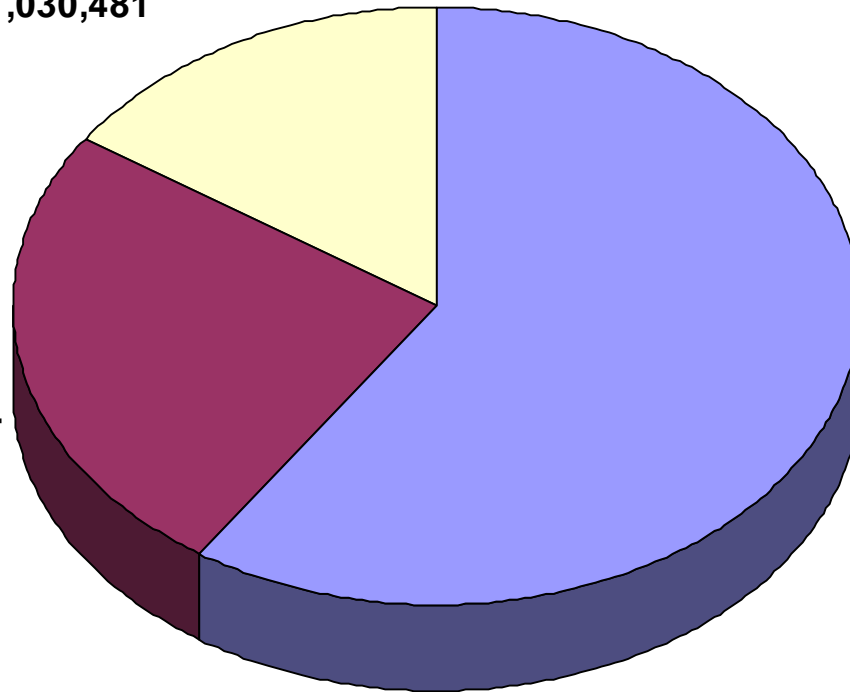


Share of Establishments by Firm Size, 2005



**Large Firms (500+ employees),
1,030,481**

**Small-Medium (10-500 employees),
1,669,297**



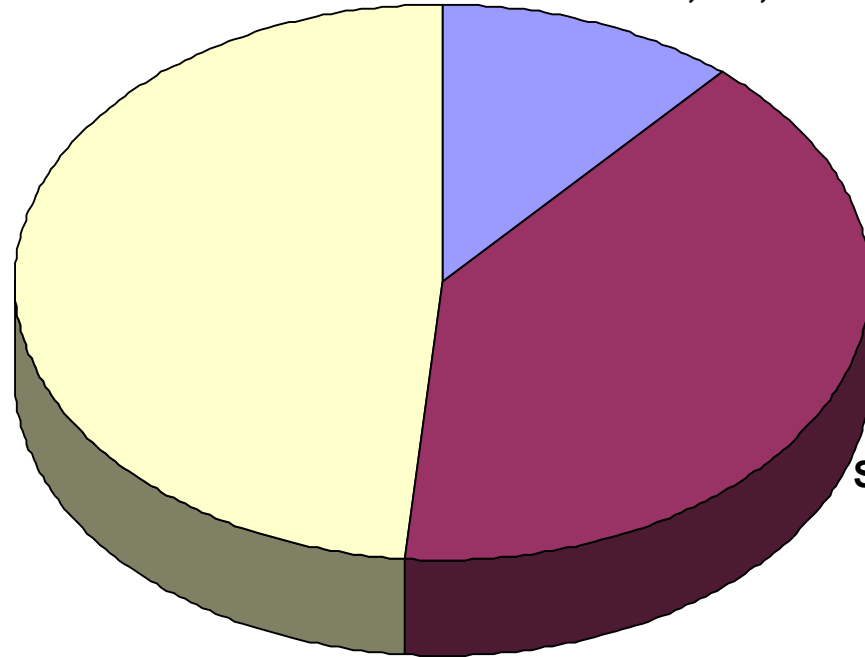
**Micro Firms (1-9 employees),
3,956,622**



Share of Employment by Firm Size, 2005



**Large Firms (500+ employees),
56,374,911**

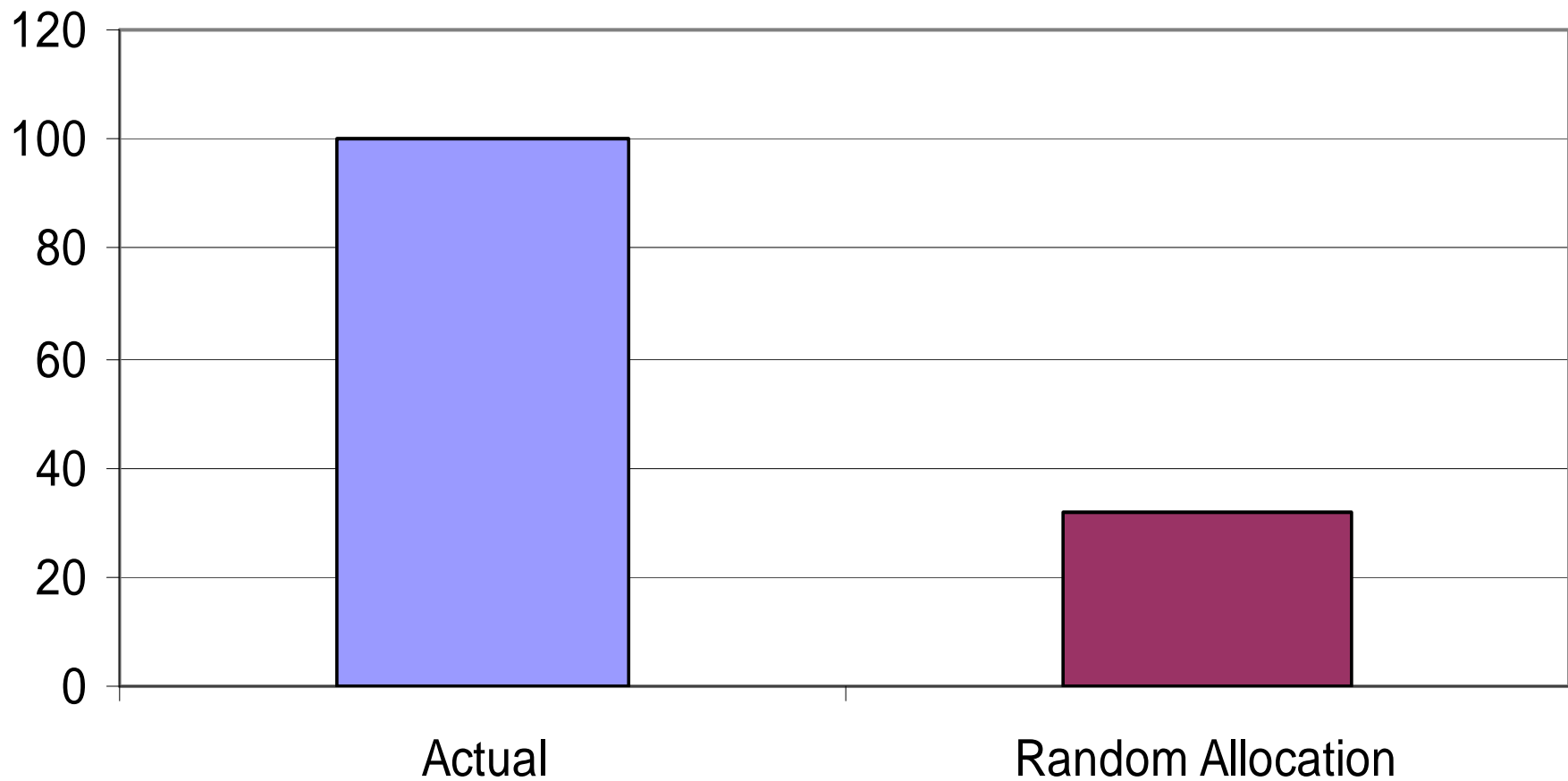


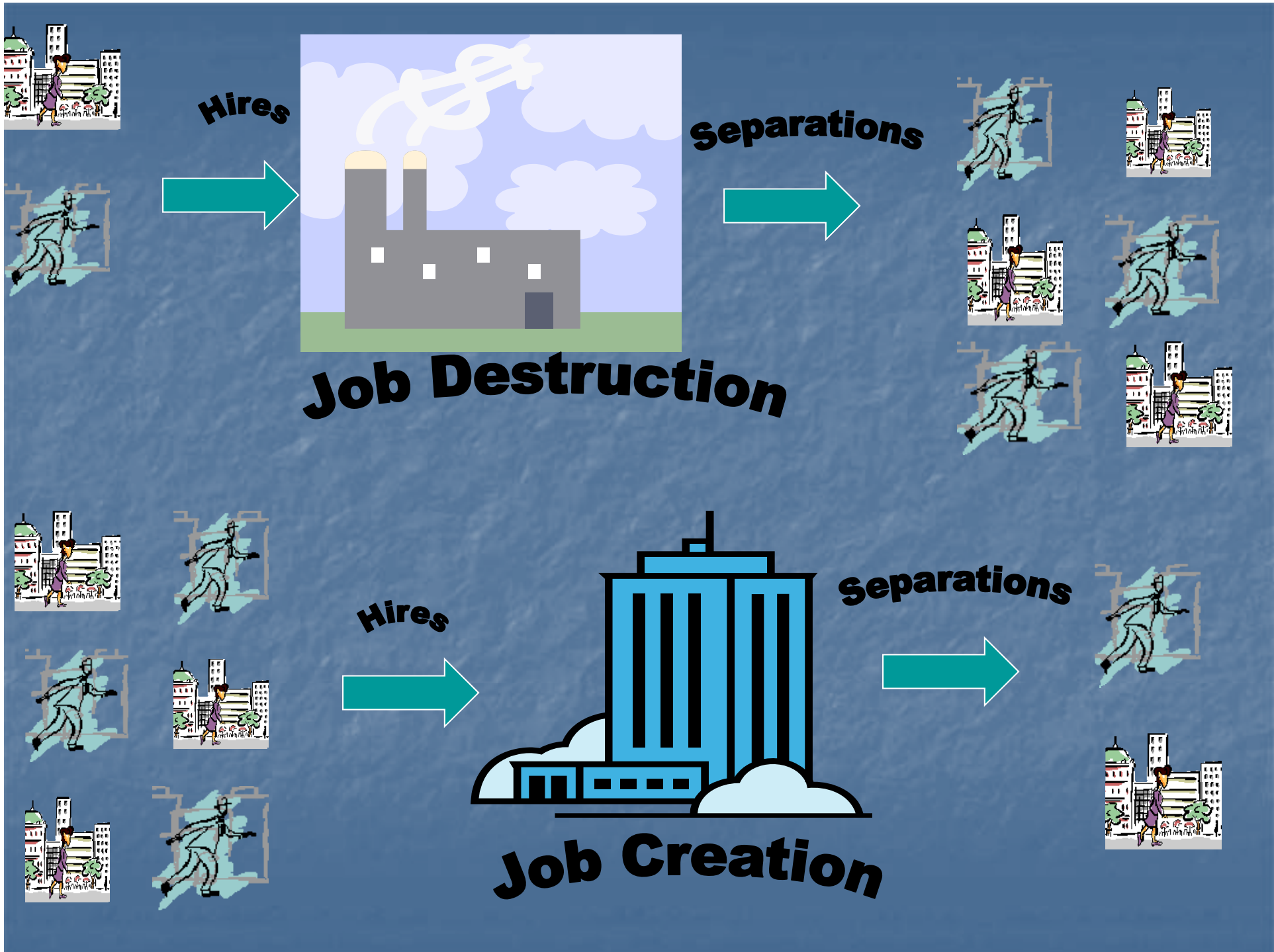
**Micro Firms (1-9 employees),
13,332,034**



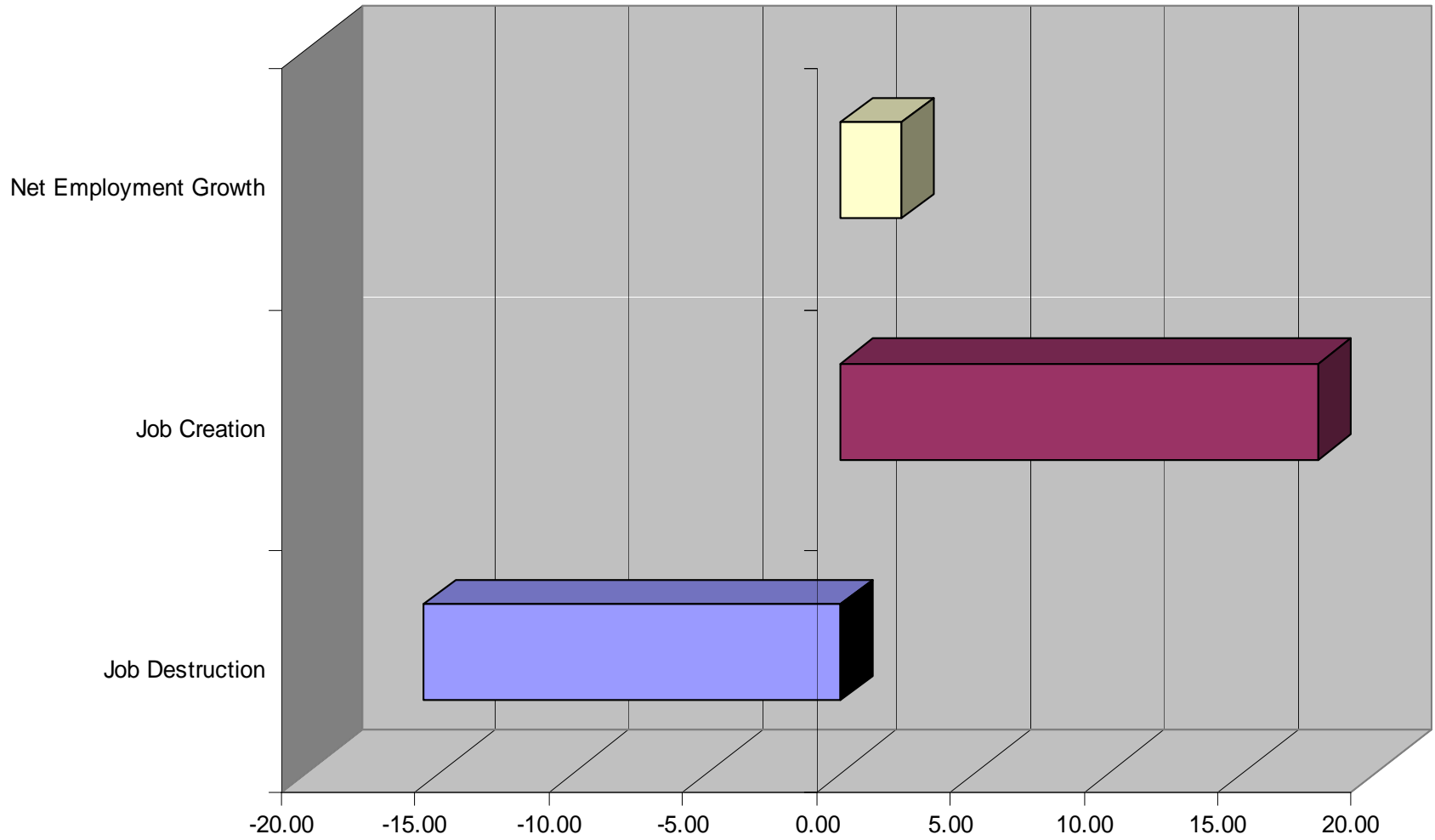
**Small-Medium (10-500 employees),
46,147,894**

U.S. Labor Productivity: Comparison Between Actual and Random Allocation of Size of Businesses

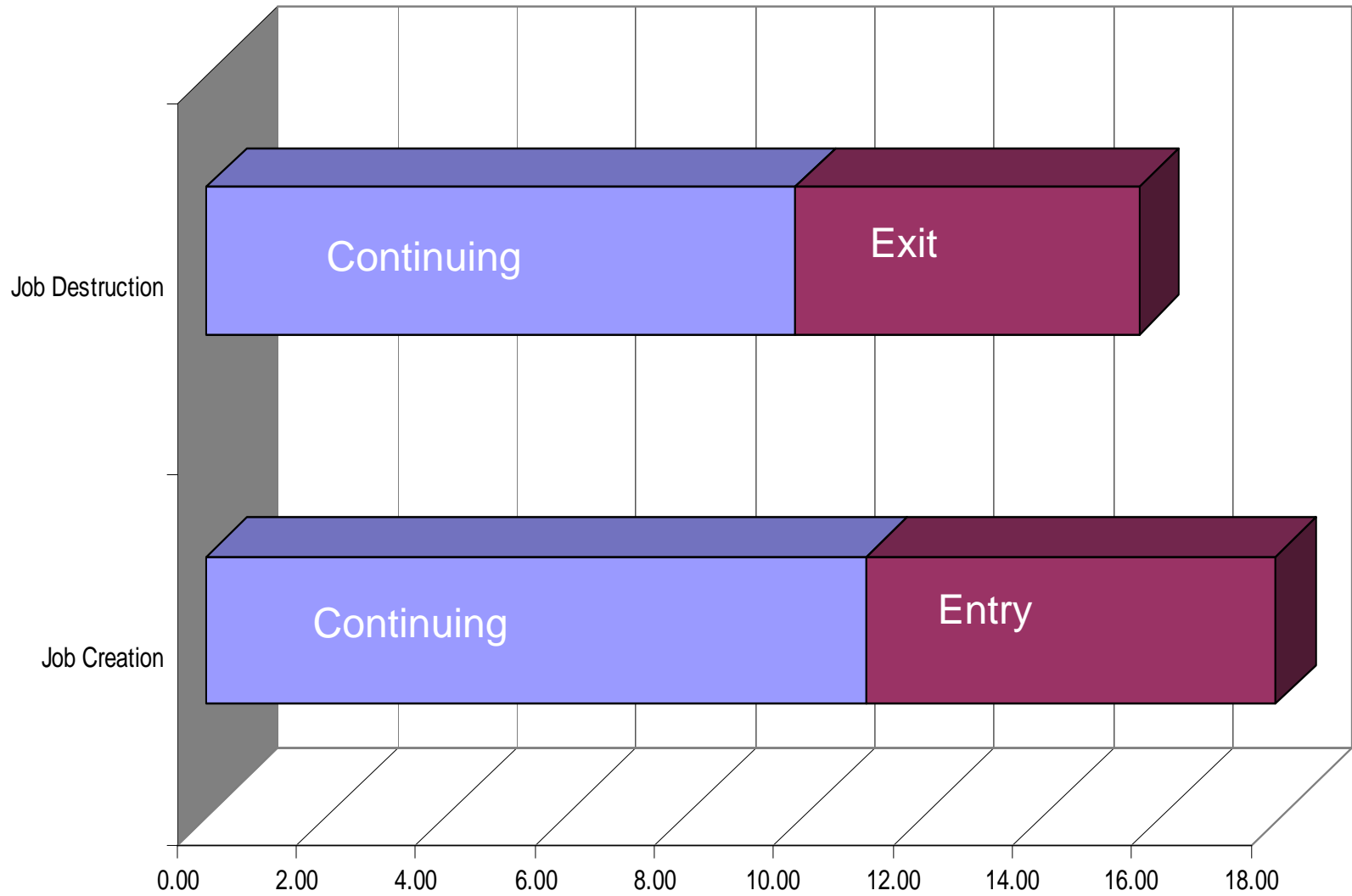




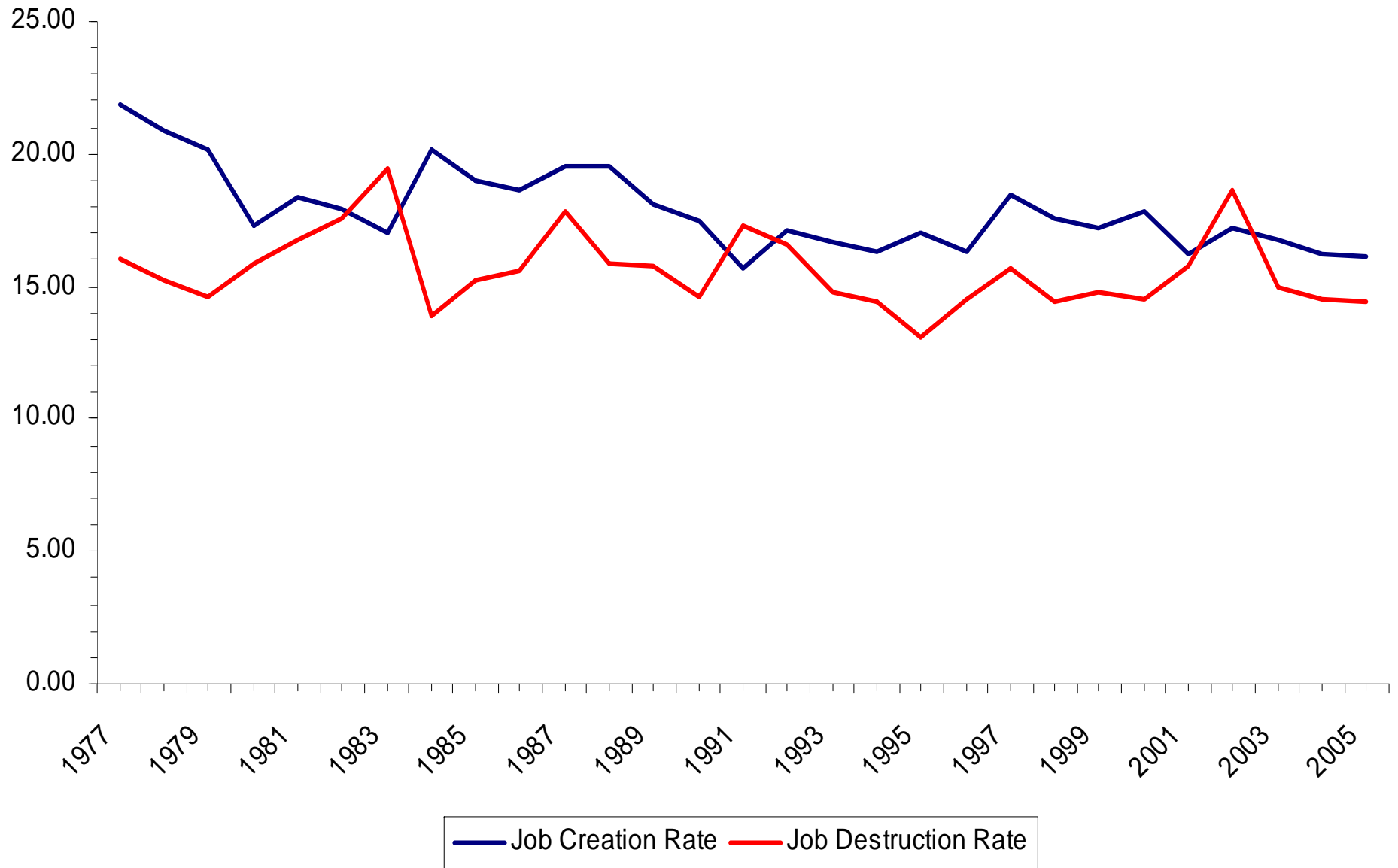
Creative Destruction in U.S.



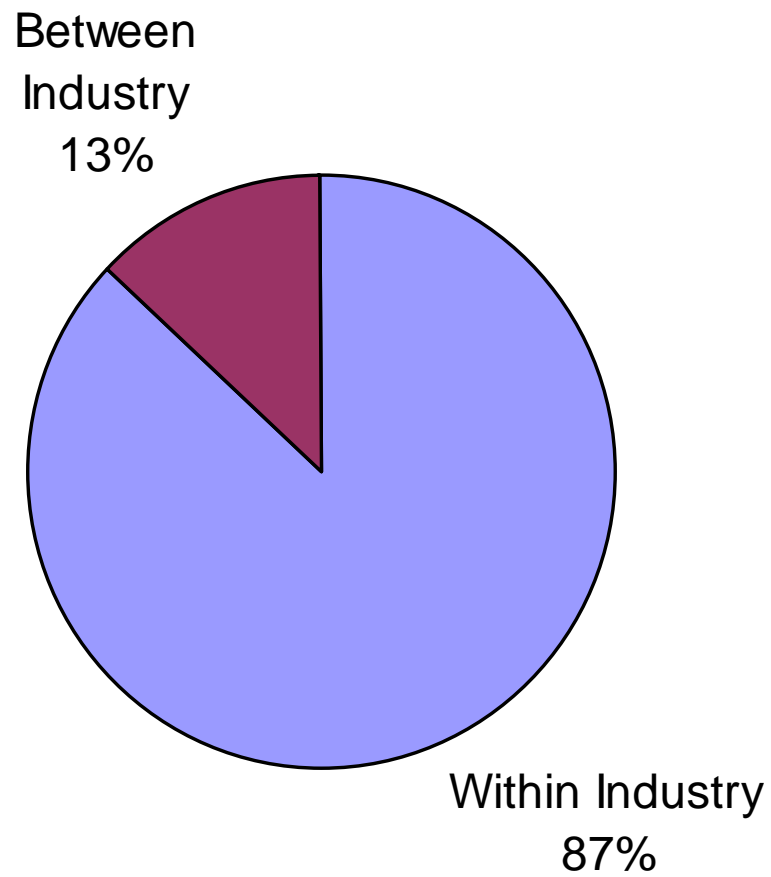
The Role of Establishment Entry and Exit



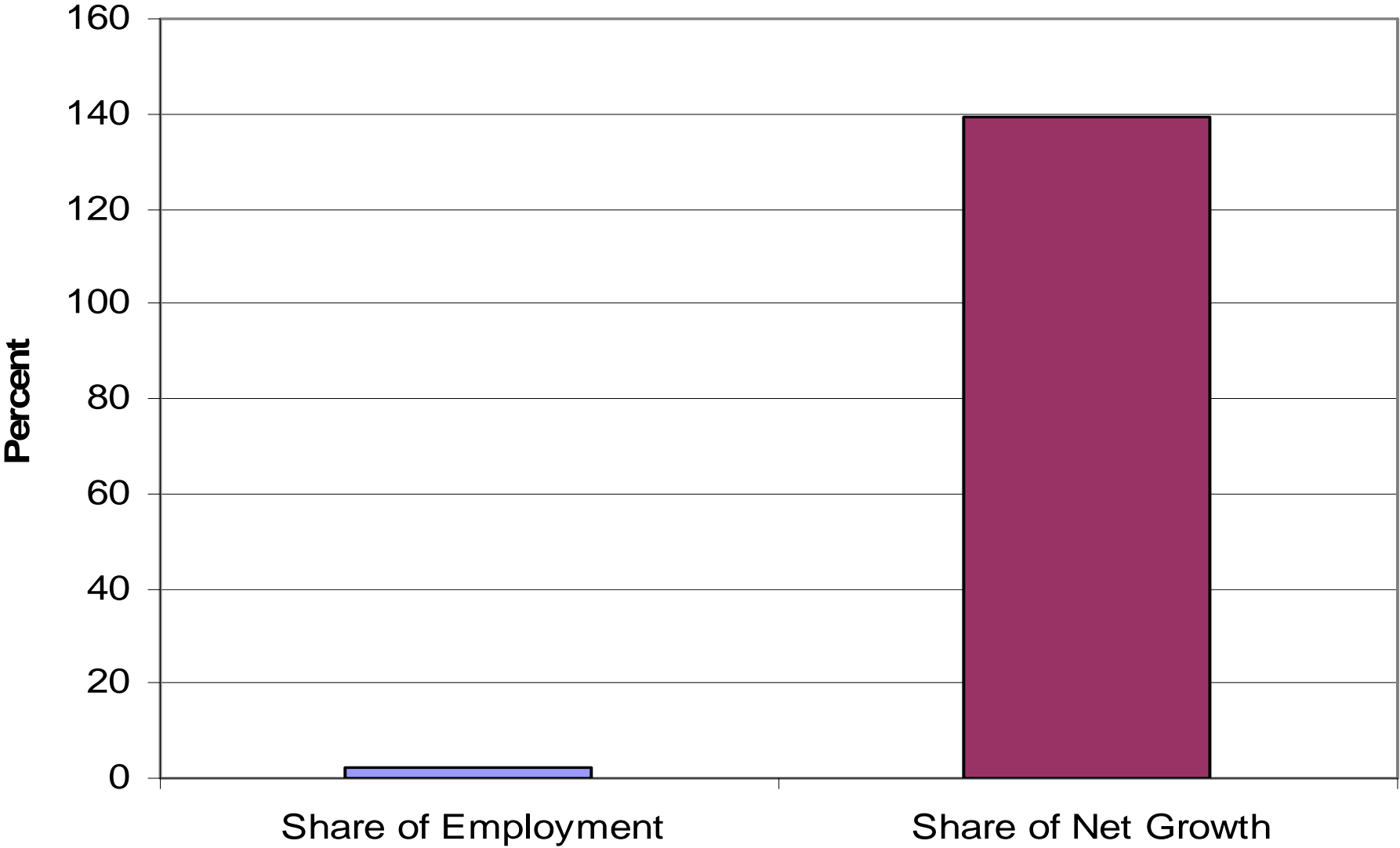
Job Creation/ Destruction Rates: Economy by Year



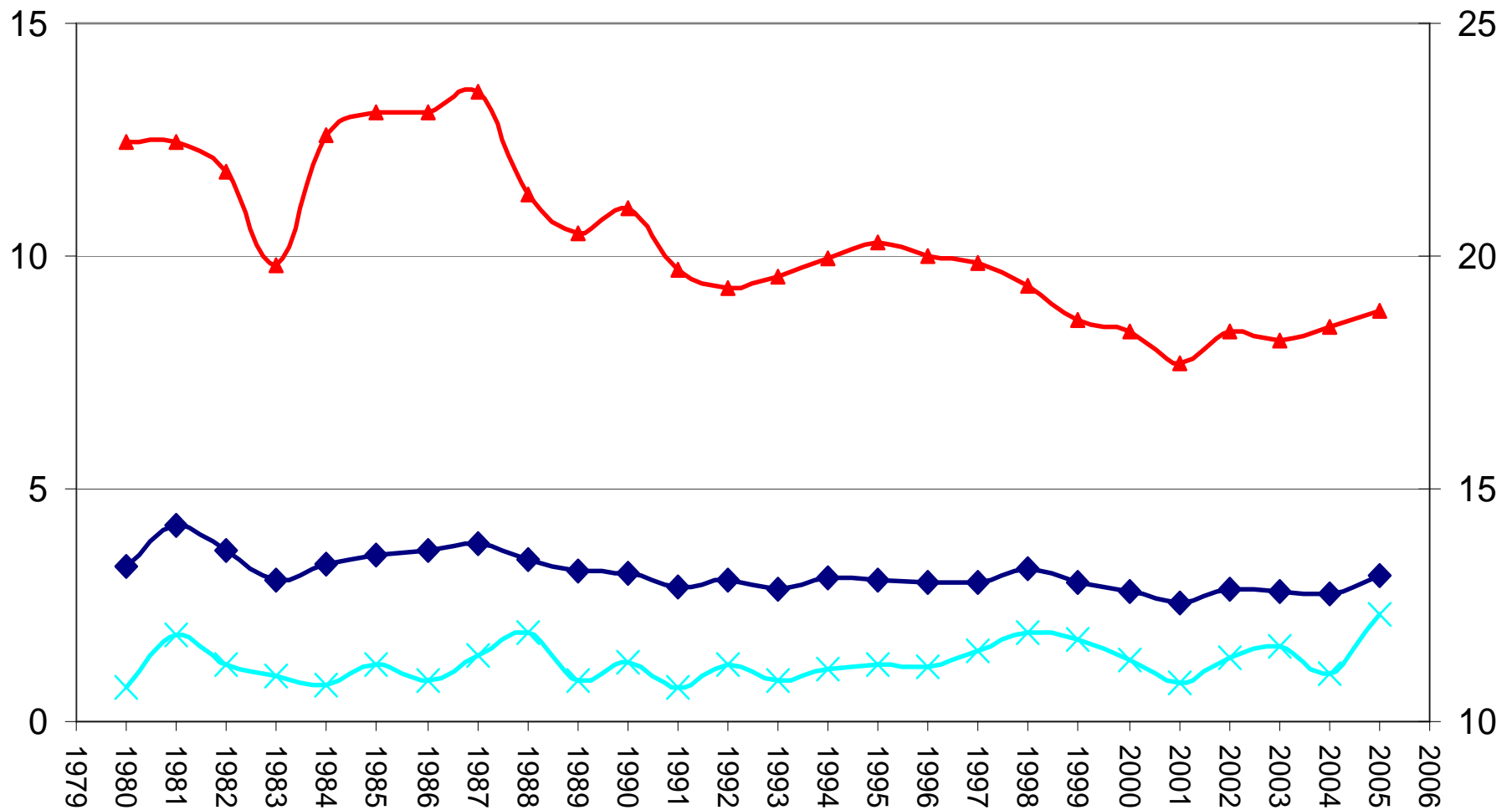
Share of Reallocation Between and Within Detailed Industries



Business Startups as Percentage of Employment and Net Growth



Percent of Jobs Accounted for by New Firms (All and Selected Size Classes)

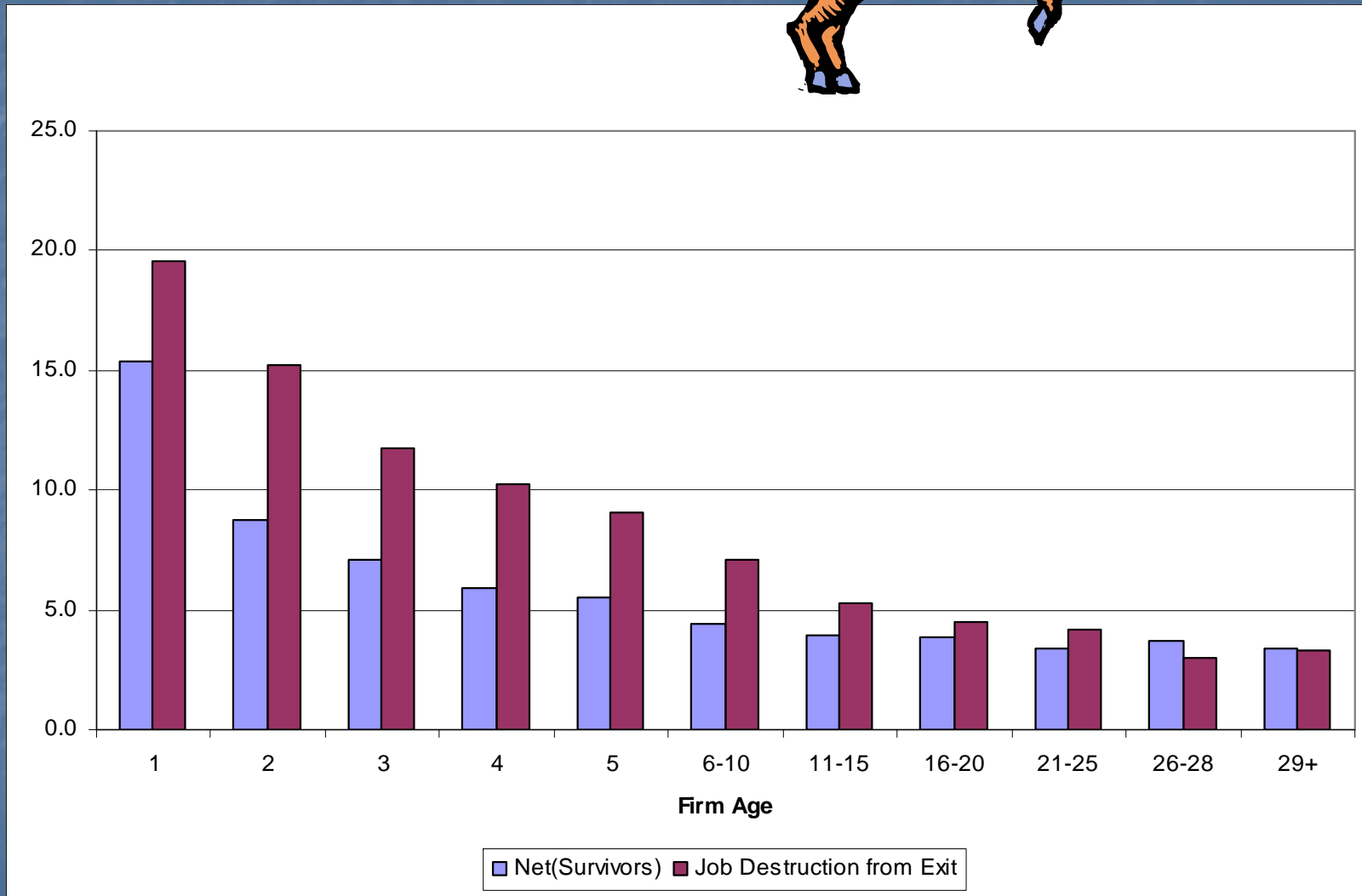
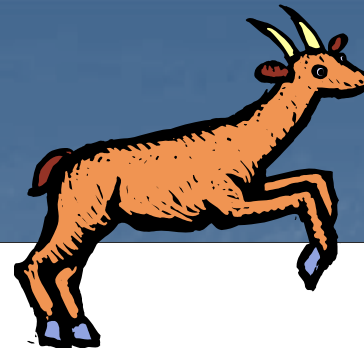


◆ All Startups

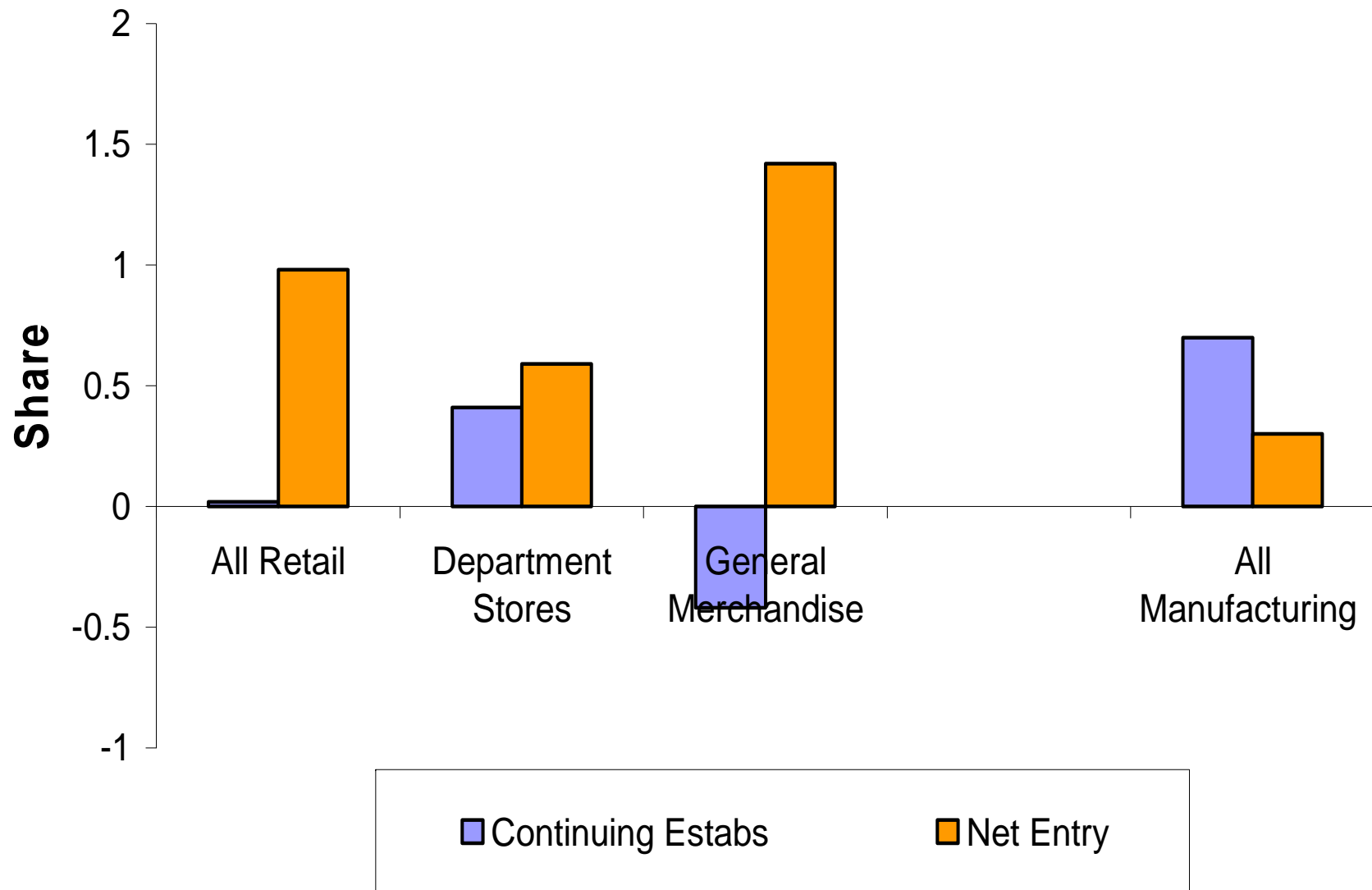
✕ Large Startups (250-499)

▲ Micro Startups (1-4) (Right Scale)

Are there Gazelles?

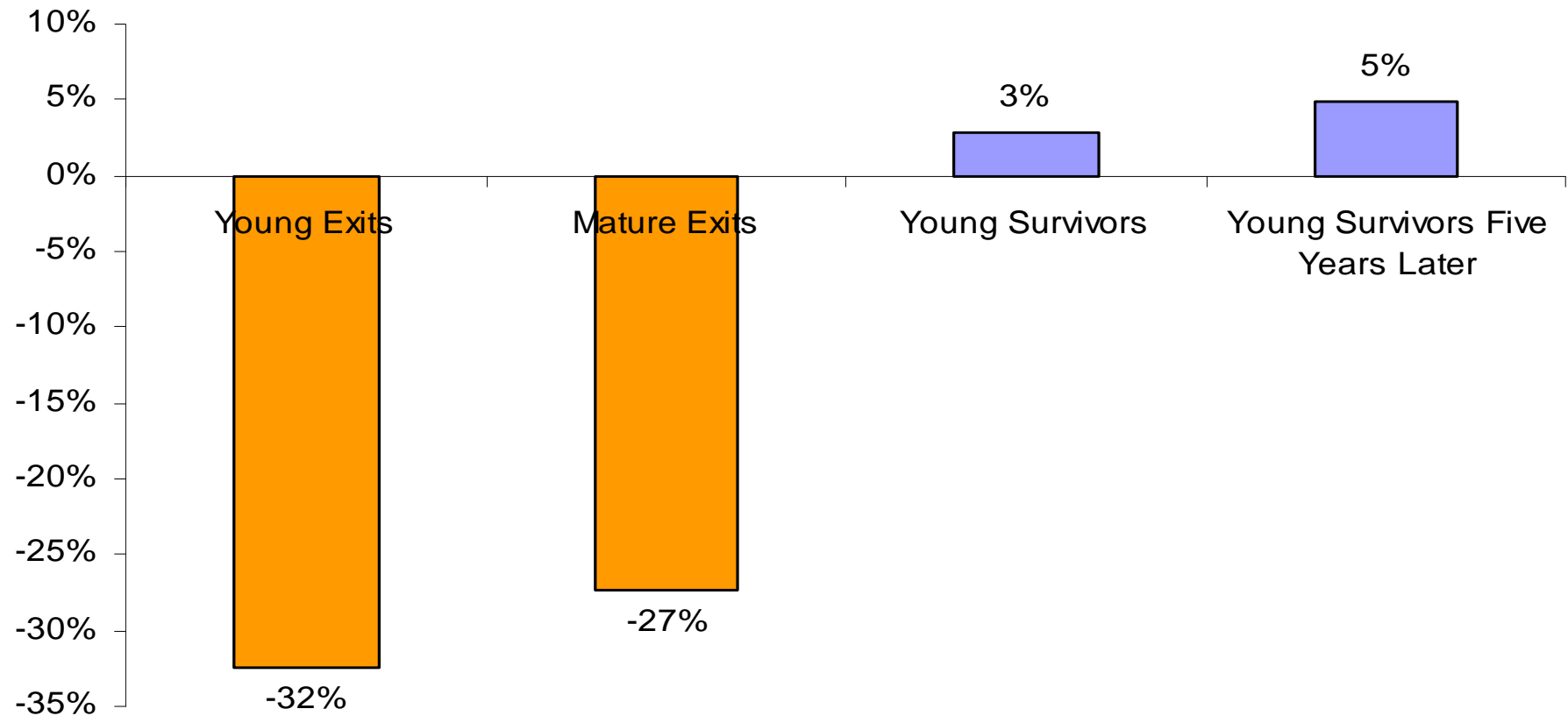


Contribution of Net Entry to Productivity Growth (10-year horizon)



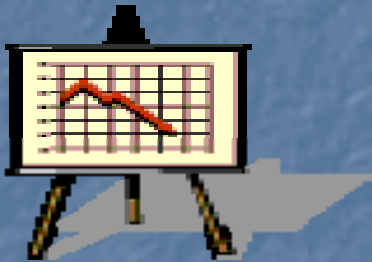
In Retail Trade, selection and learning effects play critical roles....

Productivity Relative to Mature Surviving Incumbents



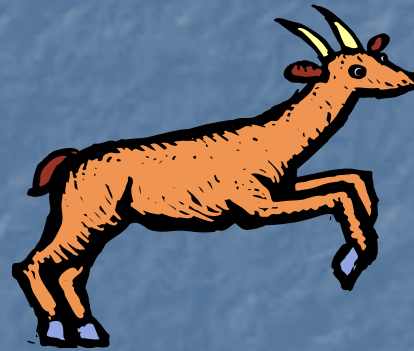
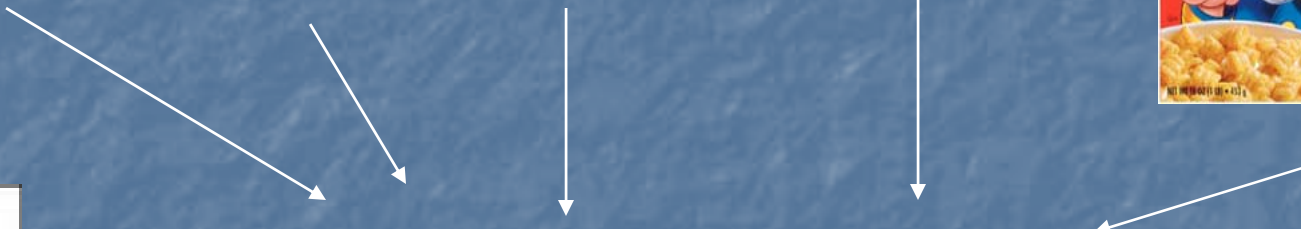
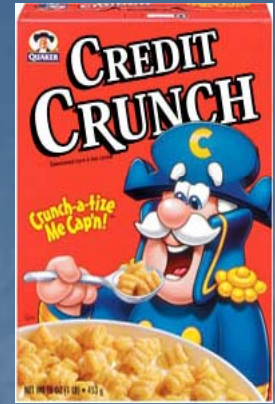


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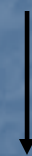
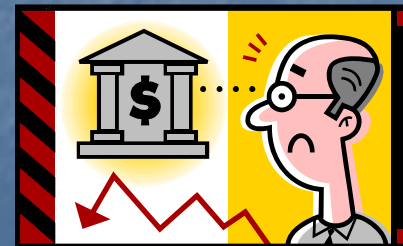
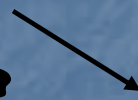
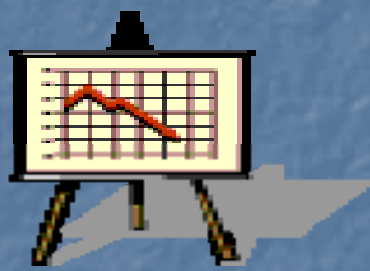
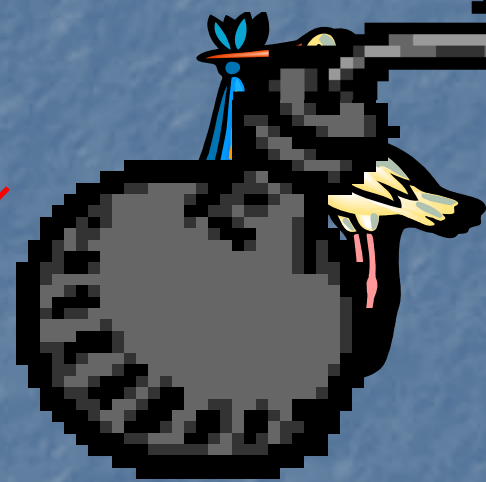
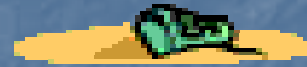


Usually as





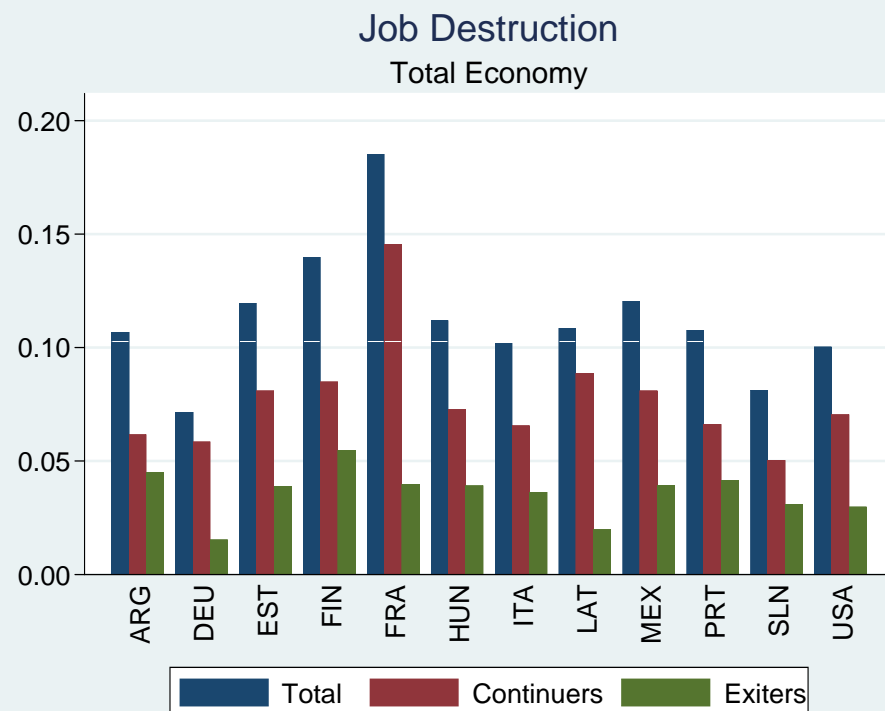
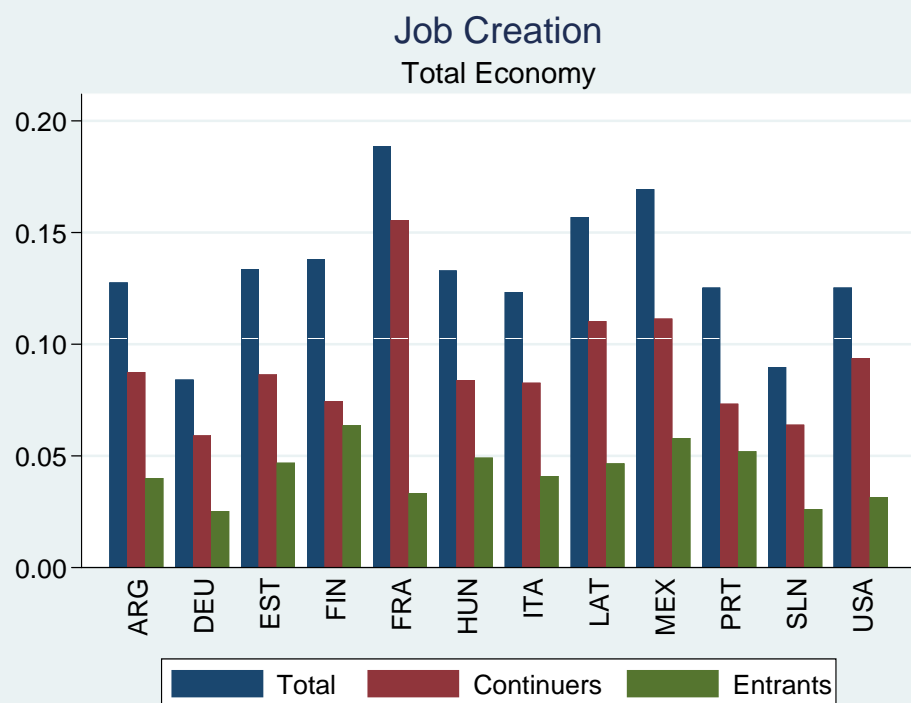
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Main Messages

- Creative Destruction ubiquitous feature of U.S. (and other healthy market economies)
 - Large Magnitude
 - Creation in Recessions, Destruction in Booms
 - Idiosyncratic Effects (Difficult to Pick Winners)
 - Young, small businesses “Up or Out”
 - Productivity Enhancing
- No free lunch
 - Costly for firms and workers
 - Breakdowns in the process?
 - Collapse of Financial Markets?
 - But evidence clearly shows distorting process can have adverse consequences on allocative efficiency

Pace of Reallocation High in Developing, Emerging and Transition Economies

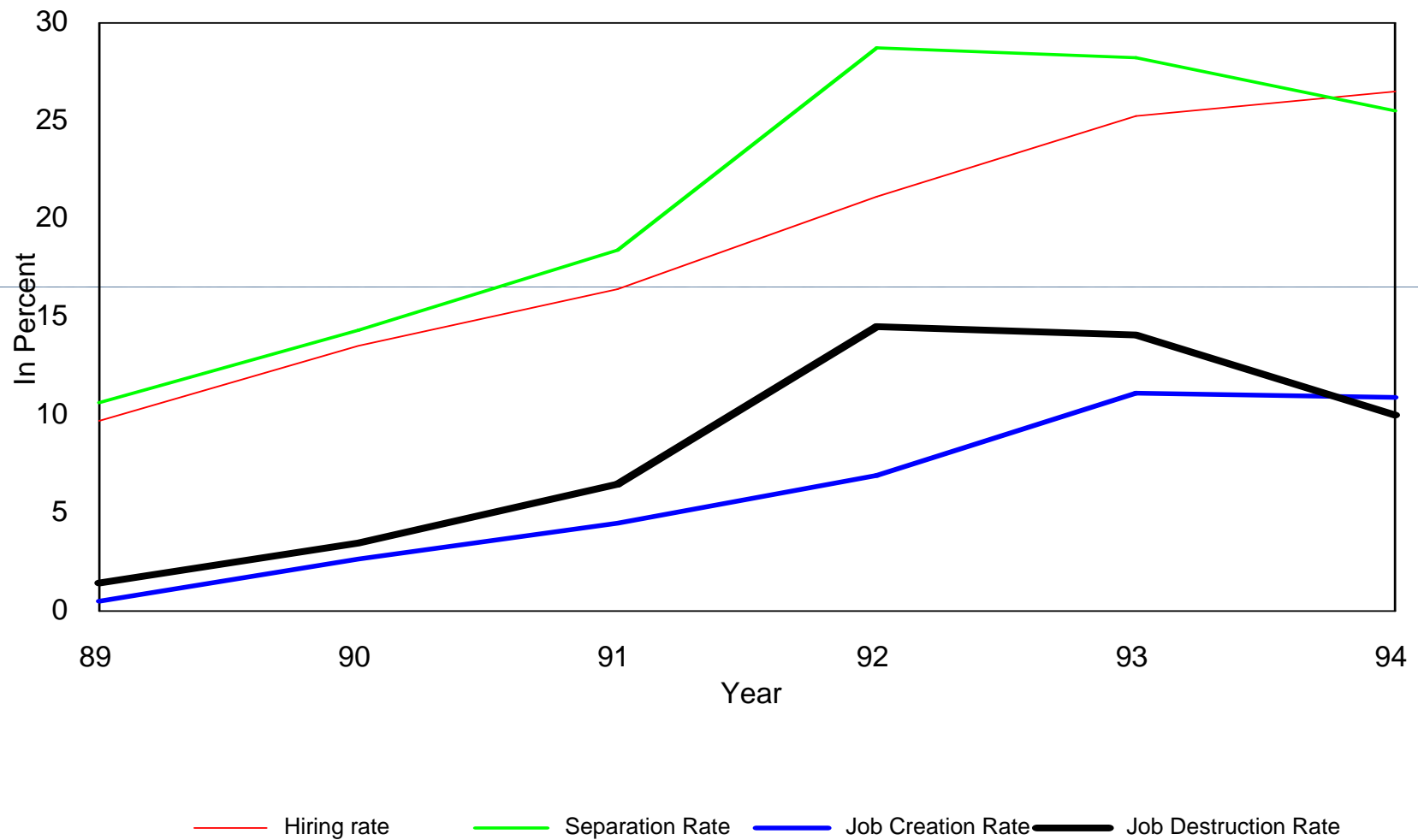


Evidence shows pace of reallocation rose over course of 1990s for transition economies

However, impact of market distortions and poor institutions appears to work more systematically on the nature and productivity of reallocation

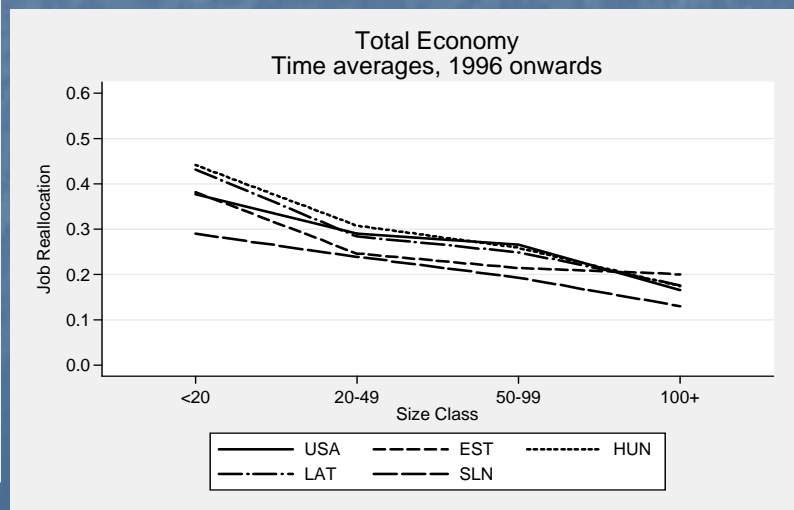
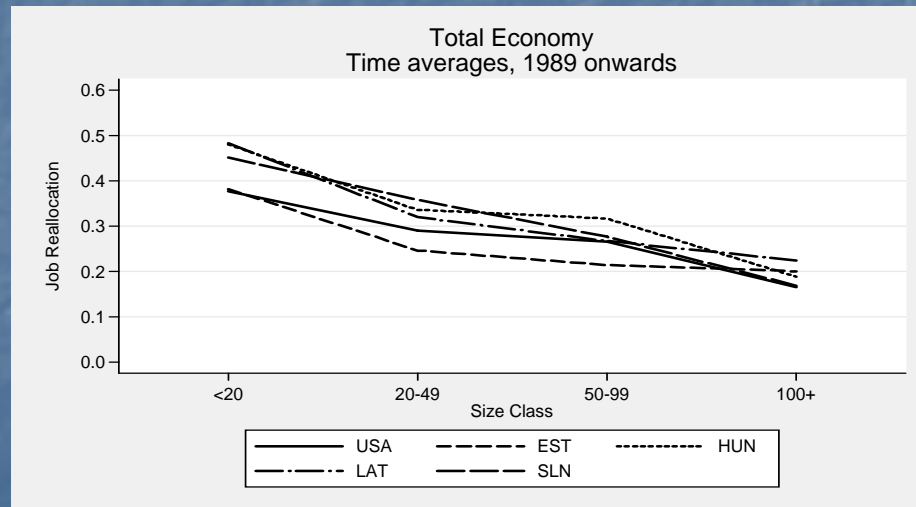
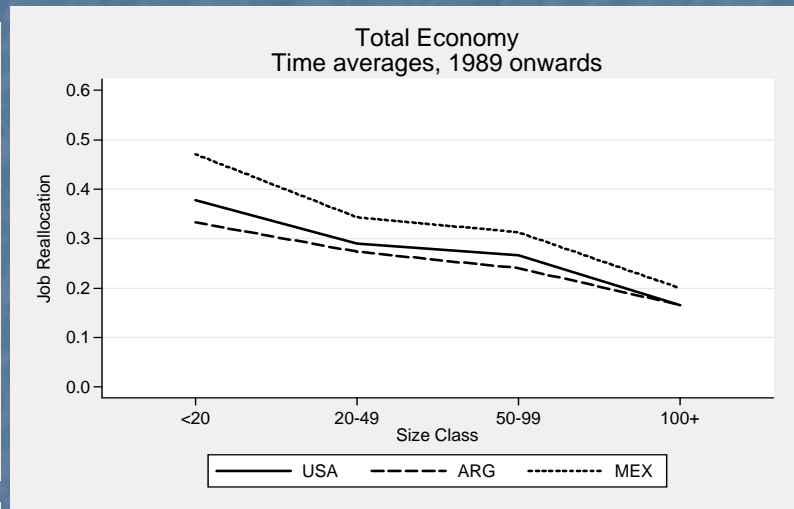
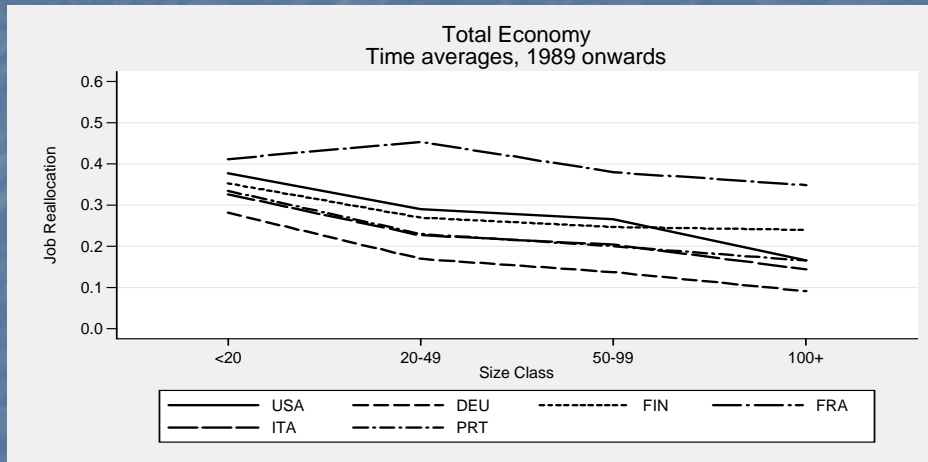
Source: Haltiwanger, Scarpetta and Schweiger (2008)

Figure 1: Annual Rates of Worker and Job Flows in Estonia



Source: Haltiwanger and Vodopivec (2002)

The Rate of Job Reallocation Declines with Size of the Firm



Source: Haltiwanger, Scarpetta and Schweiger (2008)

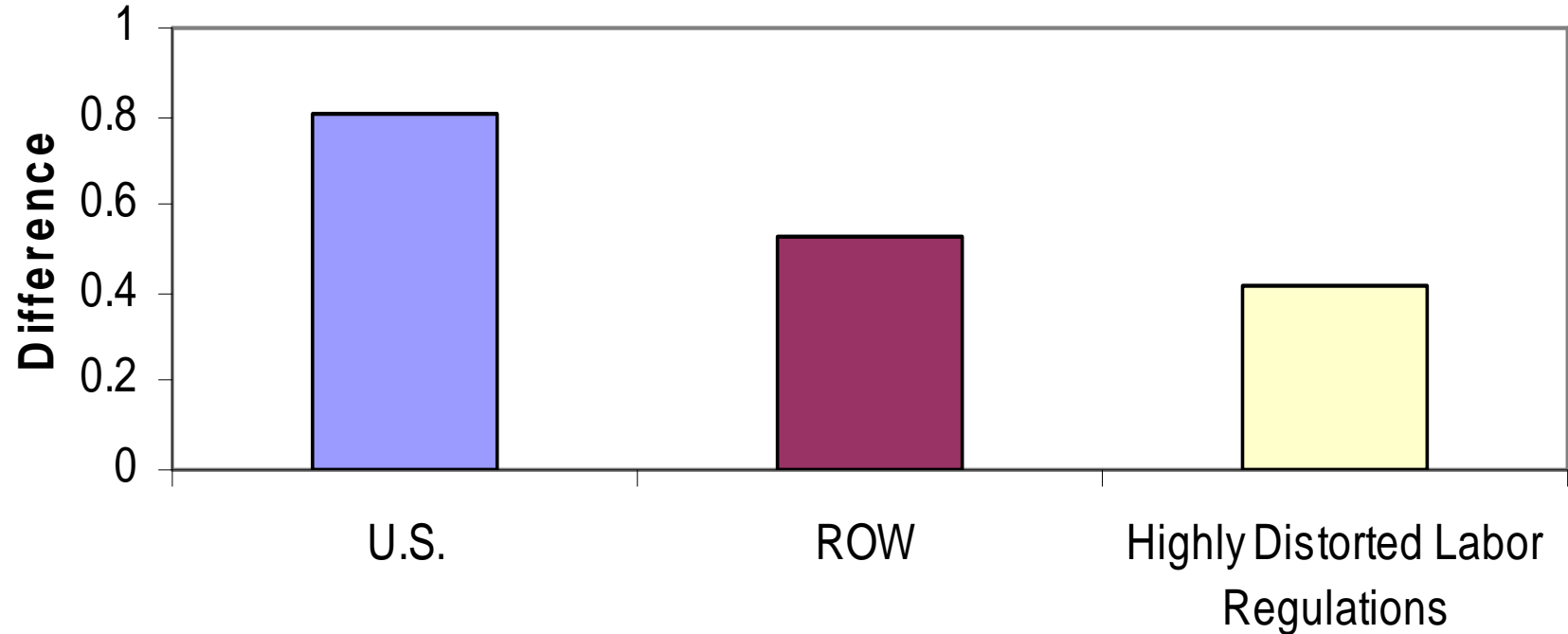
Analysis of Variance

Gross job reallocation	Total economy	Manufacturing
COUNTRY EFFECTS		
All	0.1648	0.1868
OECD	0.2019	0.1981
LAC	0.1588	0.2157
Transition (1990s)	0.0512	0.0508
Transition (late 1990s)	0.0851	0.0761
INDUSTRY*SIZE EFFECTS		
All	0.5558	0.5641
OECD	0.5579	0.5930
LAC	0.7326	0.6519
Transition (1990s)	0.7233	0.7029
Transition (late 1990s)	0.6692	0.6605

Source: Haltiwanger, Scarpetta and Schweiger (2008)

Evidence of Distortion in the Nature of Reallocation

Maximum Variation in Job Reallocation across Industry*Size Classes



Source: Haltiwanger, Scarpetta and Schweiger (2008)

Aggregate productivity and allocation

- Olley and Pakes (1996) static decomposition:

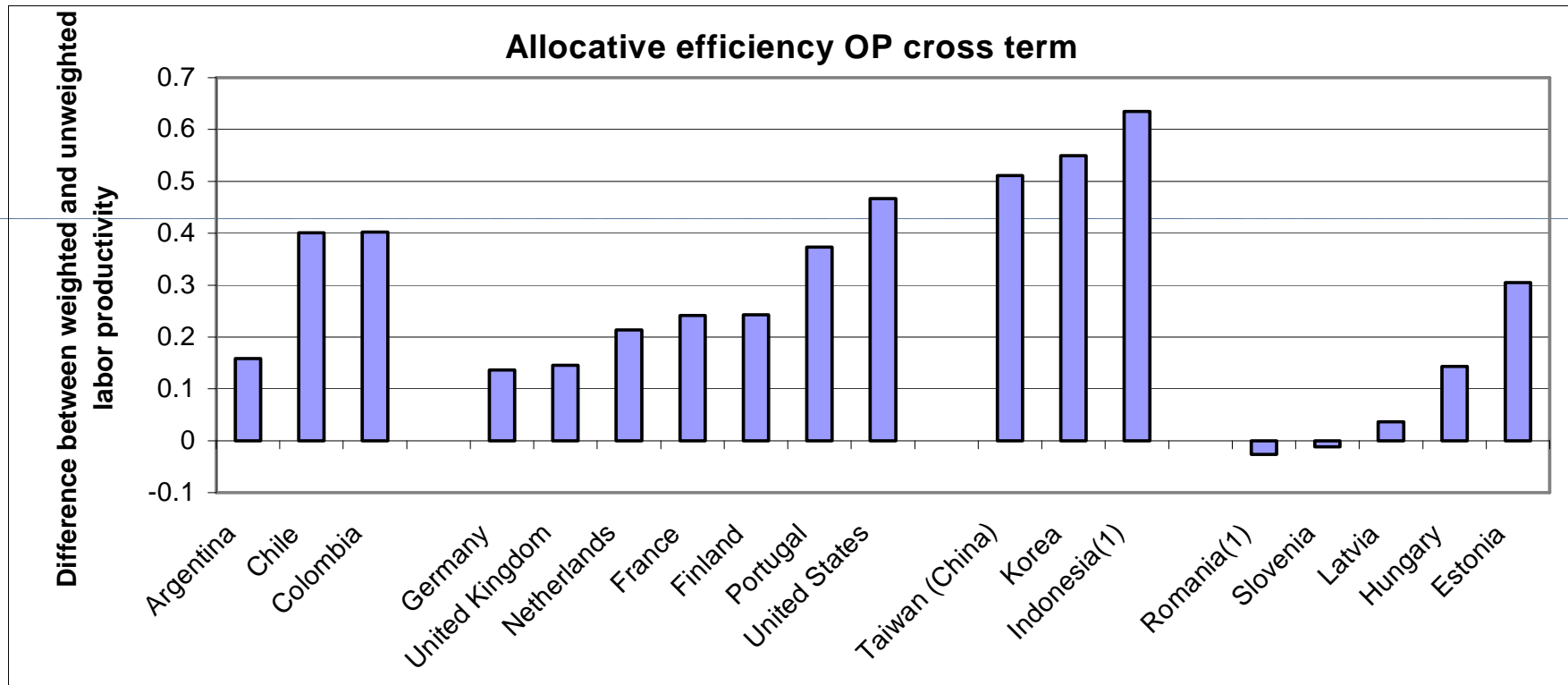
$$P_t = (1/N_t) \sum_i p_{it} + \sum_i (\theta_{it} - \bar{\theta}_t)(p_{it} - \bar{P}_t)$$

where: N: # of firms in a sector;

- The first term is the unweighted average of firm-level productivity
- The second term (OP cross term) reflects allocation of resources: do firms with higher productivity have greater market share.
- Requires representative cross sectional samples but does not require accurate longitudinal linkages
 - Cannot quantify directly importance of entry and exit
- By construction, cross term takes out country effects in productivity levels, so abstracts from some aspects of measurement error

Source: Bartelsman, Haltiwanger and Scarpetta (2006)

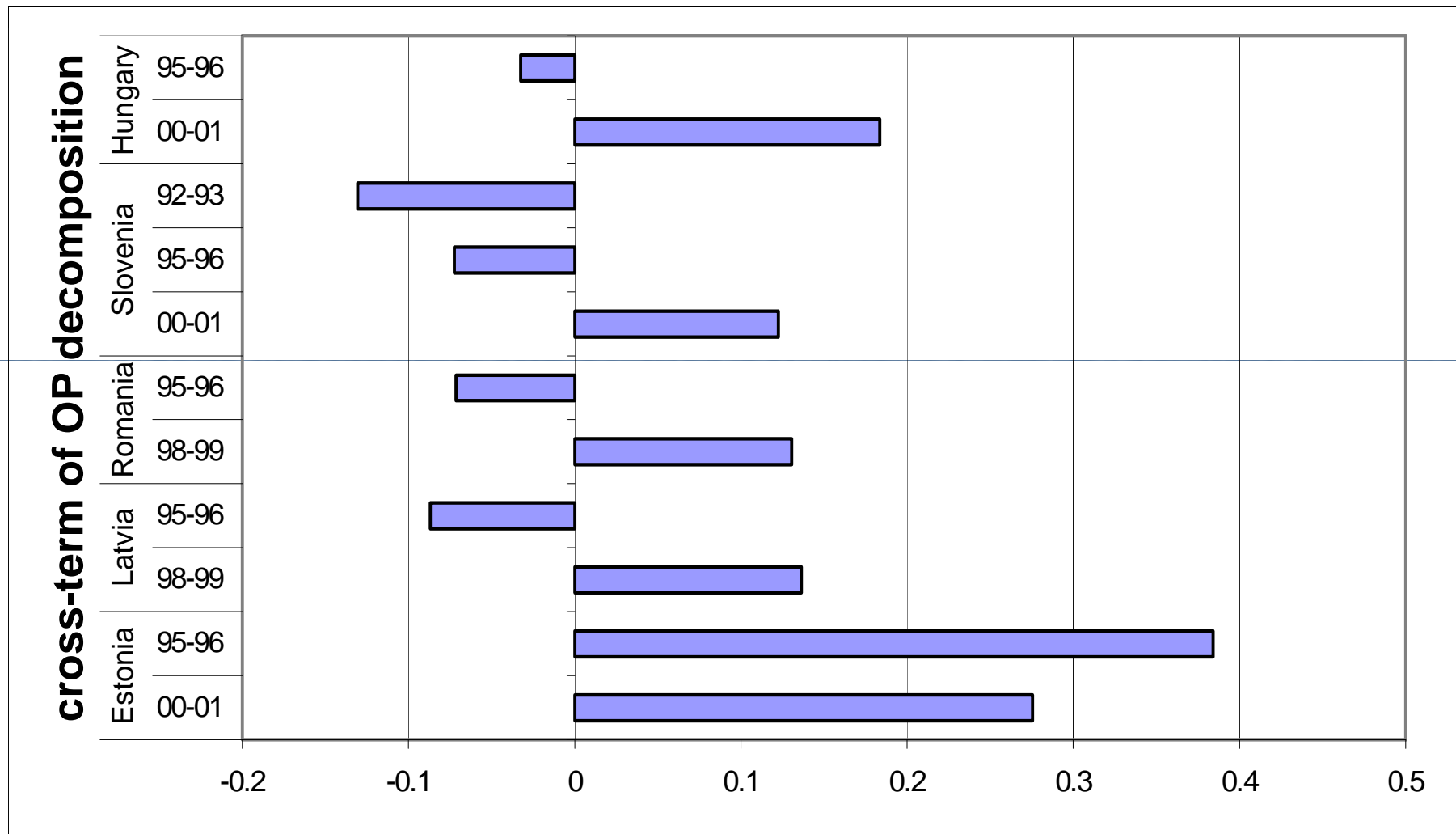
Allocative efficiency (Olley Pakes decomposition -- cross term)
 (weighted averages of industry level cross terms from OP decomposition)



1. Based on the three-year differences

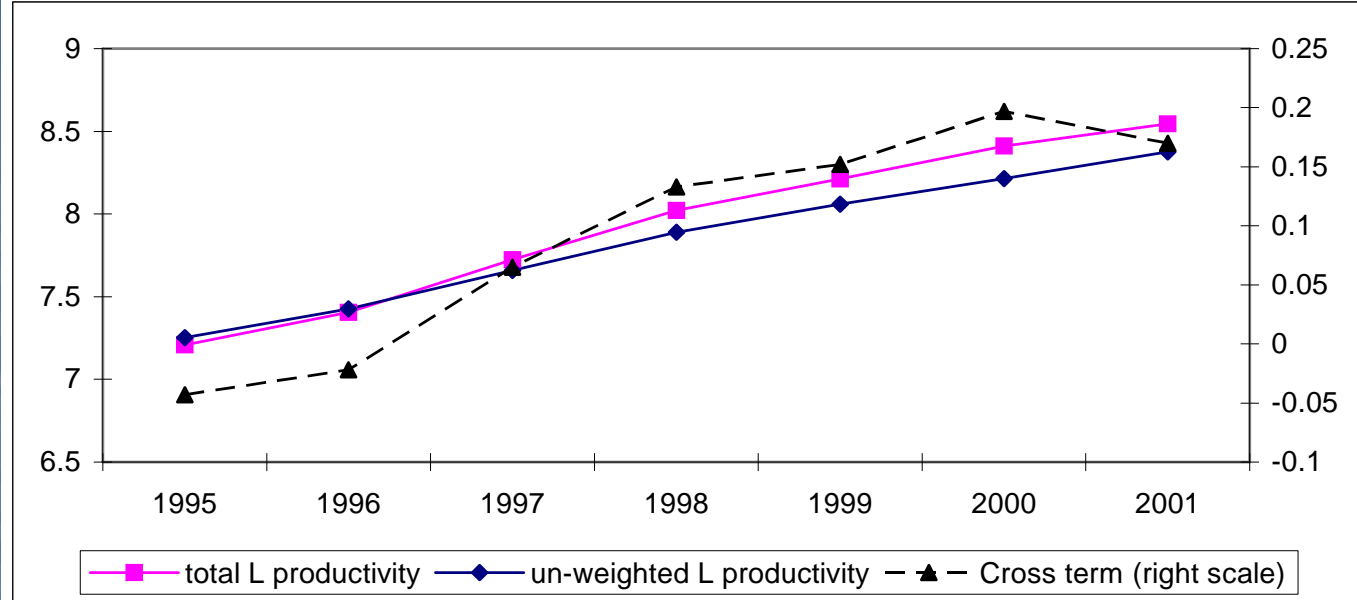
Source: Bartelsman, Haltiwanger and Scarpetta (2006)

Evolution of allocative efficiency during the transition -- Eastern Europe, manufacturing
 (weighted averages of industry level cross terms from OP decomposition)

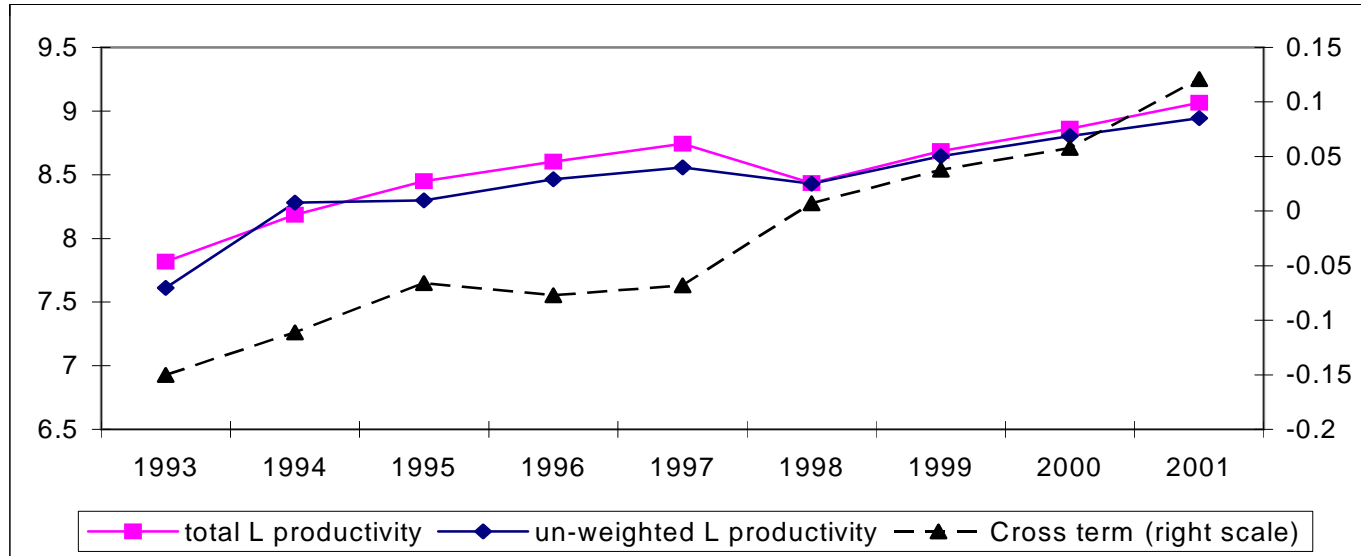


Source: Bartelsman, Haltiwanger and Scarpetta (2006)

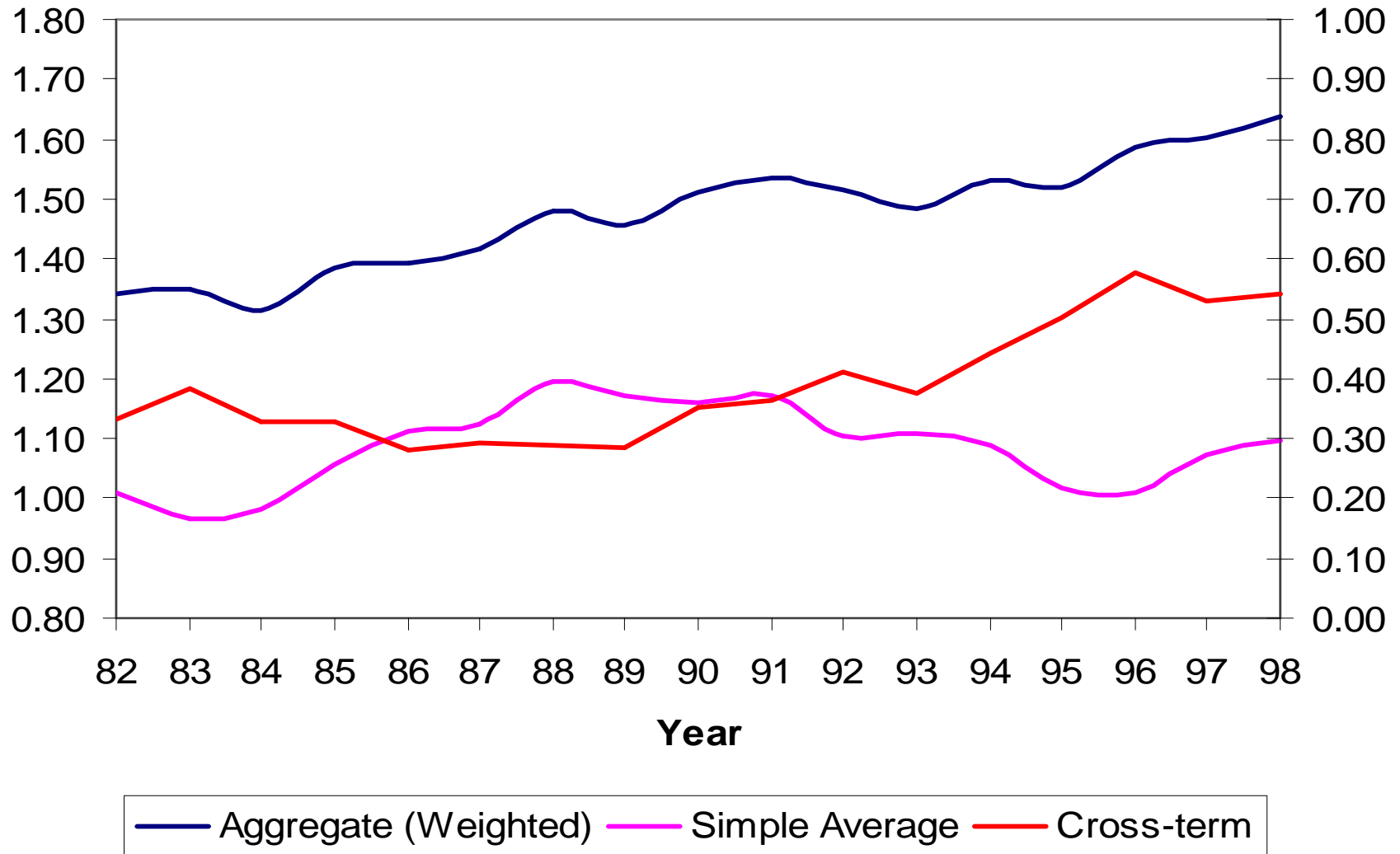
Hungary: allocative efficiency over the transition
 (cross-term of the Olley Pakes decomposition, manufacturing)



Slovenia: allocative efficiency over the transition
 (cross-term of the Olley Pakes decomposition, manufacturing)



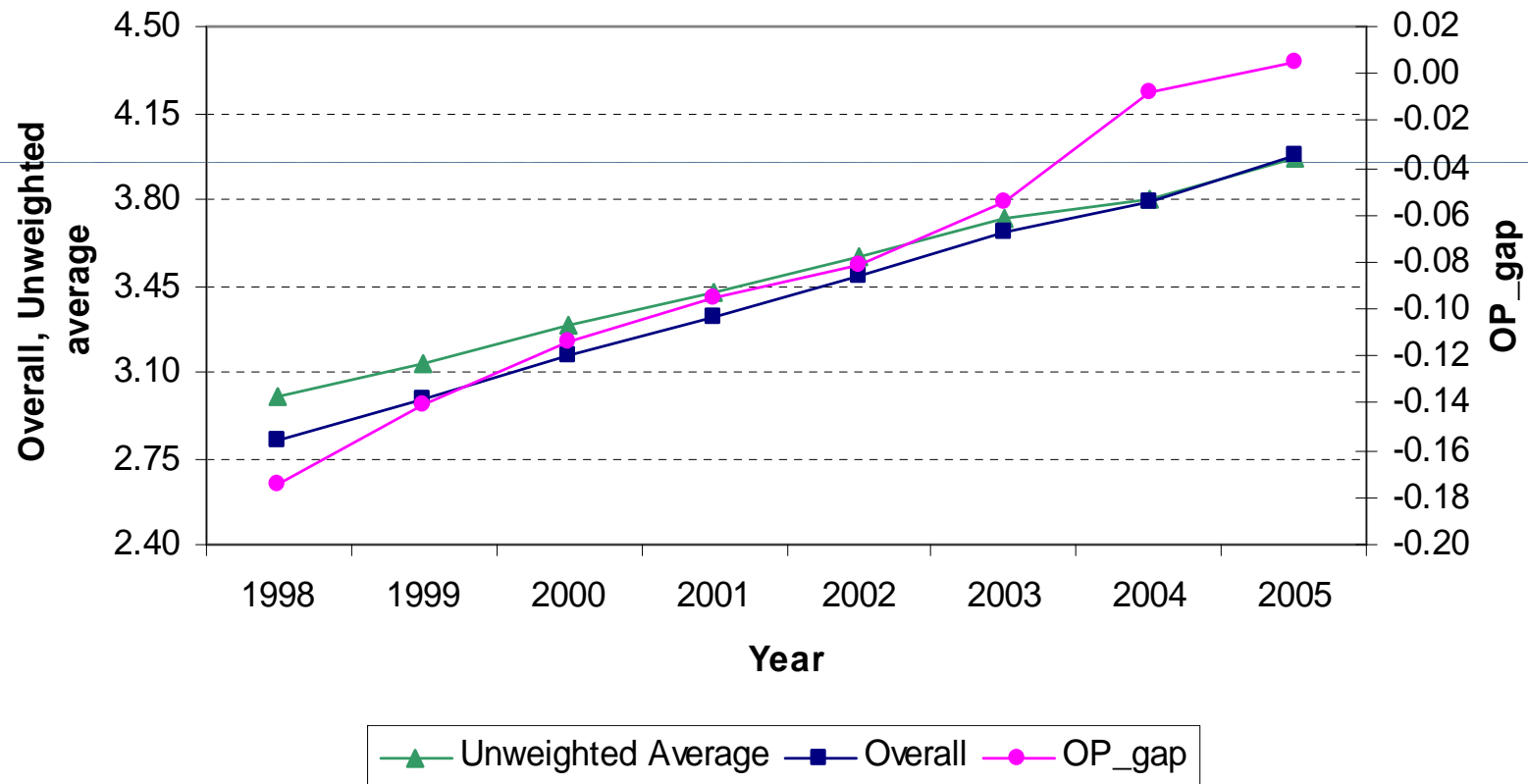
Olley-Pakes Decomposition for Colombian Manufacturing



Source: Eslava et al. (2005)

Restructuring and Reallocation Critical for Productivity Growth in China

Olley Pakes Decomposition of Labor Productivity (Average Industry)



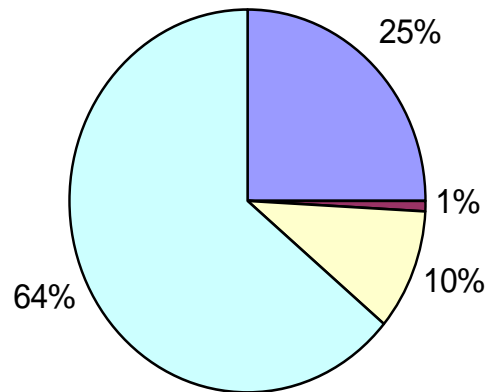
Source: Deng et. al. (2008)

Young Businesses and economic growth

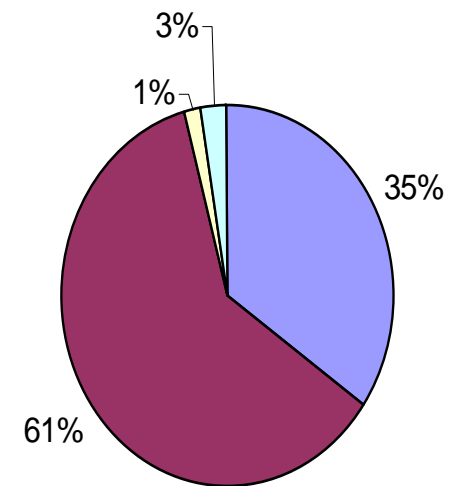
- Theme that emerges:
 - Understanding U.S. growth dynamics at aggregate level, requires drilling down to dynamics of firms (e.g., the role of young businesses)
 - Emerging evidence for ROW is that these same factors are important AND that the dynamism of small and young businesses may be distorted by market structure and institutions
- One last twist:
 - Entrepreneurial dynamics starts at micro business level
 - ILBD: Nonemployers (e.g., sole props without employees) + Employers

Micro Businesses constitute a large share of businesses and a small share of revenue...

Distribution of Businesses by Business Type, 2000

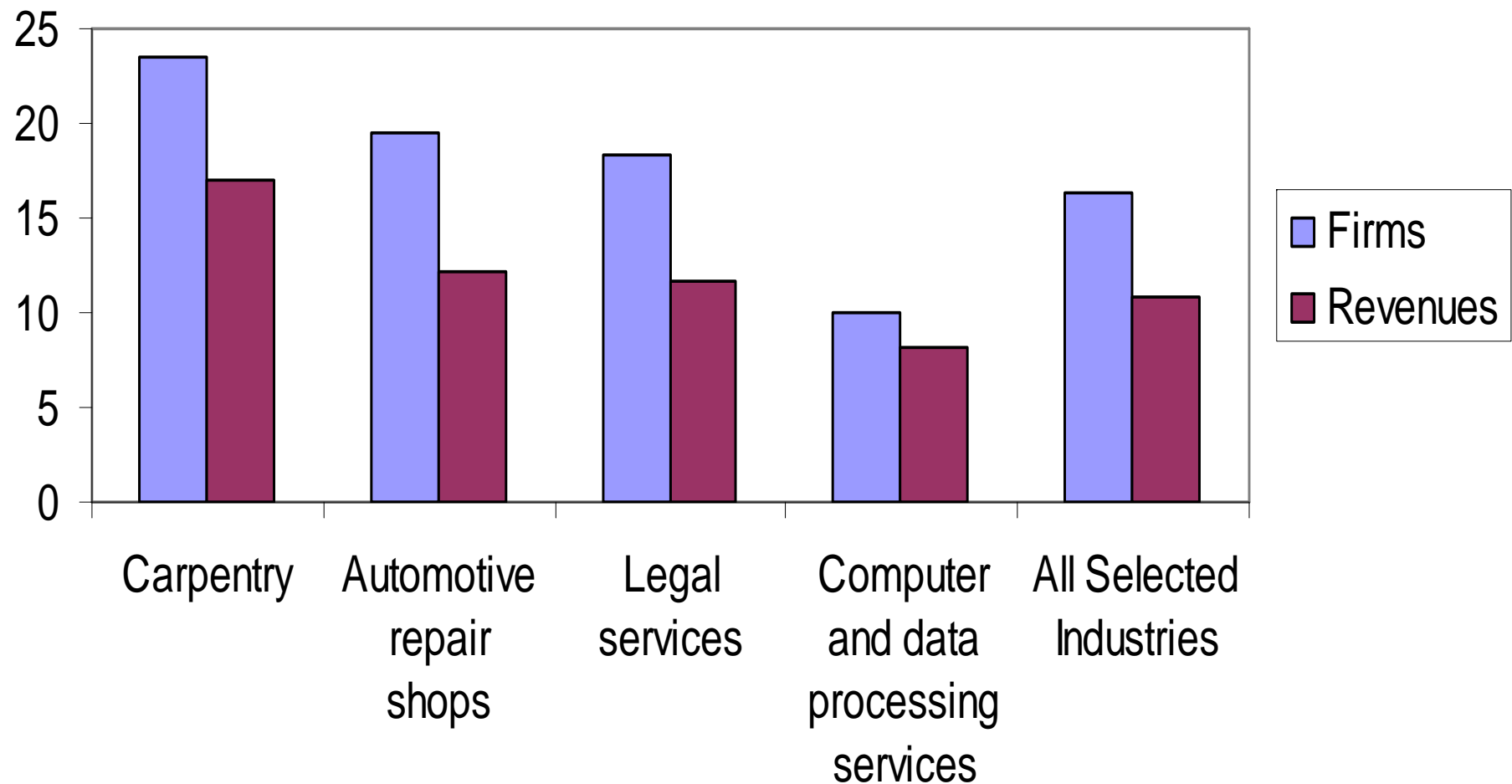


Distribution of Revenue By Business Type, 2000



Source: Davis et. al. (2008)

Shares of New Employer Businesses in 1997 with Pre-History as Nonemployer Businesses



Source: Davis et al. (2008)

Taking stock...

- Creative destruction as evidenced by:
 - Job reallocation
 - Firm entry and exit

is a ubiquitous feature of market economies

- Churning is productivity enhancing
- Young, small businesses are very high growth, very volatile
 - Micro business to employer business transitions important
 - Financing important

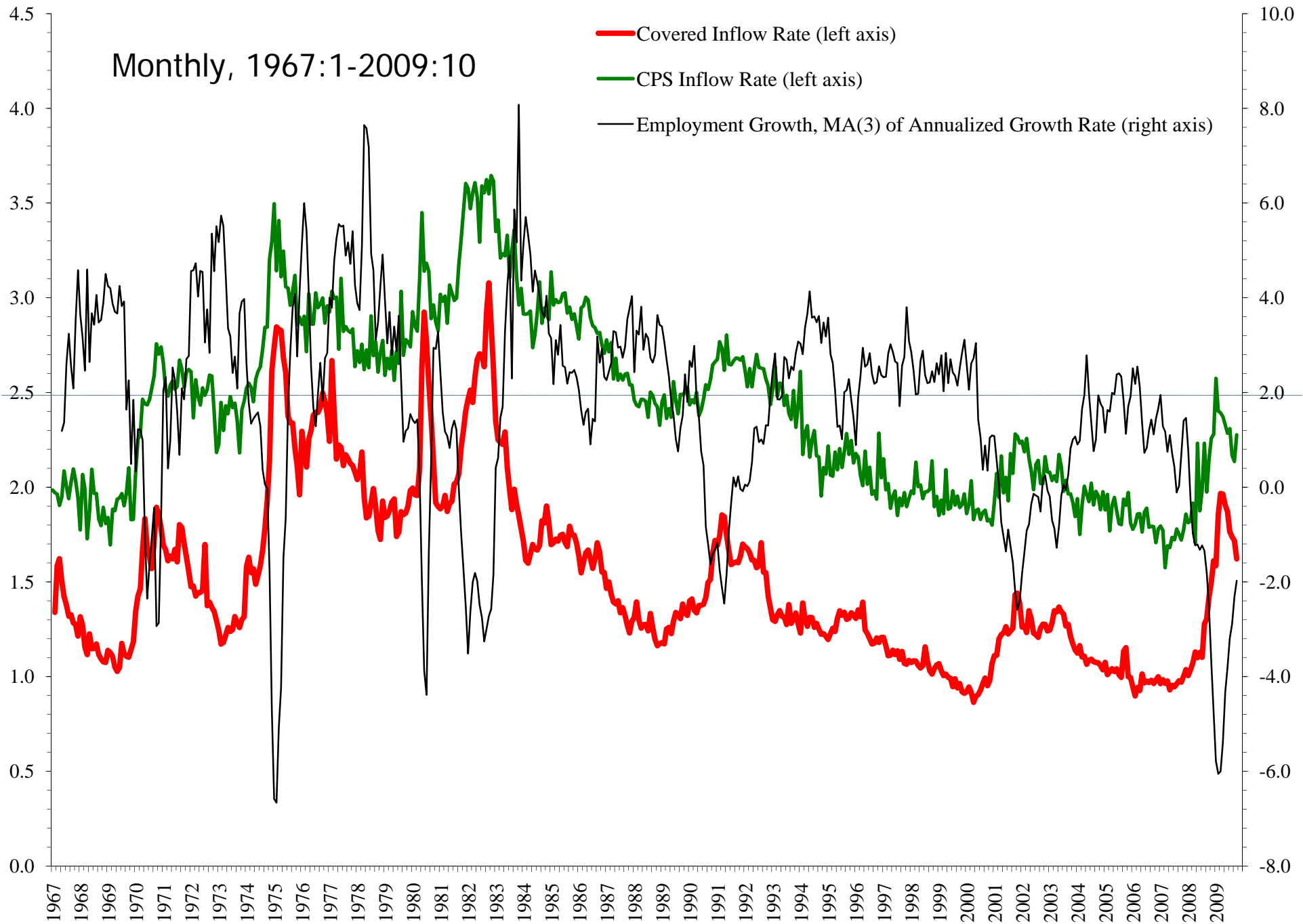
Evidence/Questions for Emerging and Transition Economies

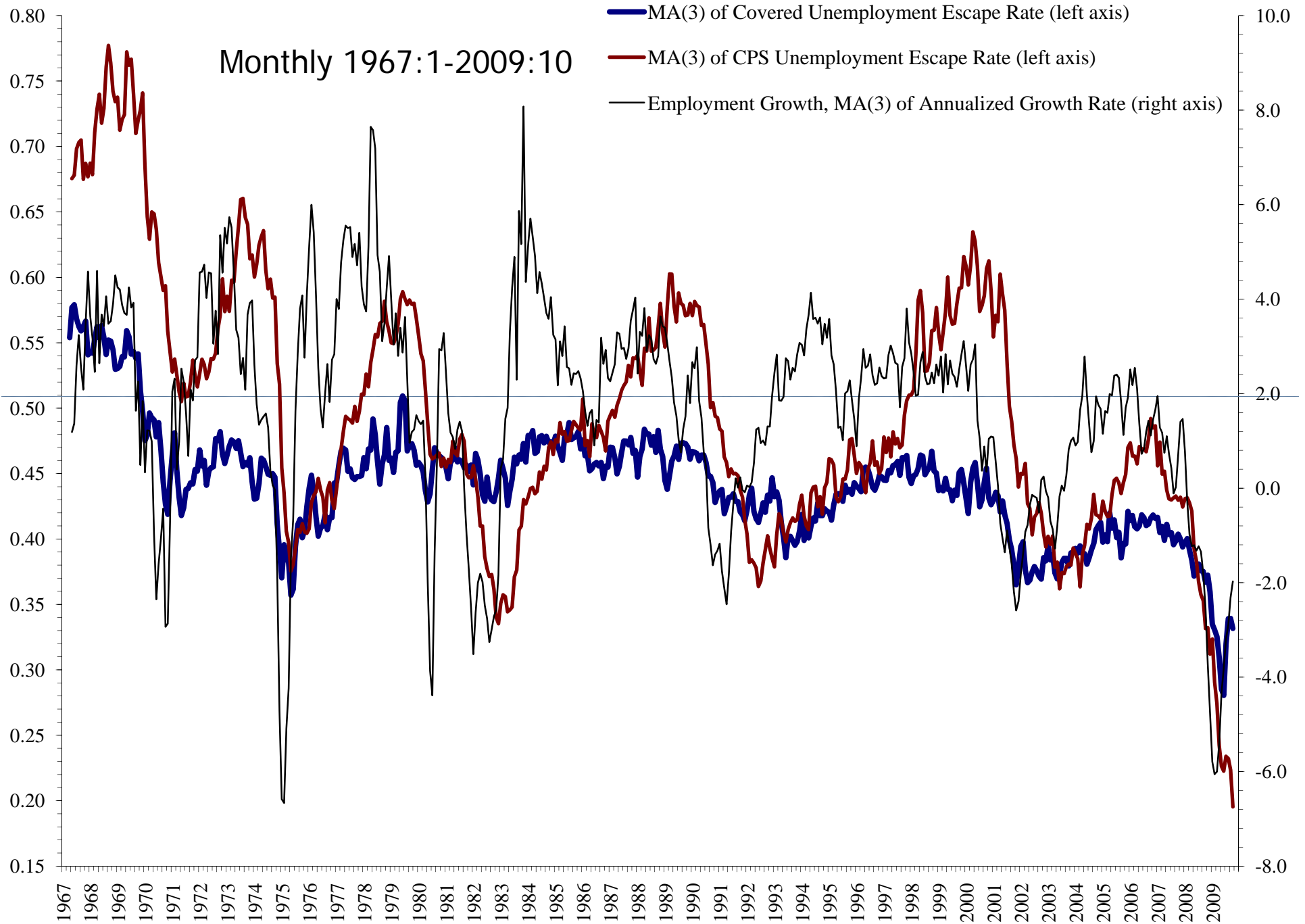
- Churning is high except for pre-transition economies
 - So churning by itself it not key
 - Is it distorted in some fashion?
 - Age, size, micro businesses?
 - Haltiwanger, Scarpetta and Schweiger (2008) find evidence that hiring and firing restrictions distort job reallocation/size relationship
 - Age and micro businesses should be high priorities for future data infrastructure
- Is it productivity enhancing?
 - Allocative efficiency differs substantially across countries
- Institutions and market structure?
 - Flexibility + Safety Net: What is the right mix?

Missing Pieces...many...

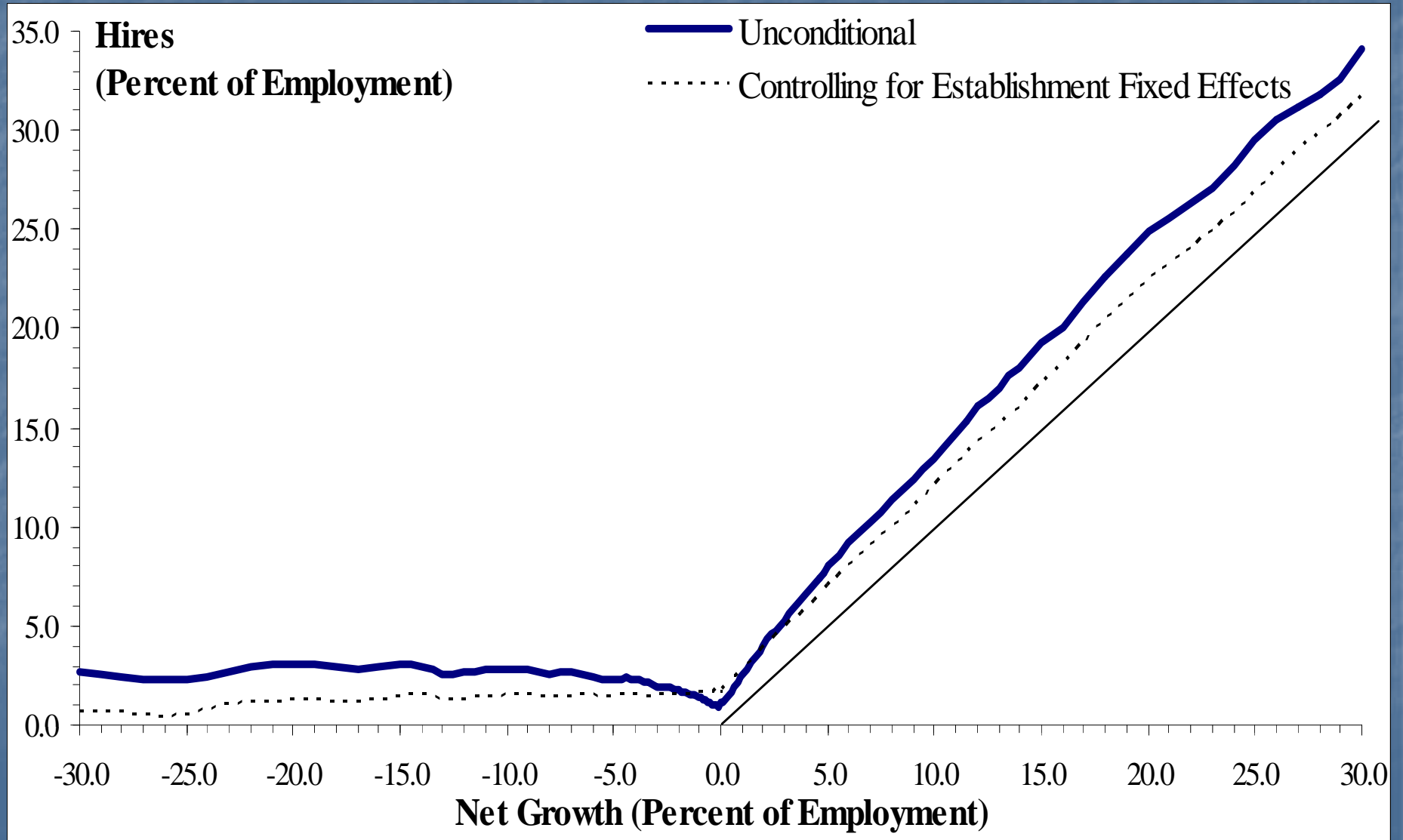
- Public sector/SOE retrenchment
 - Often managed poorly by public sector
 - Adverse selection: best workers leave and then need to be rehired
- Impact on workers:
 - Churning of jobs and firms implies need for worker mobility
 - How to achieve most of this with E-to-E flows and short duration unemployment?
 - Firm heterogeneity, dynamics and frictions have implications for earnings:
 - Earnings depend on who you are and where you work

Monthly, 1967:1-2009:10

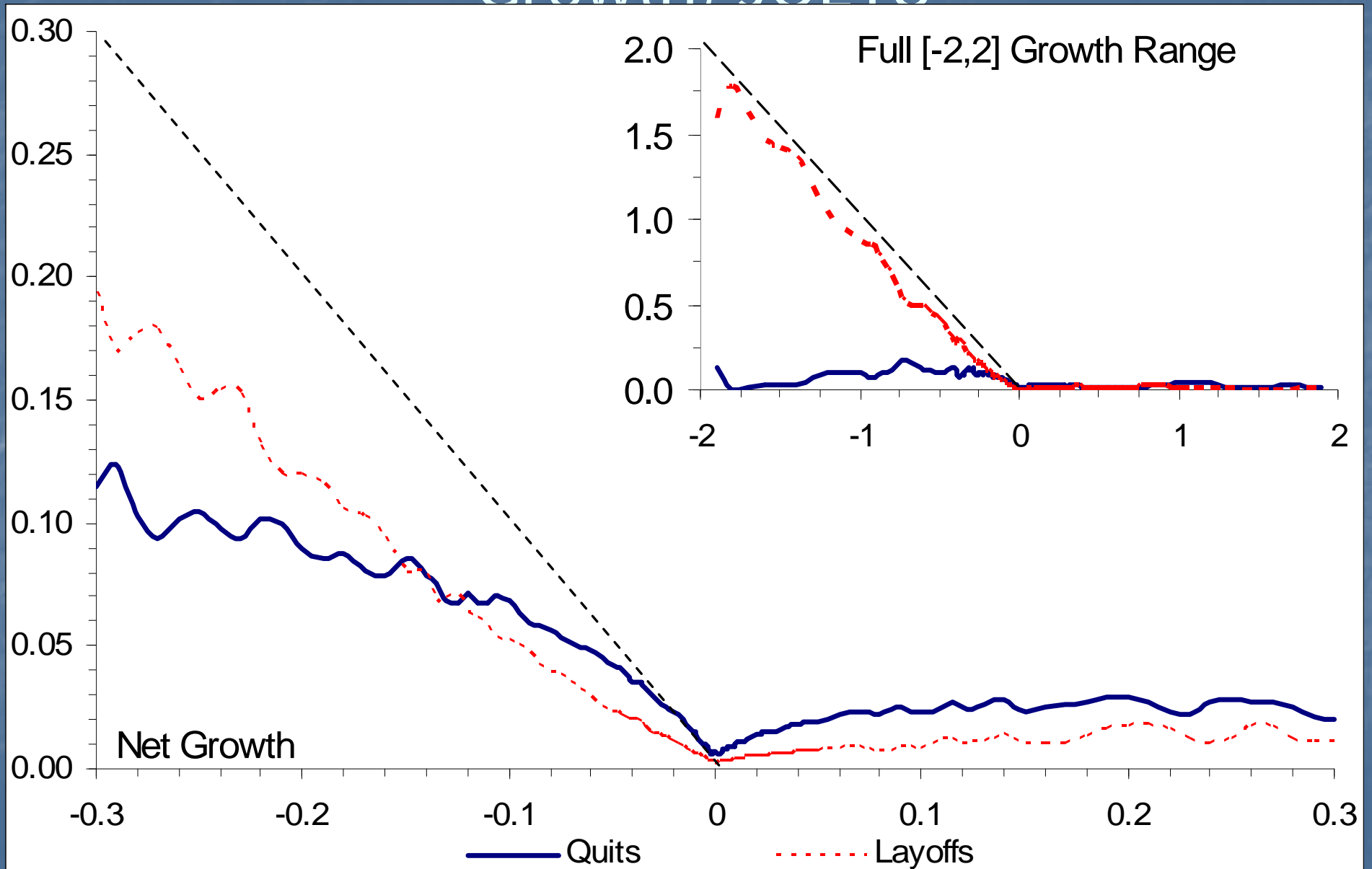




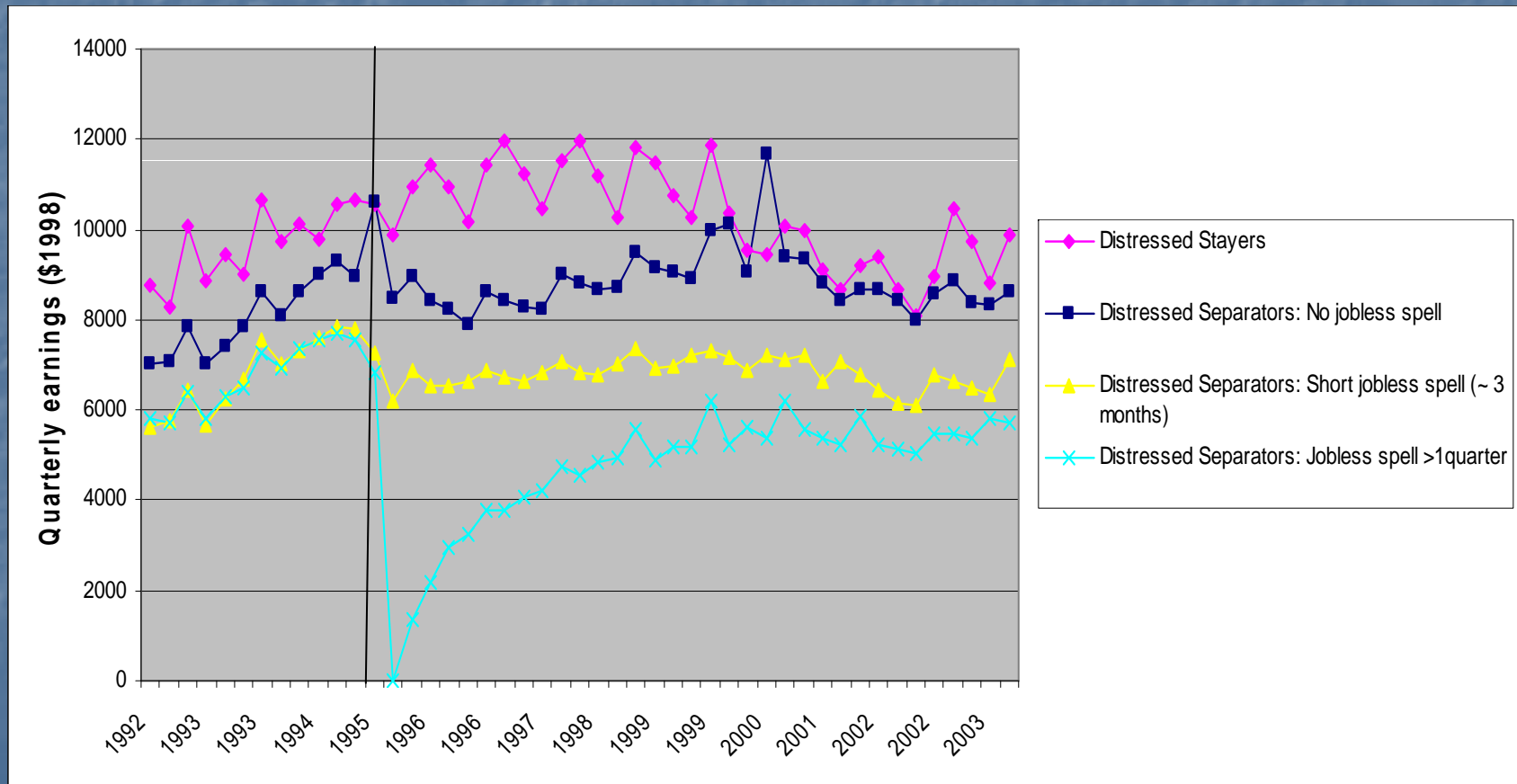
Hires and Establishment Growth



Quits and Layoffs vs Establishment Net Growth, JOLTS



Quarterly Earnings of Distressed Separators in 1995:2: By Length of Jobless Spell.



Distribution of Earnings Growth resulting from Job Change

All Job Separators	10th	25th	50th	75th	90th
EE1: no jobless spell	-33.35	-11.19	8.00	34.94	90.33
EE2: short jobless spell	-46.01	-19.14	4.77	32.34	91.66
EE3: 1 qtr. non-emp.	-39.31	-10.88	0.69	11.59	41.26
EE4: 2-3 qtrs. non-emp.	-62.45	-33.01	-3.59	25.01	97.87
EE5: 4+ qtrs. non-emp.	-72.12	-42.05	-1.31	52.86	195.53
Distressed Separators	10th	25th	50th	75th	90th
EE1: no jobless spell	-31.60	-12.00	3.36	23.25	64.05
EE2: short jobless spell	-39.31	-15.61	4.91	24.93	56.86
EE3: 1 qtr. non-emp.	-48.00	-19.37	0.10	15.28	46.31
EE4: 2-3 qtrs. non-emp.	-63.46	-40.67	-10.47	20.34	79.94
EE5: 4+ qtrs. non-emp.	-74.08	-47.57	-11.08	31.51	121.62
Job Stayers	-29.38	-7.85	1.03	10.70	31.33

Safety Net Challenges?

- Flexibility of Jobs and Workers is critical in advanced AND emerging economies for productivity growth
- Stifling job and worker reallocation through job and worker mobility restrictions dampens productivity levels and growth
- BUT workers caught up in this turbulence even in U.S. can experience persistent periods of joblessness and earnings losses.
- Implement safety net without moral hazard and adverse selection problems, without dampening job and worker mobility but provides support...