



DECLINING BUSINESS DYNAMISM: A VISUAL GUIDE

June 21, 2018

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PLEASE SUBMIT QUESTIONS* TO

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**ANSWERED AT THE END OF THE CALL*

PRESENTATION SYNOPSIS

In just the last four years (since 2015), a growing number of economists and policymakers—on both ends of the political spectrum—are pointing to growing evidence of declining U.S. business dynamism over the past three decades. By some measures, this decline is accelerating.

Declining business dynamism was originally defined as “a substantial and pervasive decline in... new firm formations, gross job creation and destruction, and worker flows.” [Haltiwanger, 2016] It has since been linked to the growing size and age of the typical firm; declining market turbulence among large firms; greater and more persistent dispersion of ROA and profit margins; and growing market concentration and pricing power across most industries.

This presentation offers a visual overview of the evidence for decline—and points out why it matters; what policies might help reverse it; and how it impacts market returns.

PRESENTATION OUTLINE

A. Why declining business dynamism matters: Slowing productivity growth

B. Nine indicators of declining business dynamism

- 1) declining rates of job creation and destruction
- 2) declining rates of job churn and geographic mobility
- 3) declining rates of company start-ups and firm turnover
- 4) declining number of total firms and (especially) listed firms
- 5) growing age and size of typical firm
- 6) declining turnover/turbulence in S&P 100 giants
- 7) weakening firm response to productivity gaps
- 8) rising market concentration
- 9) a widening divide between winners and losers

C. Possible causes of decline

D. Implications for policy and for market performance

WHY IT MATTERS: SLOWING PRODUCTIVITY GROWTH

A. Why declining business dynamism matters: Slowing productivity growth

B. Nine indicators of declining business dynamism

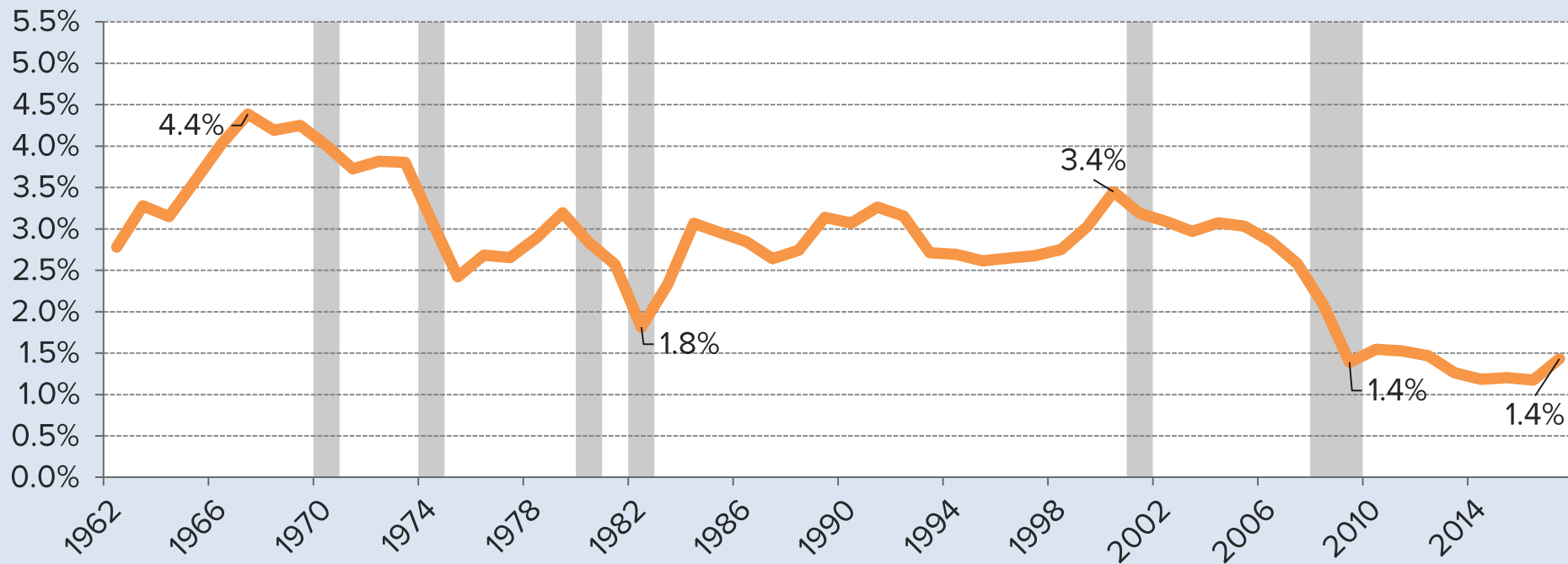
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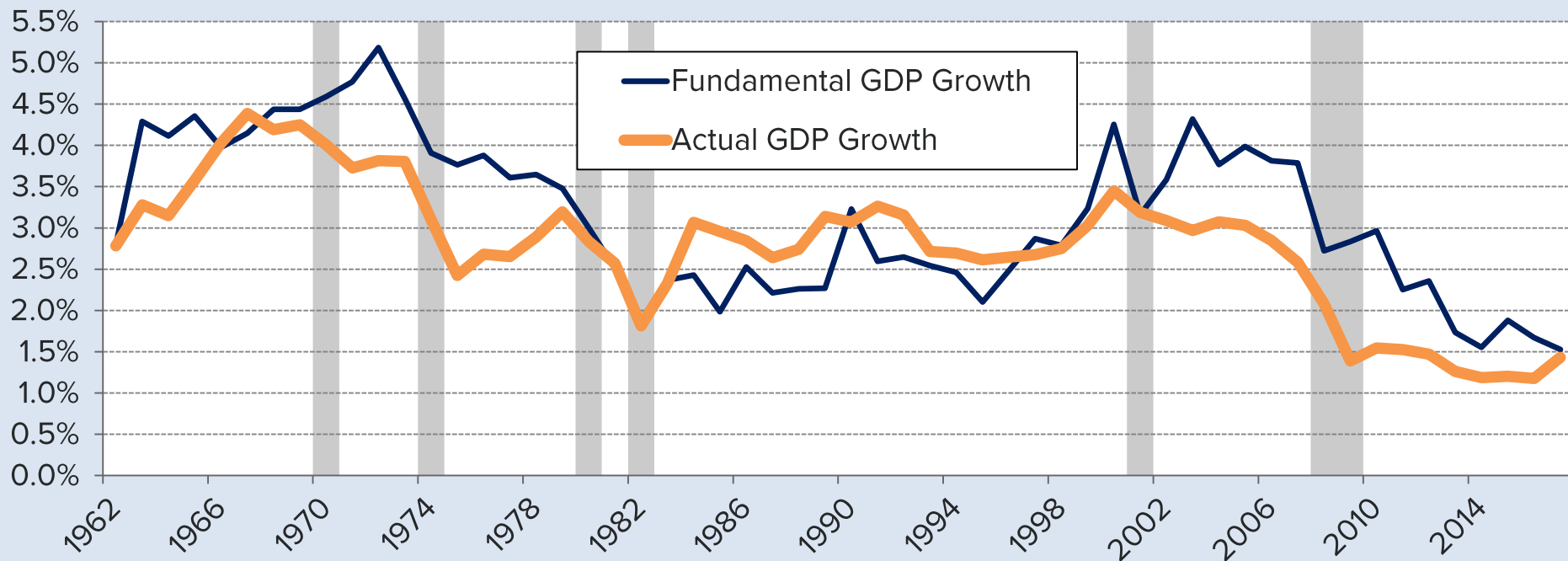
WHATEVER HAPPENED TO GDP GROWTH?

U.S. GDP: Trailing 10-YR CAGR (1962 to 2017)



WHATEVER HAPPENED TO GDP GROWTH?

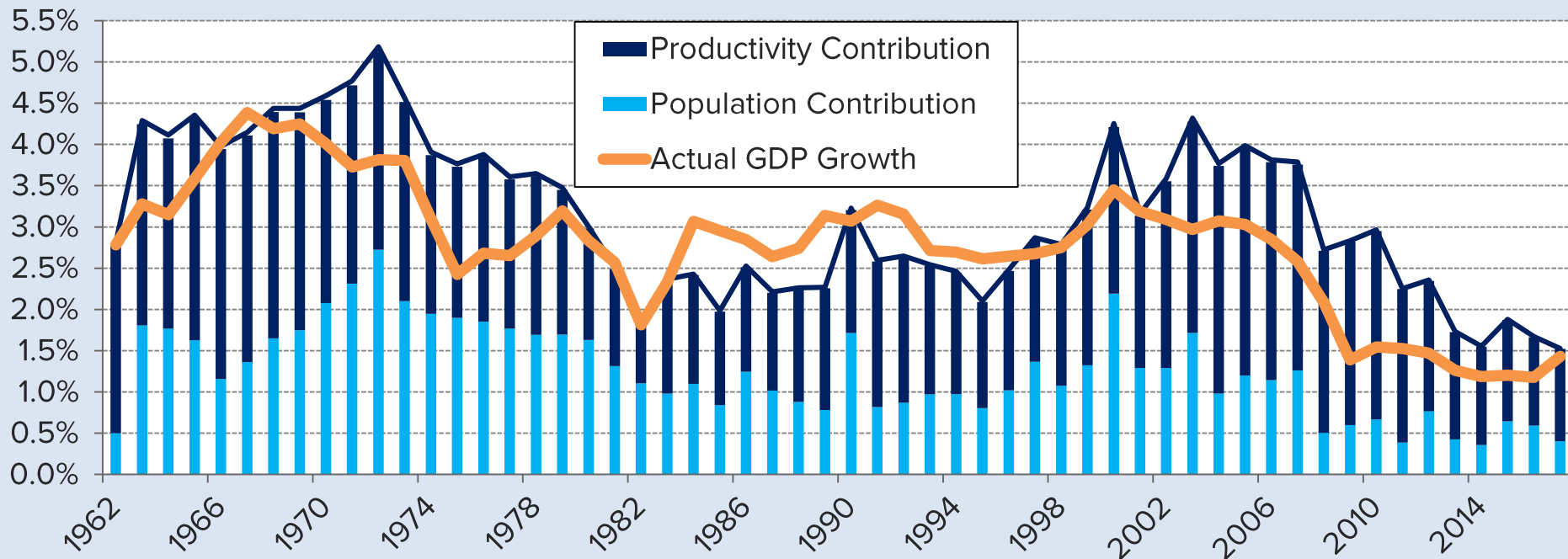
Fundamental GDP Growth* vs. Actual GDP Growth: Trailing 10-YR CAGR (1962 to 2017)



* Fundamental GDP growth = 10-YR trailing productivity CAGR multiplied by YOY working-age population growth rate.

WHATEVER HAPPENED TO GDP GROWTH?

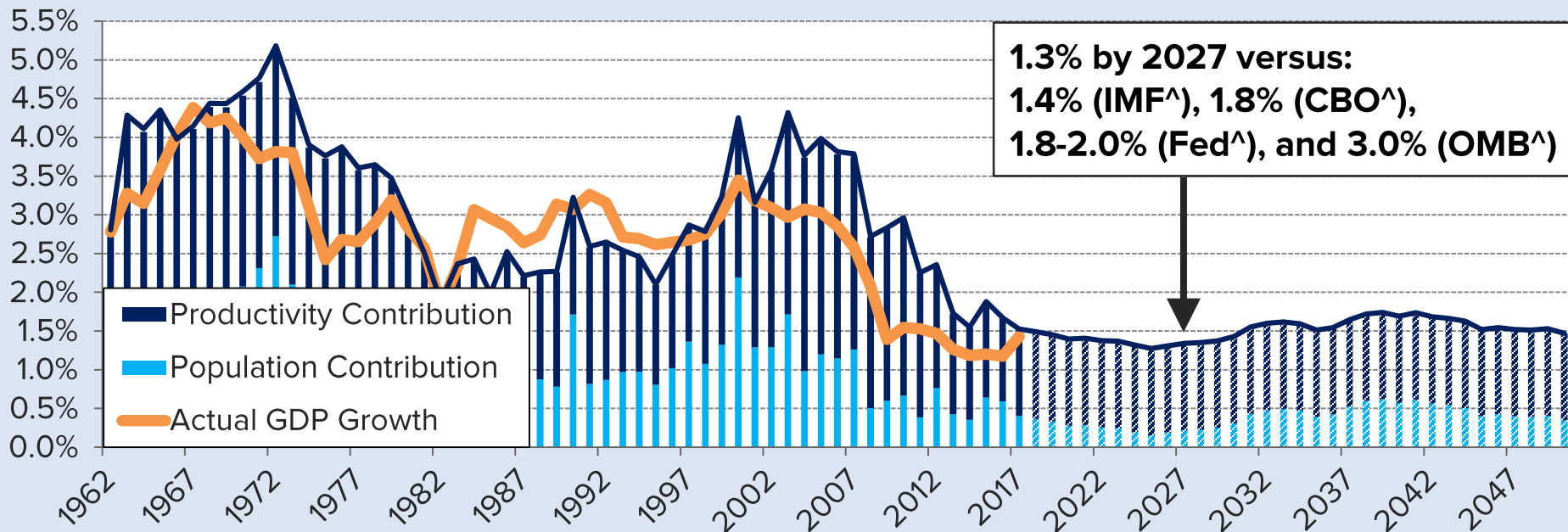
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* Fundamental GDP growth = 10-YR trailing productivity CAGR multiplied by YOY working-age population growth rate.

WHERE WE'RE HEADING

Fundamental GDP Growth* vs. Actual GDP Growth: Trailing 10-YR CAGR (1962 to 2050**)



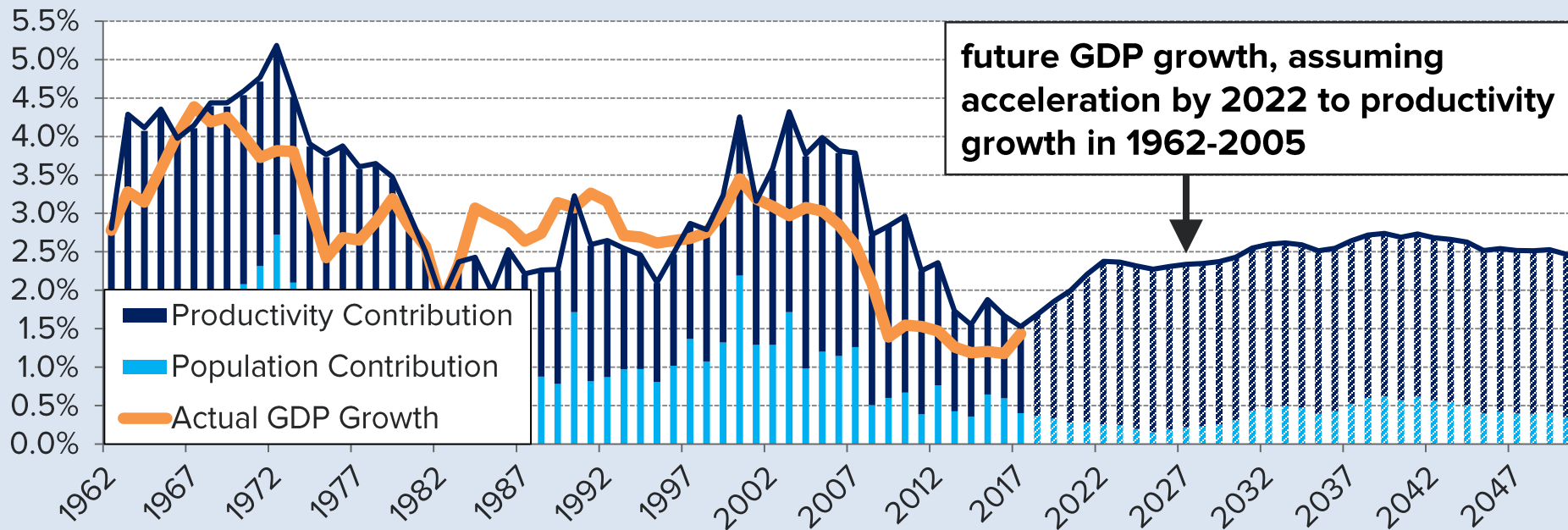
* Fundamental GDP growth = 10-YR trailing productivity CAGR multiplied by YOY working-age population growth rate.

** Outyear projections assume a constant 2017 10-YR trailing productivity rate.

^ 2018 forecasts for 2027. Exceptions: "longer run" for Fed; and 2023 for IMF.

A PRODUCTIVITY BOOST COULD CHANGE THE OUTLOOK

Fundamental GDP Growth* vs. Actual GDP Growth: Trailing 10-YR CAGR (1962 to 2050**)

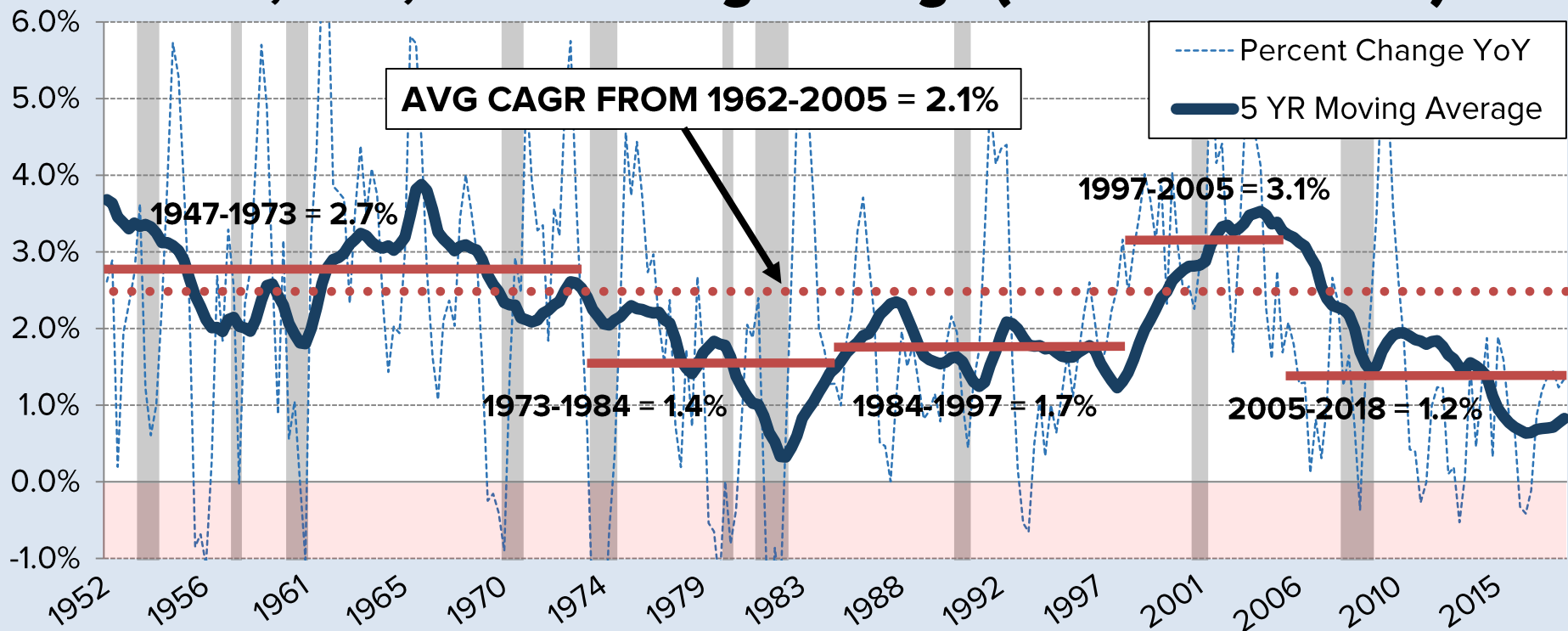


* Fundamental GDP growth = 10-YR trailing productivity CAGR multiplied by YOY working-age population growth rate.

** Outyear projections assume constant productivity growth of 2.1% (trended up to 2022), which is equal to the average productivity CAGR from 1962 to 2005.

THE PRODUCTIVITY BUST: A CLOSE-UP VIEW

Quarterly U.S. Nonfarm Business Sector Real Output Per Hour, YoY, 5 YR Moving Average (1952 to Q1 2018)



YES, THE PRODUCTIVITY DECLINE IS REAL

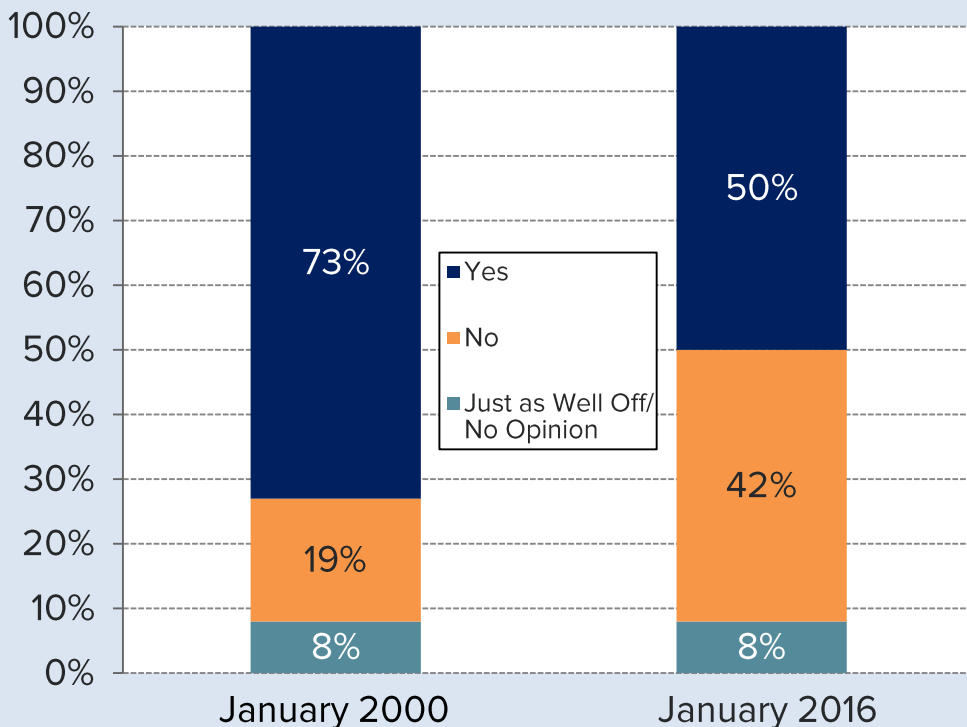
Is the productivity decline a mirage due to mismeasurement of technology gains? Most economists (see the extensive Brookings research on this question) believe it is not.

The decline occurred, after 2005, just as much IT production was being moved offshore.

What's more, even countries producing little IT are experiencing a similar decline.

If the gains of IT have been underestimated (and inflation has been overestimated), few Americans believe this compensates for the deceleration of real incomes and national living standards. (See chart.)

“Are You Better Off Than You Were Eight Years Ago?”



DRIVERS OF PRODUCTIVITY DECELERATION

WHAT'S DRIVING THE SLOWDOWN?

- ❑ **Poor Macro Performance/Policy Uncertainty** (*in wake of GFC*)
- ❑ **Inadequate Investment & Infrastructure** (*Alan Blinder*)
- ❑ **Sectoral Failure of Success** (*"Baumol's Cost Disease"*)
- ❑ **Disappearance of Low-Hanging Fruit** (*Robert Gordon*)
- ❑ **Declining Business Dynamism** (*startups, mobility, risk appetite, & more*)



THE SUBJECT OF THIS REPORT: A COMPLEX "SYNDROME" OF BEHAVIORS THAT MAY ENCOMPASS ALL OF THE ABOVE....

DECLINING RATES OF JOB CREATION & DESTRUCTION

A. Why declining business dynamism matters: Slowing productivity growth

B. Nine indicators of declining business dynamism

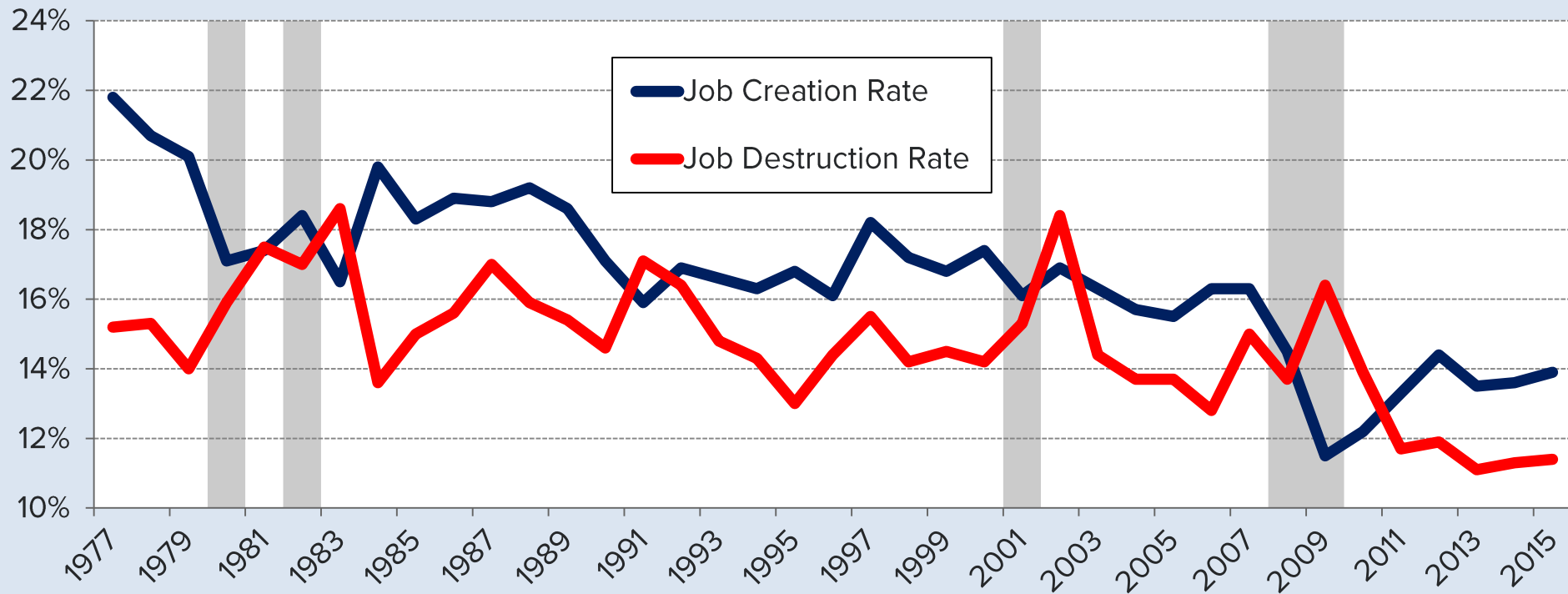
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JOB TURNOVER AT AN ALL-TIME LOW

Annual Job Creation and Destruction Rates*^ (1977 to 2015)

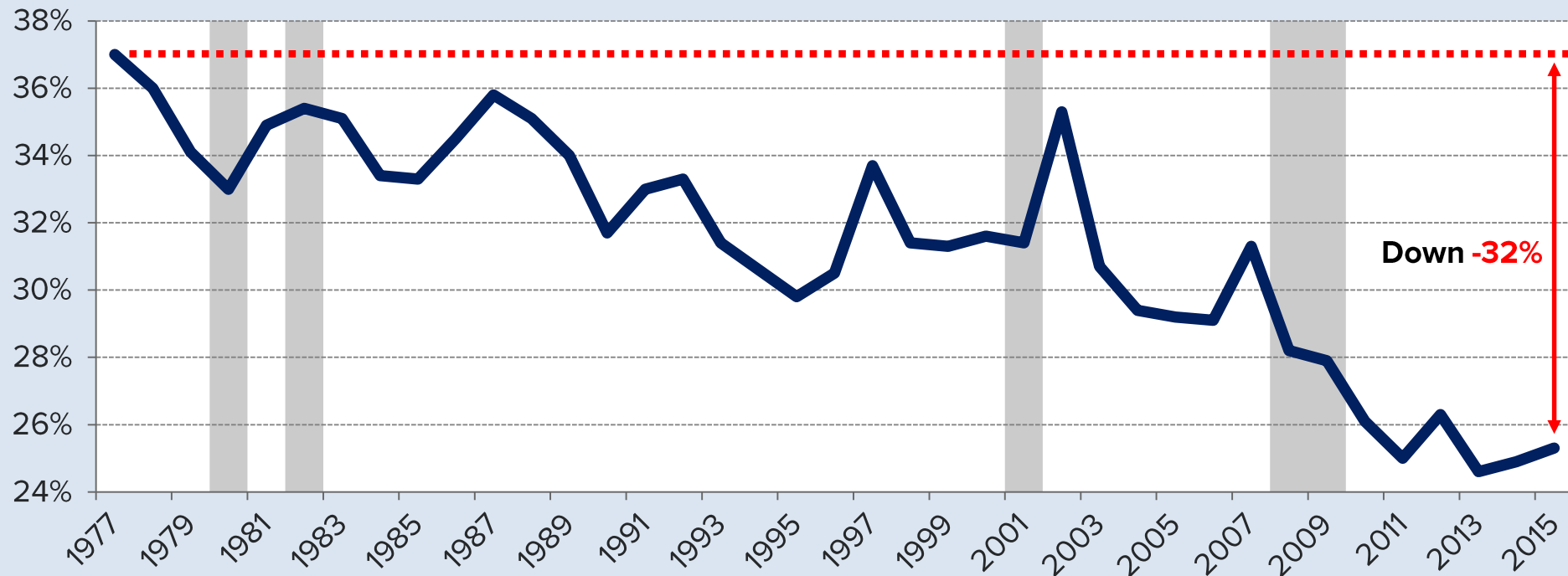


* Defined, respectively, as the number of newly created/destroyed jobs as a share of all jobs.

^ Covers U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

JOB TURNOVER AT AN ALL-TIME LOW

Annual Job Reallocation Rate*^ (1977 to 2015)

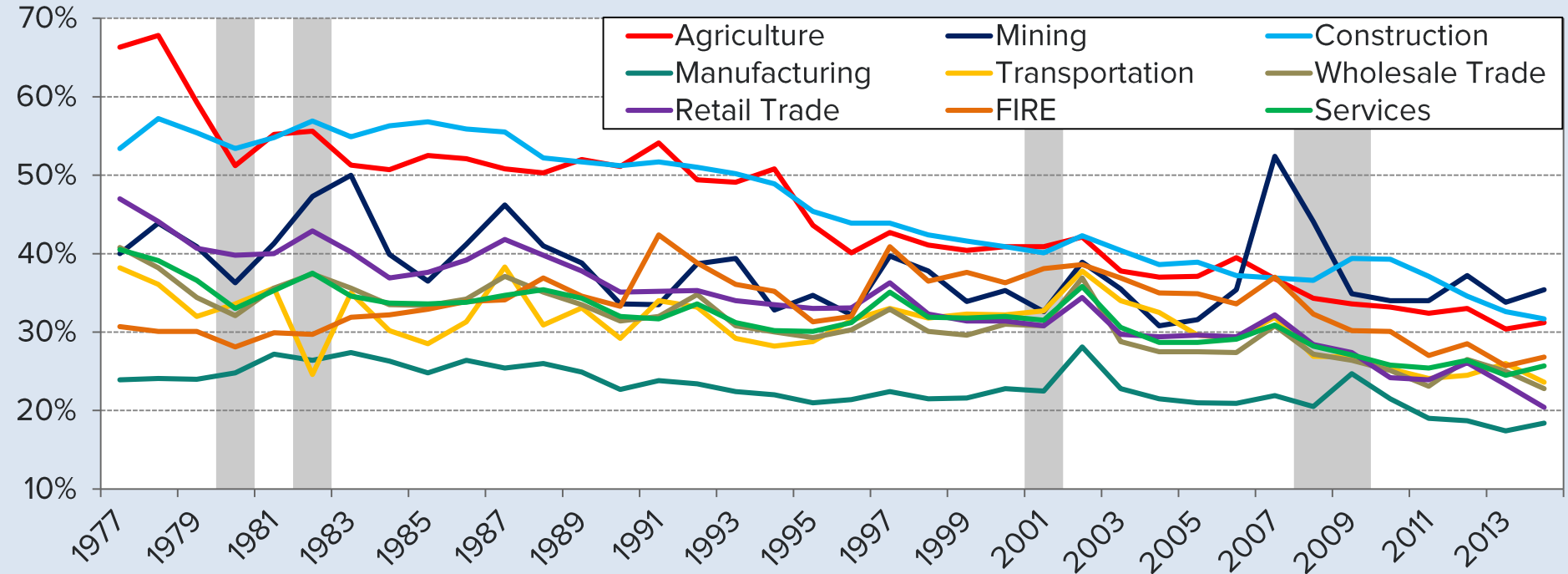


* Job reallocation rate is calculated by adding together job creation rate and job destruction rate.

^ Covers U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

JOB TURNOVER DOWN IN EVERY SECTOR

Job Reallocation Rate*^ by Sector (1977 to 2014)

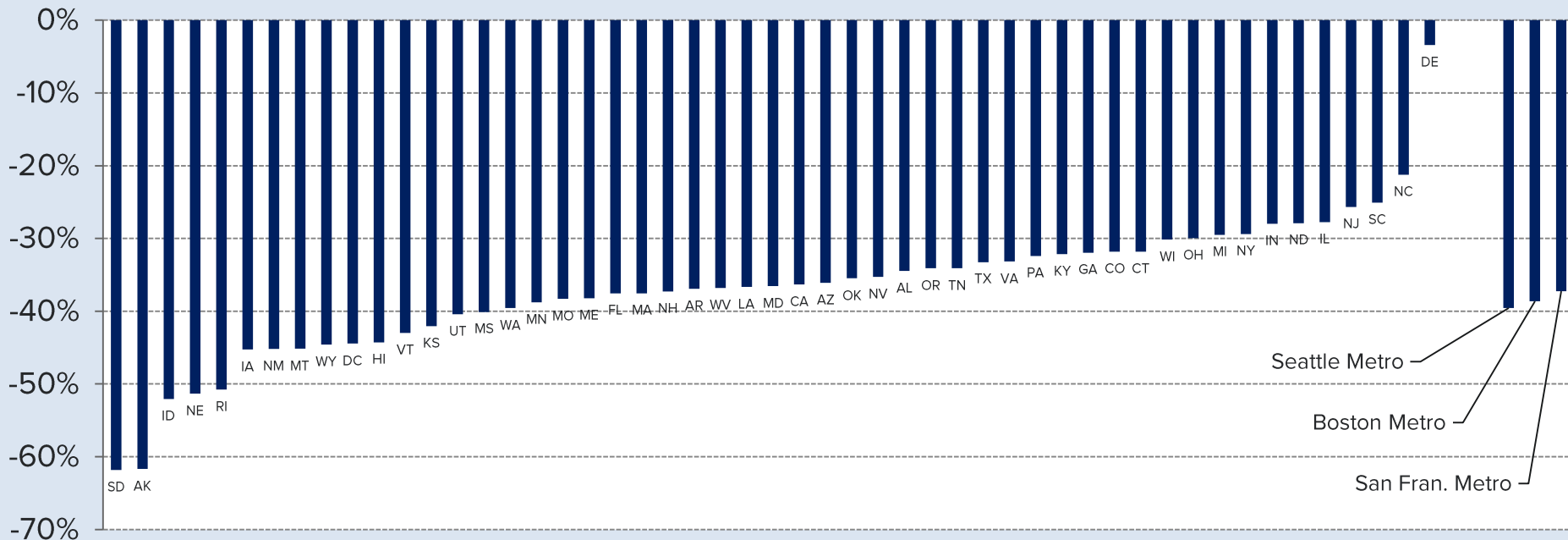


* Job reallocation rate is calculated by adding together job creation rate and job destruction rate.

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JOB TURNOVER DOWN IN EVERY REGION

Job Reallocation by State and Metro: Percentage Change from 1977 to 2014



* Job reallocation rate is calculated by adding together job creation rate and job destruction rate.

^ Covers U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

DECLINE IN JOB CHURN AND GEOGRAPHIC MOBILITY

A. Why declining business dynamism matters: Slowing productivity growth

B. Nine indicators of declining business dynamism

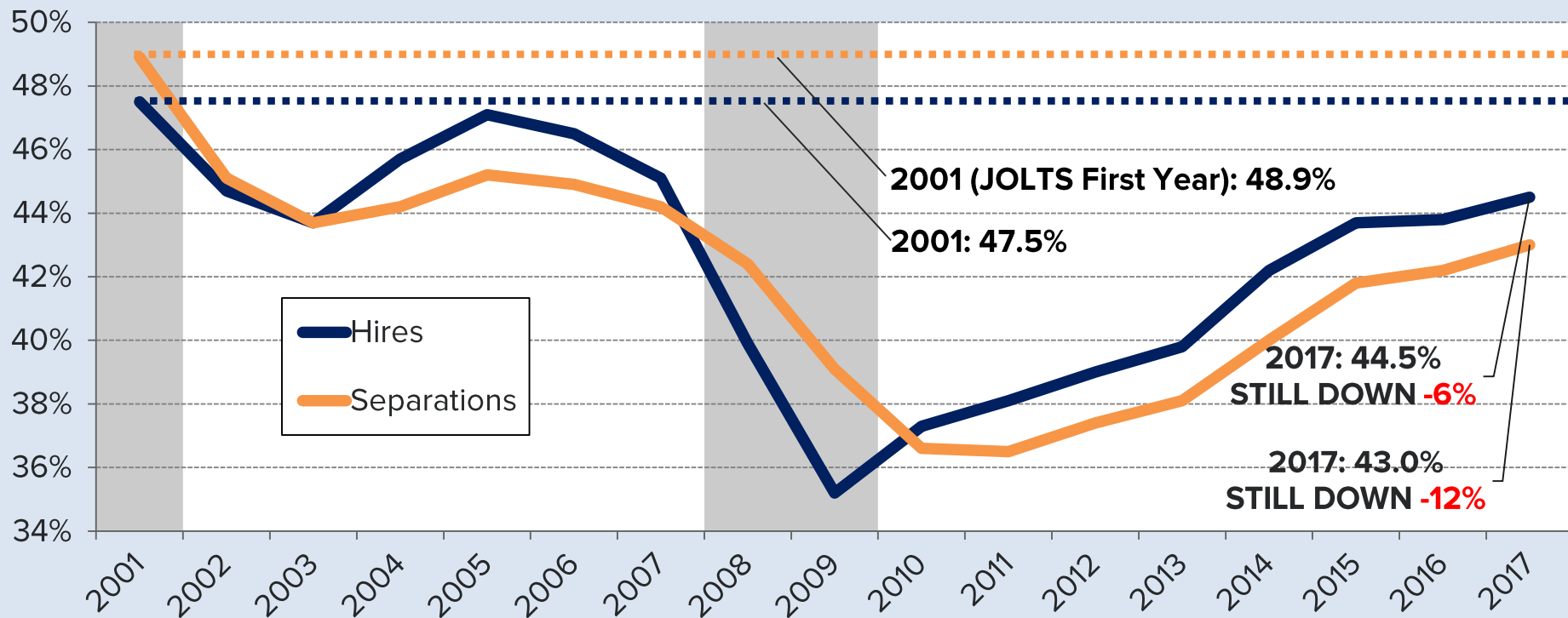
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LESS JOB CHURN TODAY

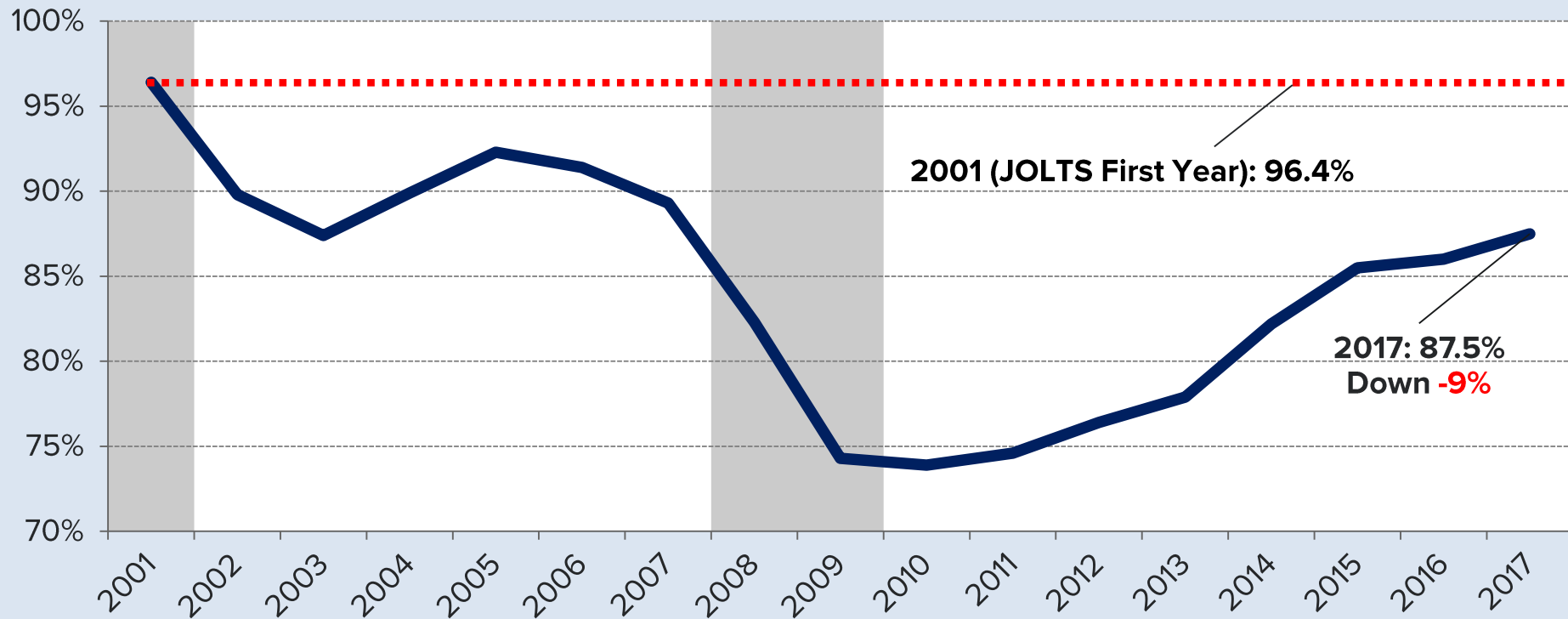
Annual Hire and Separation Rates* (2001 to 2017)



* Defined, respectively, as the number of monthly hires/separations as a share of the labor force, added for each month to produce an annual figure.

LESS JOB CHURN TODAY

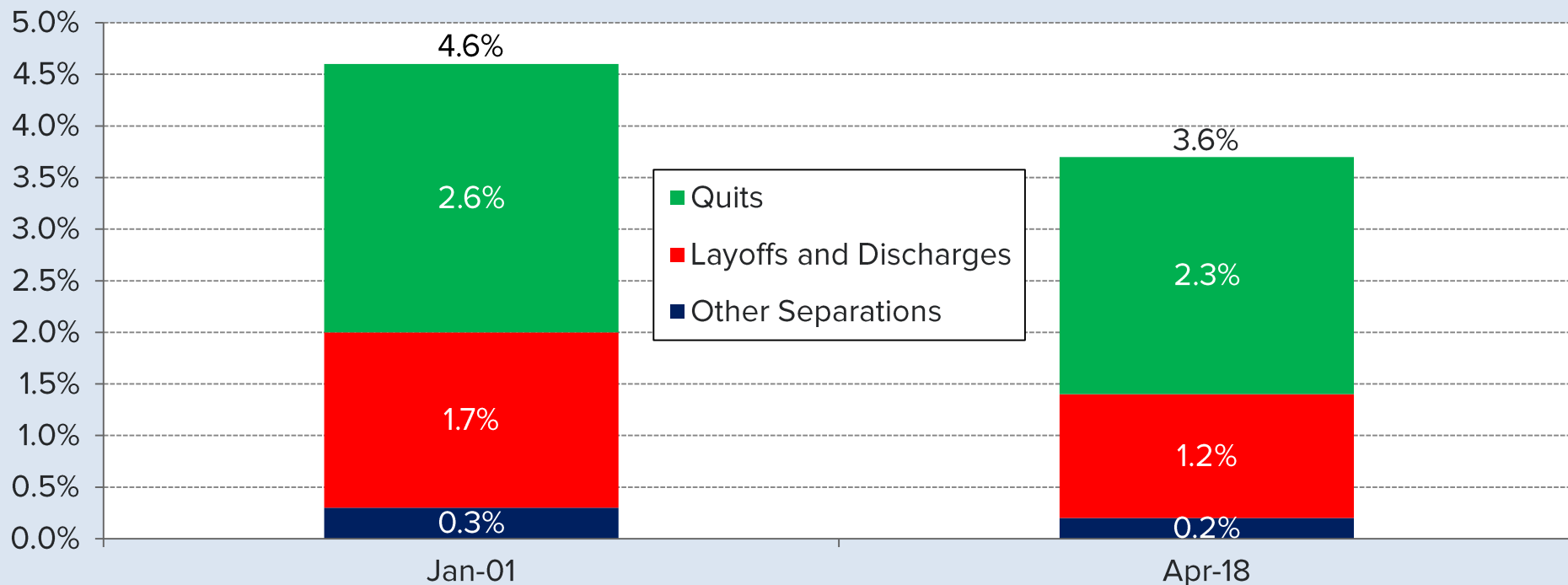
Annual Worker Reallocation Rate* (2001 to 2017)



* Worker reallocation rate is calculated by adding together hire rate and separation rate.

FEWER WORKERS LEAVE FOR ANY REASON

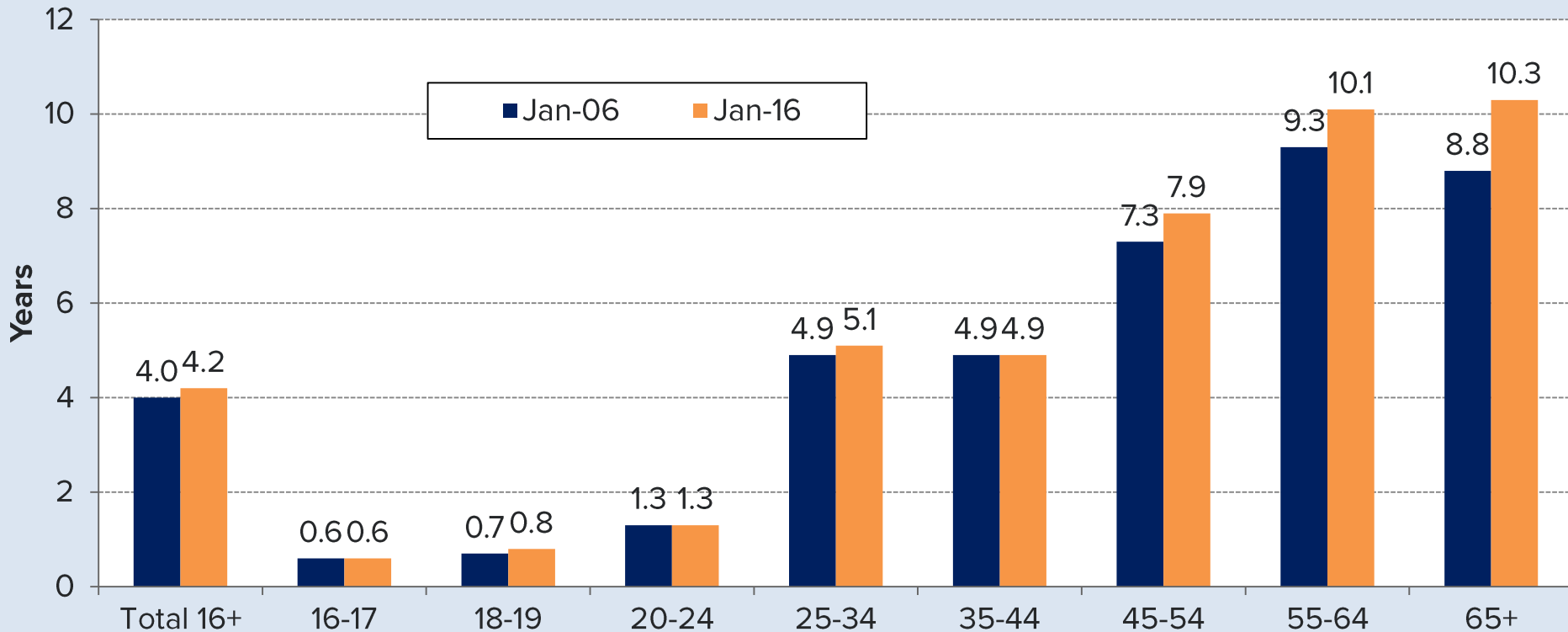
Monthly Job Separation Rate by Reason, Seasonally Adjusted (Jan-01 vs. Apr-18*)



* Values preliminary for Apr-18.

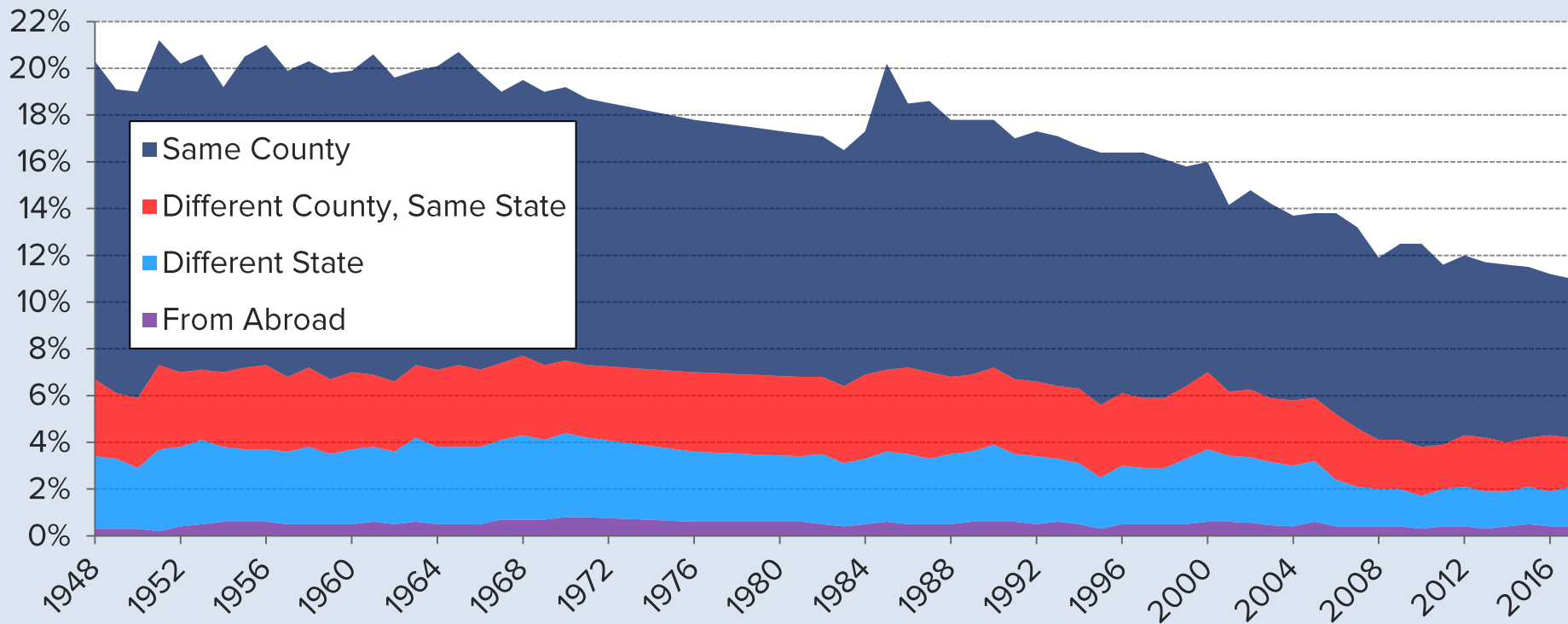
WORKERS STAYING LONGER WITH ONE FIRM

Median Employee Tenure by Age (Jan-06 vs. Jan-16)



THE LONG SLIDE IN GEOGRAPHIC MOBILITY

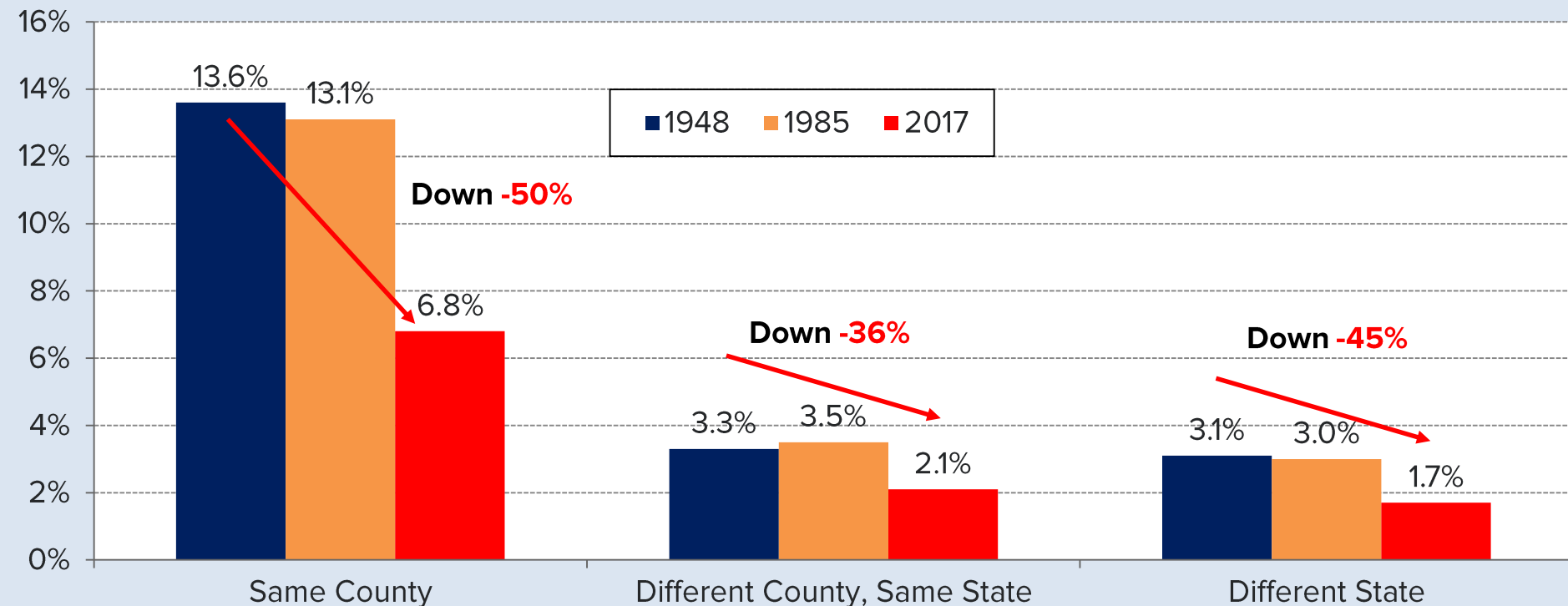
U.S. One-Year Mover Rate* (1948 to 2017)



* Describes the share of the population age 1 and older that moved during the stated year.

ACCELERATING SLIDE IN GEOGRAPHIC MOBILITY

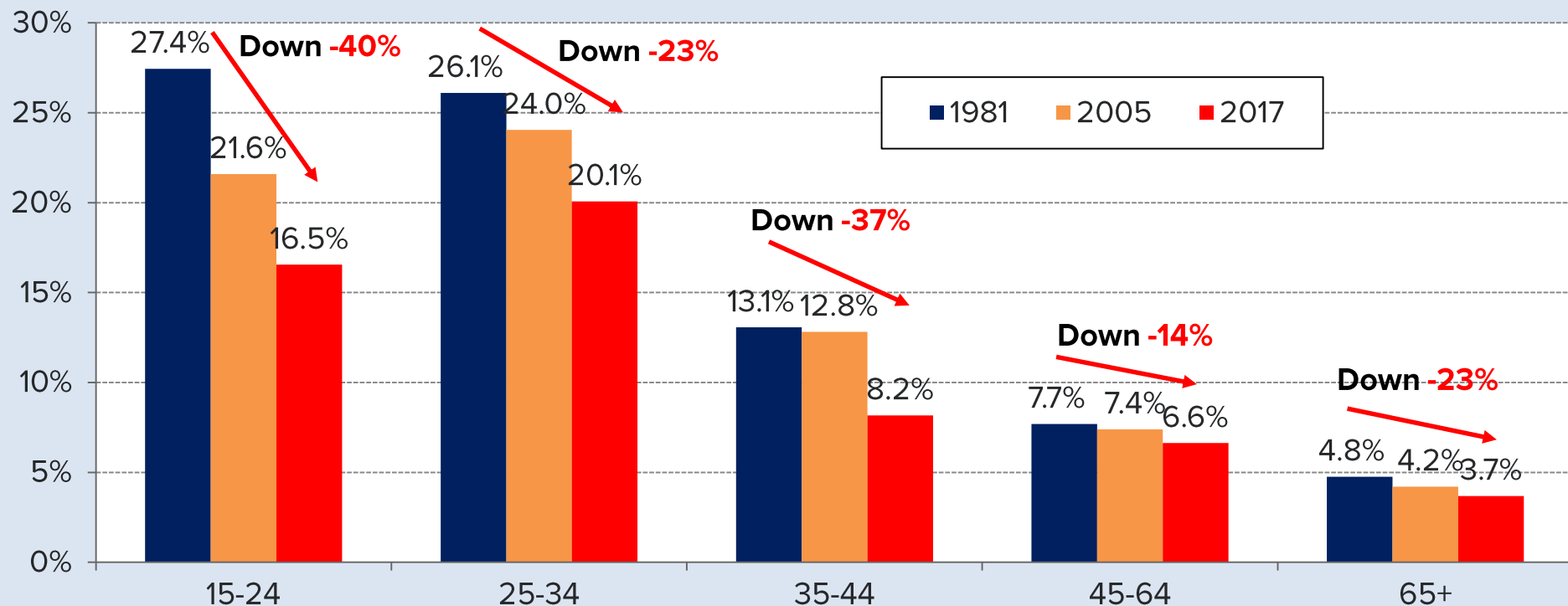
One-Year Mover Rate* by Origination (Selected Years)



* Describes the share of the population age 1 and older that moved during the stated year.

MOBILITY DOWN MOST FOR YOUNG ADULTS

U.S. One-Year Mover Rate* by Age (Selected Years)



* Describes the share of the population that moved during the stated year.

DECLINE IN COMPANY START-UPS AND FIRM TURNOVER

A. Why declining business dynamism matters: Slowing productivity growth

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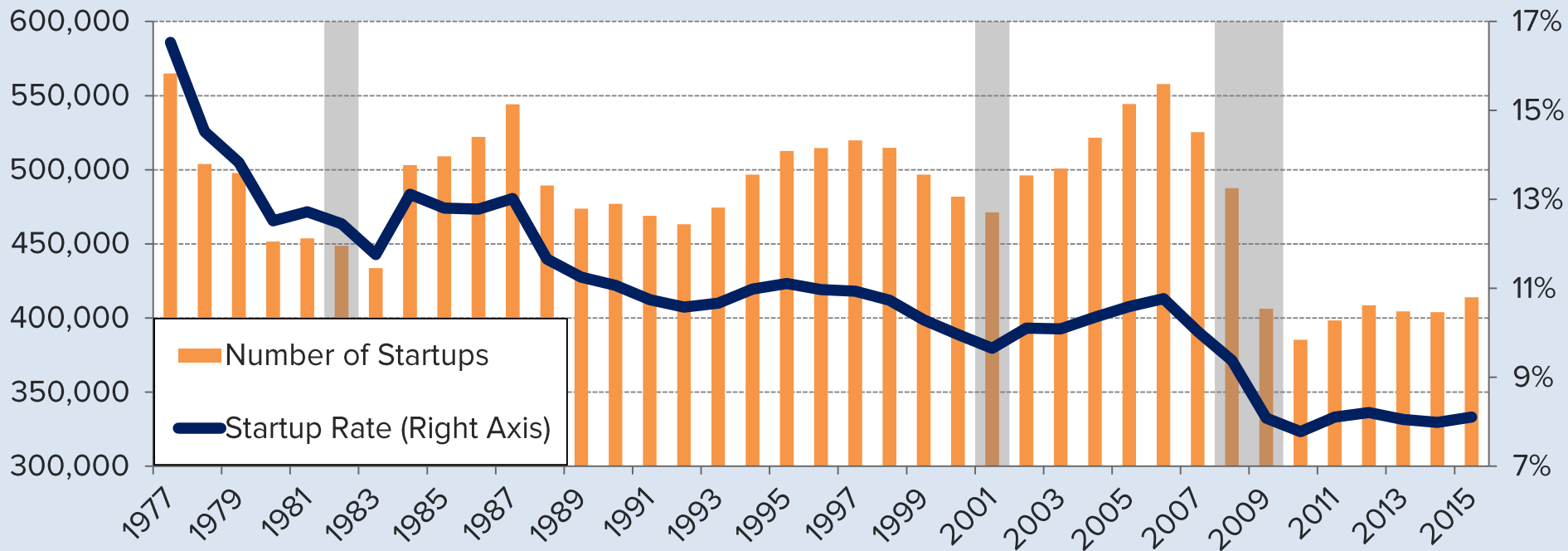
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STARTUPS ARE DOWN—BOTH NUMBER AND RATE

Annual Number of Startups and Firm Startup Rate*^ (1977 to 2015)

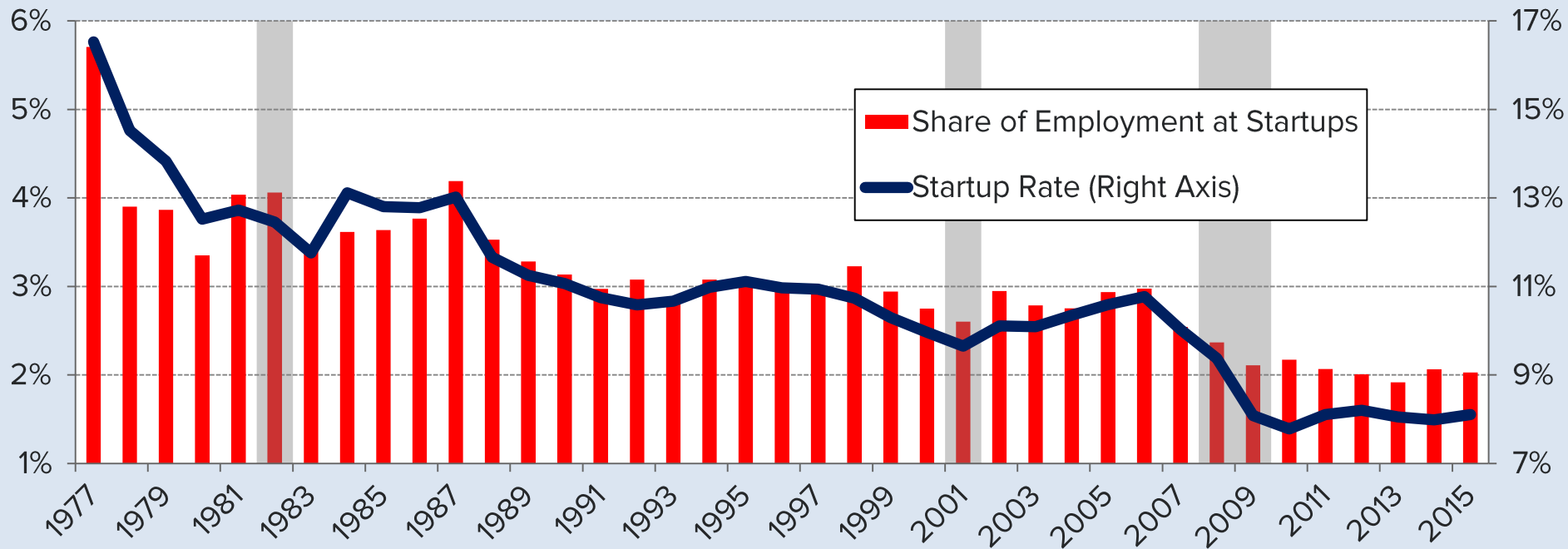


* Startup rate defined as the number of newly formed firms as a share of all firms.

^ U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

FEWER PEOPLE WORK FOR STARTUPS

Share of Employment at Startups and Annual Startup Rate*^ (1977 to 2015)

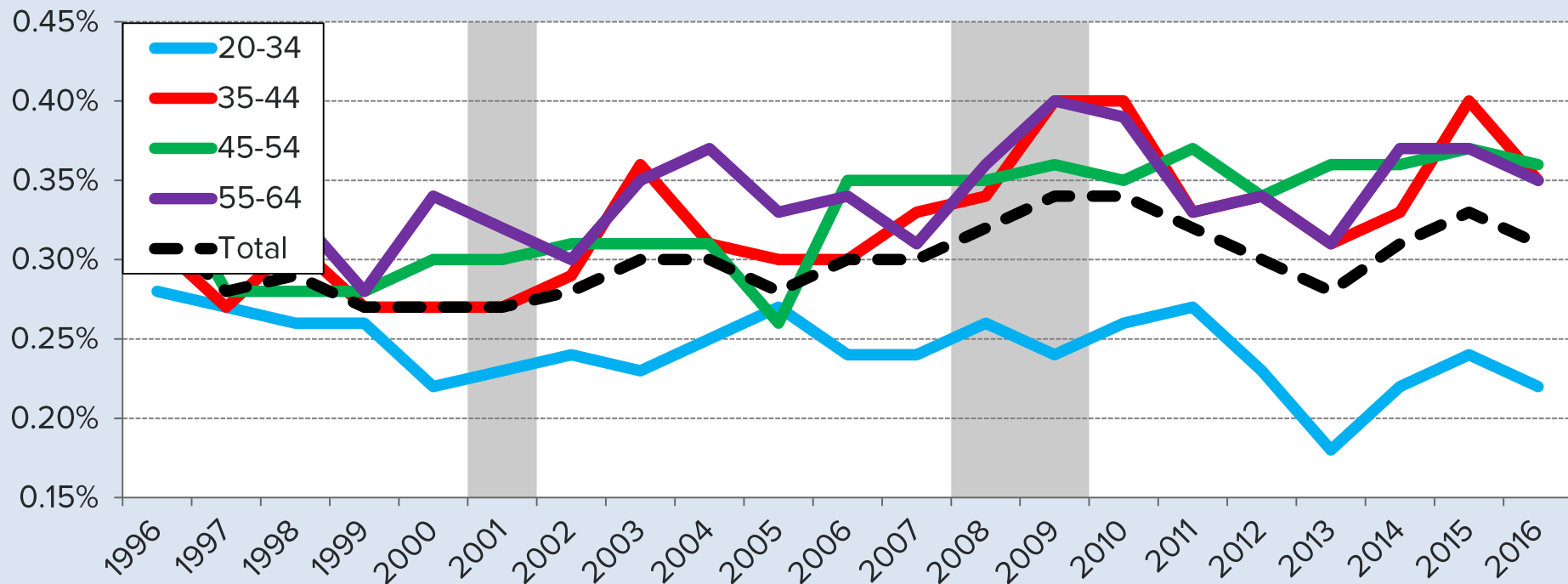


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MILLENNIALS DRIVING DOWN ENTREPRENEURSHIP...

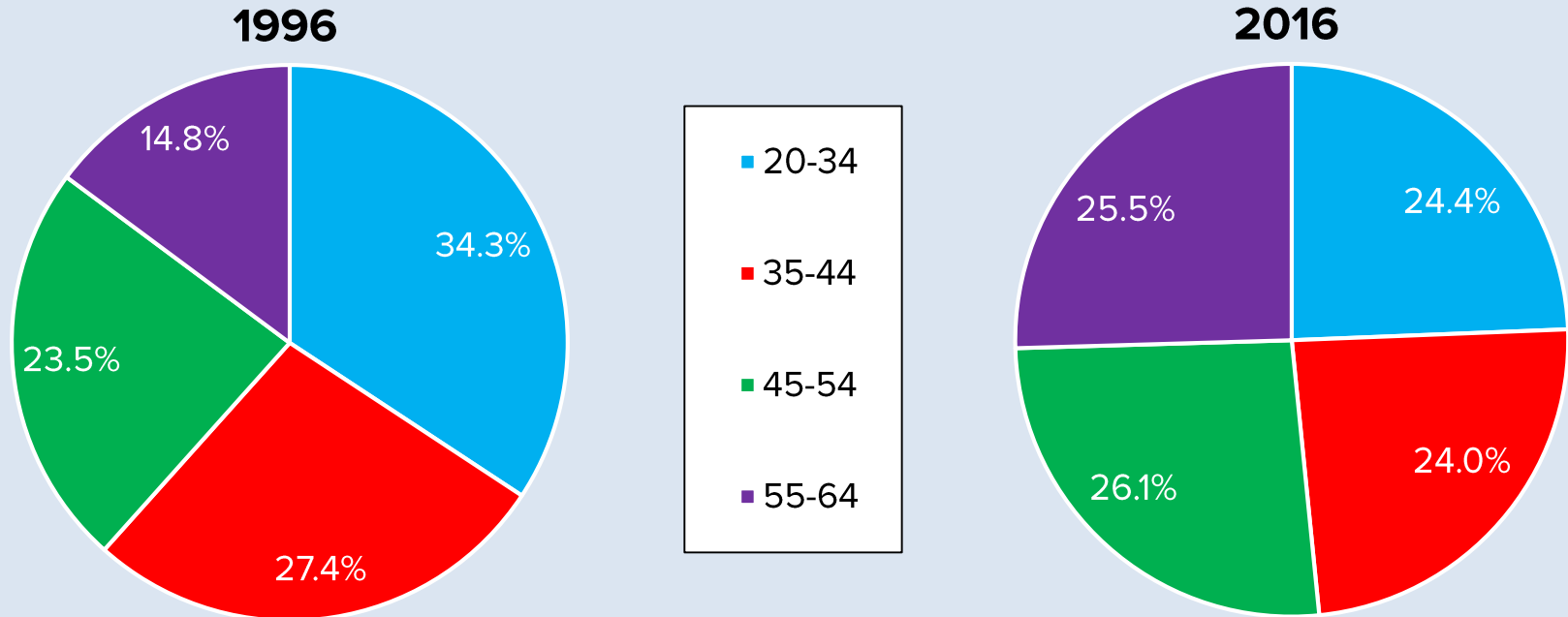
U.S. Entrepreneurship Rate* by Age (1996 to 2016)



* Defined as individuals that do not own a business in the survey month that start a business in the following month as a share of the population. Uses a broader definition of "business" than U.S. Census Bureau. Survey group includes U.S. adults age 20-64.

... WHICH IS DOWN FOR YOUNG, BUT UP FOR OLD

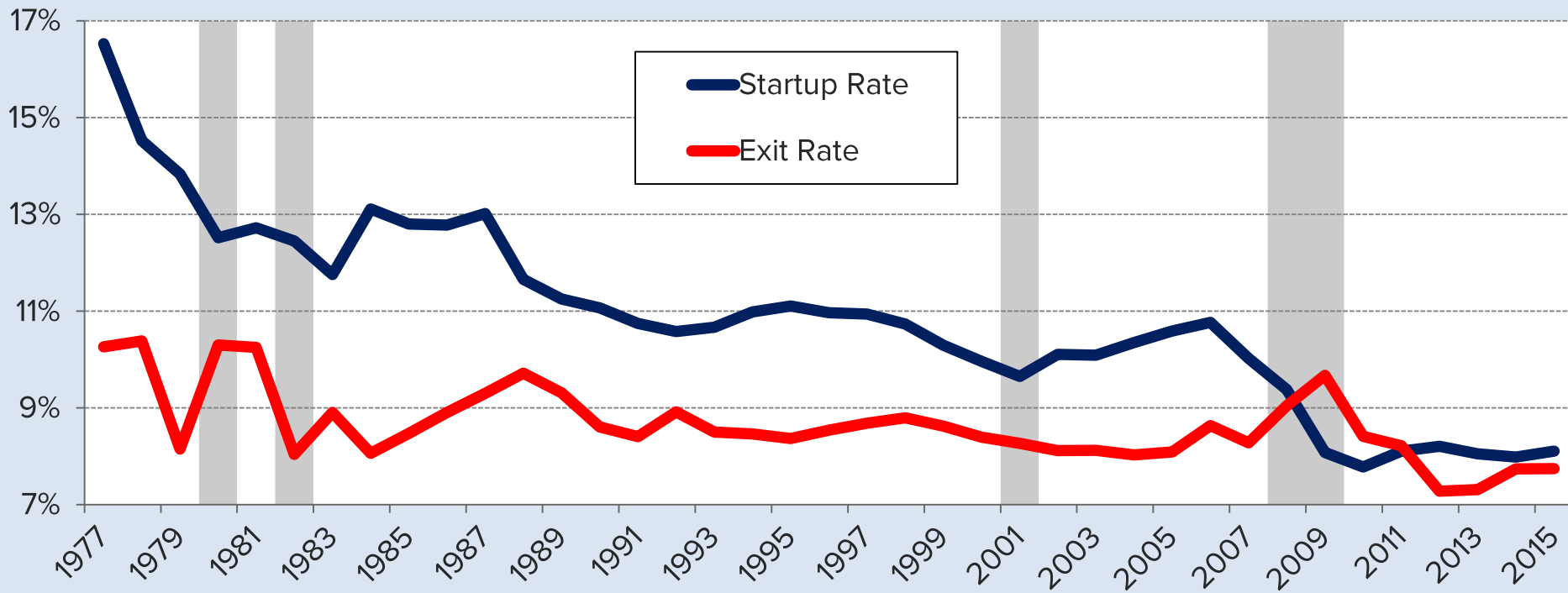
Age Gradient of New Entrepreneurs* (1996 vs. 2016)



* Defined as individuals that do not own a business in the survey month that start a business in the following month as a share of the population. Uses a broader definition of "business" than U.S. Census Bureau. Survey group includes U.S. adults age 20-64.

FIRM TURNOVER NEAR AN ALL-TIME LOW

Annual Firm Startup and Exit Rates*^ (1977 to 2015)

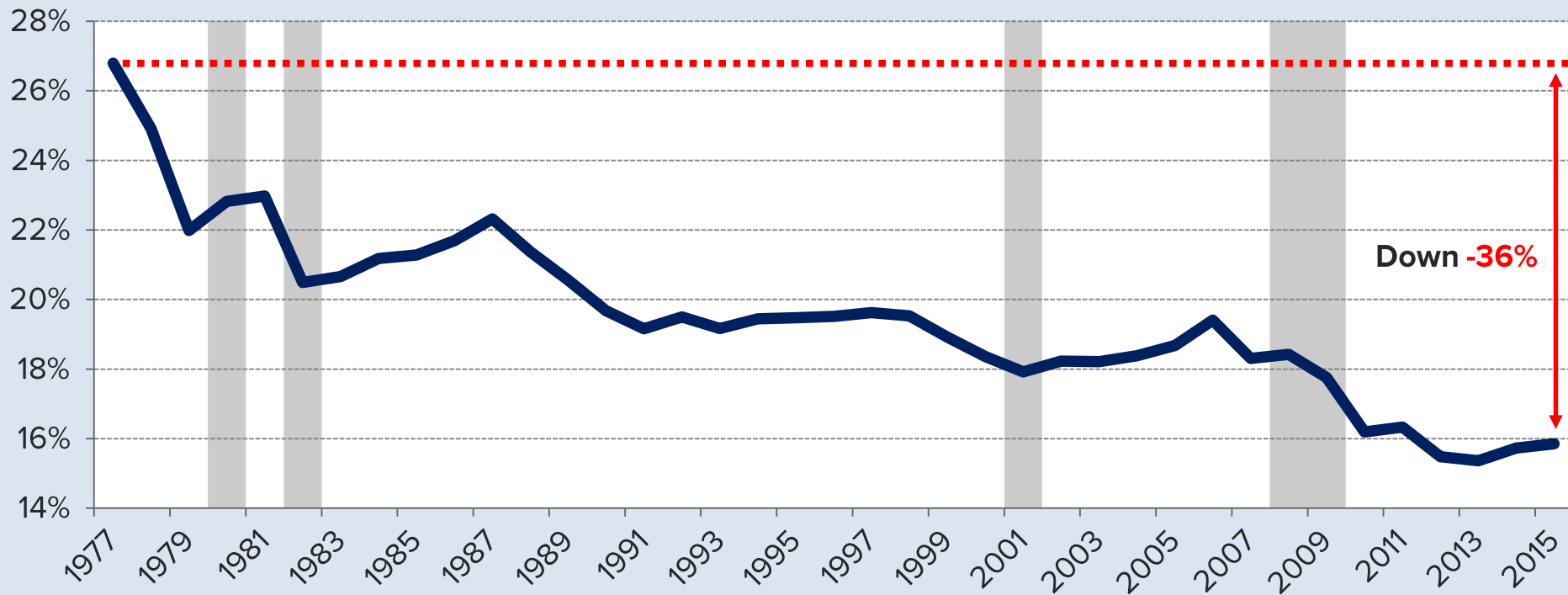


* Defined, respectively, as the number of (1) newly formed firms and (2) firms that ceased operations; both as a share of all firms.

^ U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

FIRM TURNOVER NEAR AN ALL-TIME LOW

Annual “Firm Reallocation Rate” (1977 to 2015)*^



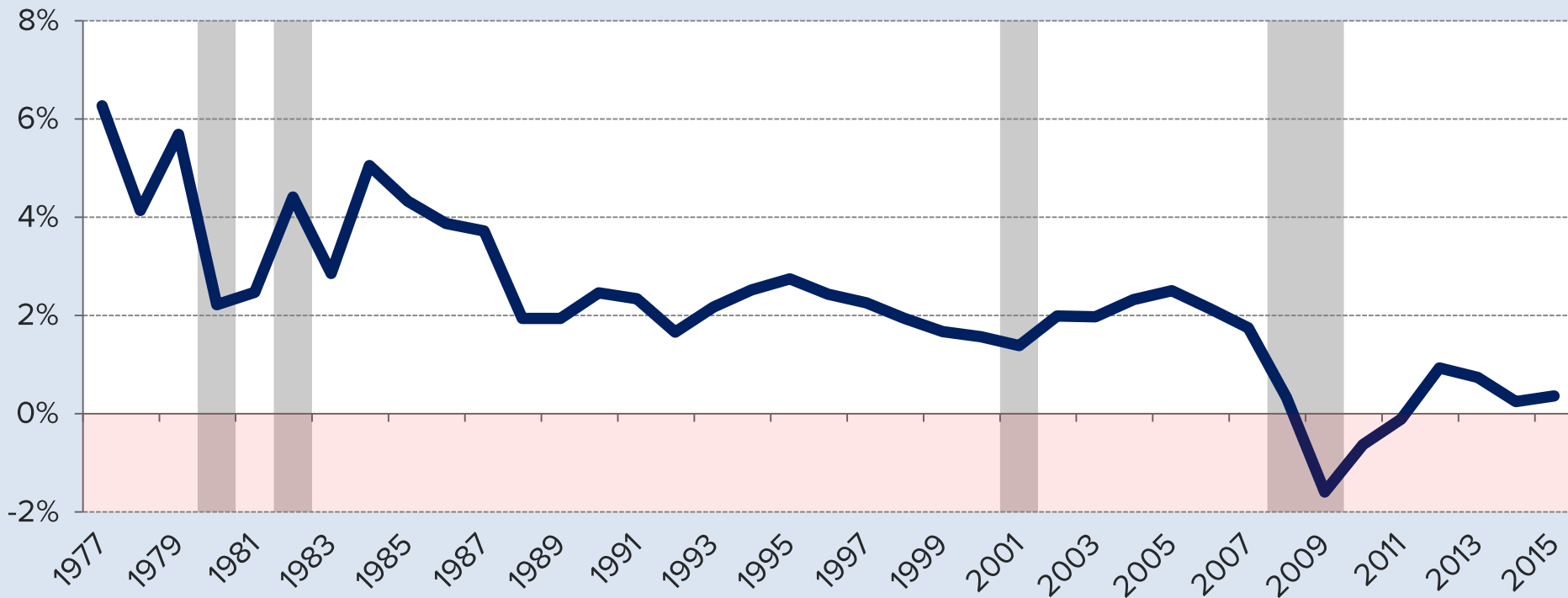
Down **-36%**

* Firm reallocation rate is calculated by adding together firm startup rate and firm exit rate.

^ U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

FIRM TURNOVER NEAR AN ALL-TIME LOW

Net Firm Creation Rate*^ (1977 to 2015)

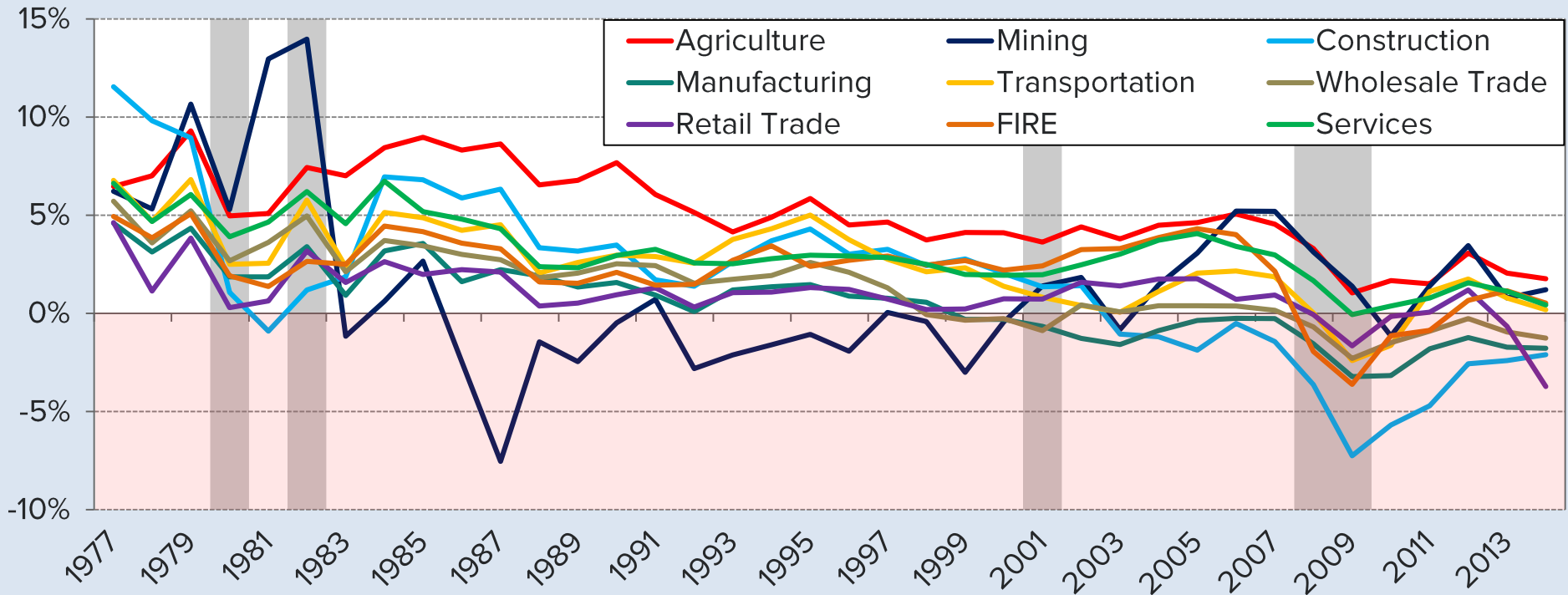


* Calculated by subtracting exit rate from startup rate.

^ U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

FIRM TURNOVER DOWN IN EVERY SECTOR

Net Firm Creation Rate*^ by Sector (1977 to 2014)



* Calculated by subtracting exit rate from startup rate for each SIC sector.

^ U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

DECLINE IN NUMBER OF FIRMS—ESP, LISTED FIRMS

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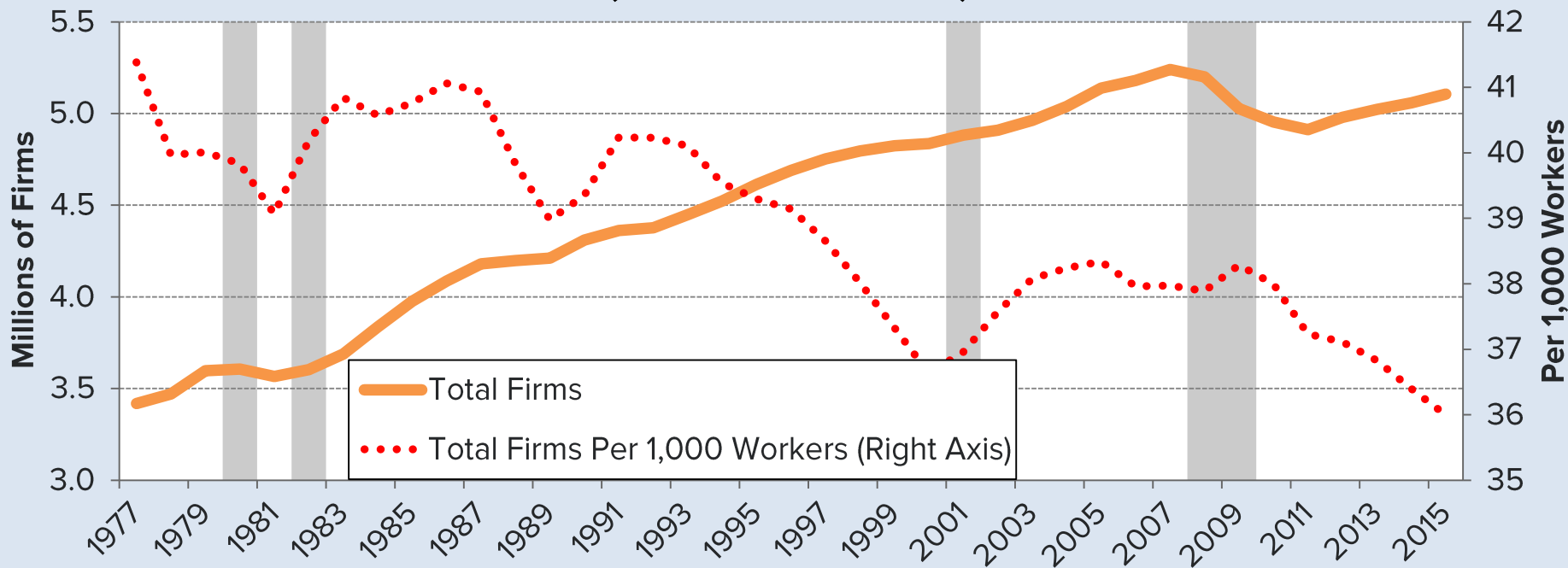
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TOTAL FIRMS PER WORKER IN DECLINE

All Firms*: Total Number and Per 1,000 Workers** (1977 to 2015)

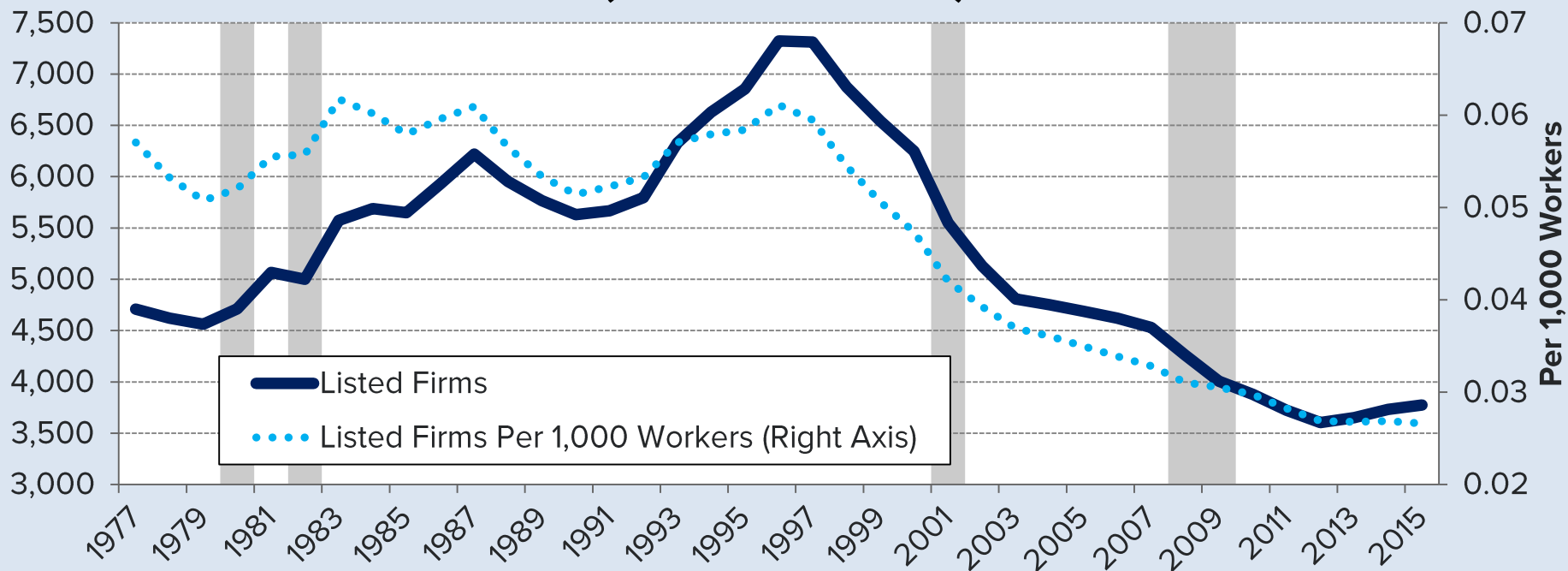


* U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships--i.e., the "self-employed."

** Number of workers as measured by the BLS Current Employment Statistics survey.

LISTED FIRMS PLUMMETING BY EVERY MEASURE

Listed Firms*: Total Number and Per 1,000 Workers** (1977 to 2015)

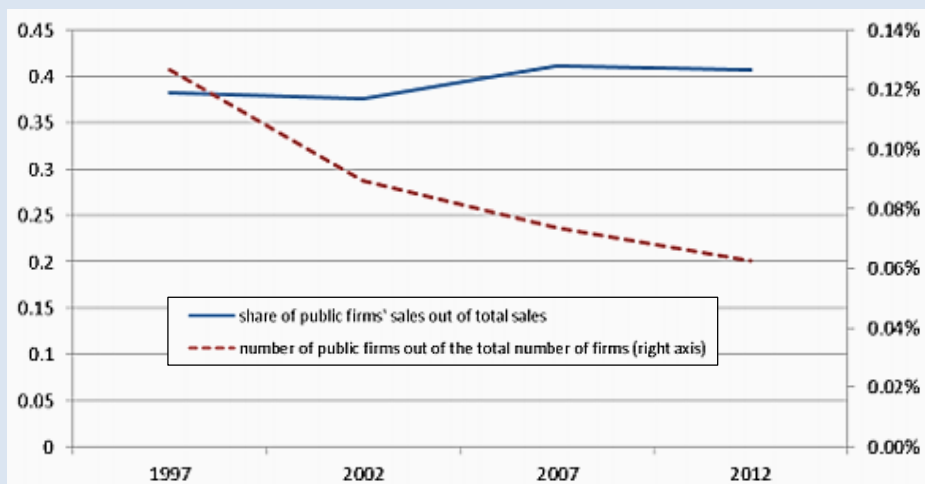


* U.S. firms listed on AMEX, NASDAQ, or NYSE, excluding investment funds and trusts.

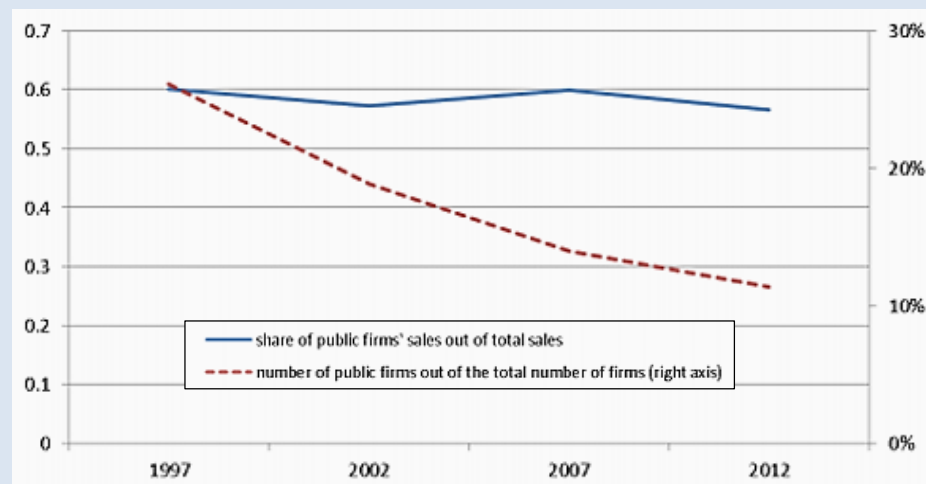
** Number of workers as measured by the BLS Current Employment Statistics survey.

LIST REVENUE % CONSTANT EVEN AS FIRM # DROPS

Public Firm Revenues as a Share of Total Firm Revenues (1997 to 2012)



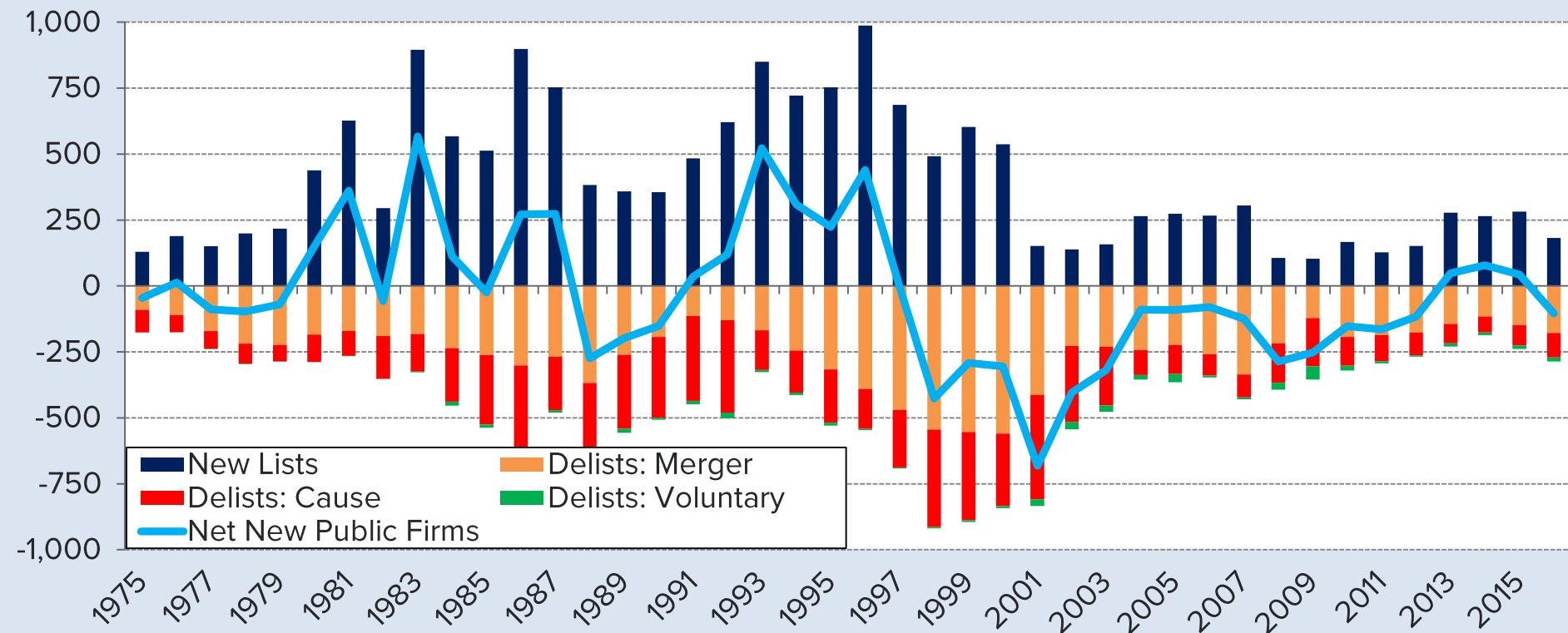
Large Public Firm* Revenues as a Share of Total Firm Revenues (1997 to 2012)



* Includes firms with annual sales in excess of \$100 million.

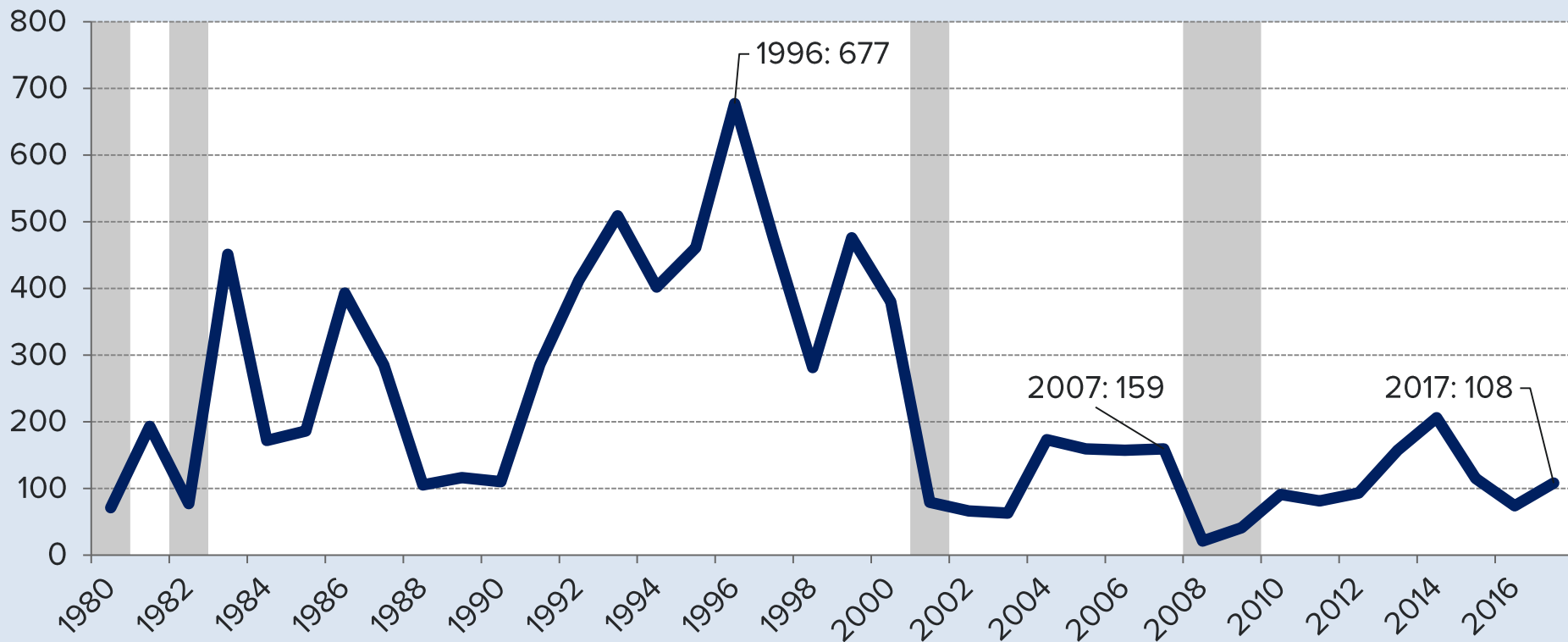
LISTED EXITS SURPASS ENTRIES IN 17 OF LAST 20 YEARS

Annual Entries and Exits in Public Markets (1975 to 2016)



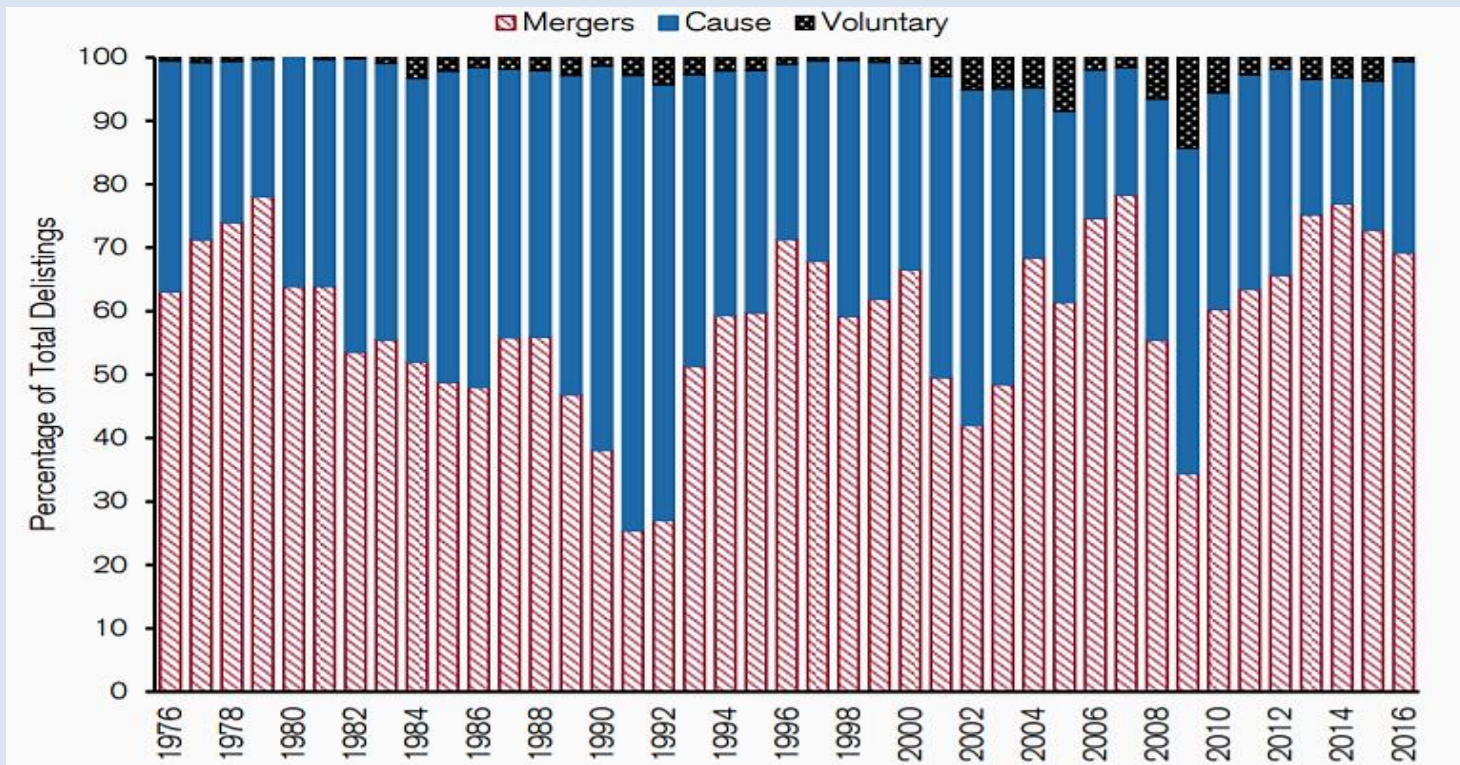
FEWER FIRMS ARE GOING PUBLIC

Number of IPOs by Year (1980 to 2017)



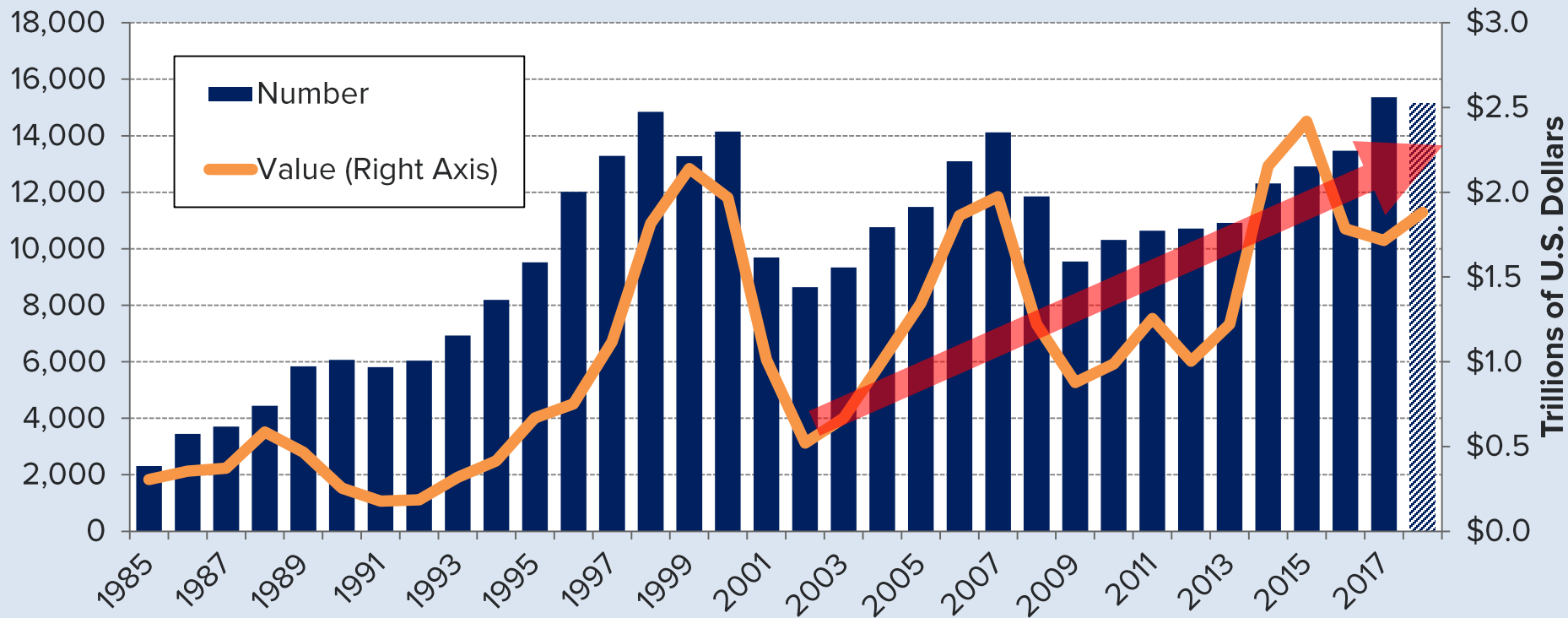
MERGERS DRIVING THE NUMBER OF DELISTINGS

Reasons for Delistings (1976 to 2016)



MERGERS & ACQUISITIONS BOOMING...

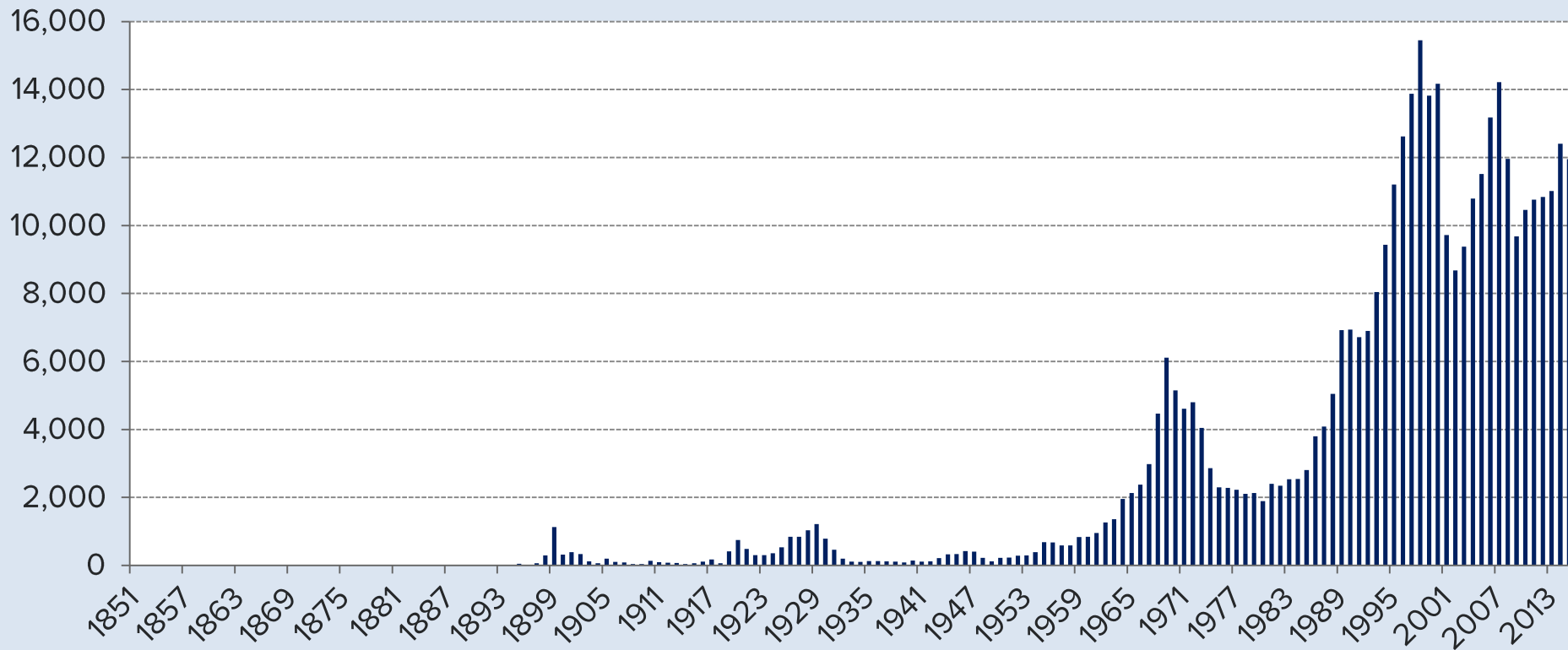
Number and Value of U.S. M&As (1985 to 2018*)



* Values projected for 2018.

... WITHOUT PRECEDENT IN AMERICAN HISTORY

Number of U.S. M&As (1851 to 2015)



GROWING AGE & SIZE OF TYPICAL FIRM

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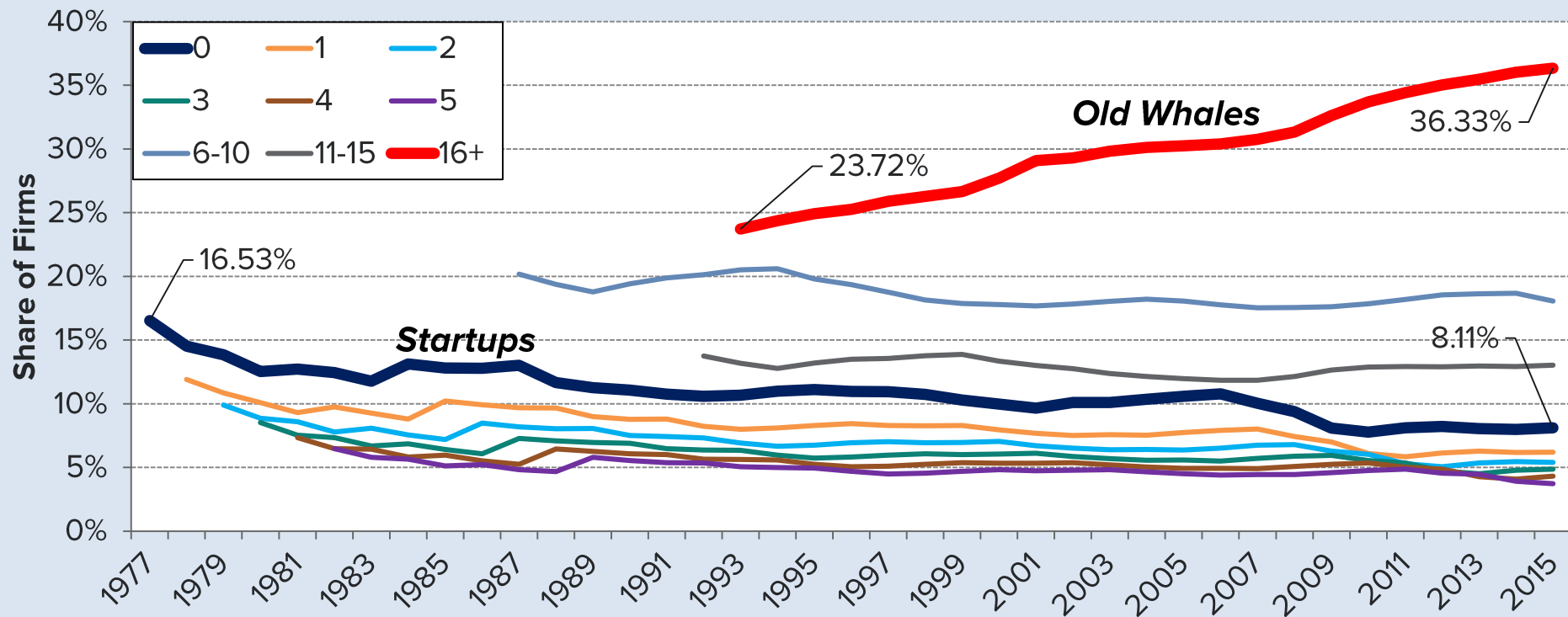
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FIRMS ARE GETTING OLDER

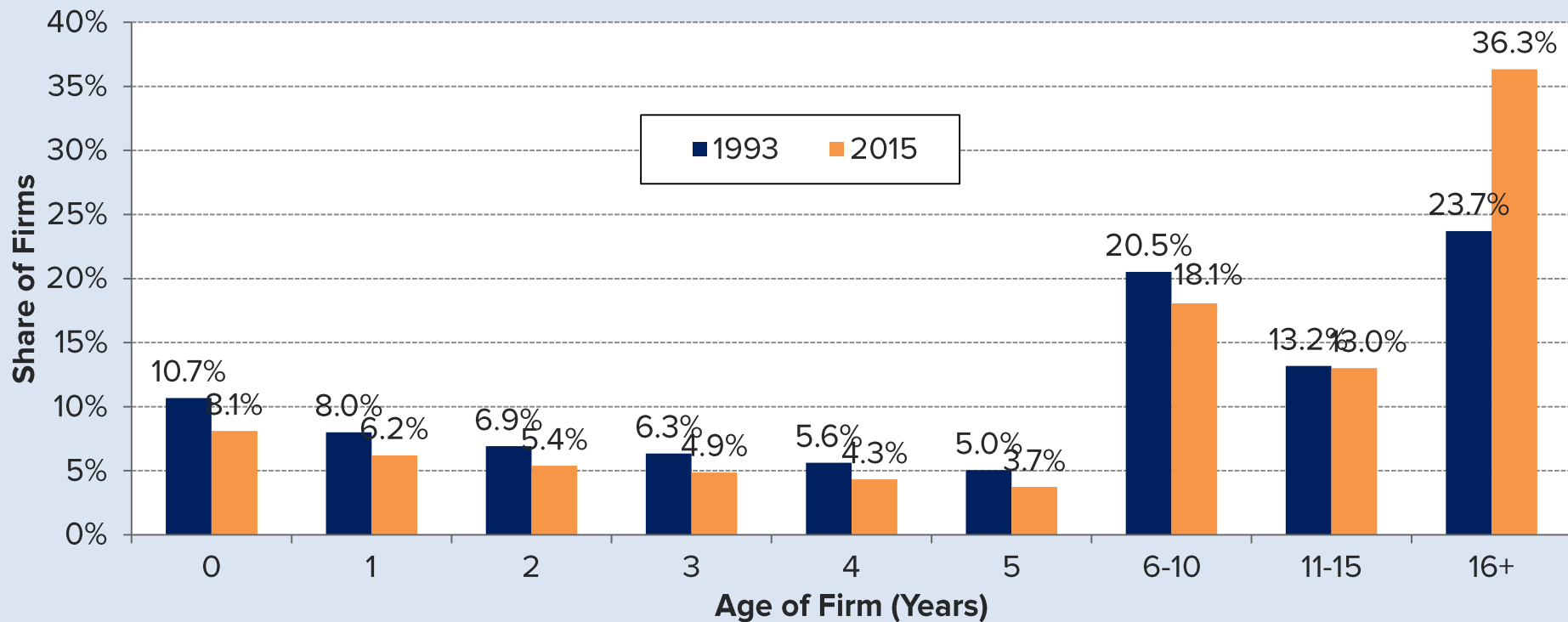
Age Distribution of U.S. Firms* (1977 to 2015)



* U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

FIRMS ARE GETTING OLDER

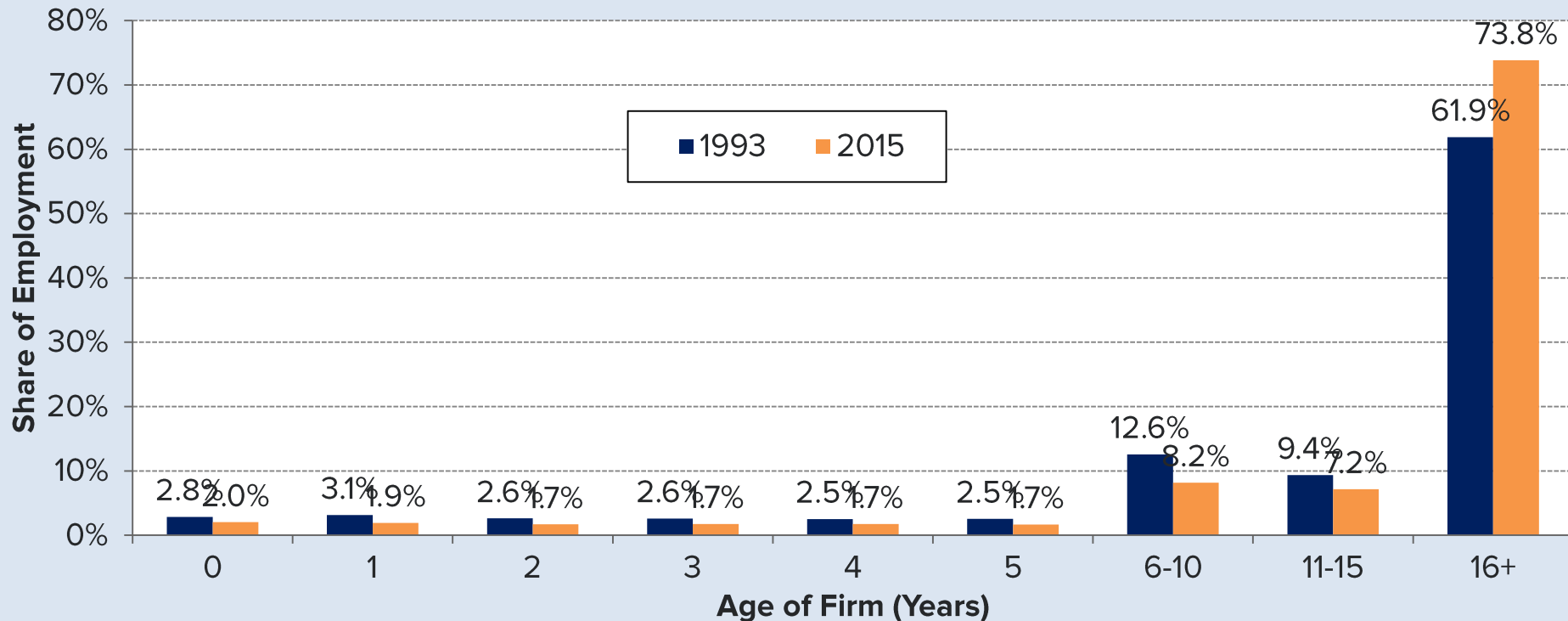
Age Distribution of U.S. Firms* (1993 vs. 2015)



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OLD FIRMS ACCOUNT FOR GROWING % OF WORKERS

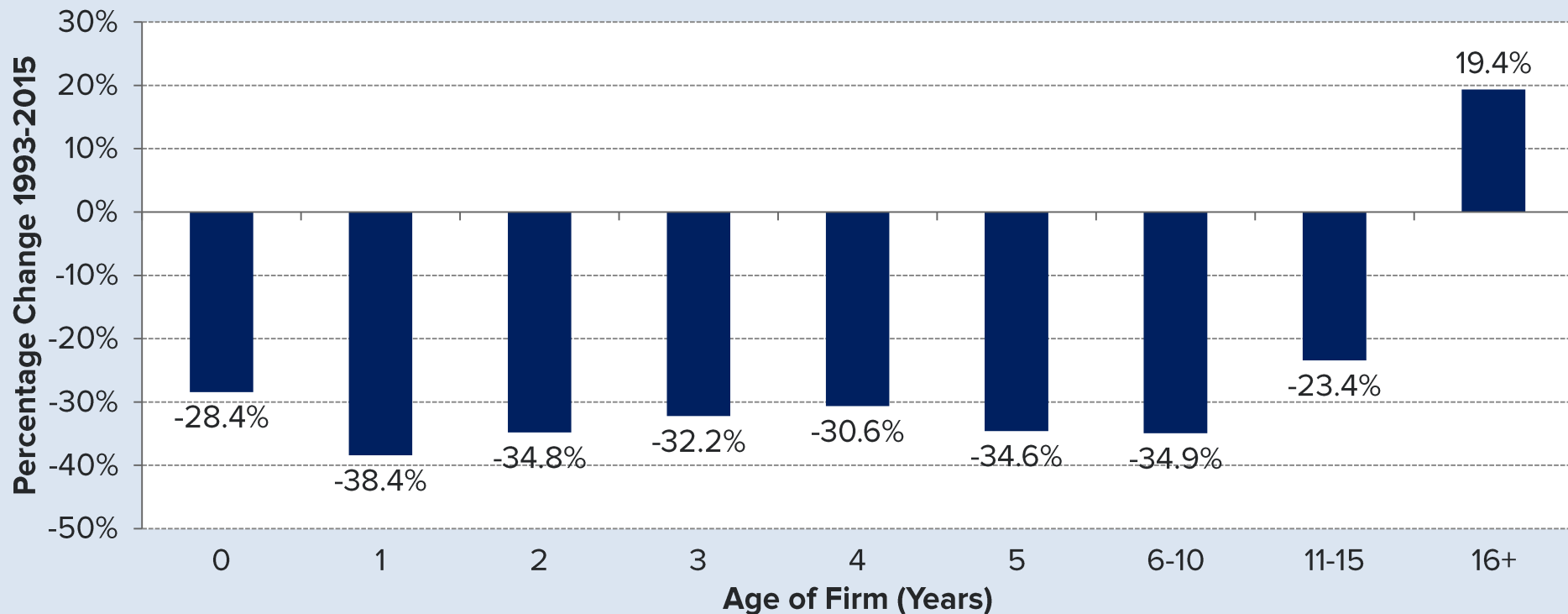
U.S. Employment by Firm Age* (1993 vs. 2015)



* U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

OLD FIRMS ACCOUNT FOR GROWING % OF WORKERS

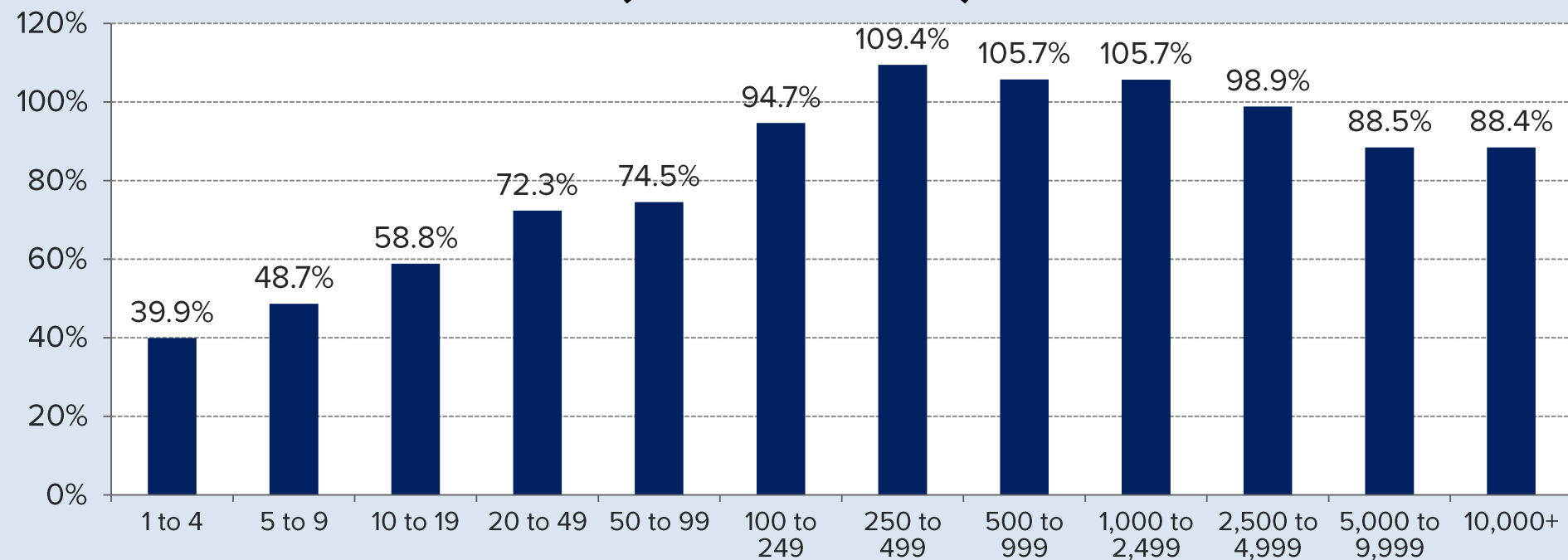
U.S. Employment by Firm Age* (1993 vs. 2015)



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SMALL FIRMS NOT KEEPING PACE WITH LARGER FISH

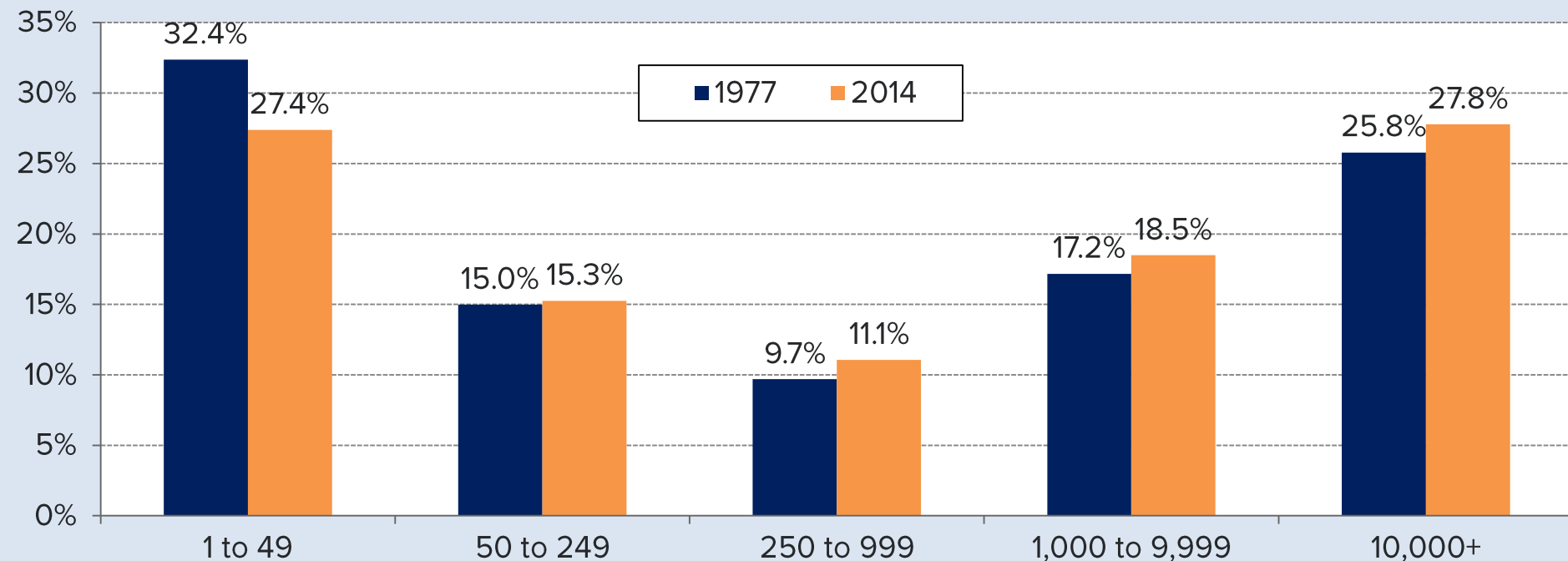
Percentage Growth in Number of Firms* by Firm Size (1977 to 2014)



* U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

MEDIUM AND LARGE FIRMS ATTRACTING MORE WORKERS

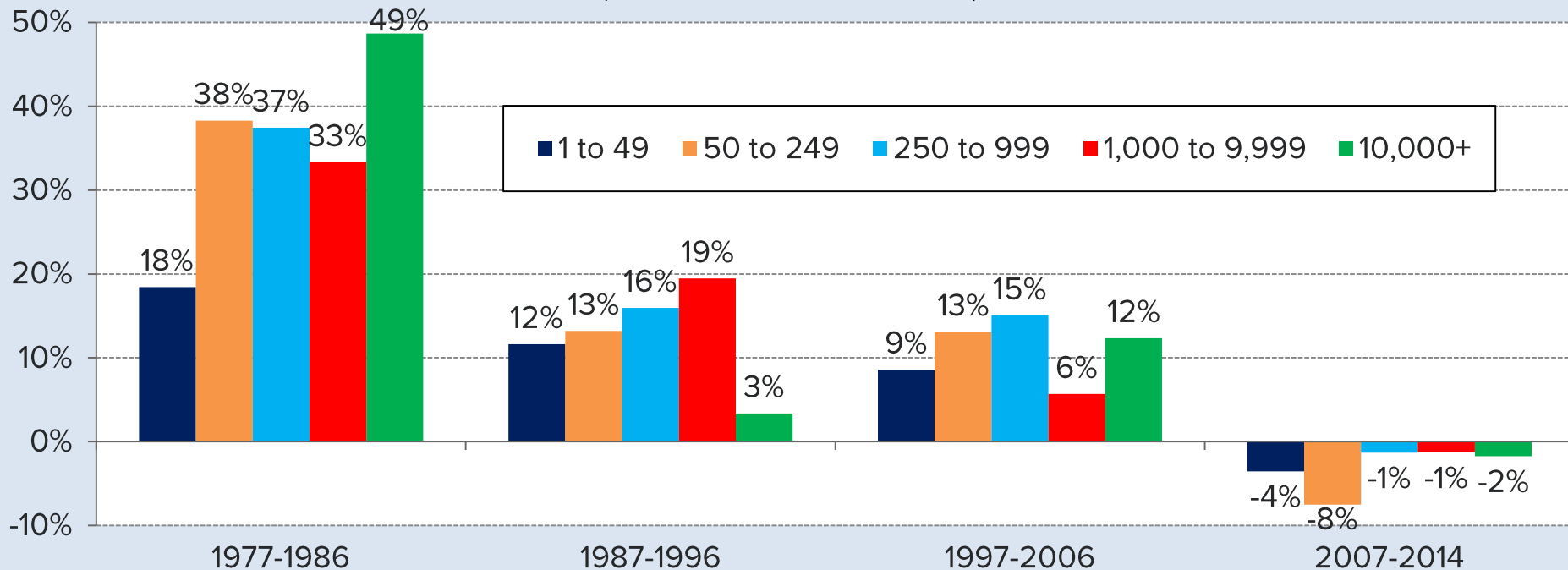
Distribution of U.S. Employees by Firm Size* (1977 vs. 2014)



* Covers U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

SMALL FIRM GROWTH LAGS IN EVERY DECADE

Percentage Growth in Number of Firms by Firm Size* (Various Years)



* Covers U.S. domestic firms of all types (corporations, LLCs, partnerships), excluding only sole proprietorships and the unincorporated self-employed.

DECLINING TURNOVER/TURBULENCE OF S&P 100 GIANTS

A. Why declining business dynamism matters: Slowing productivity growth

B. Nine indicators of declining business dynamism

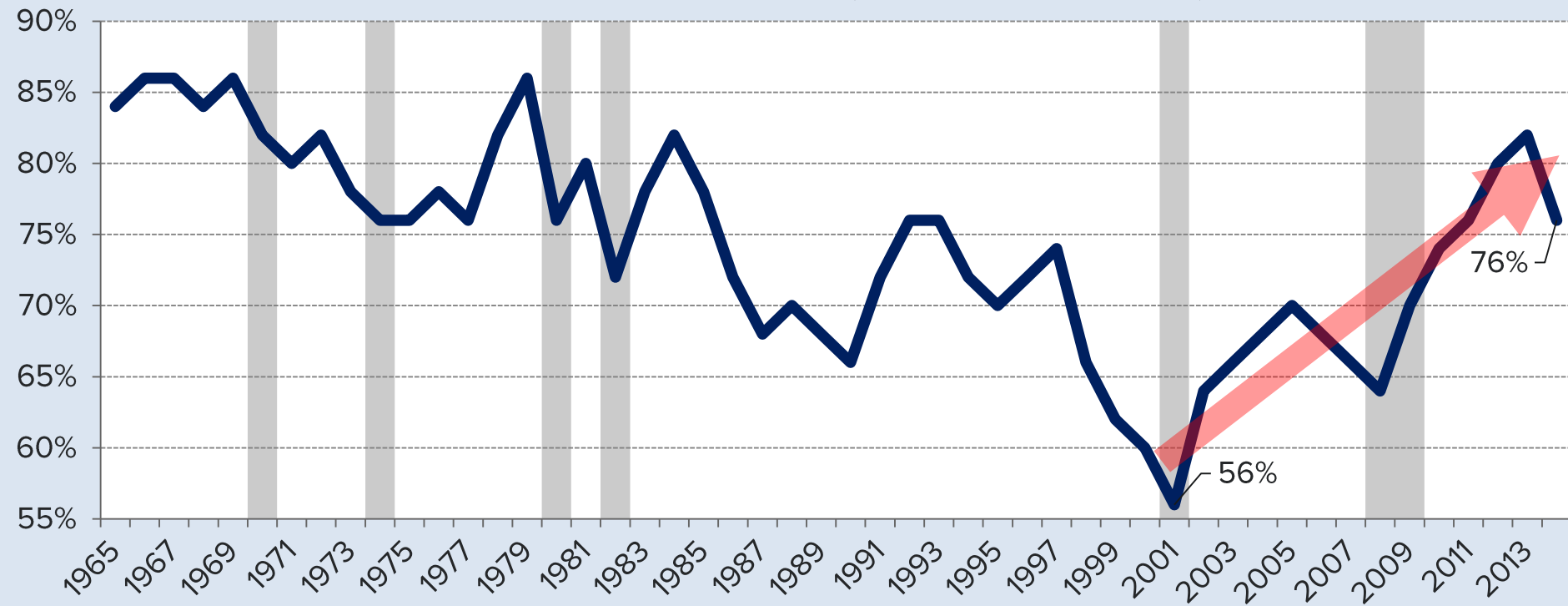
- 1) declining rates of job creation and destruction
- 2) declining rates of job churn and geographic mobility
- 3) declining rates of company start-ups and firm turnover
- 4) declining number of total firms and (especially) listed firms
- 5) growing age and size of typical firm
- 6) declining turnover/turbulence in S&P 100 giants
- 7) weakening firm response to productivity gaps
- 8) rising market concentration
- 9) a widening divide between winners and losers

C. Possible causes of decline

D. Implications for policy and for market performance

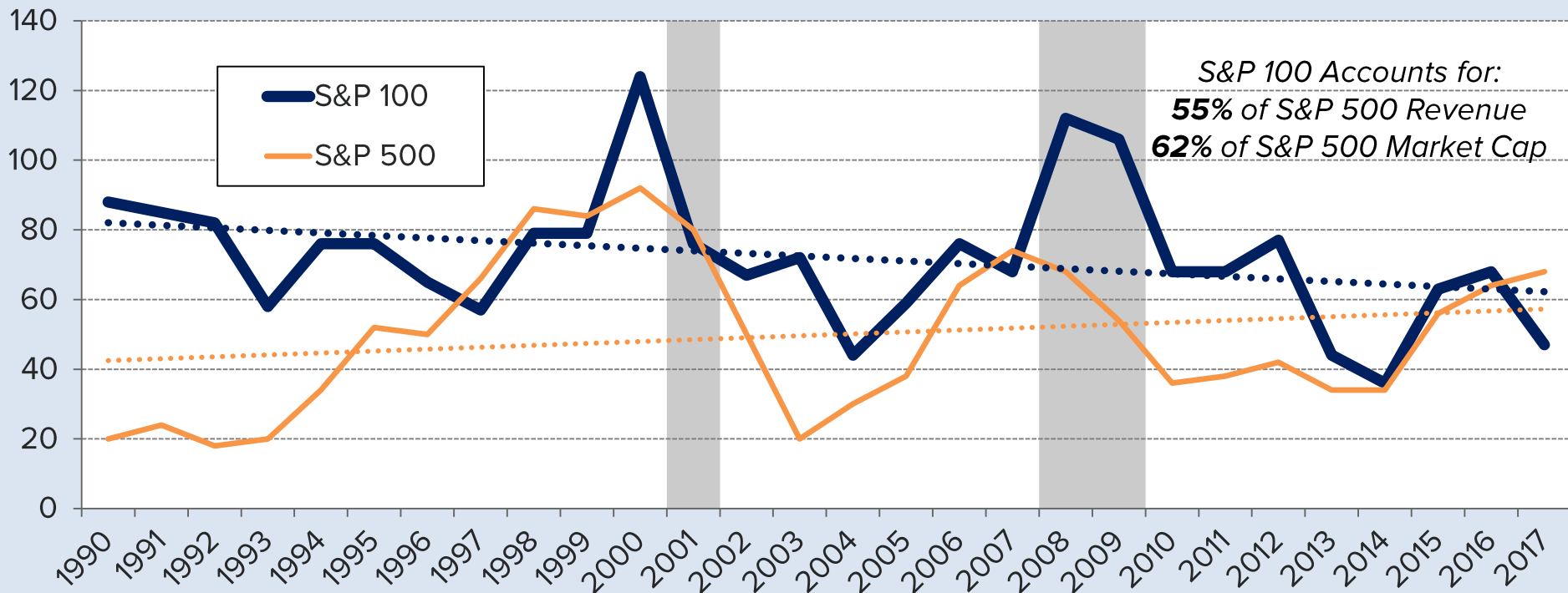
YESTERDAY'S WINNERS ARE STILL WINNING

Share of Top 50 U.S. Firms by Revenue In the Top 50 Five Years Before (1965 to 2014)



LESS TURNOVER AMONG S&P 100 GIANTS

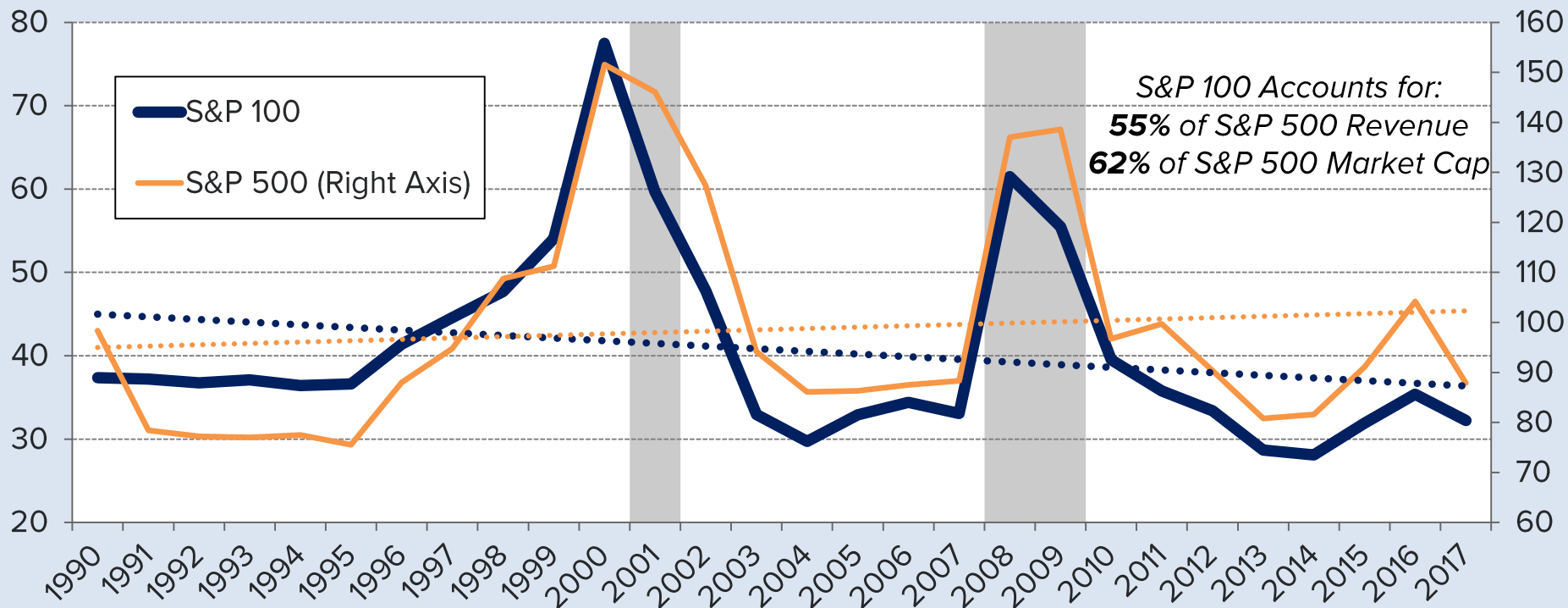
S&P 100 and S&P 500 Turnover* (1990 to 2017)



* Defined as the number of firms that join the index plus the number of firms that leave the index in a given year.

LESS TURBULENCE AMONG S&P 100 GIANTS

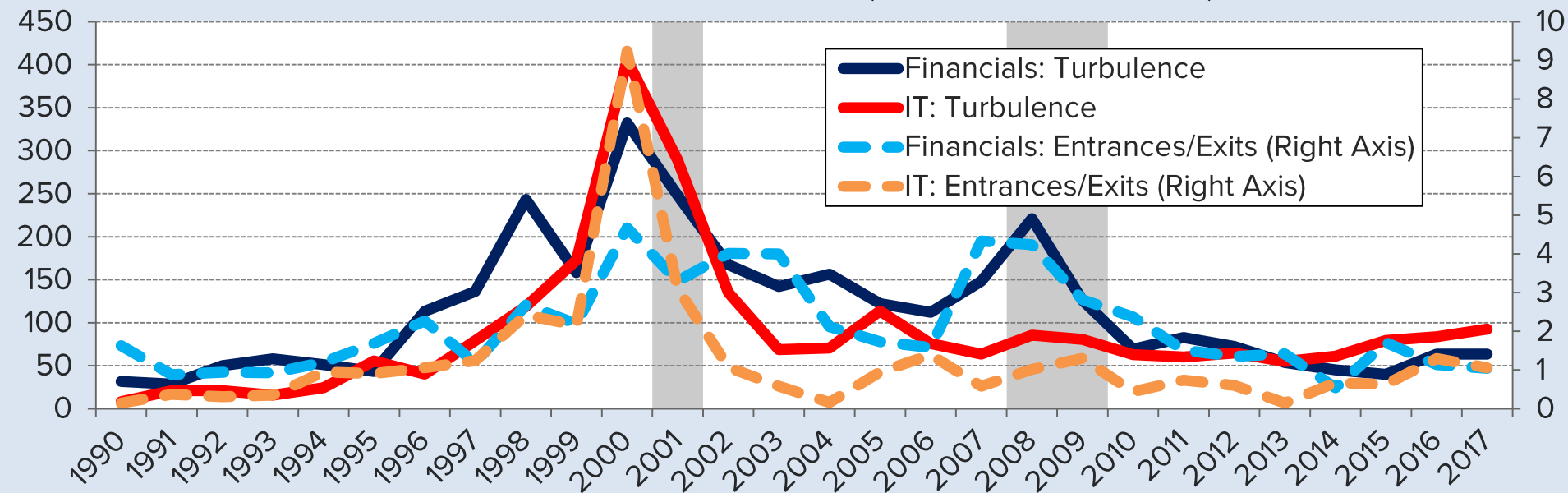
S&P 100 and S&P 500 Average Turbulence* (1990 to 2017)



* Defined as the average number of spots that a member firm moved up or down within the index compared to the previous year.

LESS TURBULENCE/TURNOVER IN MOST SECTORS

S&P 100 Turbulence* and Turnover** for Selected Sectors (1990 to 2017)

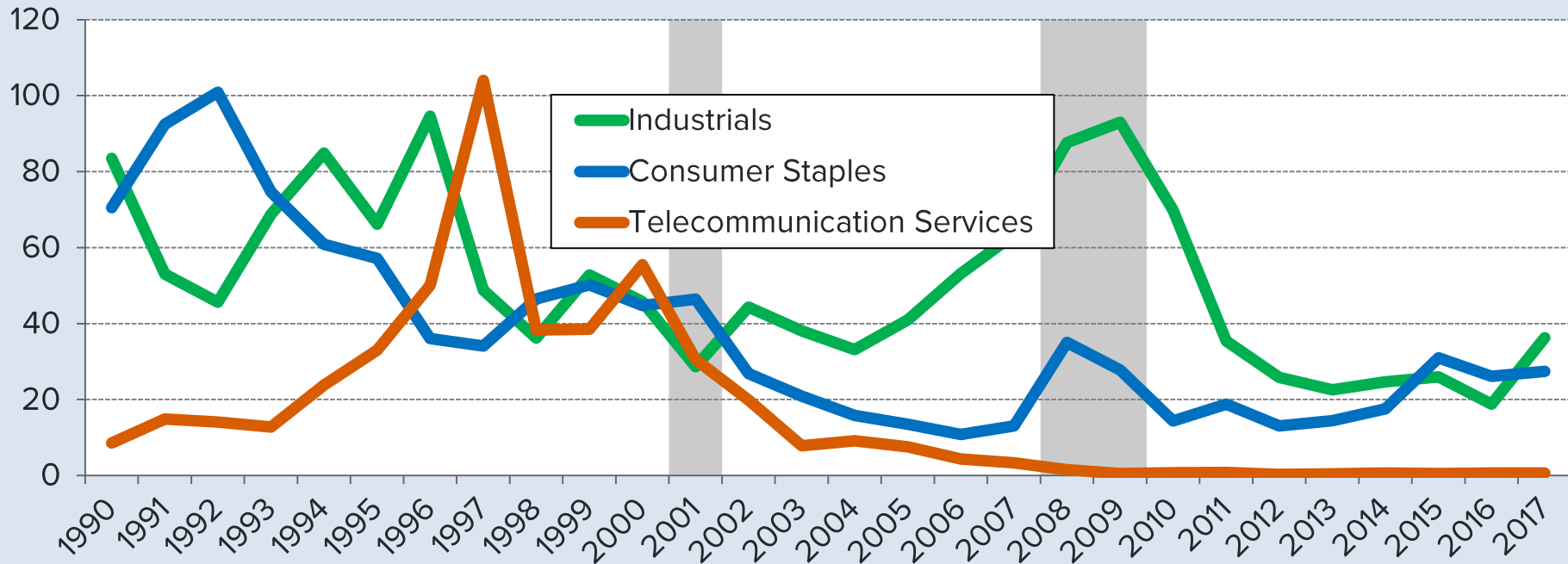


* Defined as the absolute number of spots that a firm moved up or down within the S&P 100 compared to the previous year, combined for every sector firm in the S&P 100 and weighted by the sector's share of the overall S&P 100.

** Defined as the number of sector firms that join the S&P 100 plus the number of firms that leave the S&P 100 in a given year, weighted by the sector's share of the overall S&P 100.

LESS TURBULENCE/TURNOVER IN MOST SECTORS

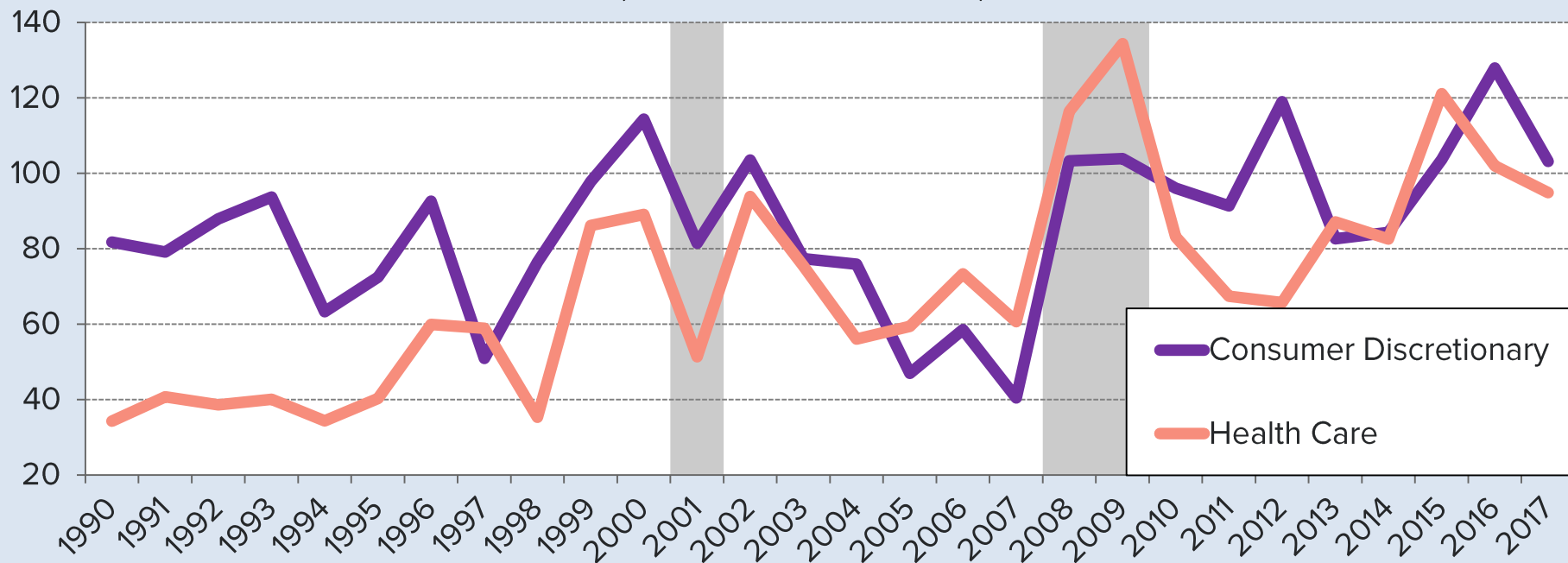
S&P 100 Turbulence* for Selected Sectors (1990 to 2016)



* Defined as the absolute number of spots that a firm moved up or down within the S&P 100 compared to the previous year, combined for every sector firm in the S&P 100 and weighted by the sector's share of the overall S&P 100.

EXCEPTIONS TO THE RULE

S&P 100 Turbulence* for Selected Sectors (1990 to 2016)



* Defined as the absolute number of spots that a firm moved up or down within the S&P 100 compared to the previous year, combined for every sector firm in the S&P 100 and weighted by that sector's share of the overall S&P 100.

WEAKENING FIRM RESPONSE TO PRODUCTIVITY GAPS

A. Why declining business dynamism matters: Slowing productivity growth

B. Nine indicators of declining business dynamism

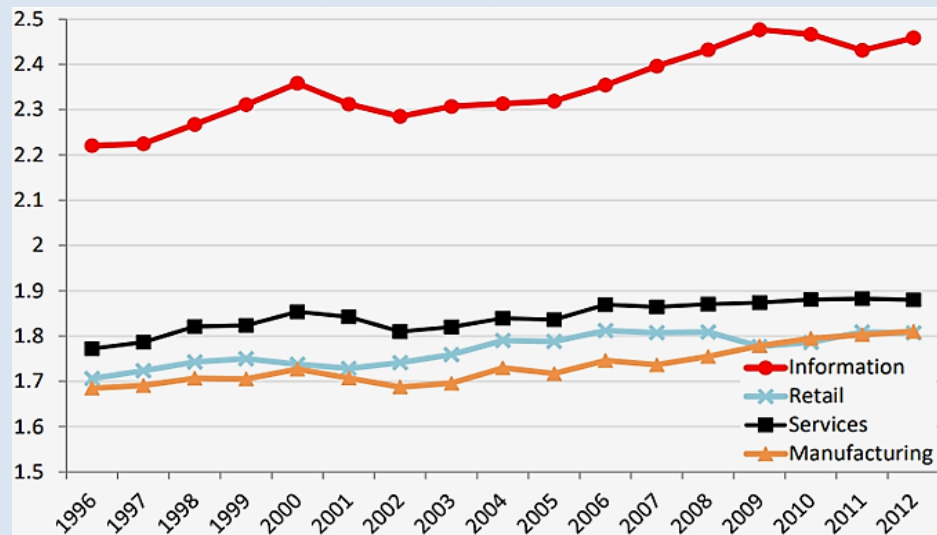
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- 9) a widening divide between winners and losers

C. Possible causes of decline

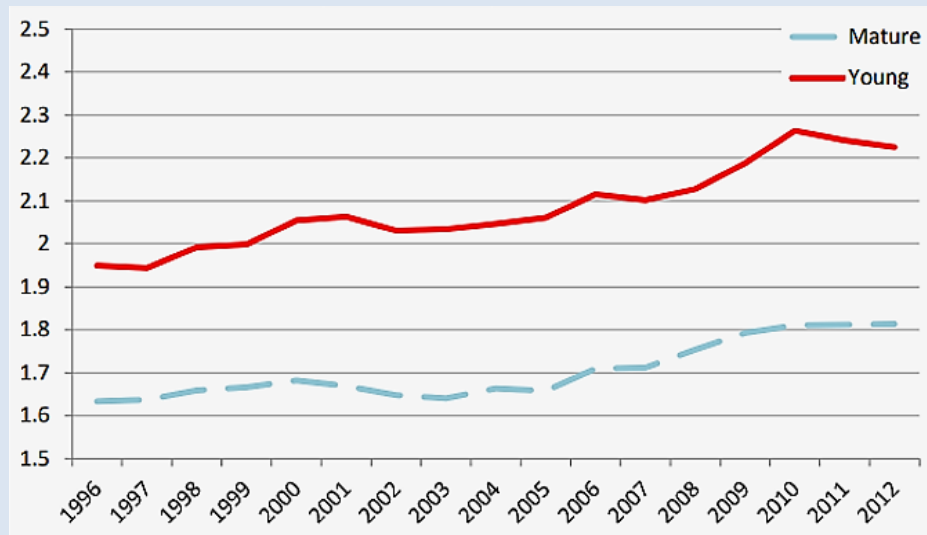
D. Implications for policy and for market performance

INTRA-INDUSTRY PRODUCTIVITY GAPS ARE RISING...

Within-Industry Labor Productivity Dispersion by Sector* (1996 to 2012)



Within-Industry Labor Productivity Dispersion Among High-Tech Firms**, by Firm Age (1996 to 2012)

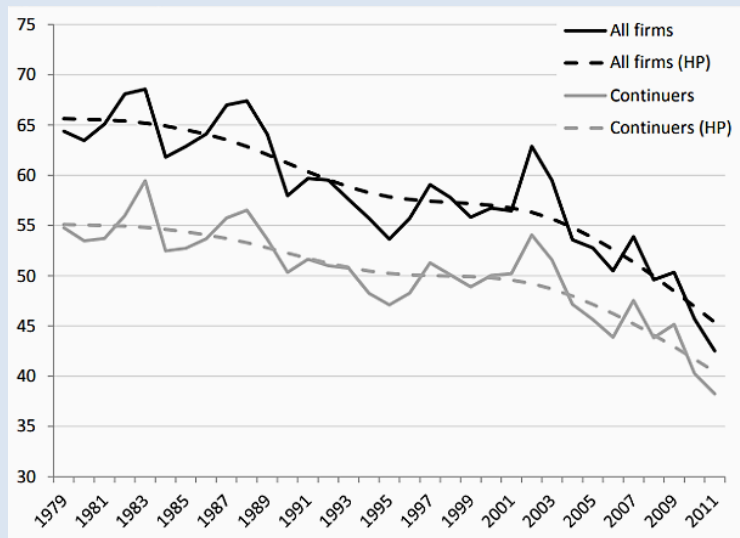


* Measures the difference in productivity growth between the 90th percentile vs. 10th percentile of firms (in terms of productivity growth) each year.

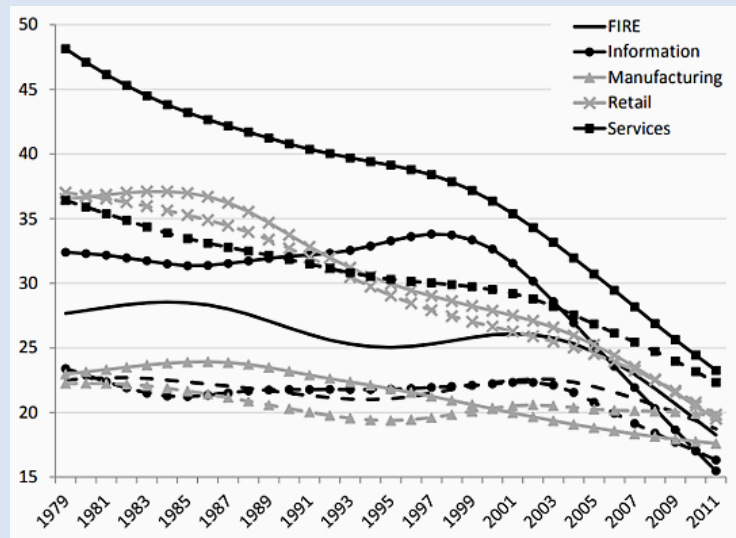
** Defined as firms with a high proportion of science, engineering, and technician occupations.

... BUT THE EMPLOYMENT RESPONSE IS DECLINING...

“90-10 Gap” in Firm Employment Growth Rates by Firm Type (1979 to 2011)*



“90-50 Gap” and “50-10 Gap” in Firm Employment Growth Rates by Sector (1979 to 2011)**^



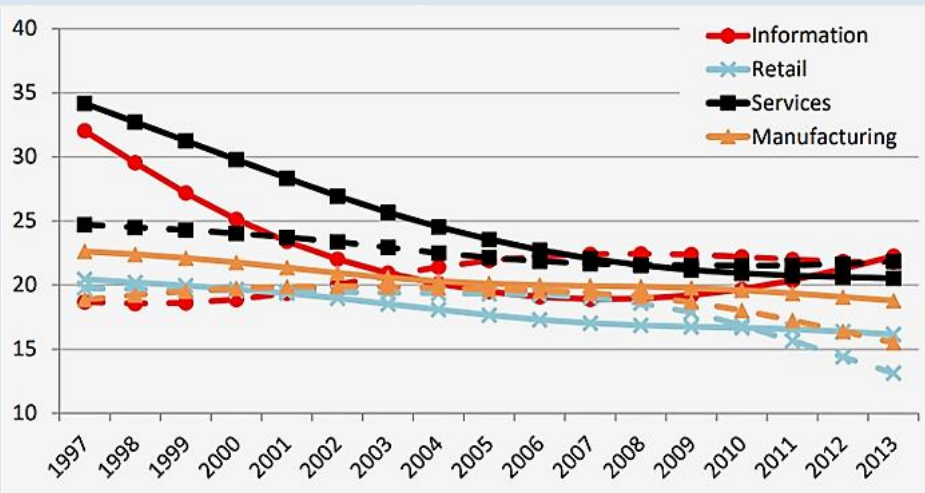
* “90-10 gap” measures the difference in employment growth of 90th percentile firms vs. 10th percentile firms (in terms of employment growth) each year.

** “90-50 gap” measures the difference in employment growth of 90th percentile firms vs. 50th percentile firms (in terms of employment growth) each year. “50-10 gap” measures the difference in employment growth of 50th percentile firms vs. 10th percentile firms (in terms of employment growth) each year.

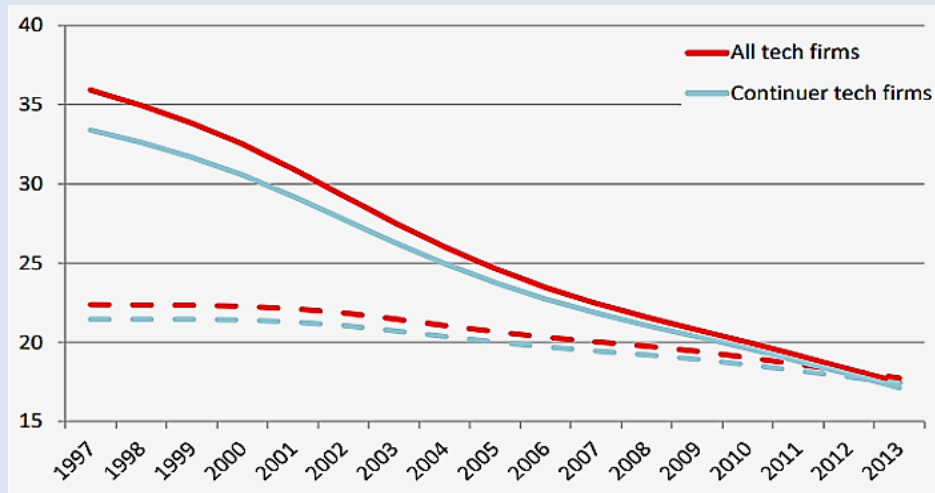
^ Solid lines indicate 90-50 gap; dashed lines indicate 50-10 gap.

... AS IS THE REVENUE RESPONSE

“Skewness” in Firm Real Revenue Growth Rates* by Sector (1997 to 2013)



“Skewness” in Firm Real Revenue Growth Rates* Among High-Tech Firms** (1997 to 2013)



* Measures the difference in real revenue growth between top-tier and bottom-tier firms (in terms of revenue growth) each year. Solid lines indicate differential between 90th-percentile and 50th-percentile firms; dashed lines indicate differential between 50th-percentile and 10th-percentile firms.

** Defined as firms with a high proportion of science, engineering, and technician occupations.

RISING MARKET CONCENTRATION

A. Why declining business dynamism matters: Slowing productivity growth

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C. Possible causes of decline

D. Implications for policy and for market performance

FLOOD OF NEW “MONOPOLY” BOOKS ON THE MARKET



EVEN BUSINESS-FRIENDLY EXPERTS ARE COMING AROUND

- ❑ “Many of today’s boldest thinkers across the ideological spectrum think the economy’s most serious malady isn’t inequality, populism or big government: it’s monopoly.”
–**Greg Ip in *The Wall Street Journal* (6/13/2018)**

- ❑ Profits have risen in most rich countries over the past ten years but the increase has been biggest for American firms. Coupled with an increasing concentration of ownership, this means the fruits of economic growth are being hoarded... High profits across a whole economy can be a sign of sickness. They can signal the existence of firms more adept at siphoning wealth off than creating it afresh, such as those that exploit monopolies.” –***The Economist* (5/15/2017)**

- ❑ “Concerns over rising concentration in the American economy have become increasingly prevalent among economists, policymakers, and investors over the past year. But is the notion that America has a concentration problem supported by empirical evidence? This, said economists during the opening panel of the Stigler Center’s conference on concentration in America, appears to be the case.”
–***promarket.org* (3/31/2017)**

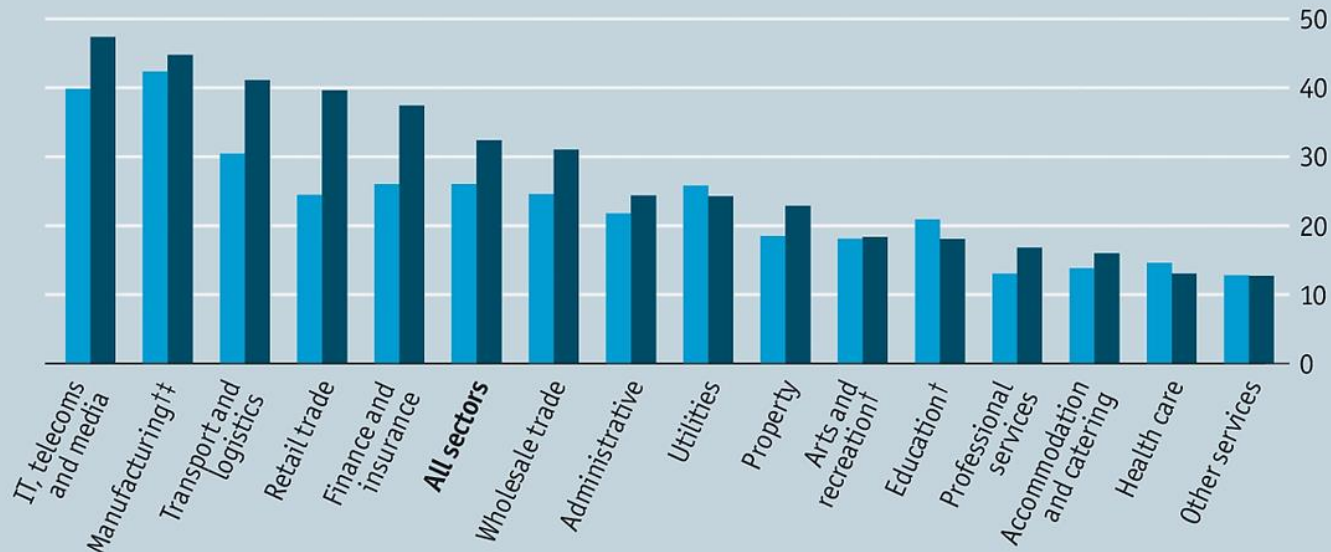
MARKET CONCENTRATION RISING IN MOST SECTORS

More to fewer

Top four firms' average share of total revenue, %
United States, across 893 industries, grouped by sector*

1997

2012



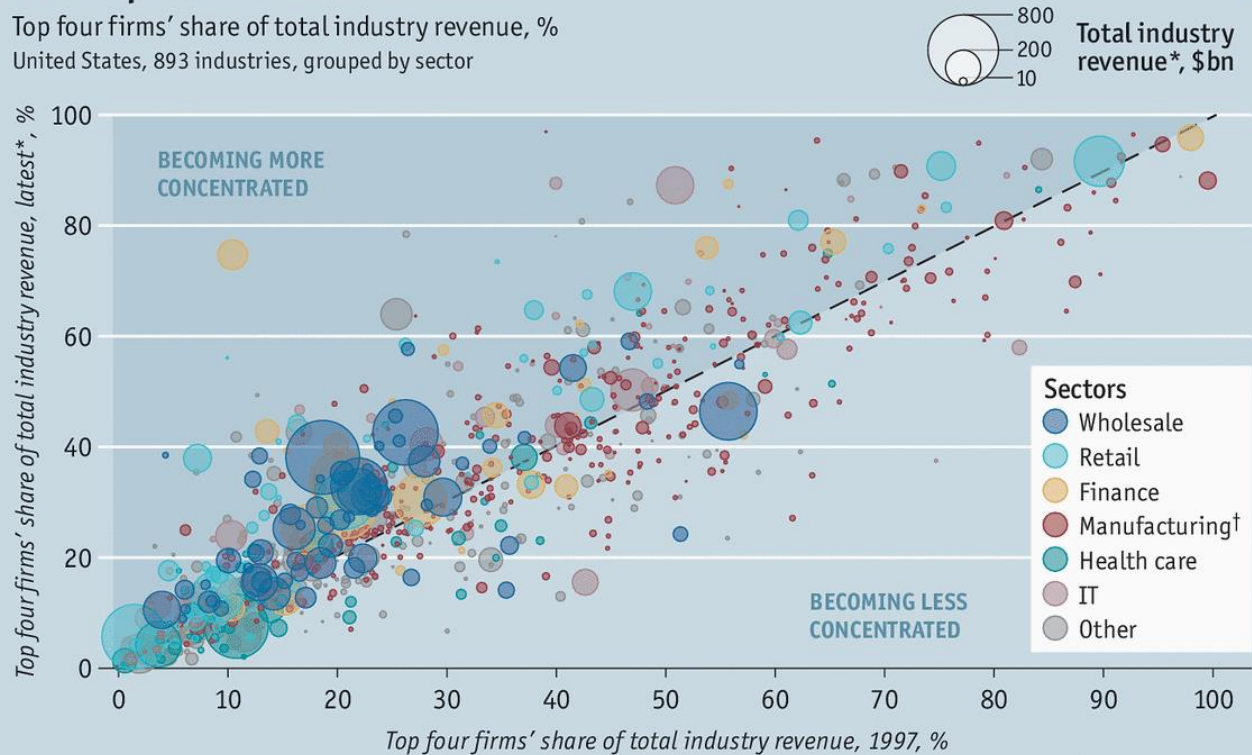
Sources: US Census Bureau; *The Economist*

*Weighted-average †2007 ‡By valued-added

MARKET CONCENTRATION RISING IN MOST SECTORS

A widespread effect

Top four firms' share of total industry revenue, %
United States, 893 industries, grouped by sector

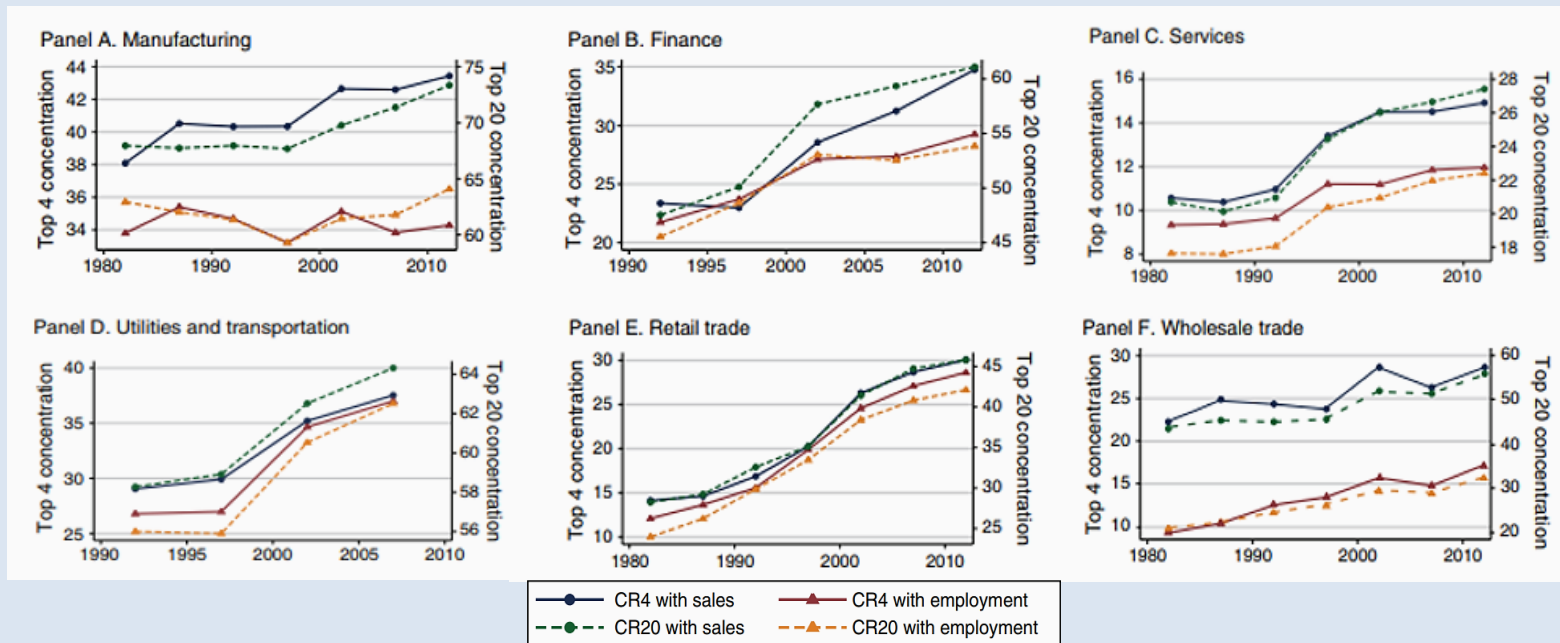


Sources: US Census Bureau; *The Economist*

*Latest available, 2007 or 2012 †By valued-added

MARKET CONCENTRATION RISING IN MOST SECTORS

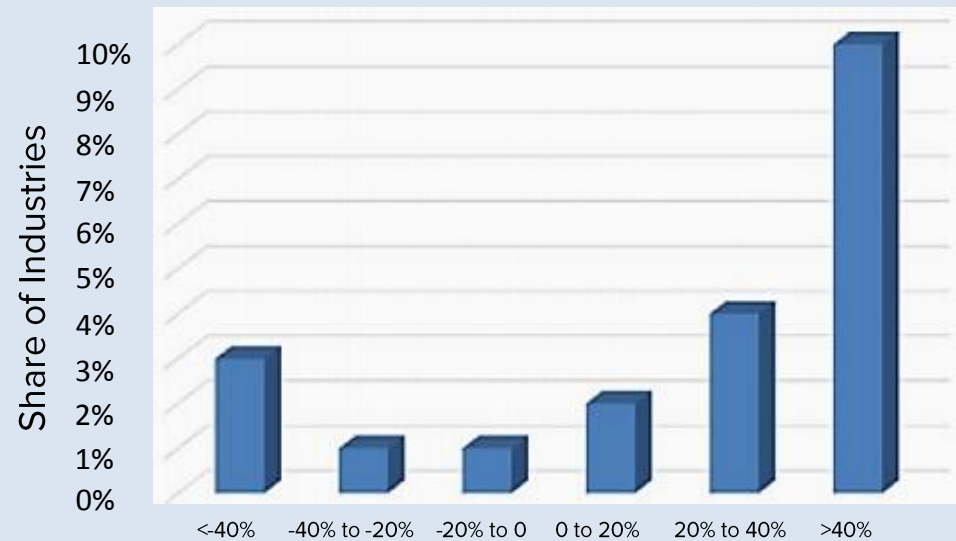
Average Top 4 Industry Concentration by Major Industry Group (1982 to 2012)



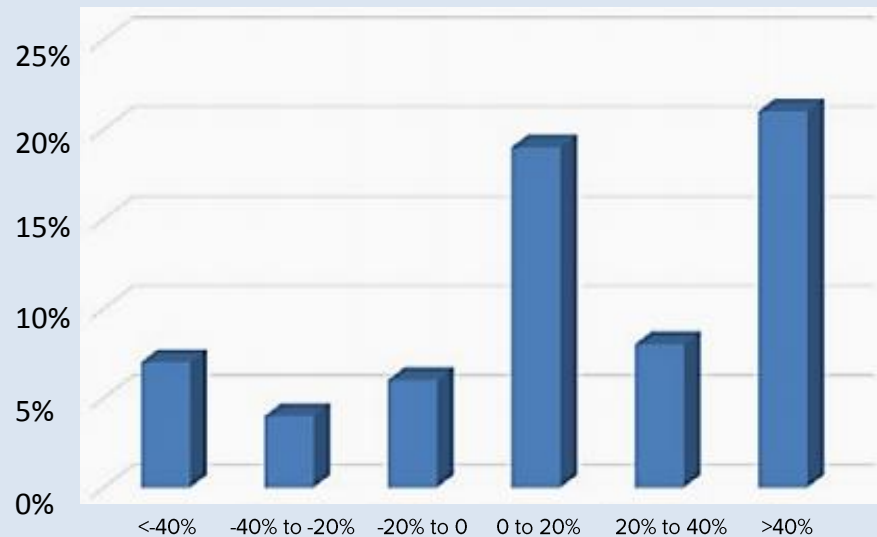
* Concentration measured using total sales for all firms in a given industry each year.

LEADERS' MARKET SHARE IS GROWING FOR ALL FIRMS...

**Change in Industry HHI*
(1997 to 2012)**



**Change in the Share of the Industry's
Largest Four Firms (1997 to 2012)**

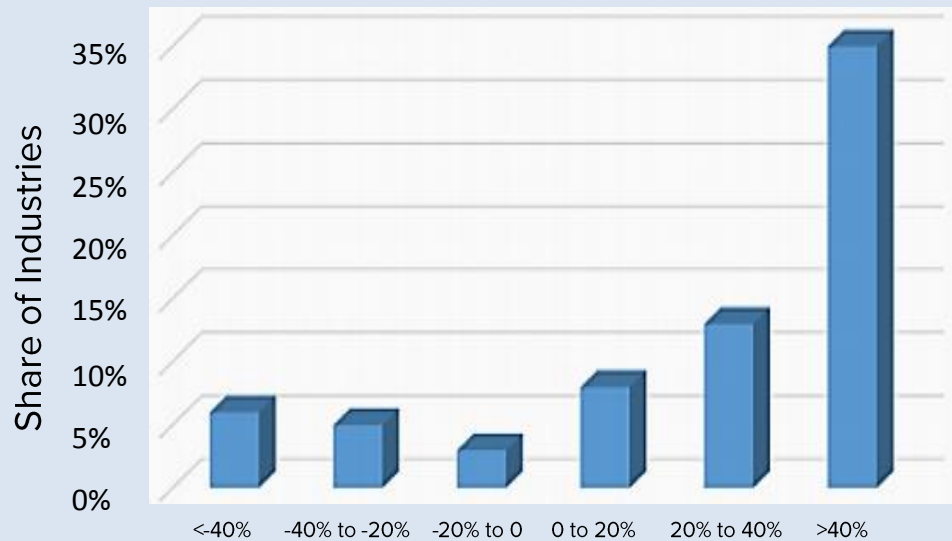


Change Since 1997

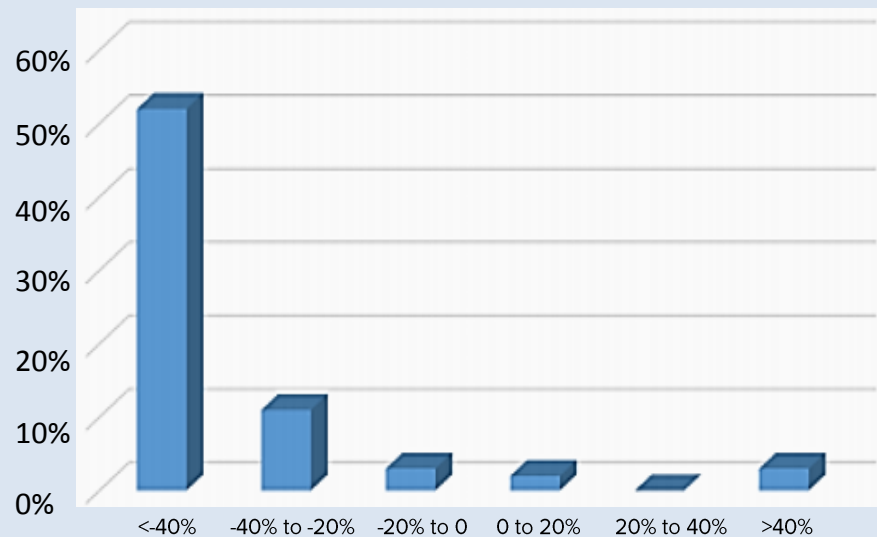
* Herfindahl-Hirschman Index is a commonly accepted measure of market concentration. Calculated using Census data for all firms.

... AND FOR LISTED FIRMS

**Change in Industry HHI*
(1997 to 2012)**



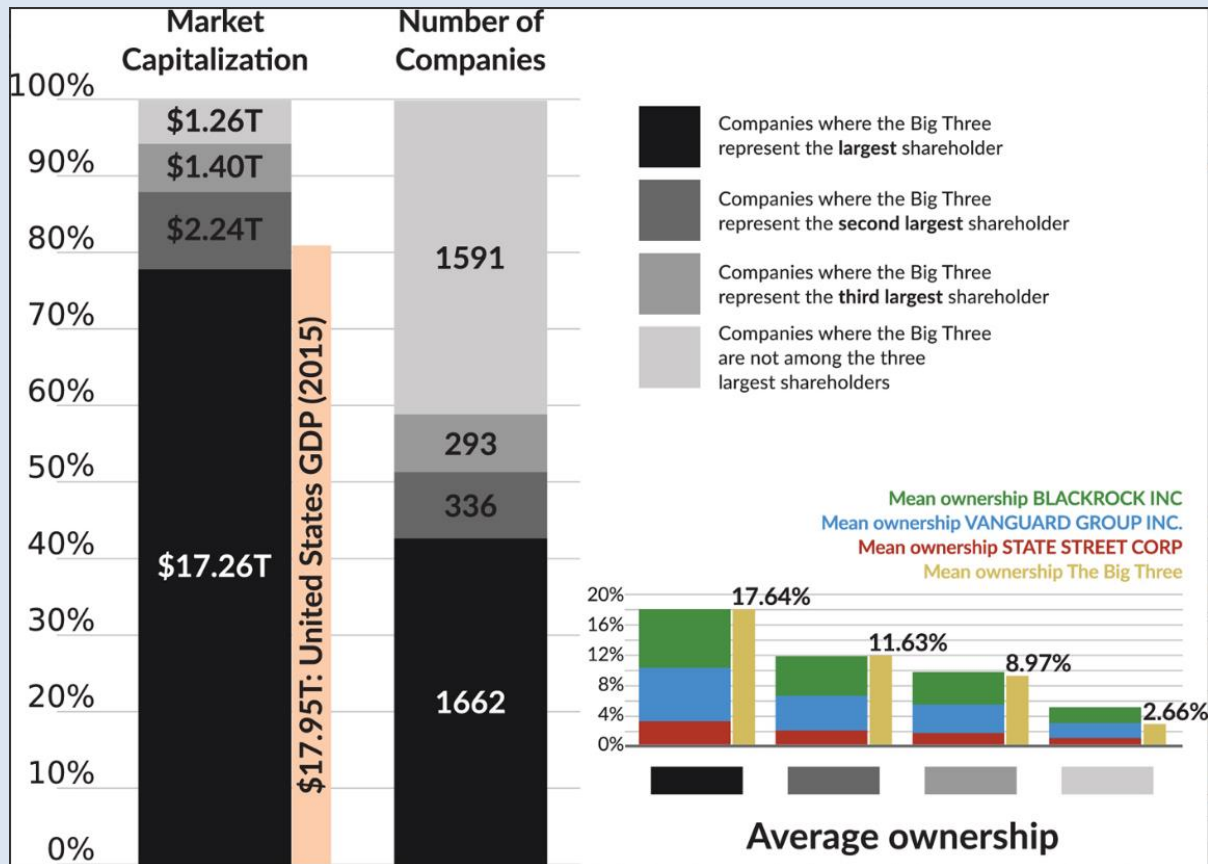
**Change in Number of Public Firms
(1997 to 2012)**



Change Since 1997

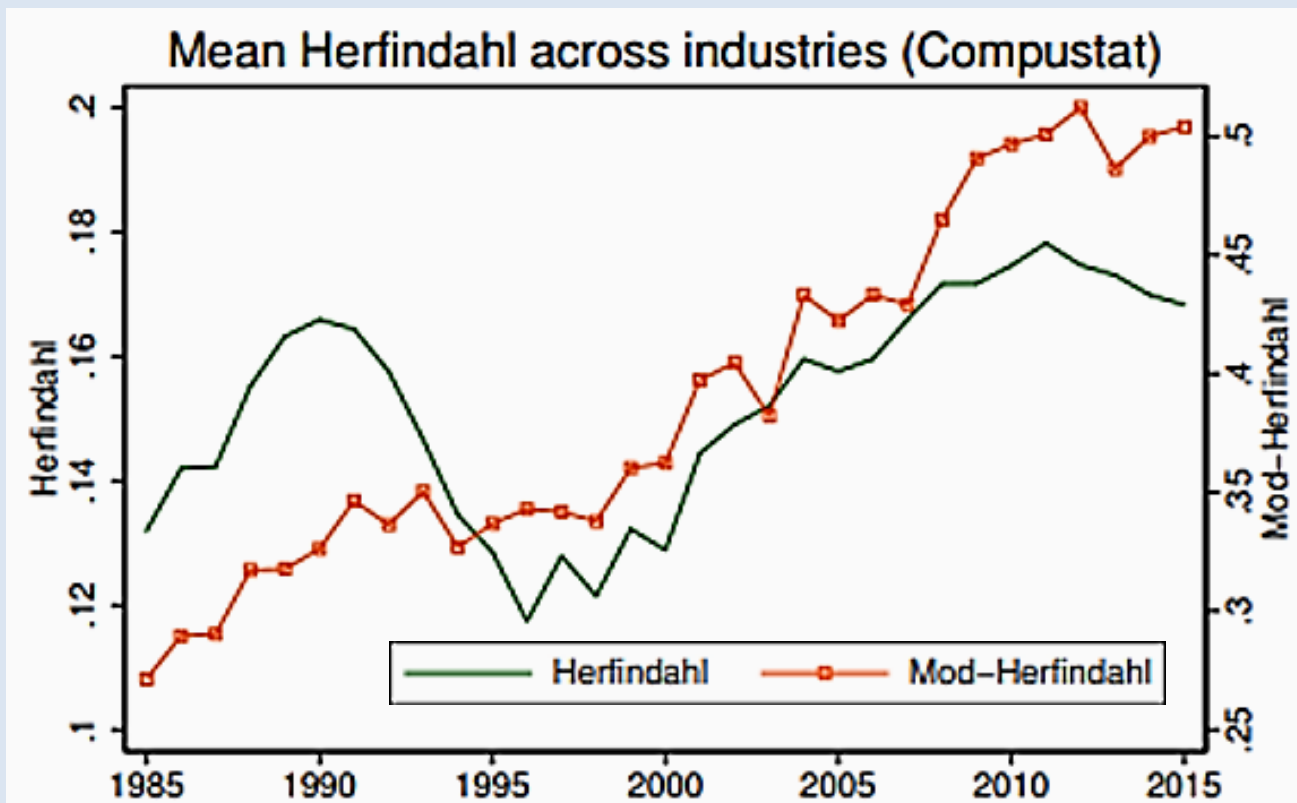
* Herfindahl-Hirschman Index is a commonly accepted measure of market concentration. Calculated using Compustat data.

PASSIVE INDEXING DISINCENTIVIZES COMPETITION



PARADOX OF TOTAL RISK DIVERSIFICATION: MAJOR PASSIVE INDEXES ARE BIGGEST OWNERS ACROSS EVERY INDUSTRY, COMPETING AGAINST... WHOM?

COMMON OWNERSHIP EQUALS MORE CONCENTRATION



* “Mod-Herfindahl” includes an adjustment to account for common ownership.

A WIDENING DIVIDE BETWEEN WINNERS & LOSERS

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C. Possible causes of decline

D. Implications for policy and for market performance

A WIDENING DIVIDE BETWEEN WINNERS & LOSERS

- ❑ **Widening Dispersion of Firm ROAs**
- ❑ **Rise of Global “Superstars” with Persistent Productivity Advantage**
- ❑ **Overall Rise in Firm Profit Margins**
- ❑ **Concentration Correlated (by Industry) with Higher Tech & Falling Labor Share**
- ❑ **Overall Rise in Profit Share of GDP (and Decline in Labor Share)**
- ❑ **Weak Capex Despite Strong Valuations**
- ❑ **Widening Interfirm Wage Inequality**

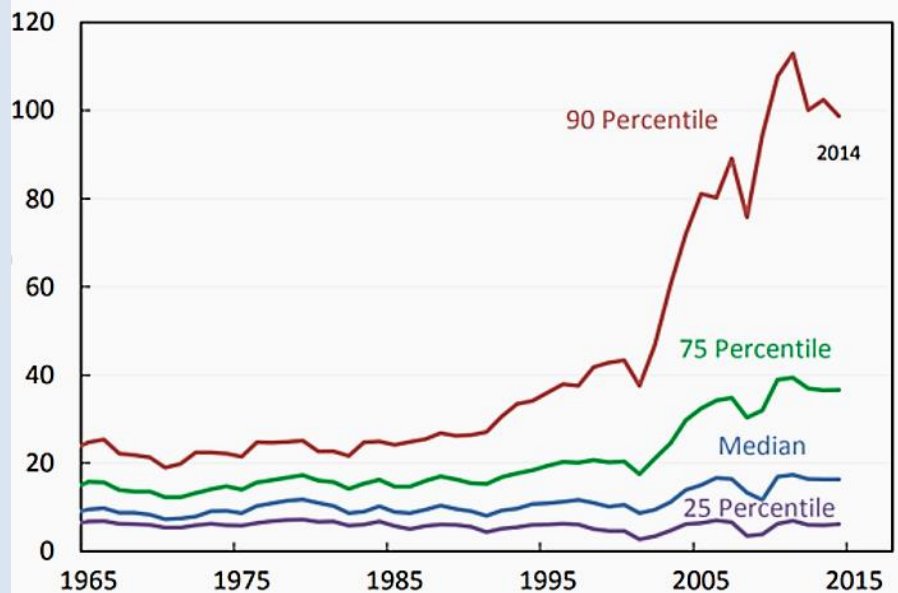
PROFITS RISING—ESPECIALLY FOR LEADING FIRMS



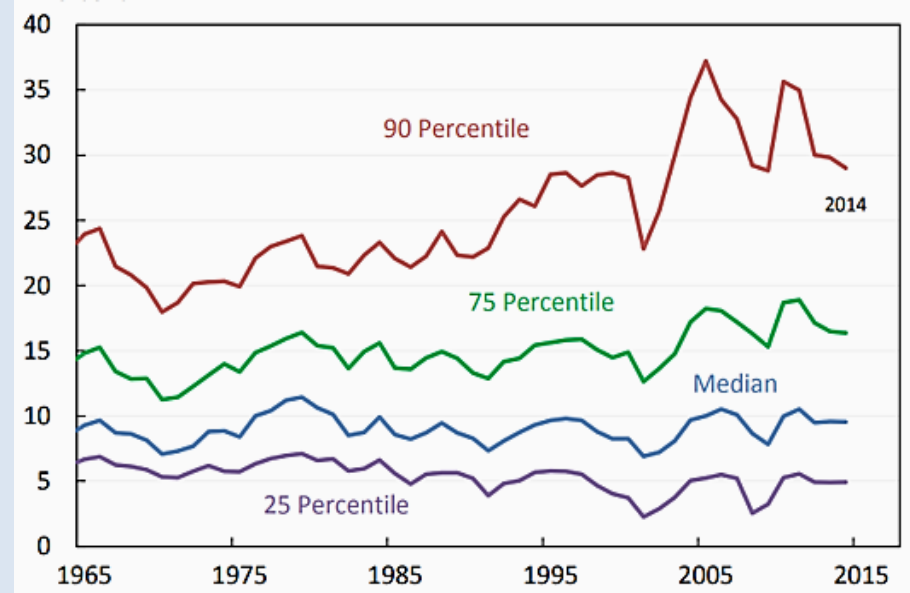
* Measures global return on capital among U.S. companies.

ROIC SOARING FOR TOP FIRMS, STAGNATING FOR THE REST

**Return on Invested Capital
(Excluding Goodwill) Among U.S. Public
Nonfinancial Firms (1965 to 2014)**

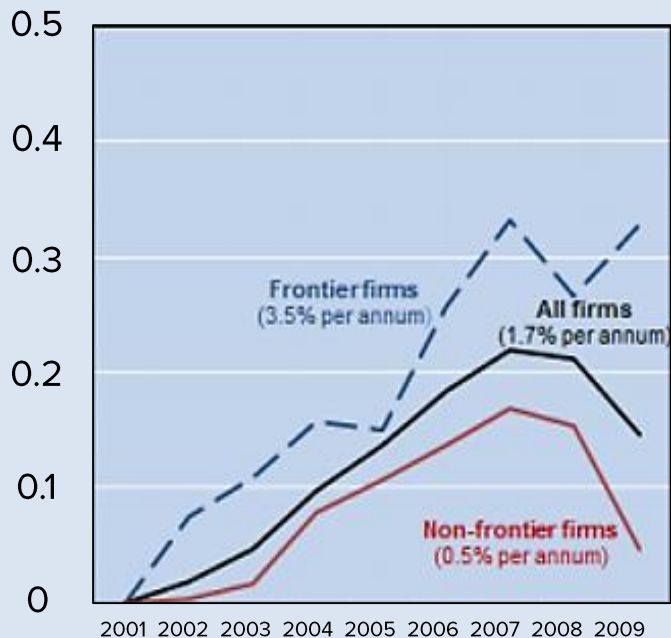


**Return on Invested Capital
(Including Goodwill) Among U.S. Public
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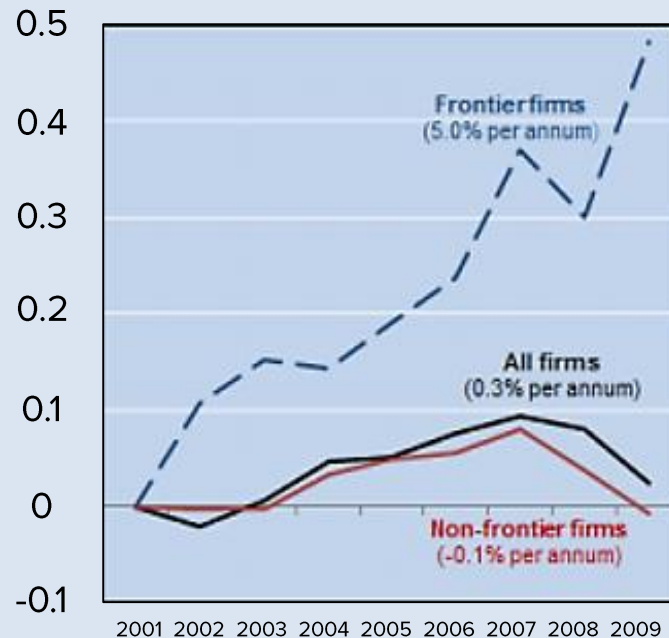


THE RISE OF GLOBAL “SUPERSTAR” FIRMS

Index: Manufacturing Sector
Productivity by Firm Tier* (0 = 2001)



Index: Services Sector
Productivity by Firm Tier* (0 = 2001)

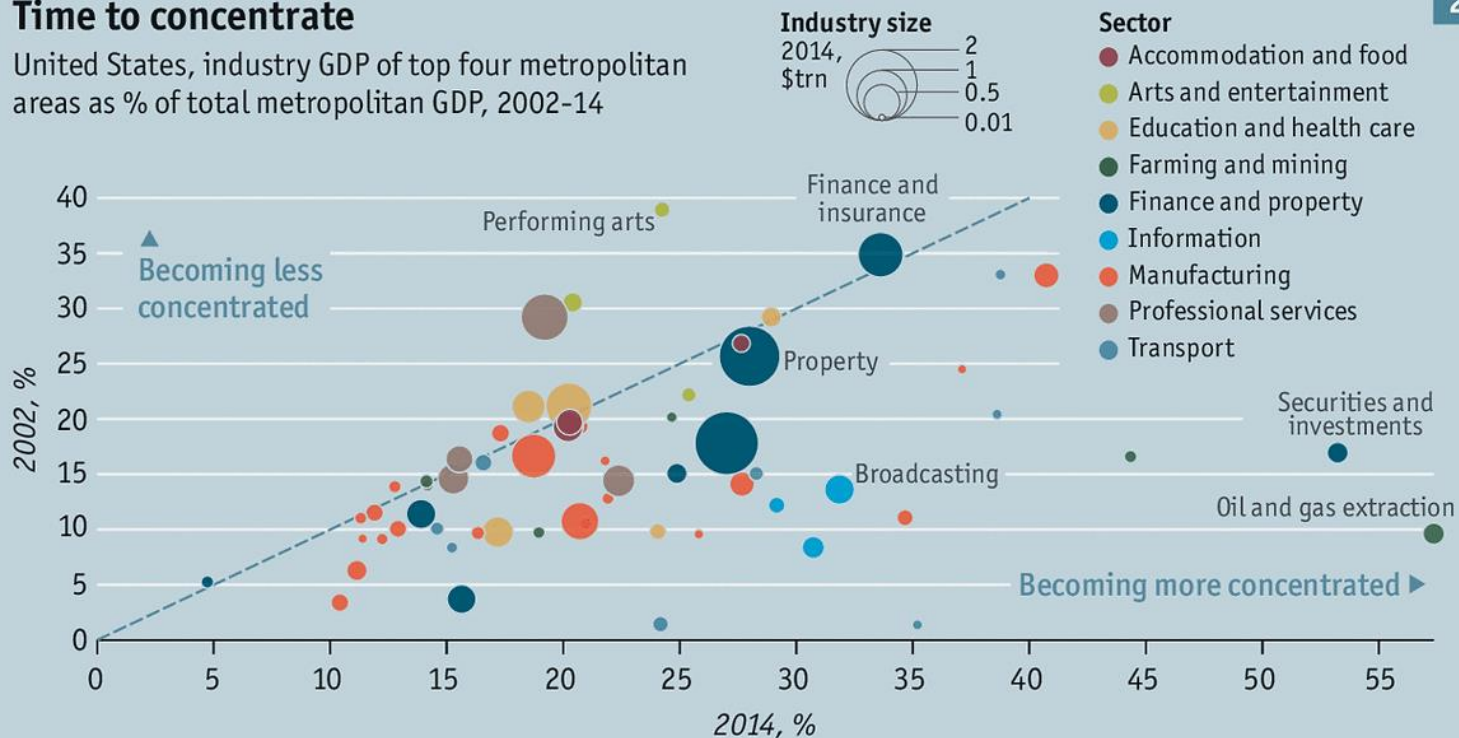


* “Frontier firms” are the 100 most productive global firms in each sector. “Non-frontier firms” is the average of all other firms.

THE RISE OF “SUPERSTAR” METRO AREAS

Time to concentrate

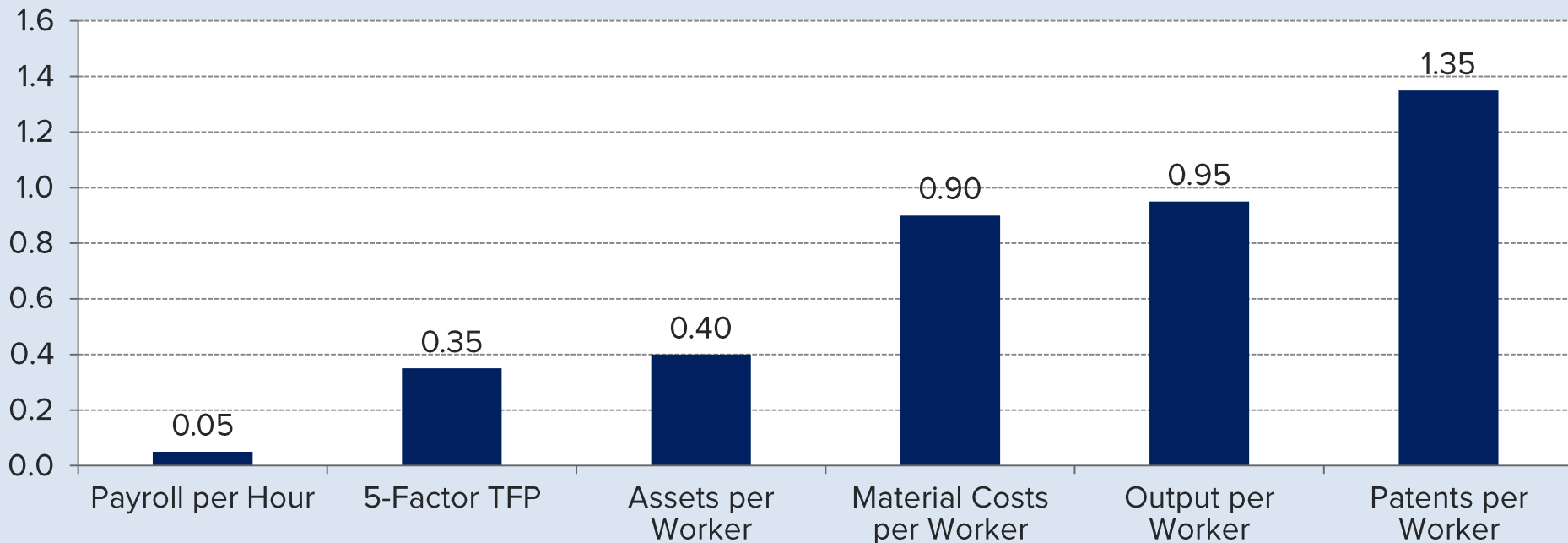
United States, industry GDP of top four metropolitan areas as % of total metropolitan GDP, 2002-14



Sources: Bureau of Economic Analysis; *The Economist*

INNOVATION, PATENTS, & CONCENTRATION GO TOGETHER

Correlation Between Industry Concentration and Various Industry Characteristics (1982 to 2012)*^

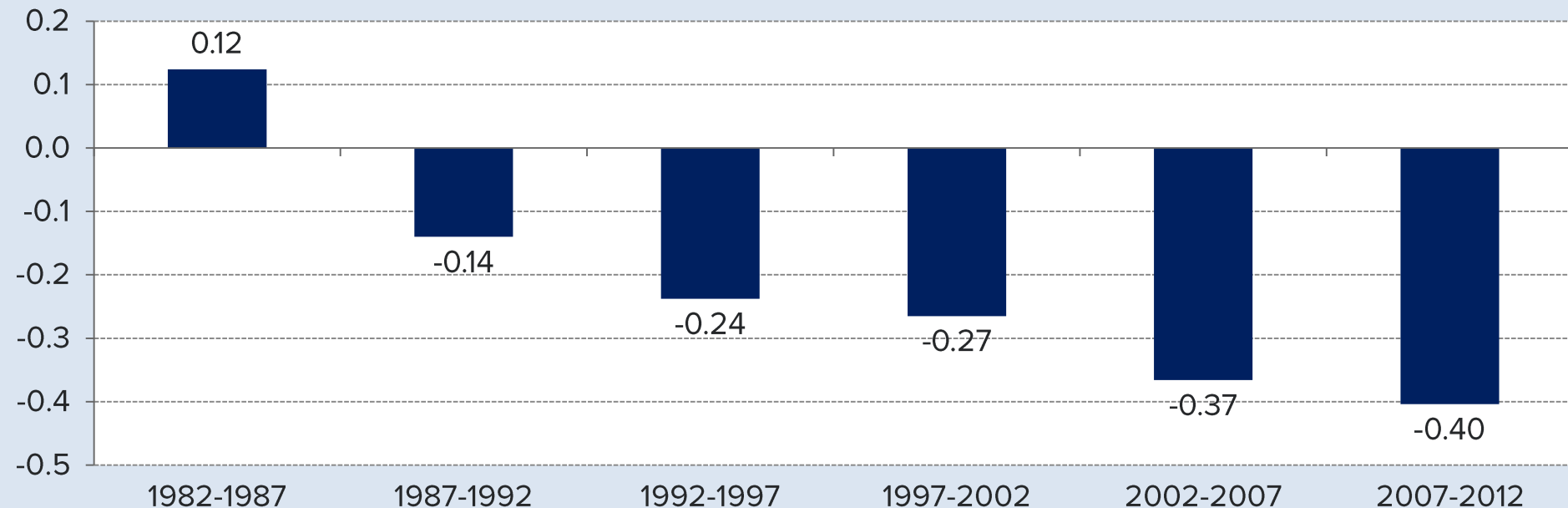


* Estimated data.

^ Correlations based on four-digit manufacturing industries and include pooled five-year changes from 1982 to 2012.

TODAY, RISING CONCENTRATION = FALLING LABOR SHARE

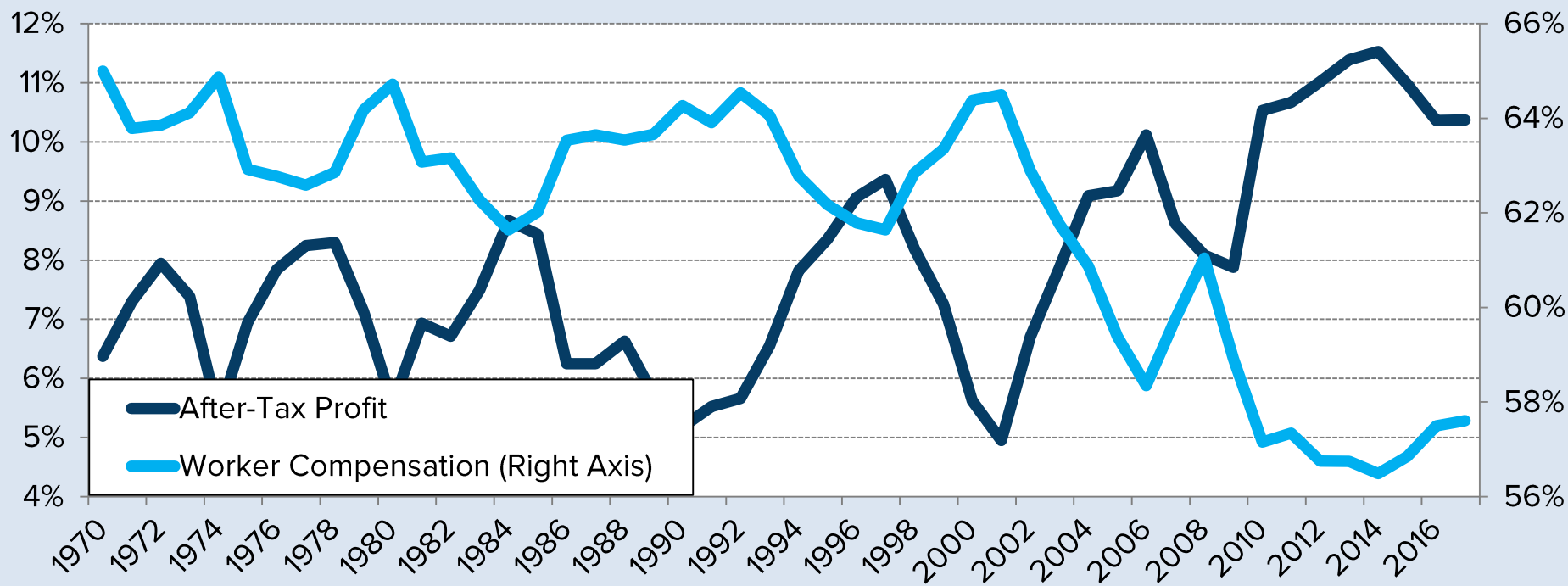
Correlation Between Industry Concentration and Labor Share* (Selected Years)



* Calculated by examining industries within the manufacturing sector over various five-year intervals. Negative correlation indicates that a rise in one variable coincides with a fall in the other.

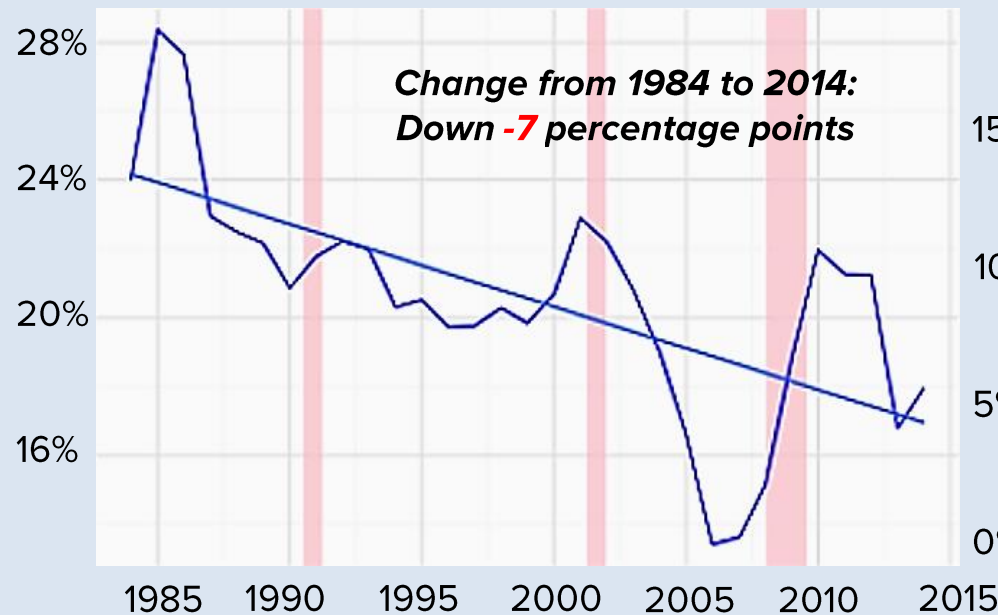
OVERALL, CAPITAL SHARE UP & LABOR SHARE DOWN...

After-Tax Profit and Worker Compensation as a Share of Domestic Value-Added of U.S. Corporations (1970 to 2017)

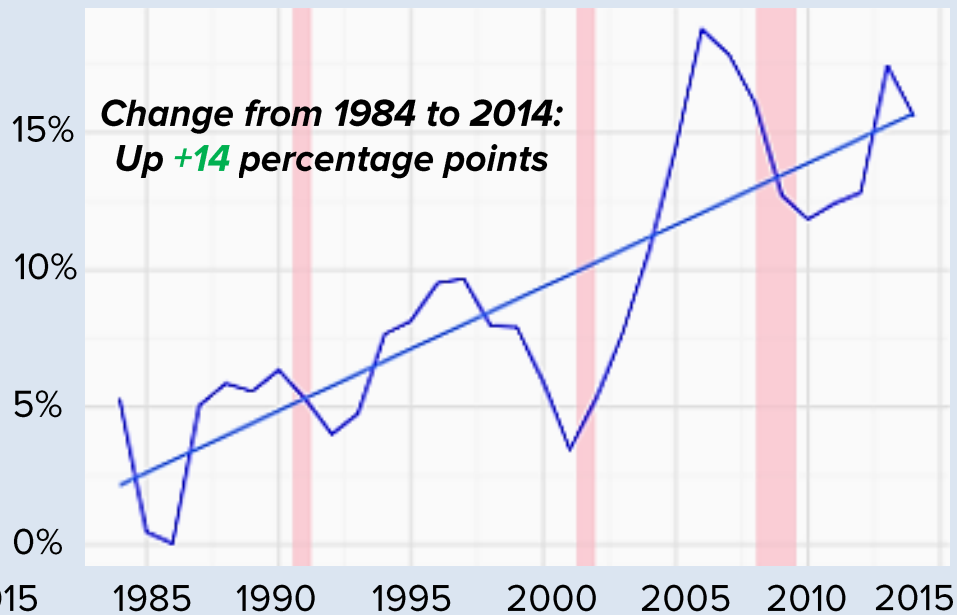


... AND MORE CAPITAL INCOME GOING TO PROFITS/RENT

“Capital-Cost” Share of U.S. Corporate Value Added*



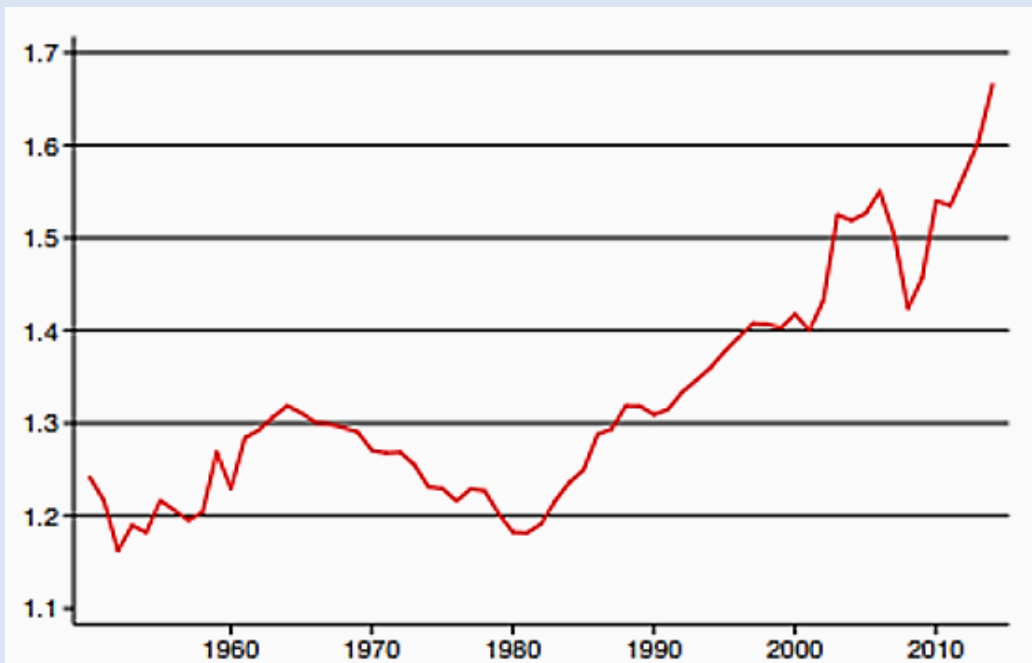
“Profit” Share of U.S. Corporate Value Added*



* Measures the share of gross value added for the U.S. non-financial corporate business sector.

PRICING POWER MAY TRANSLATE INTO HIGHER MARGINS

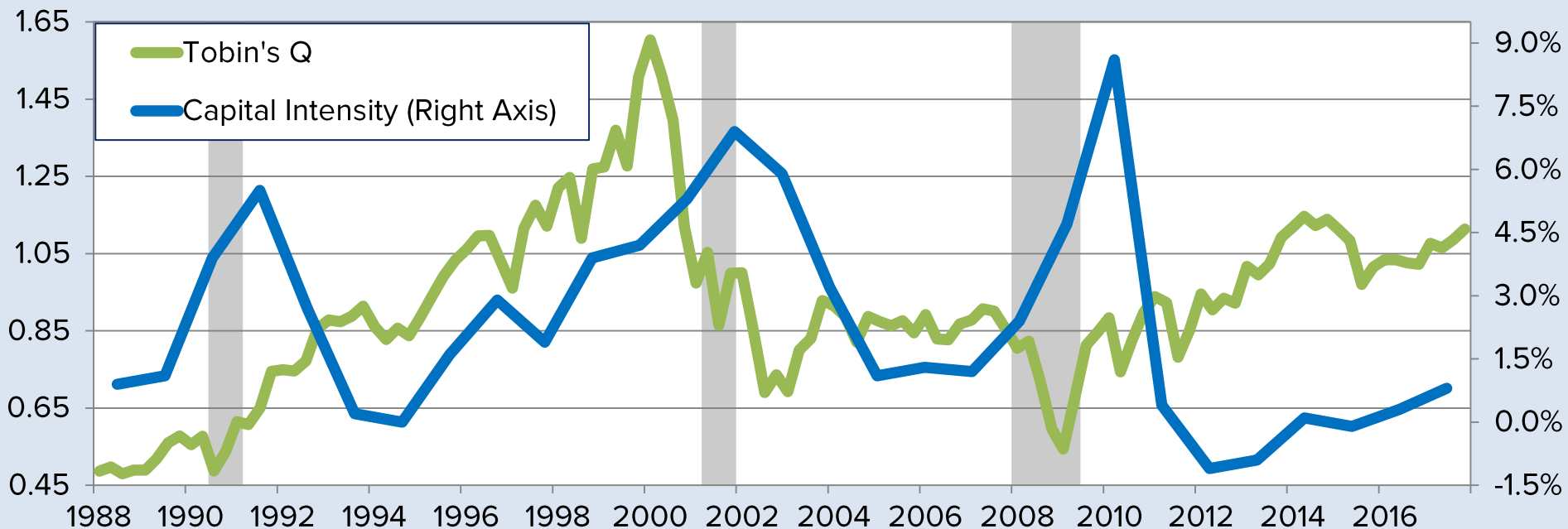
Weighted Average Markup* Throughout U.S. Economy (1960 to 2014)



* Defined as the amount charged by the average firm over cost, weighted by market share of sales.

CAPEX LAGS DESPITE RISING VALUATIONS

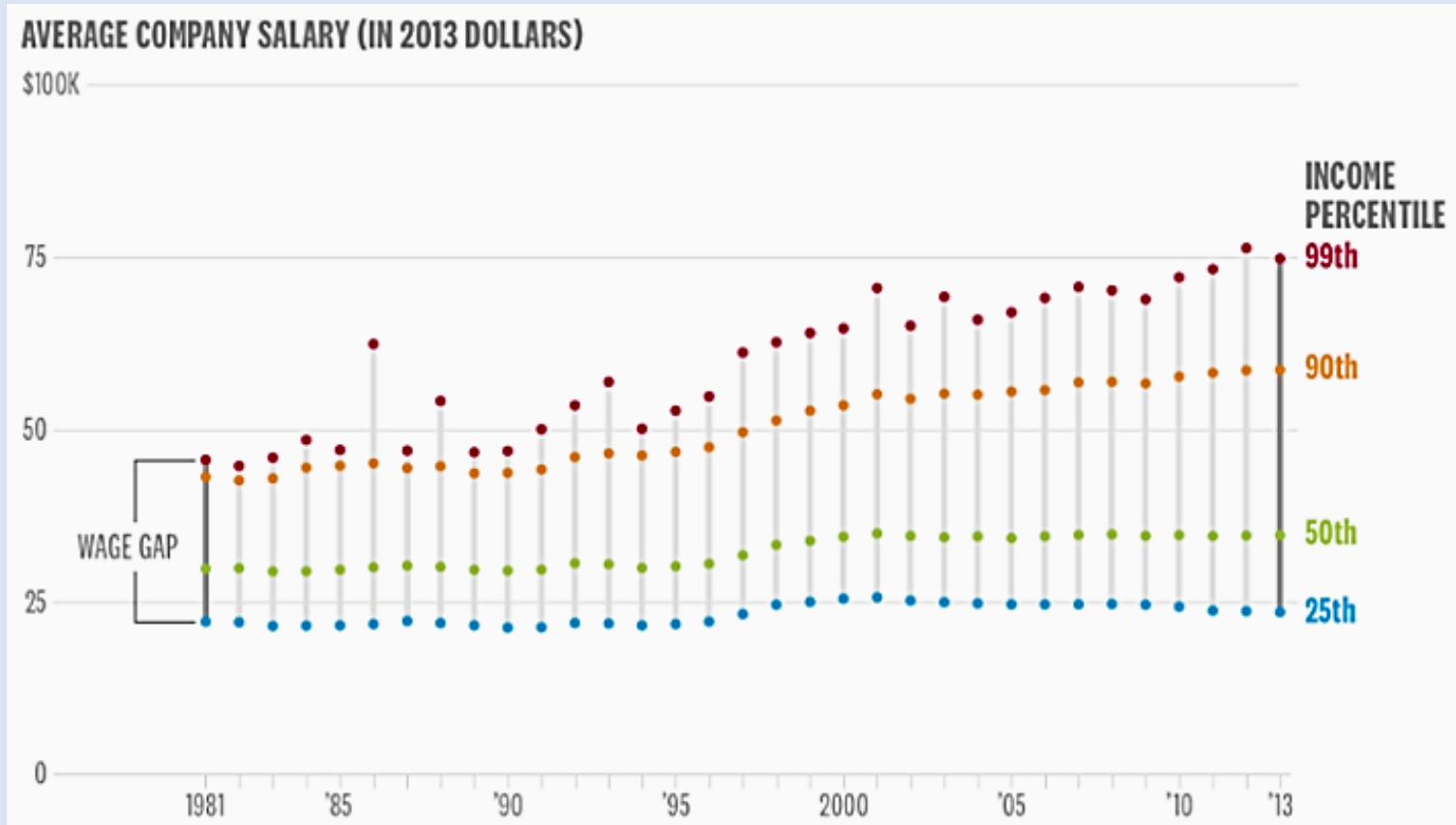
Quarterly Tobin's Q* and Annual YoY Change in Capital Intensity** (1988 to 2017)



* Equals the market value of all public firms divided by their replacement cost.

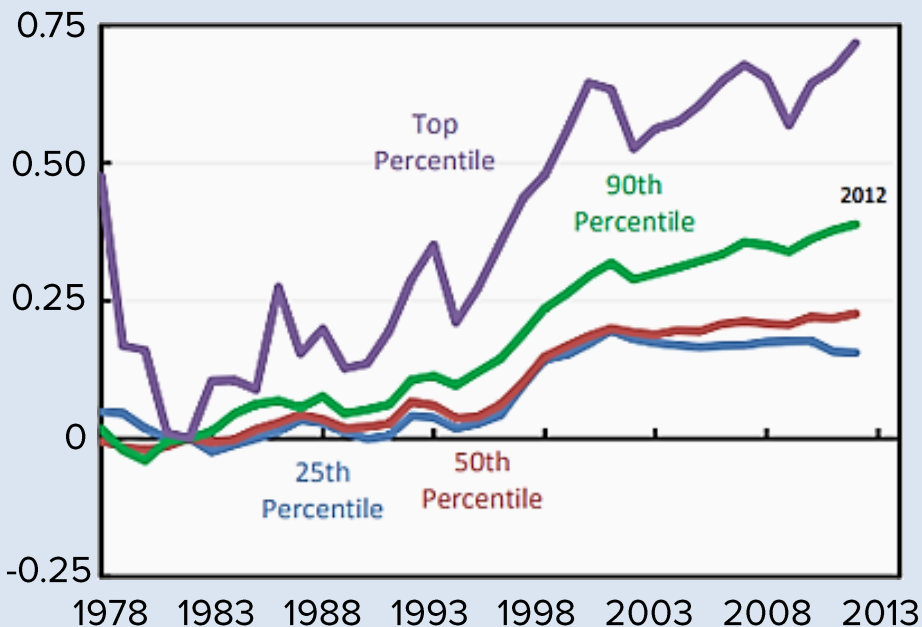
** Measures the ratio of capital services to hours worked for private nonfarm businesses.

WAGE GAP BETWEEN WORKERS IS WIDENING...

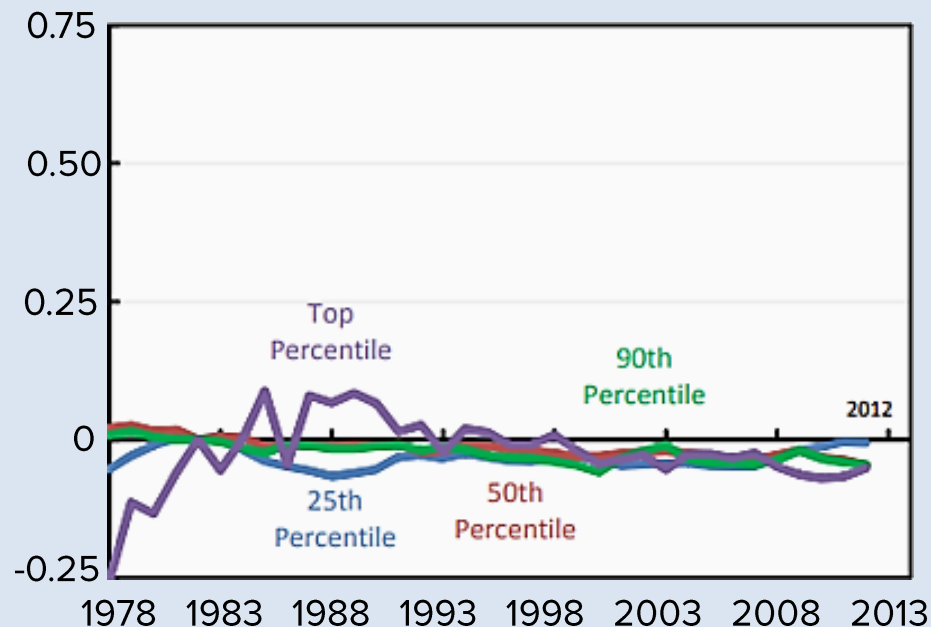


... THANKS TO DISPARITY BETWEEN, NOT WITHIN, FIRMS

**Change in Interfirm Wage Structure*
(1982 to 2012)**



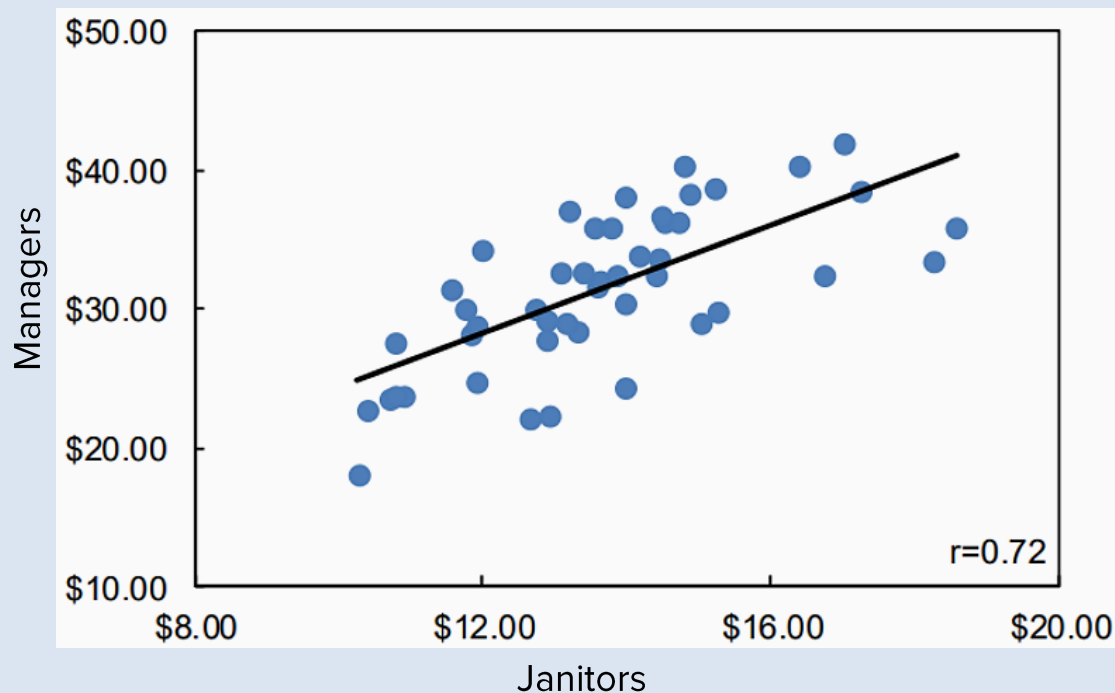
**Change in Intrafirm Wage Structure*
(1982 to 2012)**



* Measures change in log real annual wage.

IT'S WHERE YOU WORK, NOT WHAT YOU DO

Average Hourly Wage of Managers and Janitors, by Industry (2012)



POSSIBLE CAUSES OF DECLINE

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C. Possible causes of decline

D. Implications for policy and for market performance

POSSIBLE CAUSES OF DECLINE

- ❑ **Demographic Aging** (*older, less flexible, slower-growing workforce*)
- ❑ **Generational Change** (*Millennial risk aversion?*)
- ❑ **Rise of IT & Global Markets** (*generating network effects and infinite returns to scale*)
- ❑ **Dysfunctional IP/Patent System** (*“patent thickets” and proprietary moats*)
- ❑ **Regulatory Capture** (*helping incumbents in banking, pharma, transport, health, etc.*)
- ❑ **Ebbing Antitrust Enforcement** (*Robert Bork still casts a long shadow*)
- ❑ **Productivity Exhaustion** (*maybe Baumol and Gordon have a point*)
- ❑ **Policy Sclerosis & Civic Distrust** (*NIMBYism, gridlock, & Mancur Olsen’s famous thesis*)

IMPLICATIONS FOR POLICY AND MARKET PERFORMANCE

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IMPLICATIONS FOR POLICY

❑ POLICIES MOSTLY FAVORED BY THE RIGHT

- **Rolling back social and industry regulation** (to reduce regulatory capture)
- **Flatter, no-loopholes tax code** (to get rid of tax-favored insiders)
- **Reducing in-state & local real-estate zoning** (to reduce geographic “rent”)

❑ POLICIES MOSTLY FAVORED BY THE LEFT

- **“Anti-bigness” antitrust policy** (to break up the giants)
- **Pro-union legislation** (to boost bargaining power of labor)
- **Incomes policies** (guaranteed jobs or income & higher tax rates on wealthy)

❑ POLICIES FAVORED BY MANY ON BOTH SIDES

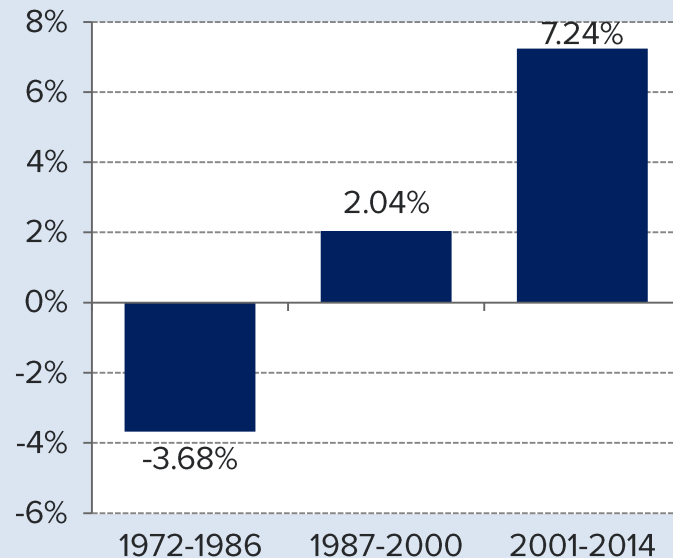
- **Stricter “economic” antitrust policy** (to reduce excess concentration)
- **Reform of patent/IP law** (to accelerate knowledge dissemination)
- **Deregulate professions** (by quashing certification laws and noncompete clauses)

IMPLICATIONS FOR MARKET PERFORMANCE

Correlation[^] of Firm Performance Measures to Industry Concentration (Various Years)

	1972-1986			1987-2000			2001-2014		
	Change in # of Firms	HHI*	Custom Index**	Change in # of Firms	HHI*	Custom Index**	Change in # of Firms	HHI*	Custom Index**
<u>ROA</u>	n/a	n/a	-	n/a	n/a	-	-	+	+
			-			-	-	+	+
			-			-	-	+	+
<u>Margin</u>	n/a	n/a	n/a	n/a	n/a	-	-	n/a	+
			n/a			-	-		+
			n/a			-	-		+
<u>Patent Generation</u>	0	+	0	+	-	-	-	+	+
		+		+	-	-	-	+	+
		+		+	-	-	-	+	+

Annualized Return for Average High-Concentration Portfolio*** (Various Years)



* Herfindahl-Hirschman index (HHI) measures concentration within NAICS 3-digit industries.

** Author-compiled measure of NAICS 3-digit industry concentration that equals the sum of the annual rank of the HHI and the annual inverse rank of the total number of industry incumbents.

*** Average high-concentration portfolio contains the 10 industries with the smallest relative change in the number of firms.

[^] + or – at the 90%, 95%, and 99% level of significance.

IMPLICATIONS FOR MARKET PERFORMANCE

❑ NEAR-TERM, GO WITH DEAL FLOW

- In general, overweight global superstars enjoying a sizable productivity edge, high profit margins, outsized ROA, durable incumbency advantages (wide IP or regulatory “moats”), and growing industry concentration.
- In this environment, acquisitions and buy-backs still beat new capex; and firms promising future pricing power (“growth”) still beat firms capable of extreme efficiency in competitive industries (“value”).

❑ LONGER-TERM, BEWARE: THE TIDE MAY SHIFT ABRUPTLY

- What will trigger the shift? Three things: (1) falling market and economic slowdown; (2) geopolitical shock (unsynced global economy and trade war); and (3) populist/authoritarian backlash. These may all happen together.
- Result? Multiples compress; global scale edge shrinks; and politics intervenes against concentration. Those who came first will now be last.

PLEASE SUBMIT QUESTIONS* TO

QA@HEDGEYE.COM

**ANSWERED AT THE END OF THE CALL*

FOR MORE INFORMATION, CONTACT US AT:

SALES@HEDGEYE.COM
(203) 562-6500