

# DISCLAIMER

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# OUR INVESTMENT PROCESS

## INTEGRATING FUNDAMENTALS AND MACRO RESEARCH

### 1. Idea Generation

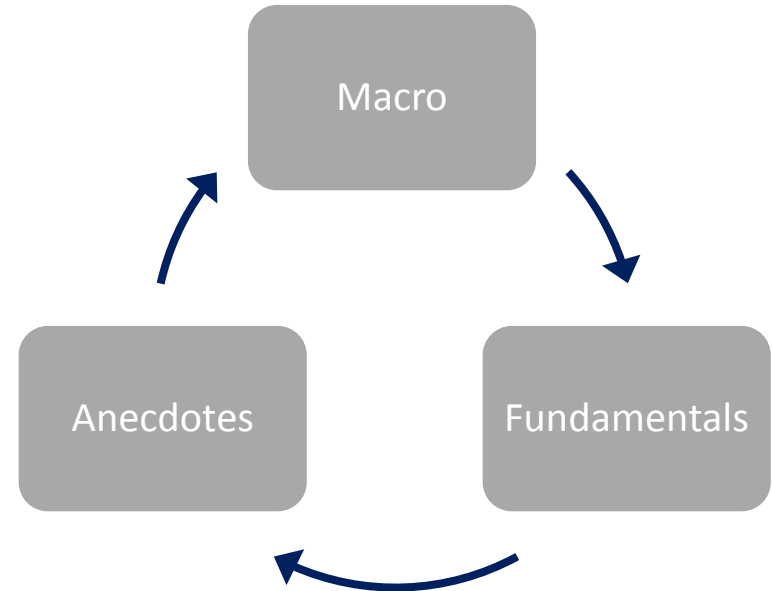
- Relative and absolute performance
- Valuation, estimate, and sentiment trends and relevance
- Battleground stocks
- Market research

### 2. Fundamentals

- Detailed financial models
- Identify Key Drivers
- Filings, transcripts, unstructured data, proprietary algorithms
- Professional interviews, surveys
- Multiple and sentiment forecast regressions

### 3. Macro Integration with Macro Monitor Database

- Database of 4000+ (and growing) curated time series data
- Automatically calculates and sorts correlations and significance
- Analyze leading and lagging relationships across multiple durations
- Identify, update, track, and chart high frequency Key Drivers



# HEALTHCARE THEMES

1

## REGULATION / #ACATAPER

- New enrollees from exchanges and Medicaid expansion was a one-time stimulus to the medical economy.
- ACA reforms will continue to put pressure on healthcare inflation.

2

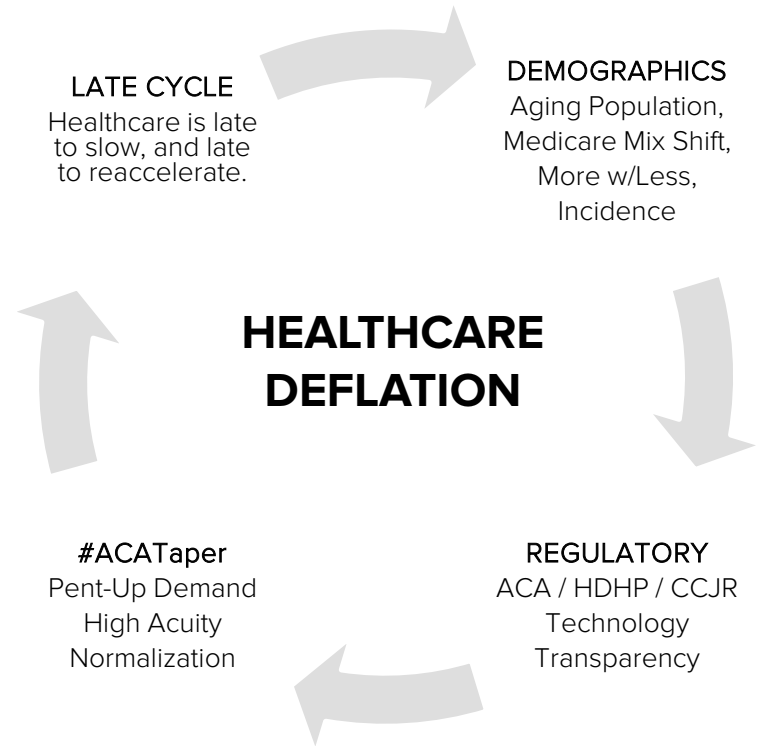
## DEMOGRAPHIC DEFLATION

- Commercially insured working population continues to slow. The Commercially Insured US Medical Consumer has the highest revenue and margins.
- Medicare beneficiaries are growing but CMS policy will need to reduce real per beneficiary spending.

3

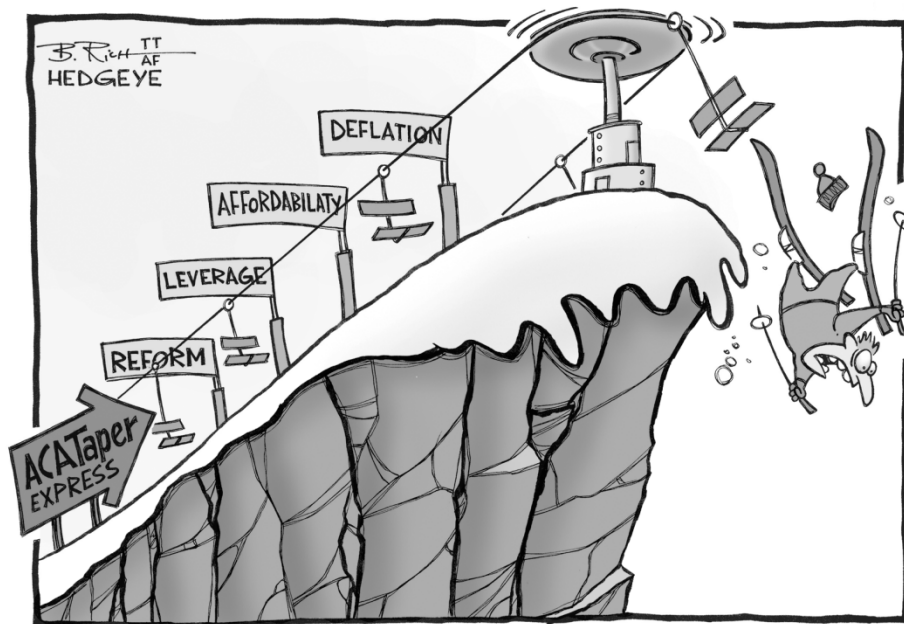
## #CLEANSWEEP

- Major healthcare issues including health insurance affordability, drug prices and Public Option
- Shadow voters, Hillary's 80%-90% Presidential odds, down ballot #cleansweep all impact policy trends



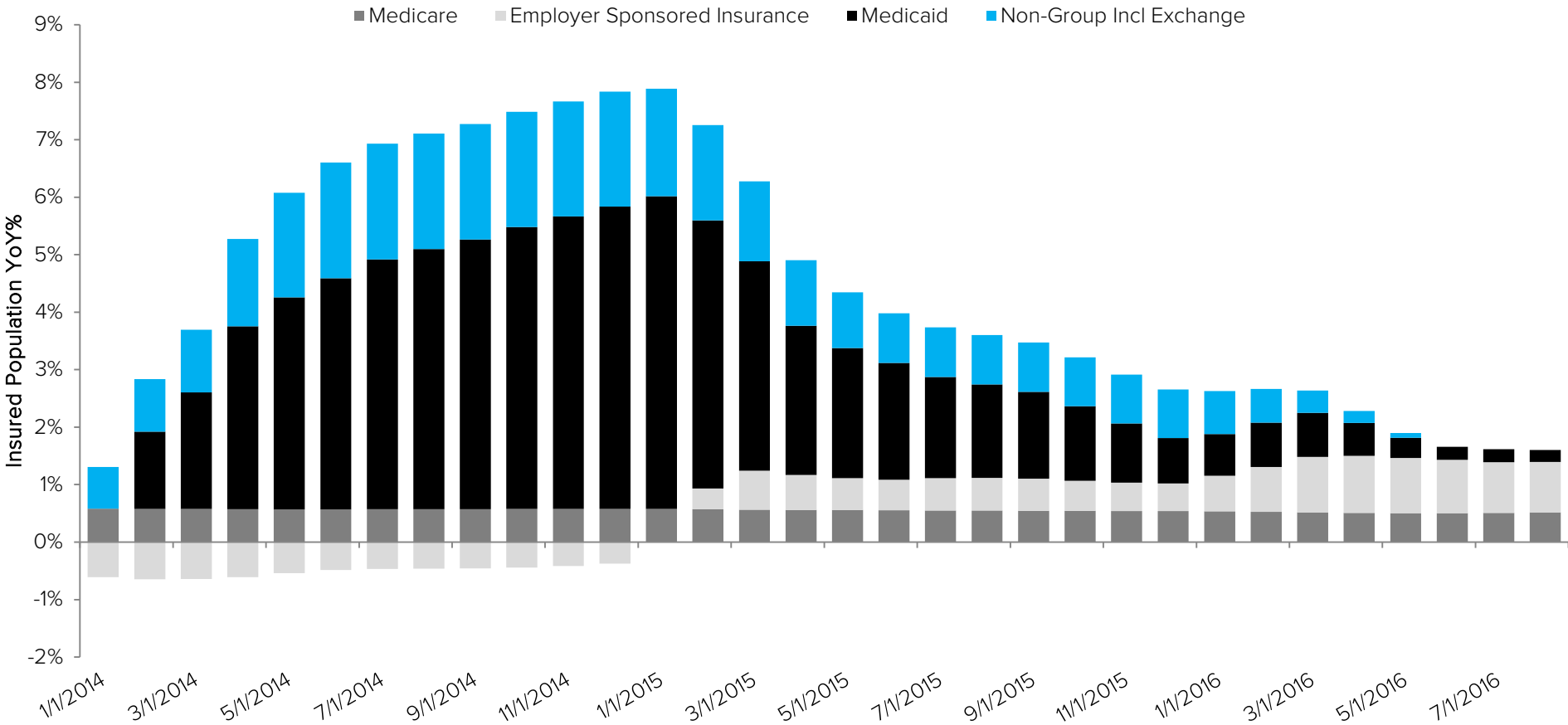
# HEALTHCARE POSITION MONITOR

Sentiment	Investment Ideas - Longs			Trade	Trend	Tail	Sentiment	Investment Ideas - Shorts			Trade	Trend	Tail
Score <sup>1</sup>	<b>LONG</b>						Score <sup>1</sup>	<b>SHORT</b>					
6	ATHN	athenahealth, Inc.		---	---	✓	89	CERN	Cerner Corporation		x	x	x
6	EXAS	Exact Sciences Corporation		✓	✓	✓	81	HOLX	Hologic, Inc.		x	x	x
							59	AHS	AMN Healthcare Services, Inc.		x	x	x
							53	ZBH	Zimmer Biomet Holdings, Inc.		---	x	x
							41	HCA	HCA Holdings, Inc.		x	x	x
							33	MD	MEDNAX, Inc.		x	x	x
							22	QSII	Quality Systems, Inc.		---	---	x
							17	MDRX	Allscripts Healthcare Solutions, Inc.		x	x	x
							1	CPSI	Computer Programs and Systems, Inc.		---	---	x
Sentiment	Long Bench						Sentiment	Short Bench					
Score <sup>1</sup>	<b>LONG</b>						Score <sup>1</sup>	<b>SHORT</b>					
41	ILMN	Illumina, Inc.		---	---	---	97	WOOF	VCA Inc.		---	---	---
56	EVH	Evolent Health Inc Class A		---	---	---	79	LH	Laboratory Corporation of America Holdings		---	---	---
78	ABCO	Advisory Board Company		---	---	---	71	ICLR	ICON Plc		---	---	---
							53	CRL	Charles River Laboratories International, Inc.		---	---	---
							44	MDSO	Medidata Solutions, Inc.		---	---	---
							36	LPNT	LifePoint Health, Inc.		---	---	---
							24	PRXL	PAREXEL International Corporation		---	---	---
							18	Q	Quintiles Transnational Holdings, Inc.		---	---	---
							5	DGX	Quest Diagnostics Incorporated		---	---	---
							1	CYH	Community Health Systems, Inc.		---	---	---



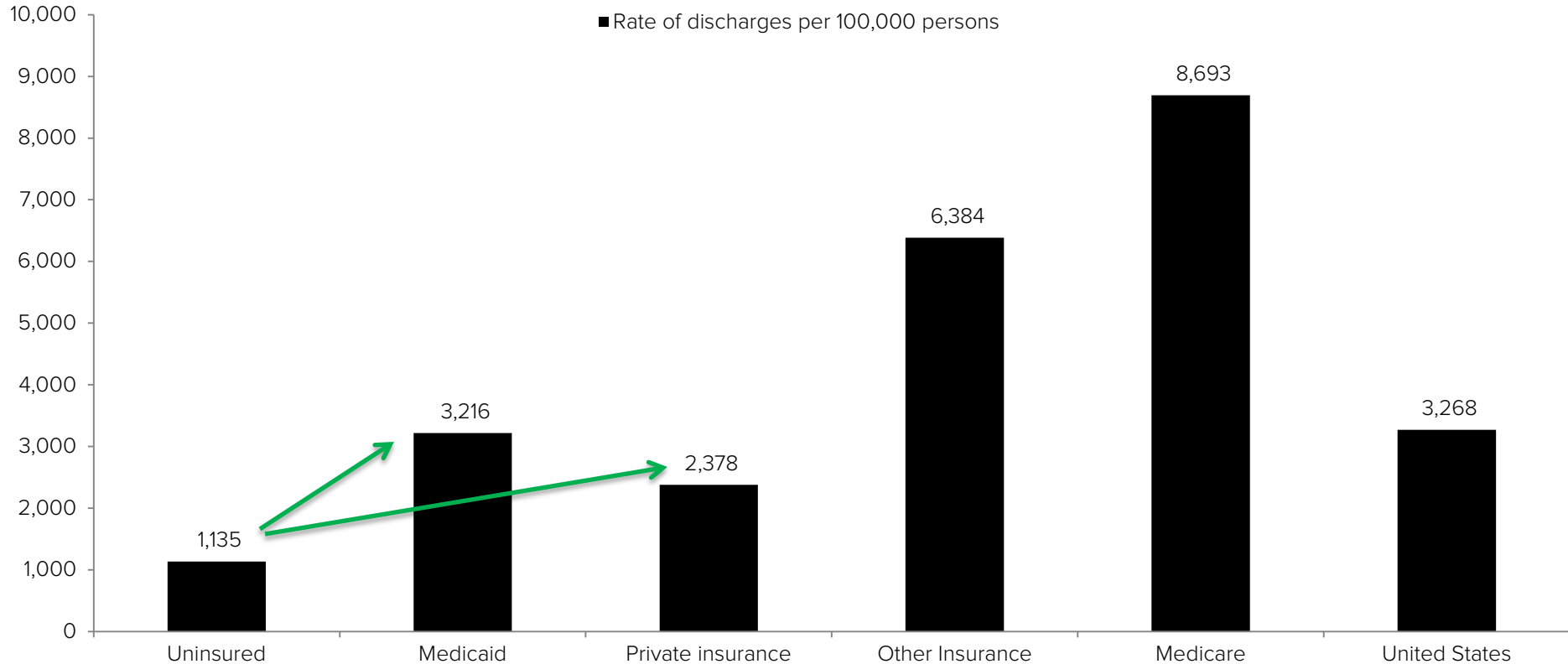
# INSURED MEDICAL CONSUMERS

# INSURED POPULATION SLOWING



# 3-FOLD INCREASE IN UTILIZATION

## OPERATING ROOM PROCEDURES INCREASE

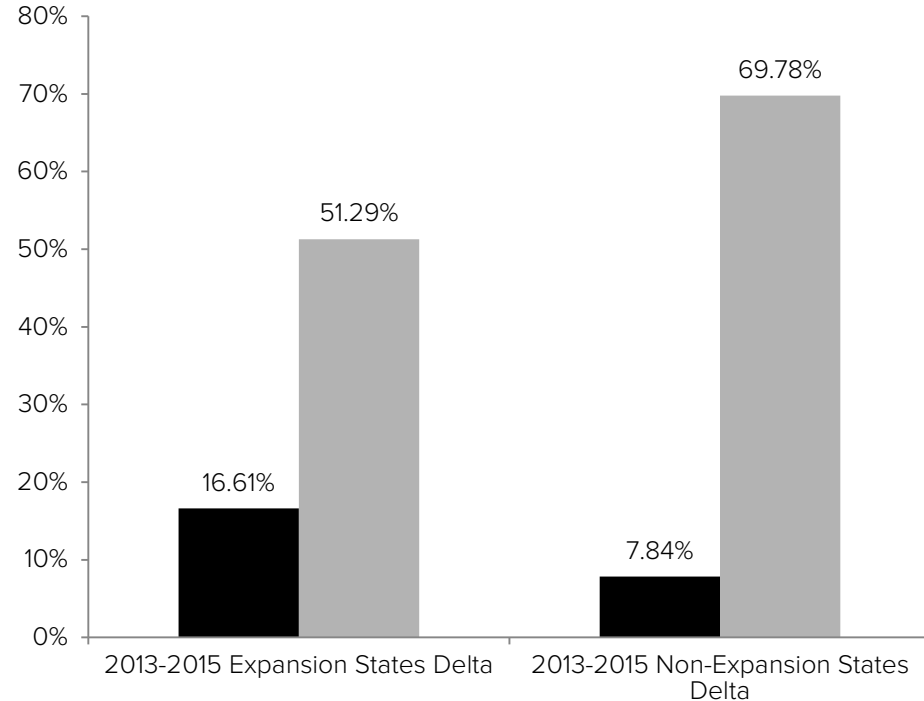




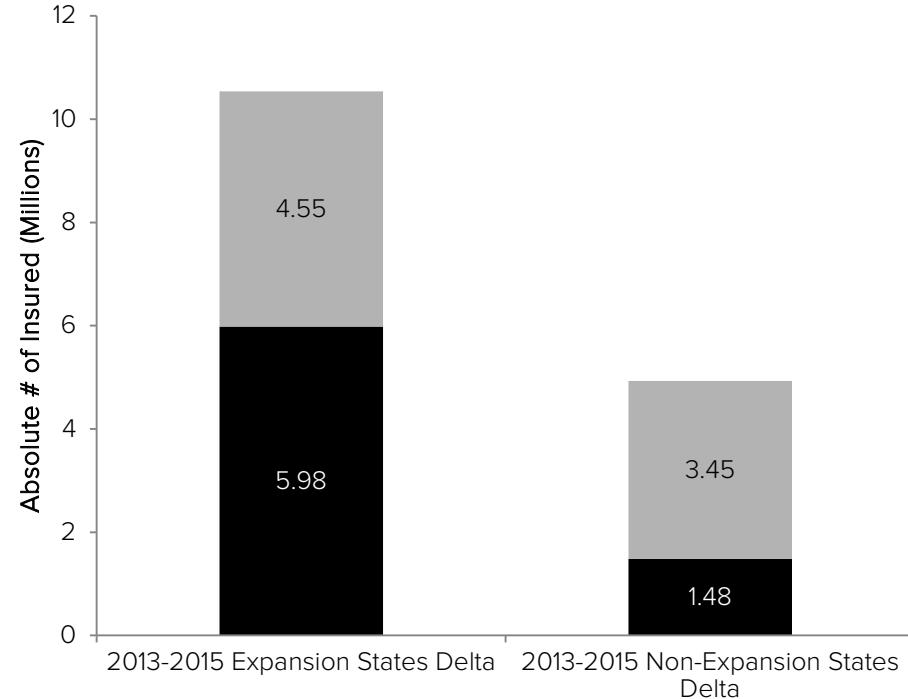
# MEDICAID AND NON-GROUP

## MEDICAID EXPANSION GREATER THAN EXCHANGES

■ Medicaid 2013-2015 Delta as % of 2013 Baseline  
■ Non-Group 2013-2015 Delta as % of 2013 Baseline

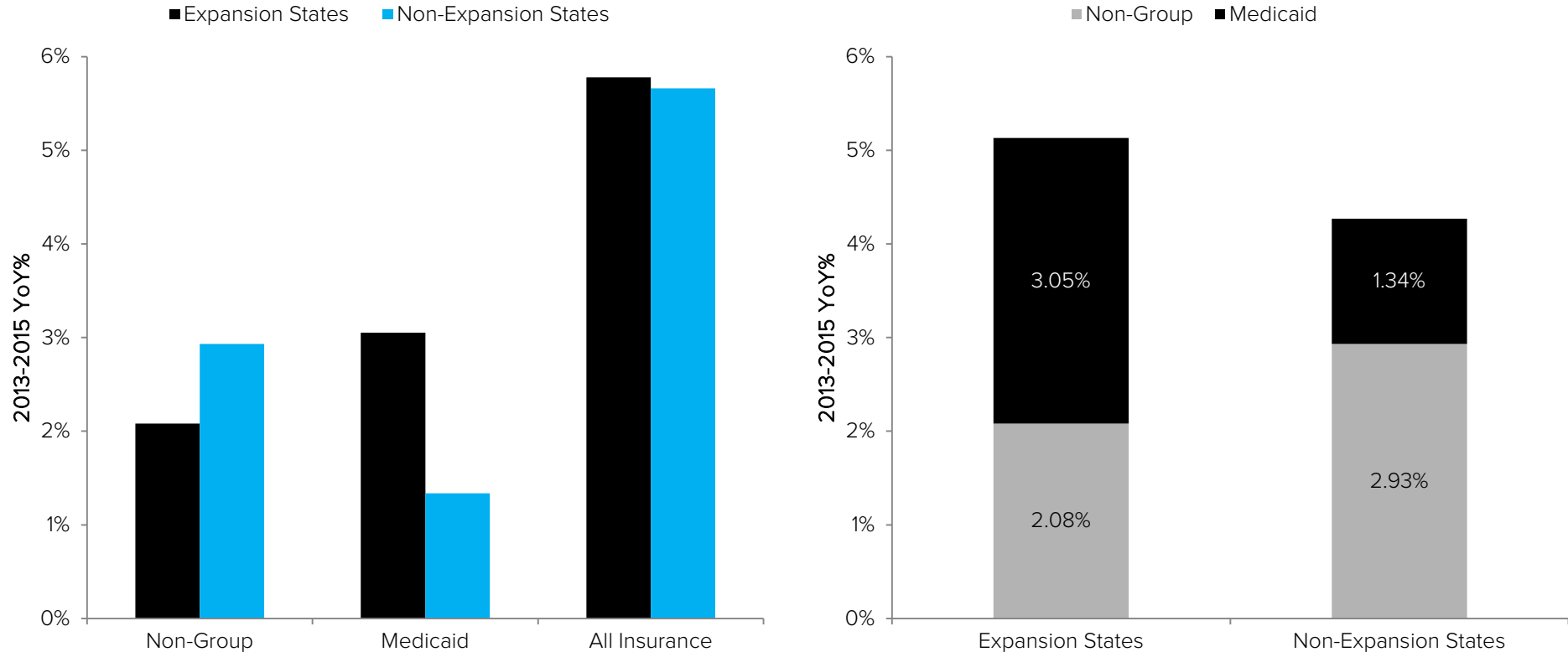


■ Medicaid ■ Non-Group

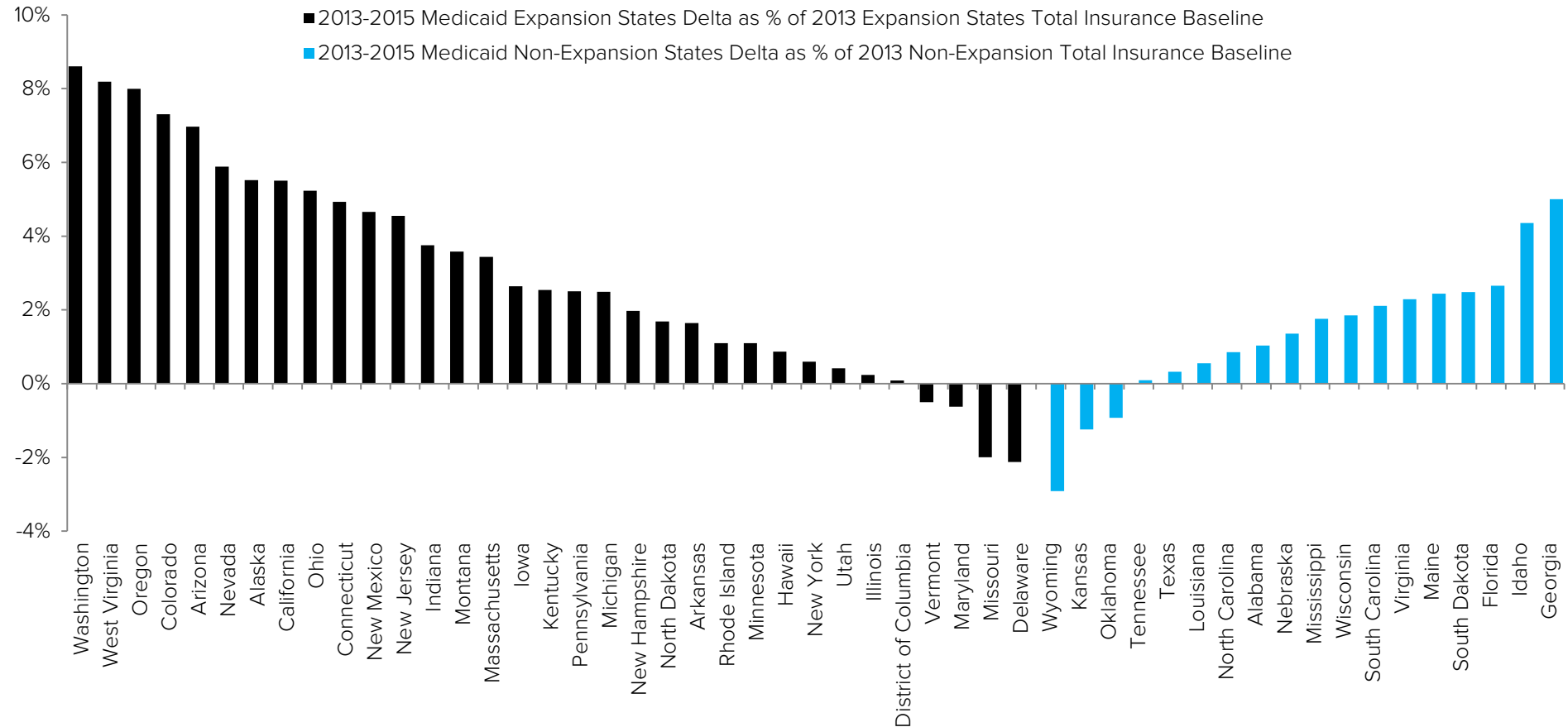


# TOTAL GROWTH SIMILAR

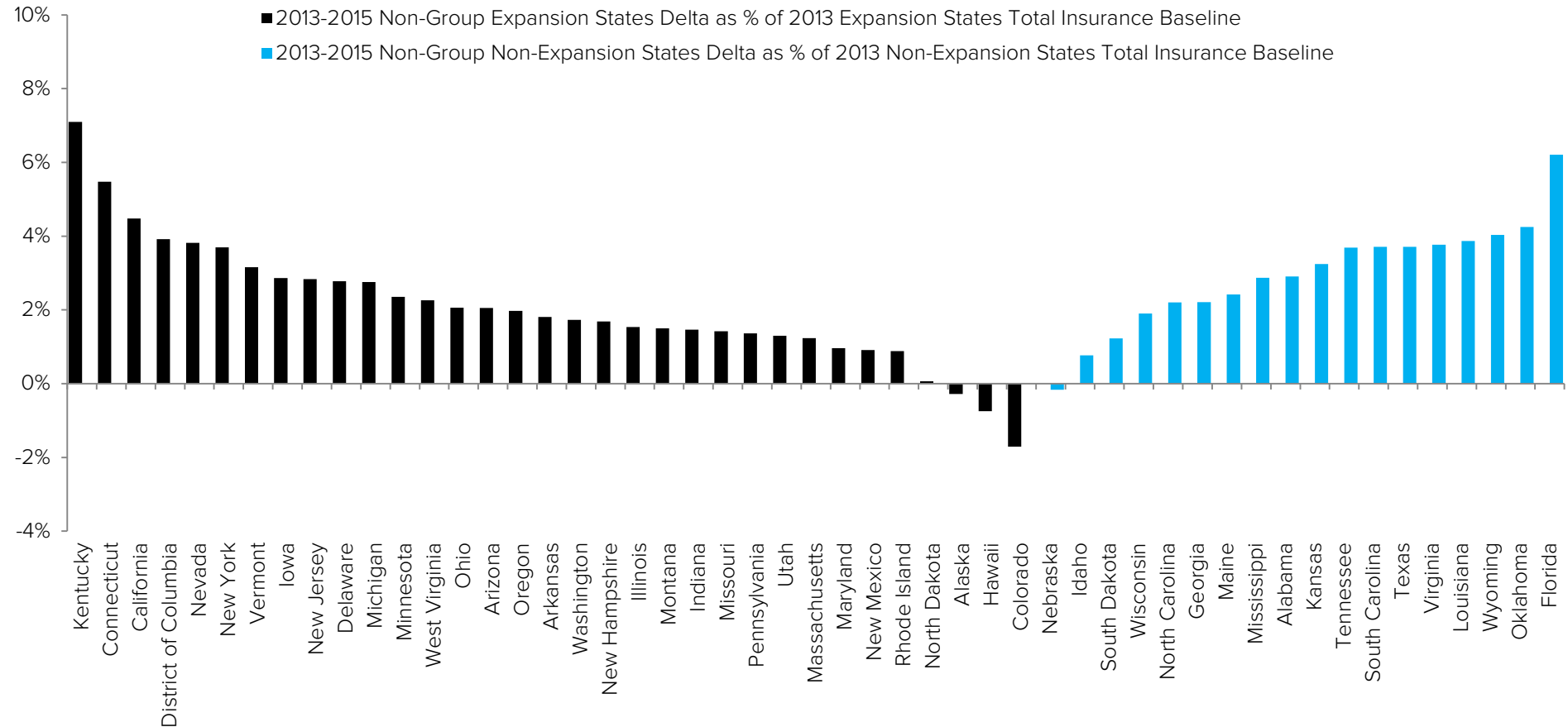
## NON-EXPANSION STATES DID BETTER WITH EXCHANGES



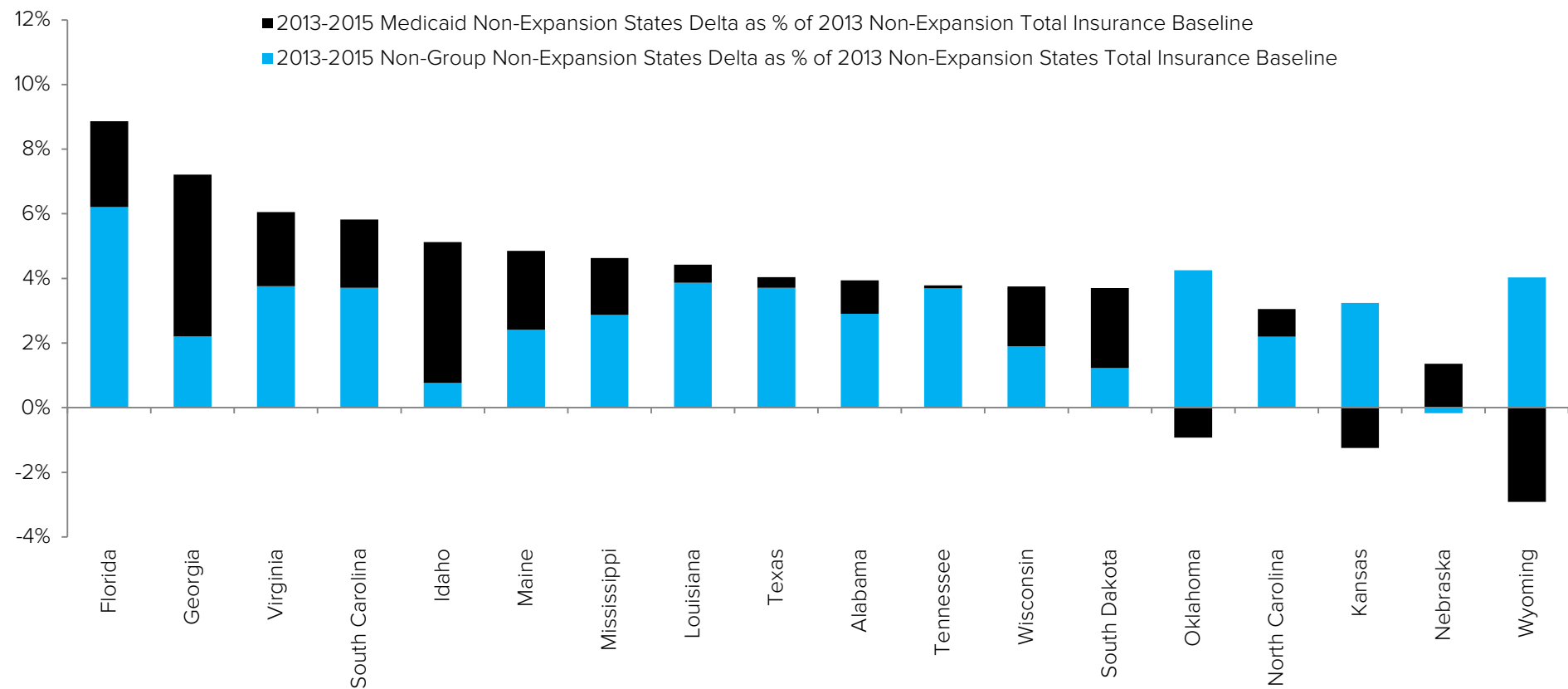
# MEDICAID GROWTH BY STATE



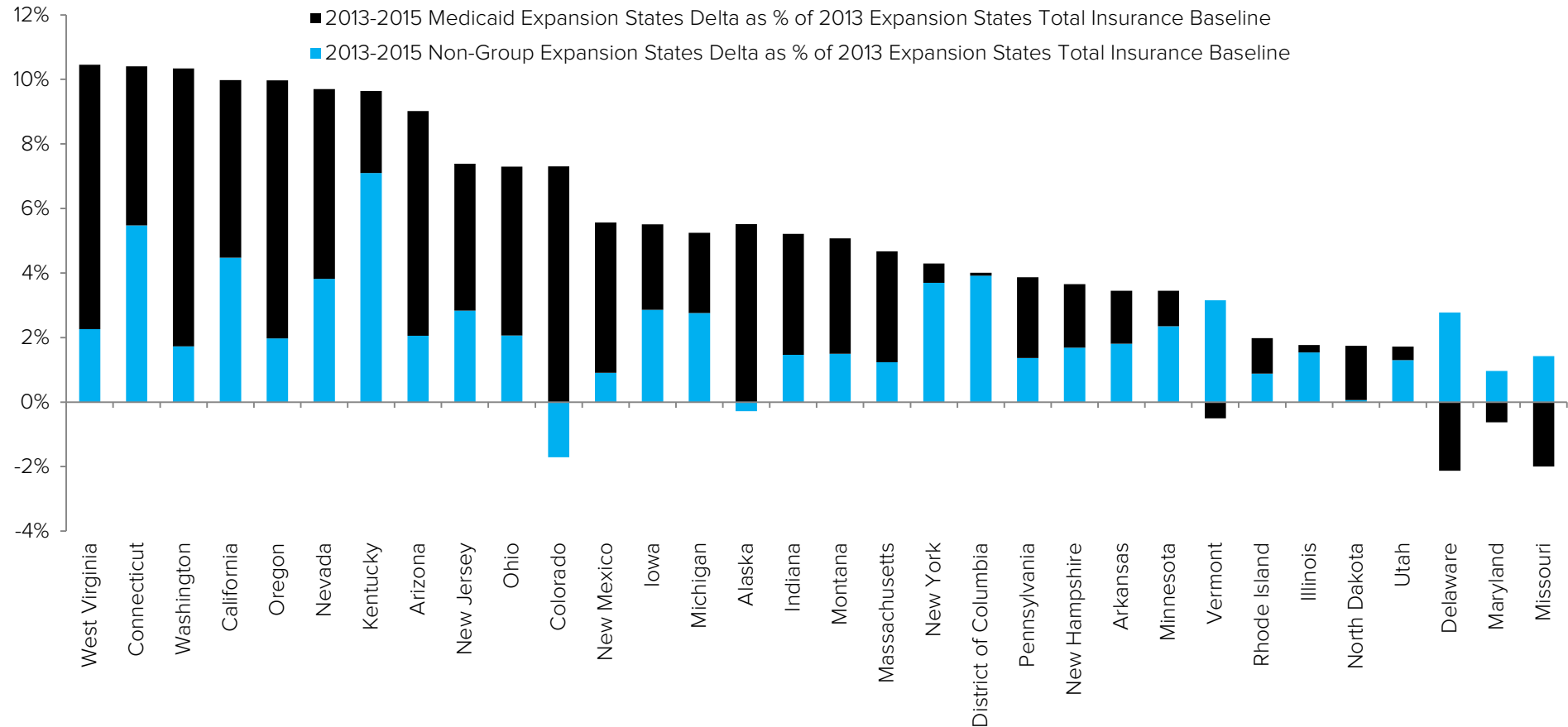
# NON-GROUP GROWTH BY STATE



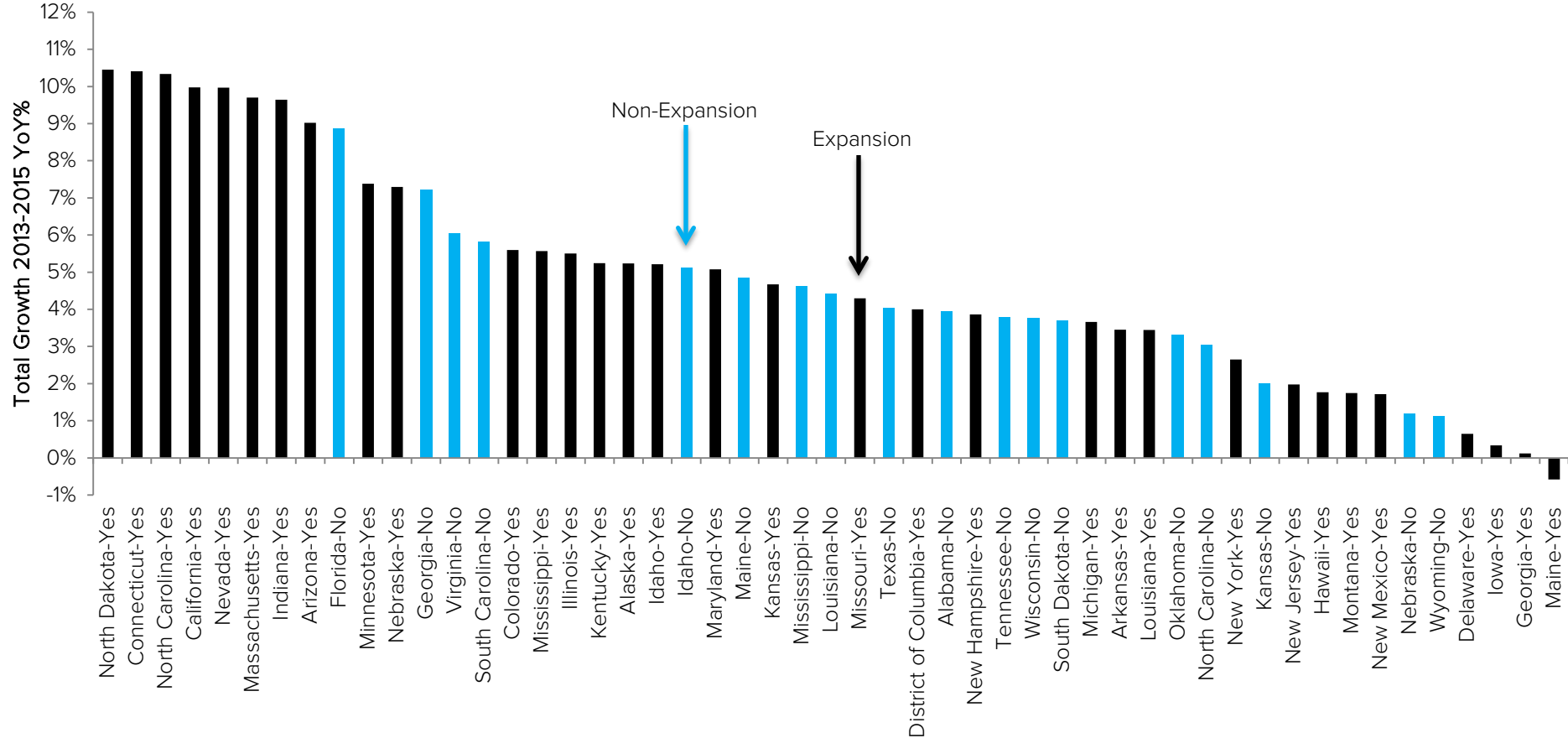
# NON-EXPANSION STATES RANKED



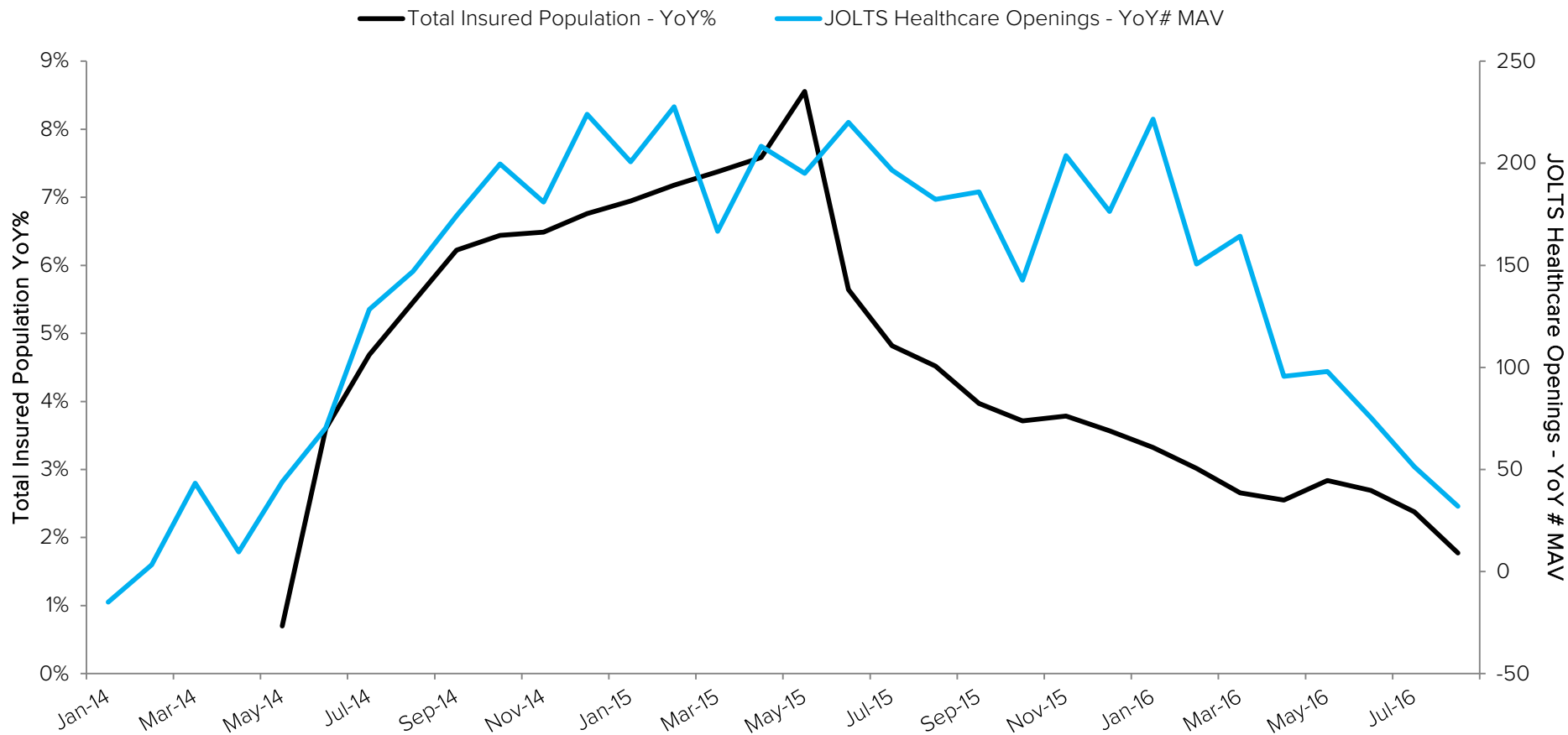
# EXPANSION = MEDICAID + NON-GROUP



# MEDICAID NOT THE ONLY DRIVER



# INSURED POP & HC JOB OPENINGS





# HC WORKFORCE “NEW NORMAL”

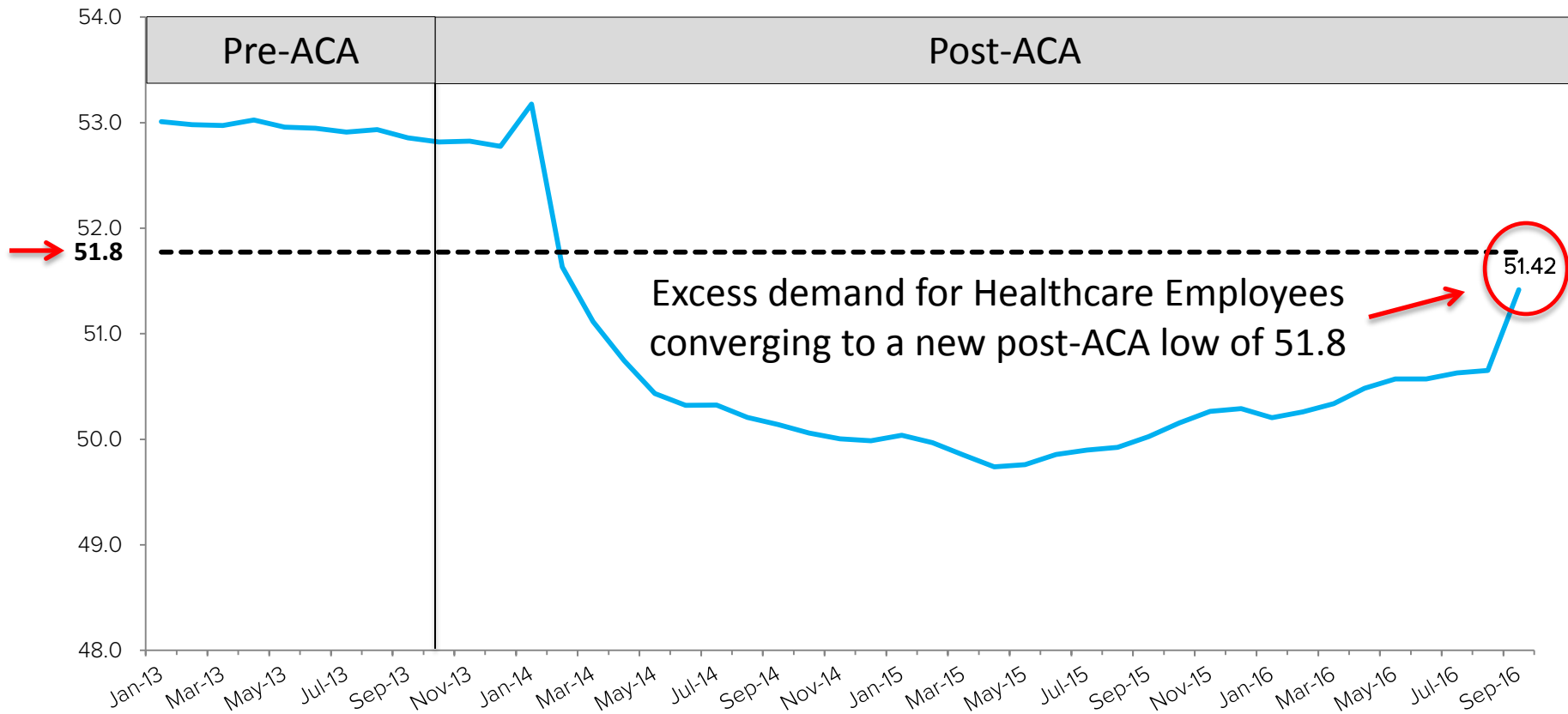
HEALTHCARE WORKERS NEEDED PER 100,000 INSURED 53.6 → 51.8

Insurance Status	2013			2016		
	Population	Percent with Expense	Utilization	Population	Percent with Expense	Utilization
Employer	155,697	88.0%	137,013	155,723	88.0%	137,036
Non-Group	13,816	88.0%	12,158	21,778	88.0%	19,165
Medicaid	54,919	85.0%	46,681	72,700	85.0%	61,795
Medicare	40,876	95.7%	39,119	47,670	95.7%	45,620
Other	6,295	88.0%	5,540	6,422	88.0%	5,652
<b>Total Insured</b>	<b>271,604</b>	<b>88.6%</b>	<b>240,511</b>	<b>304,294</b>	<b>88.5%</b>	<b>269,268</b>
Uninsured	41,795	54.9%	22,946	28,966	54.9%	15,902
<b>Total</b>	<b>313,401</b>	<b>84.1%</b>	<b>263,457</b>	<b>333,260</b>	<b>85.6%</b>	<b>285,170</b>
Healthcare Workers	14,554,900		14,554,900	15,754,494		15,754,494
Healthcare Workers per 100,000 Population	53.59			51.77		
Healthcare Workers per 100,000 Units of Utilization			55.25			55.25

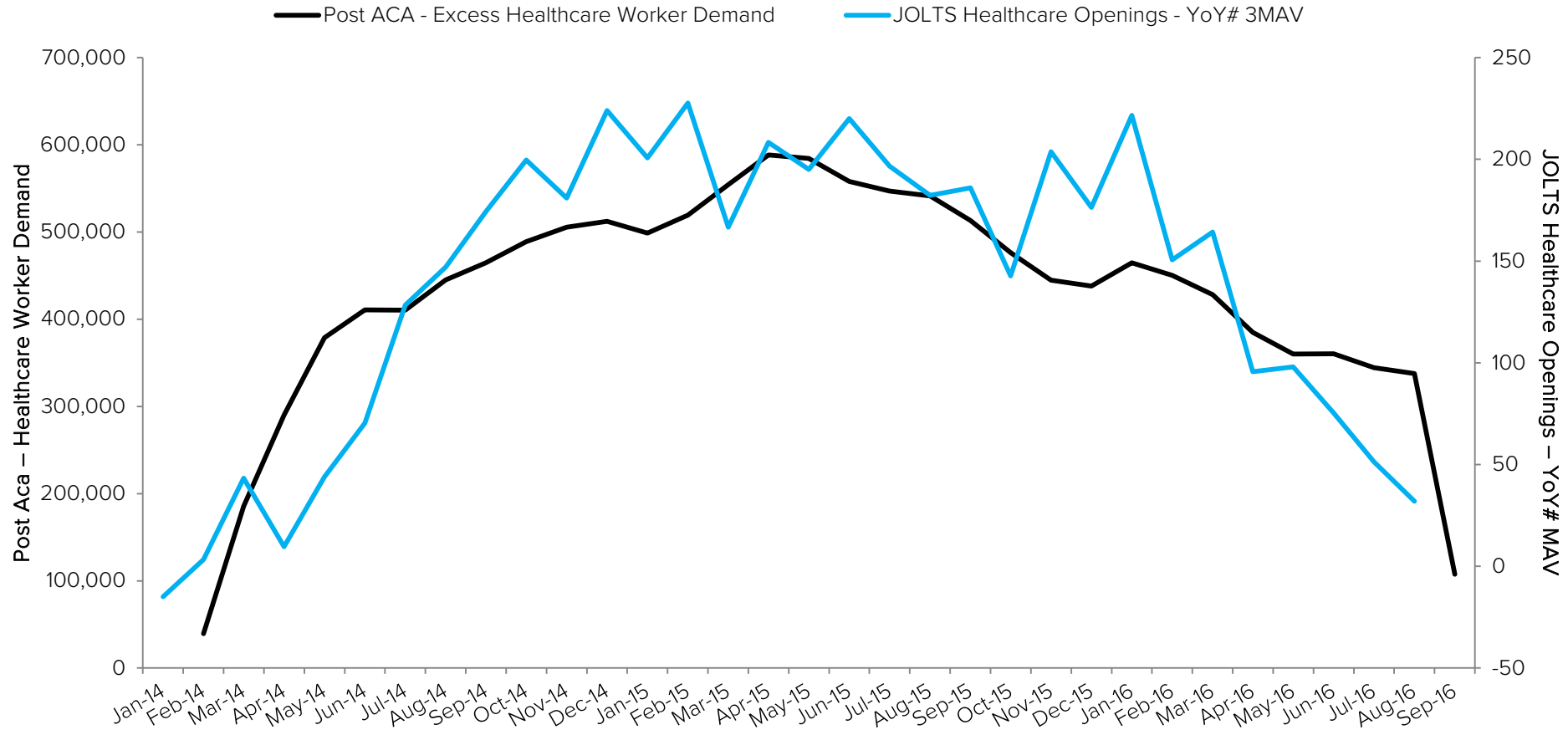
# THE “NEW NORMAL” FOR HC LABOR

— Healthcare Workers per 1,000 Insured Population

- - - Healthcare Workers per 1,000 Insured Population - Post ACA

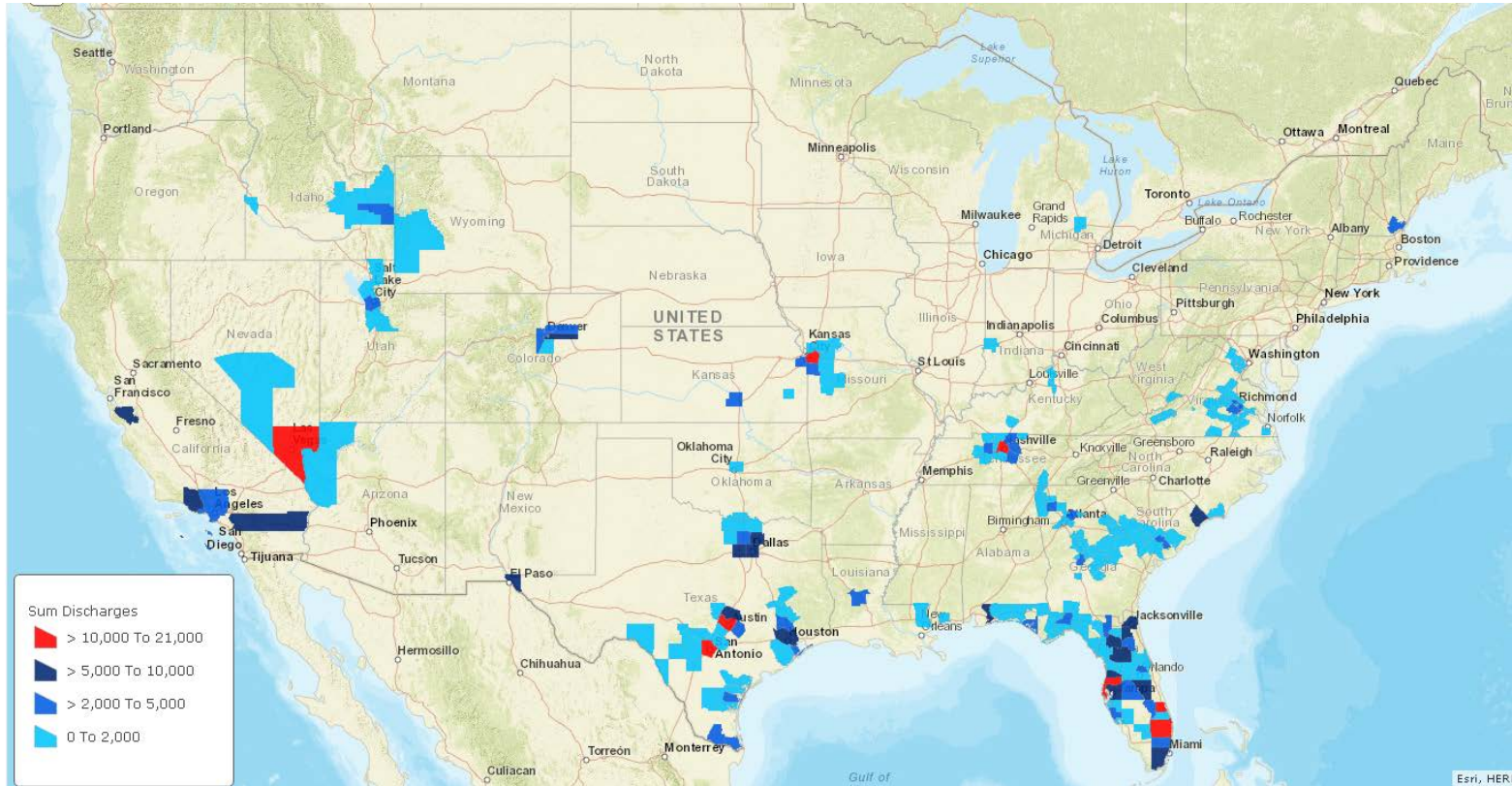


# DEMAND FOR HC WORKERS FALLING



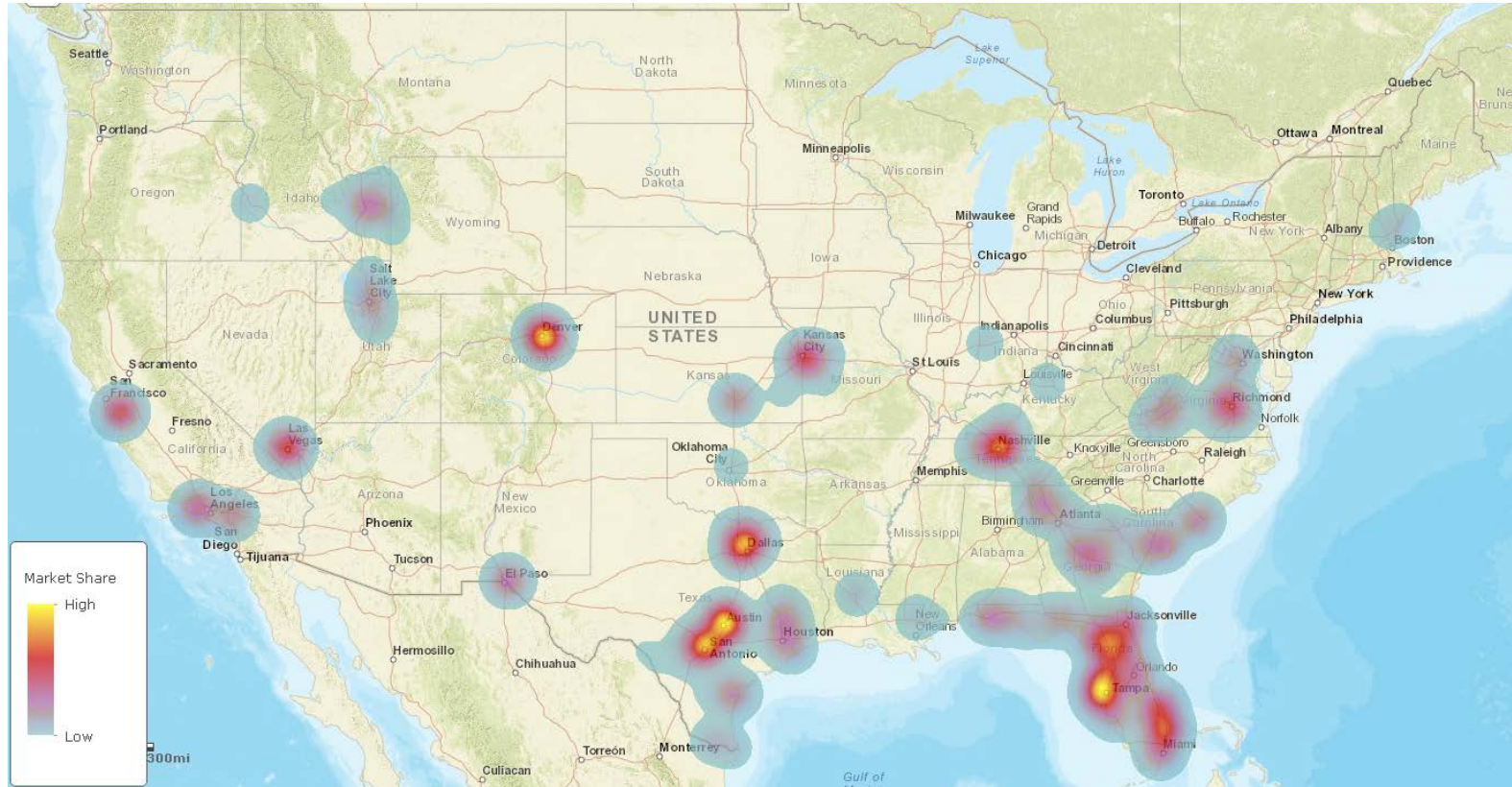
# HCA ADMISSIONS BY COUNTY

FLORIDA AND TEXAS ACCOUNT FOR ~60% DISCHARGES

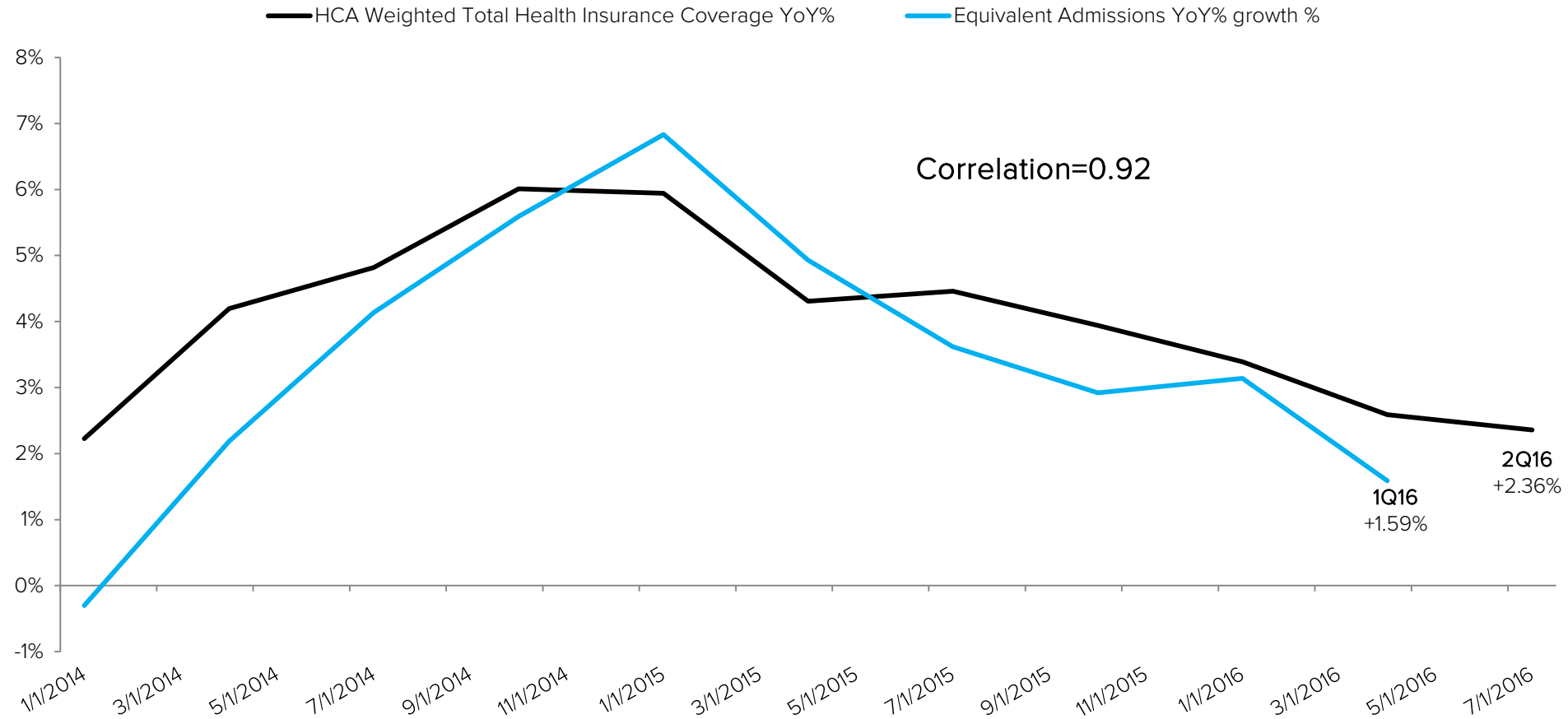


# HCA GEOGRAPHY MATTERS

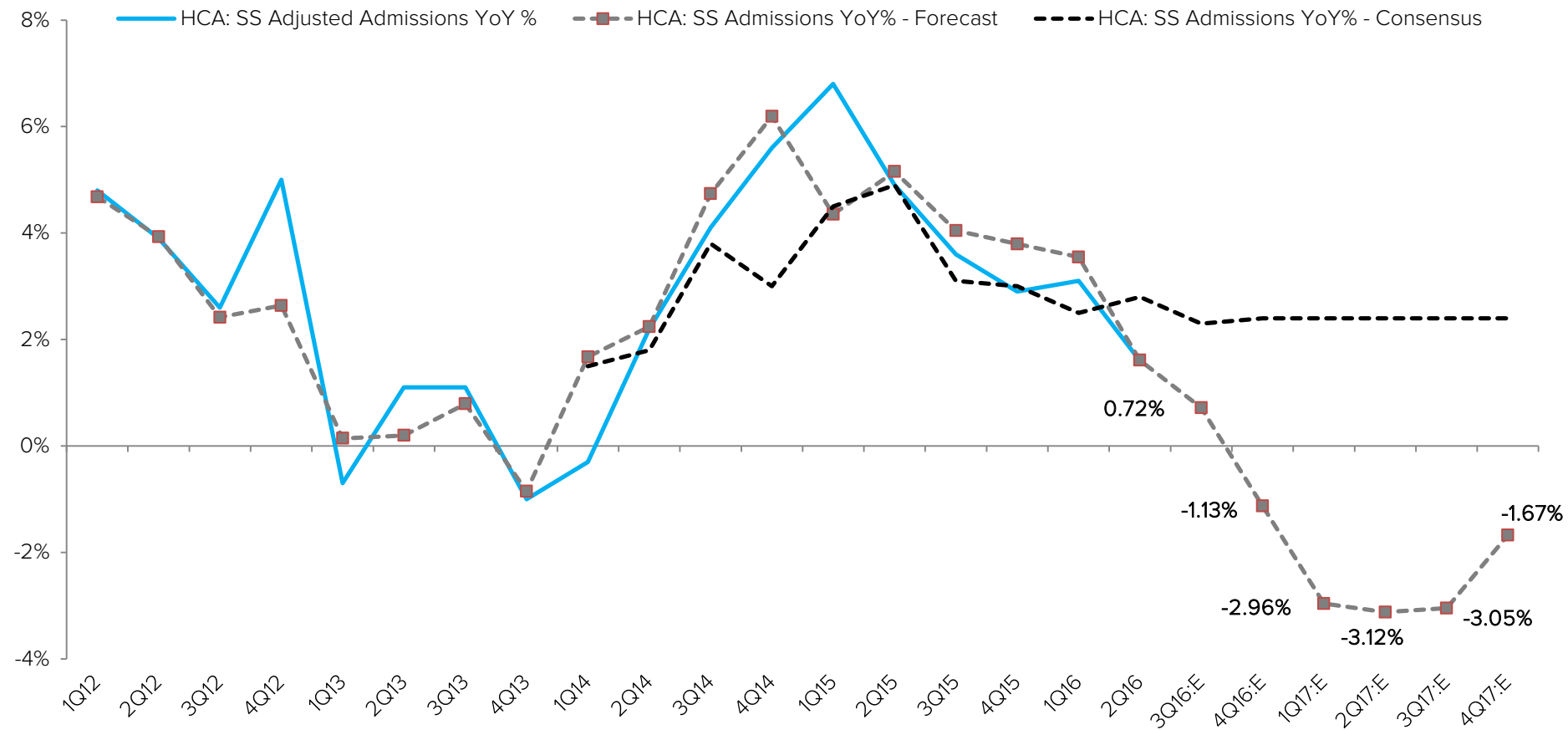
## MARKET SHARE FOLLOWS VOLUME



# COVERAGE DRIVES ADMISSIONS

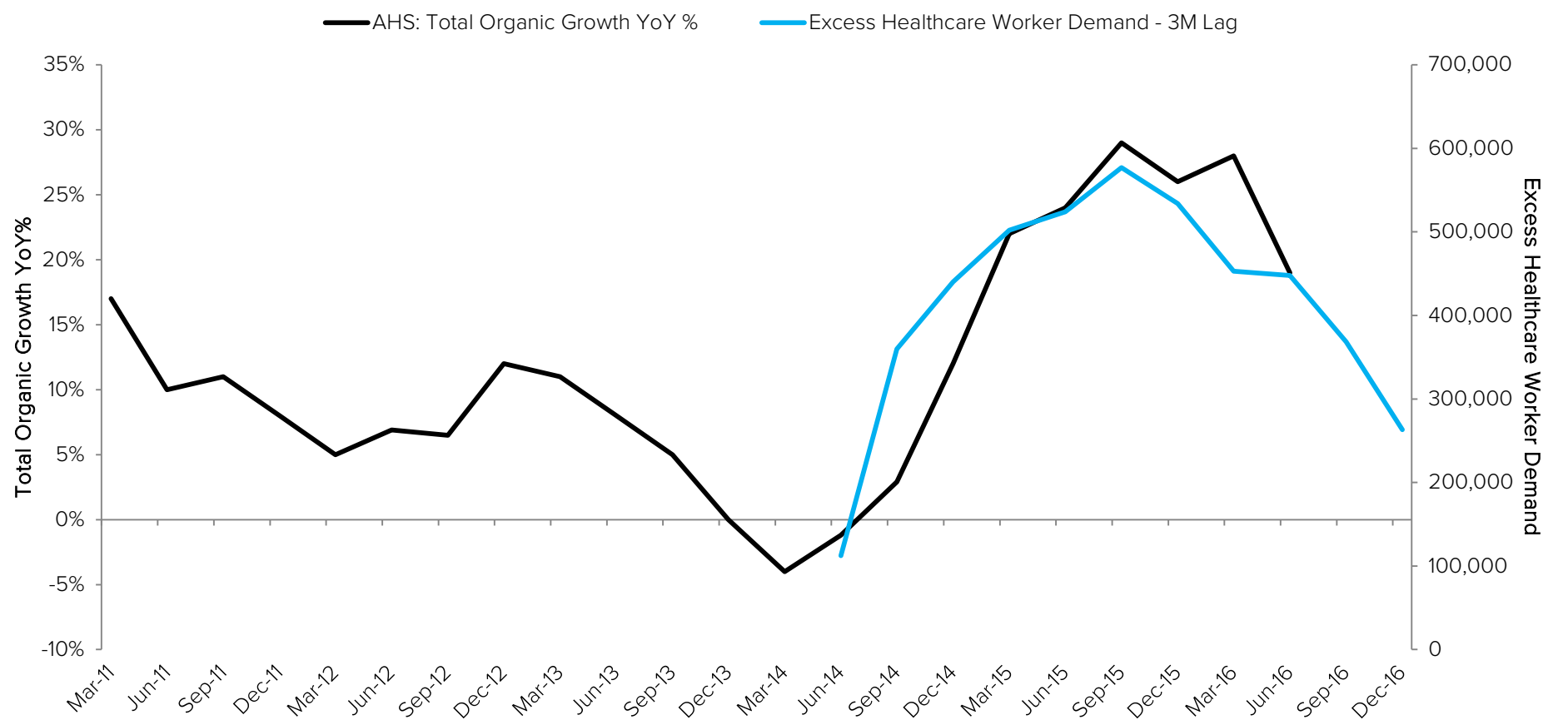


# HCA ADMISSIONS JOLTS FORECAST



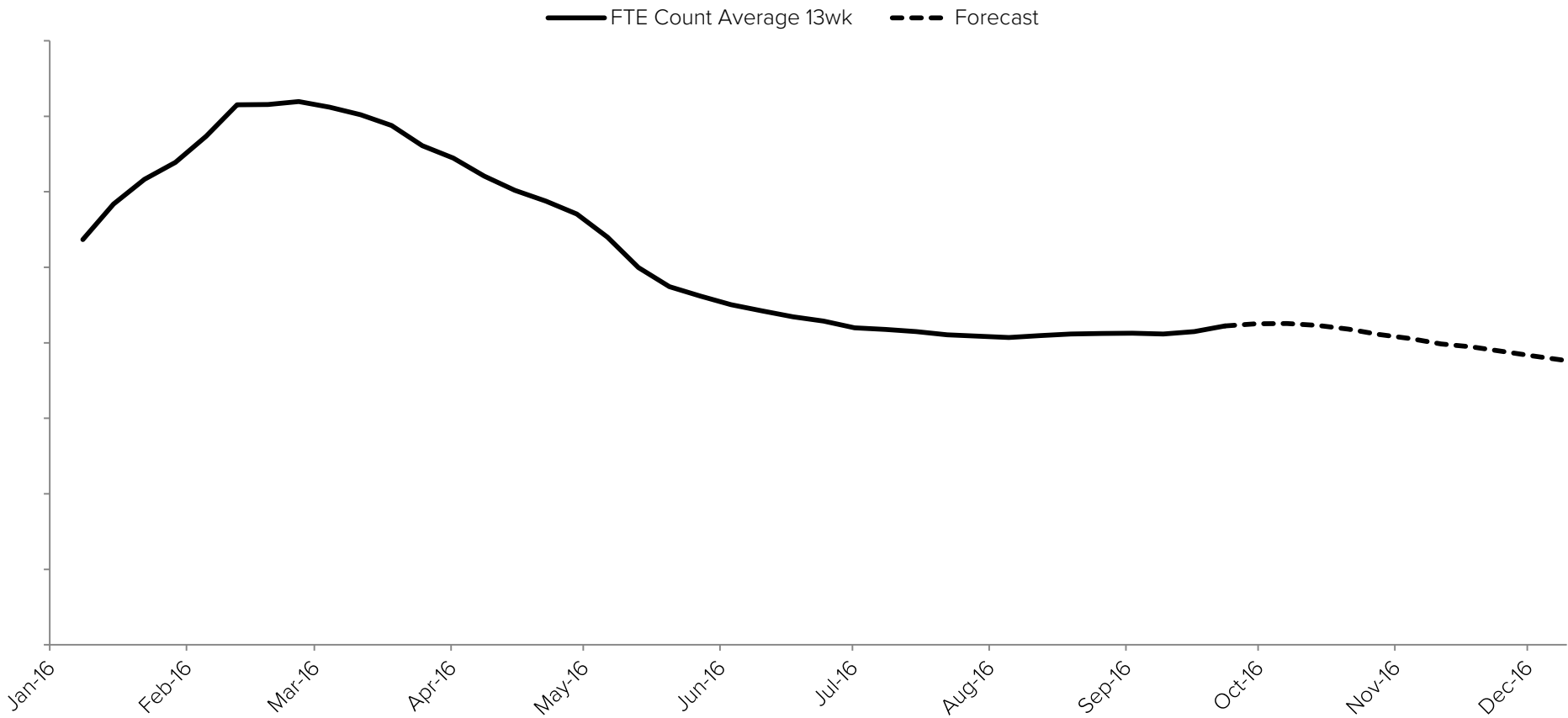


# AHS ORGANIC % VS LABOR DEMAND





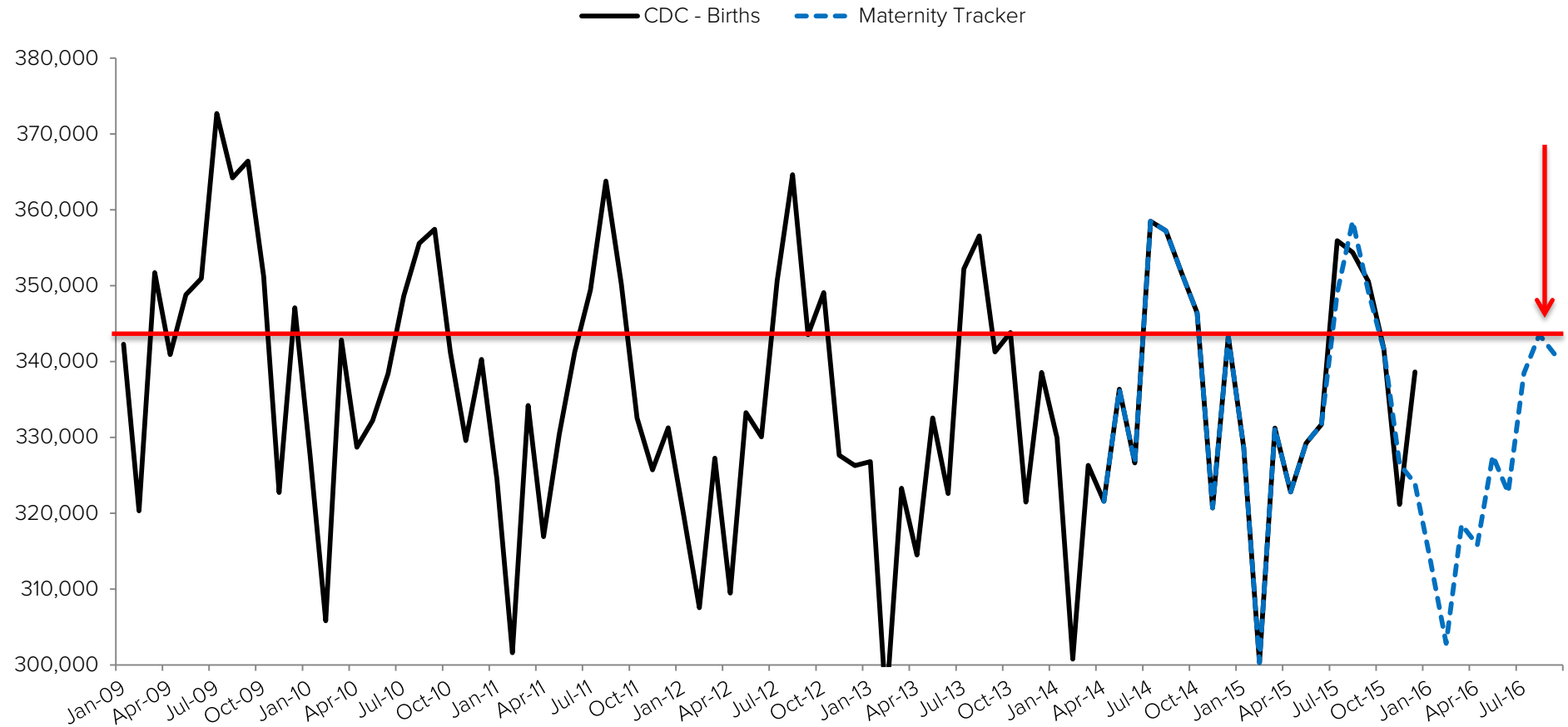
# AHS TRACKER



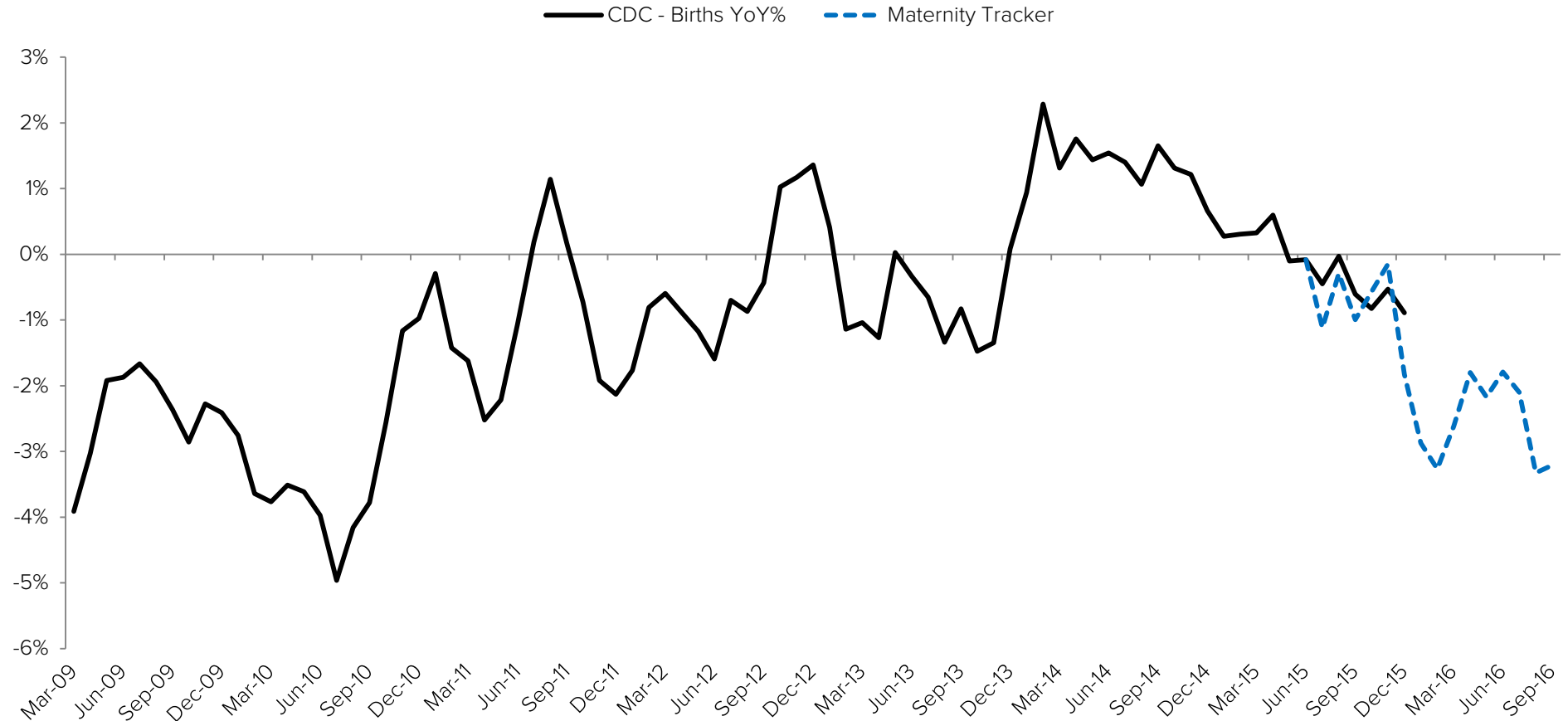


# Declining Birth Rates: Where's Baby?

# MATERNITY DOWN IN 2016



# MATERNITY CONTINUES NEGATIVE

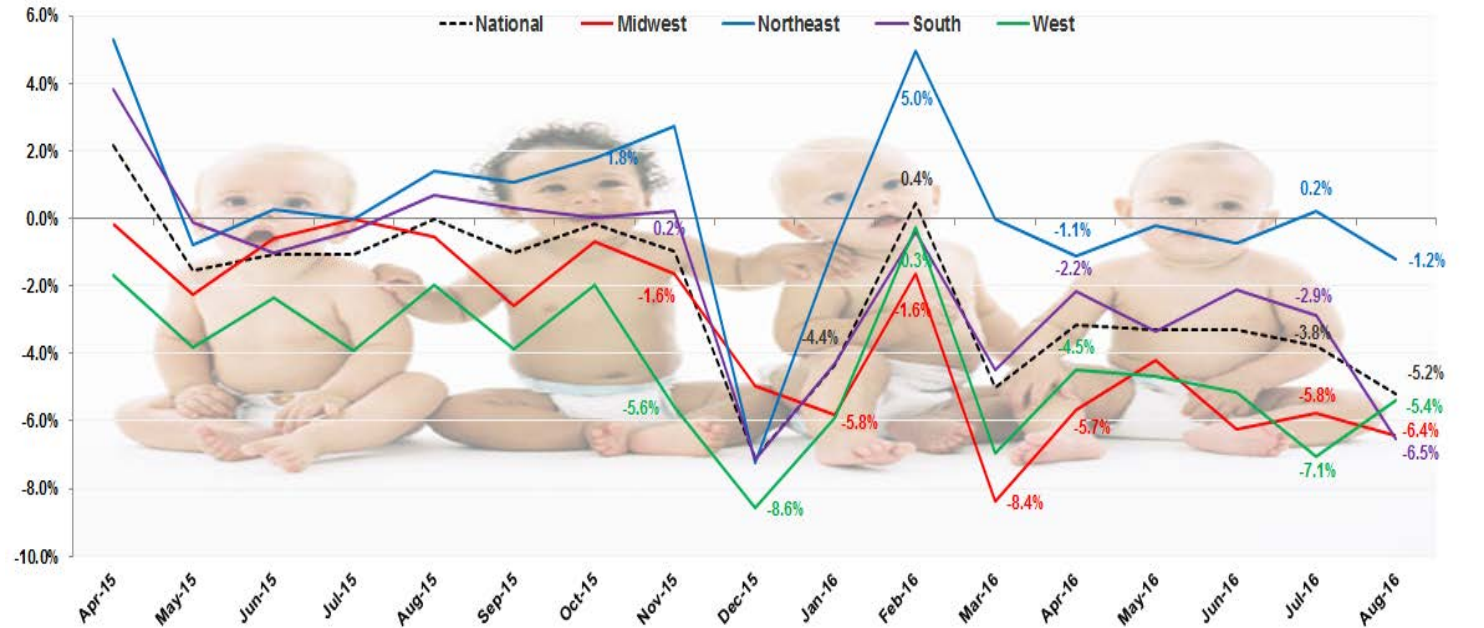


# FACILITY WEIGHTED MATERNITY

	3Q15	4Q15	1Q16	Apr-16	May-16	Jun-16	2Q16	Jul-16	Aug-16	Sep-16 (P)	3Q16
Maternity Tracker/CDC Regression (yr/yr)	-1.0%	-1.8%	-2.5%	-2.2%	-0.5%	-2.7%	-1.8%	-3.0%	-4.2%	-2.4%	-3.2%
HCA - Maternity Tracker (wtd, yr/yr)	-0.9%	-1.6%	-2.8%	-1.7%	0.6%	-3.0%	-1.3%	-2.9%	-5.1%	-3.3%	-3.8%
THC - Maternity Tracker (wtd, yr/yr)	0.2%	-1.0%	-2.4%	-1.4%	1.2%	-2.4%	-0.9%	-3.0%	-4.4%	-2.1%	-3.2%
CYH - Maternity Tracker (wtd, yr/yr)	-0.6%	-1.7%	-3.3%	-1.5%	0.7%	-1.7%	-0.8%	-2.5%	-4.3%	-1.4%	-2.8%
MD - Maternity Tracker (wtd, yr/yr)	-0.7%	-1.4%	-1.8%	-1.2%	-0.4%	-2.6%	-1.4%	-3.1%	-4.5%	-3.1%	-3.6%
LPNT - Maternity Tracker (wtd, yr/yr)	-1.5%	-0.2%	-2.6%	-0.1%	0.1%	1.6%	0.5%	0.6%	-1.5%	-2.6%	-1.2%
AHS - Maternity Tracker (wtd, yr/yr)	-1.8%	-1.9%	-2.0%	-2.0%	-0.8%	-2.8%	-1.9%	-3.3%	-4.2%	-2.7%	-3.4%

# BIRTH RATES BY REGION

BIRTH TRACKER: UNITED STATES BY CENSUS REGION- Y/Y RATE OF CHANGE



DATA SOURCE: HEDGEYE MATERNITY TRACKER

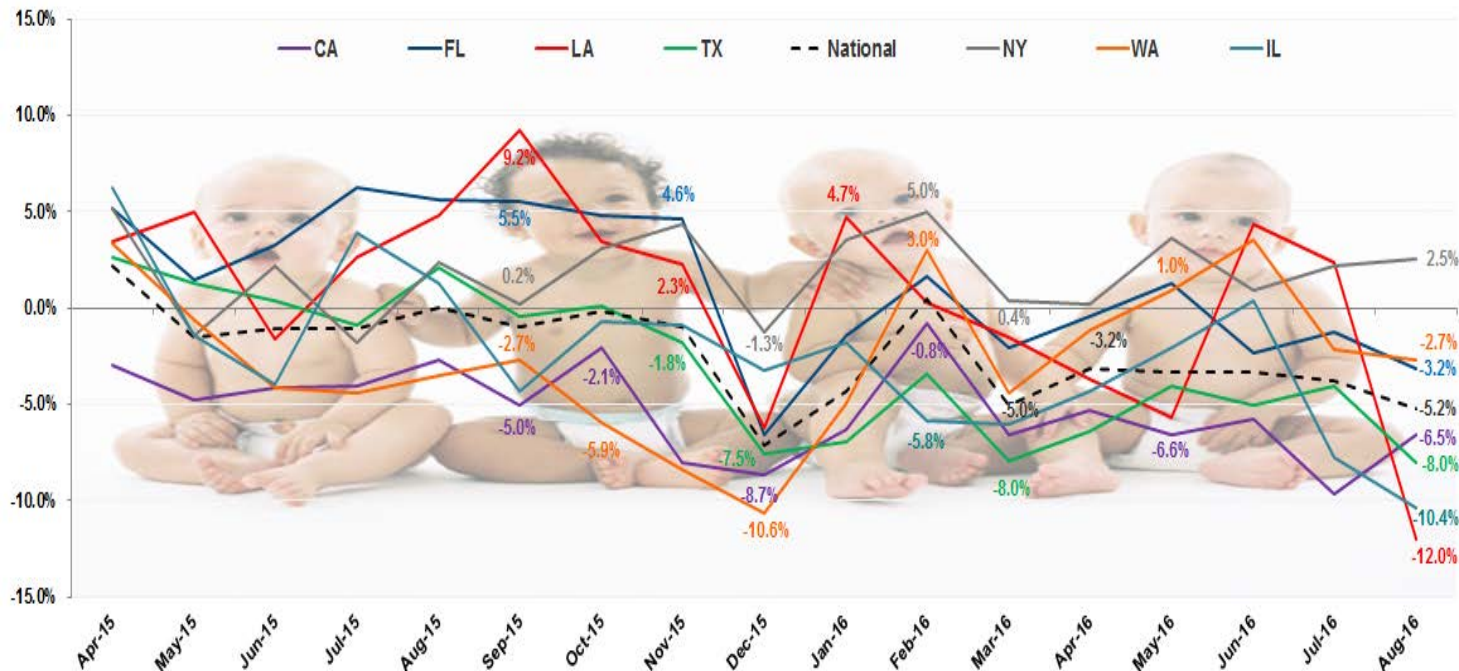
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Nationally, birth rates declined - 5.2% in August.

With the exception of the Northeast Census region, the other three census regions saw a Y/Y Roc that was worse than the national average with the South showing a notable slowdown

# BIRTH RATES CONTINUED

BIRTH TRACKER: SELECTED STATES VS. NATIONAL AVERAGE-Y/Y RATE OF CHANGE



DATA SOURCE: HEDGEYE MATERNITY TRACKER

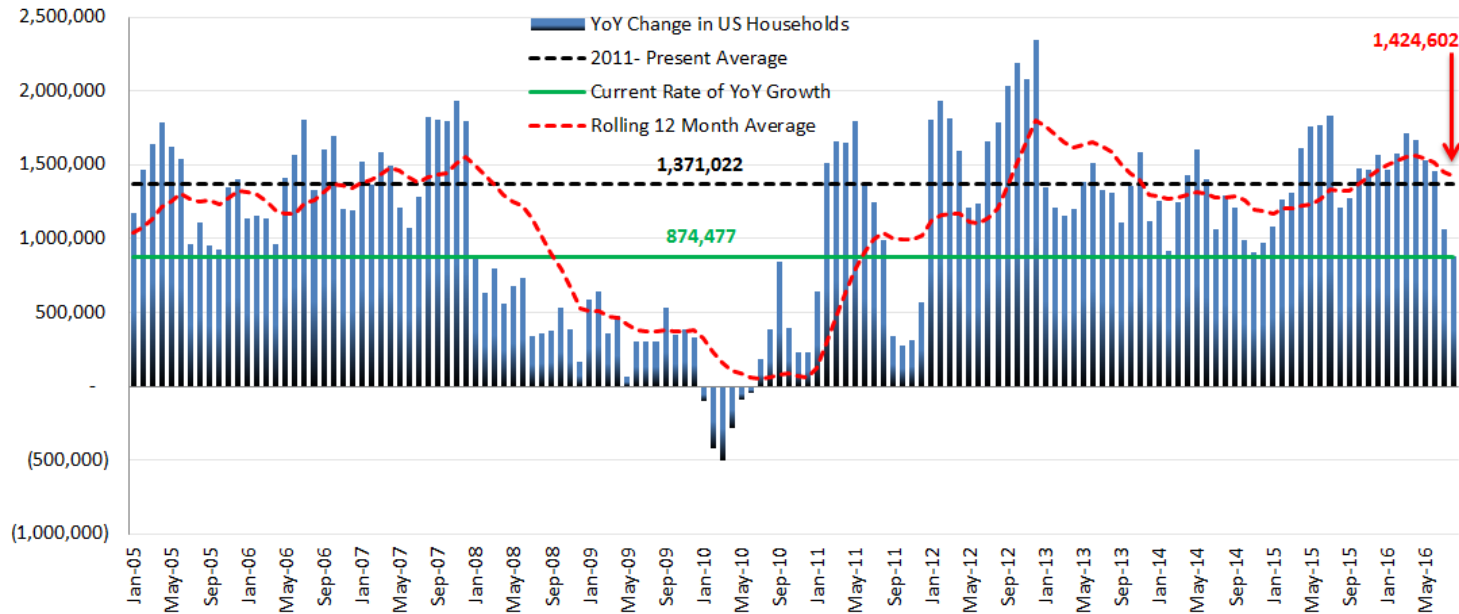
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On a state level, birth rates are declining across the country.

The data for New York (in Gray) represents the minority, as just 7 of the contiguous United States exhibited a **Positive Y/Y Roc** in August.

# HH FORMATION: MULTI YEAR LOW

YEAR-OVER-YEAR GROWTH IN US HOUSEHOLDS BY MONTH  
( 2005-PRESENT )

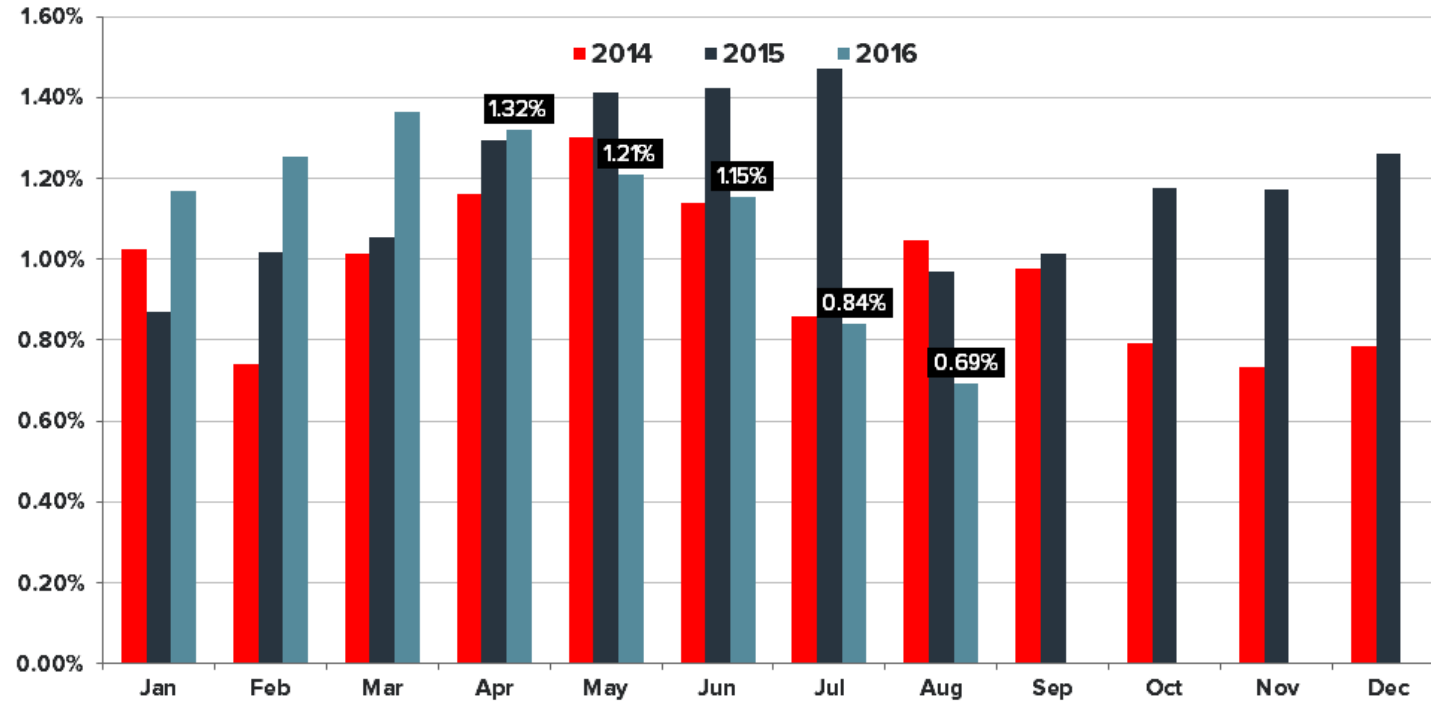


Less households have been formed in 2016, and the current YoY growth rate is far below both the 2011-Present Average, and the Rolling 12 Month Average.



# GROWTH AT MULTI-YEAR LOWS

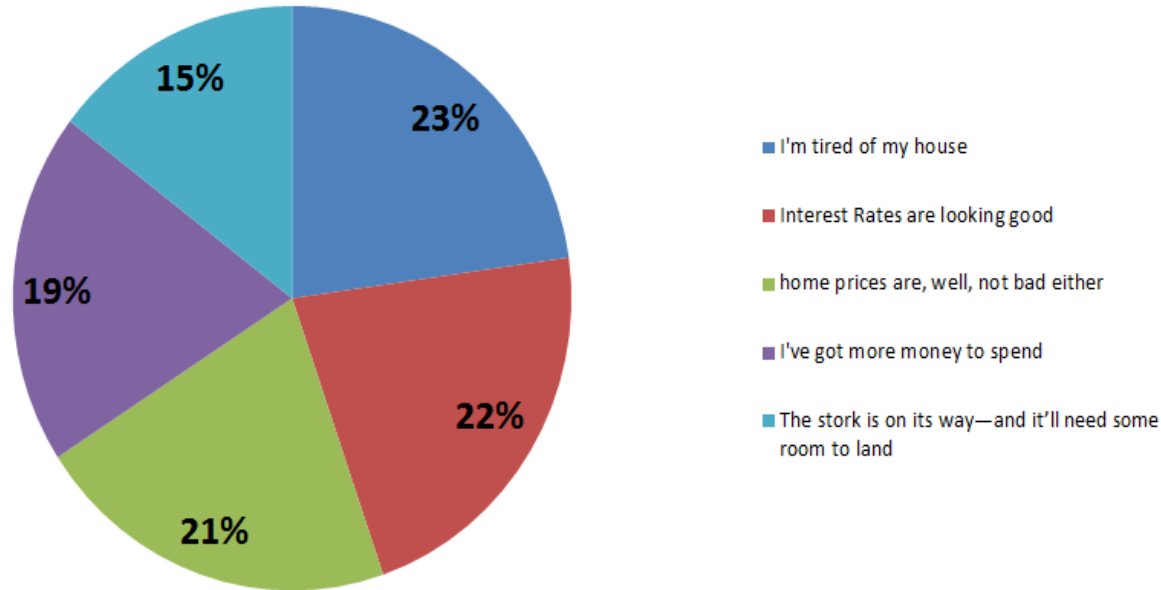
Y/Y % Change in Household Formation: 2014, 2015, 2016



The current YoY growth rate is far below both the 2011-Present Average, and the Rolling 12 Month Average.

# THE STORK IS COMING, CALL OUR AGENT

Reason for Buying a New Home



DATA SOURCE: NAR, HEDGEYE

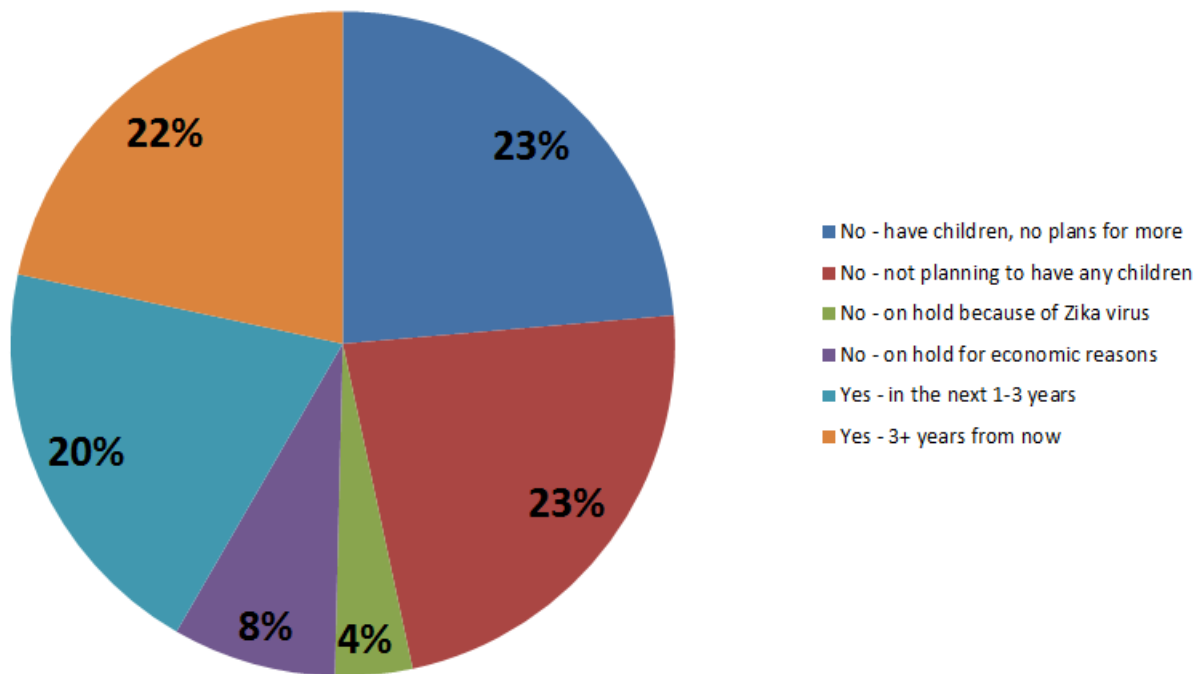
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In 2015, the NAR conducted this survey and targeted it towards potential home buyers.

**15%** of the surveyed population noted a baby on the way as their primary reason for purchasing a new home.

# HEDGEYE MATERNITY SURVEY

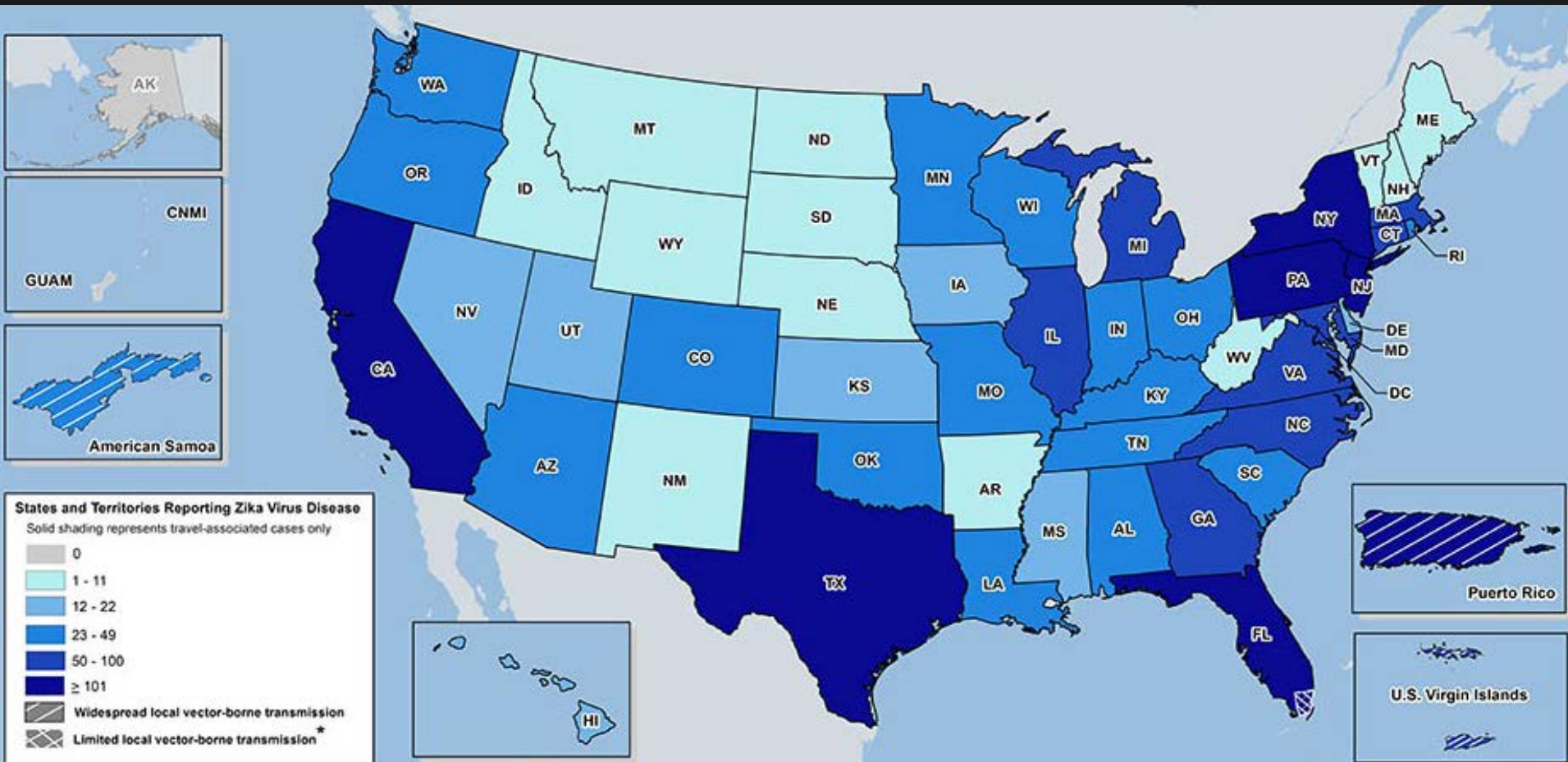
Hedgeye Maternity Survey Results: Nationally



Hedgeye conducted a survey of 5,000 women between the ages of 18 and 34 nationwide.

Each participant was given six possible choices for the question:  
**Are you planning to have children?**

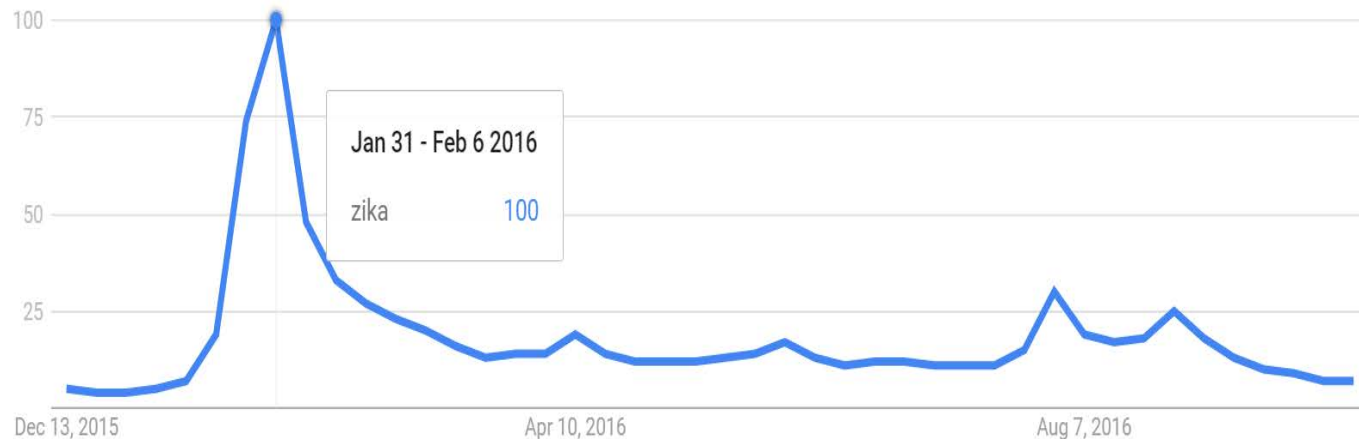
# ZIKA IN THE UNITED STATES



# ZIKA IN THE NEWS

Interest over time ?

Google Trends: "Zika"



Search Trends peaked into the Olympics and have been flat to down subsequently.

# ZIKA: QUANTIFYING THE IMPACT

Hedgeye Survey Questions & Responses	Total	No - have children, no plans for more	No - not planning to have any children	No - on hold because of Zika virus	No - on hold for economic reasons	Yes - in the next 1-3 years	Yes - 3+ years from now
National	4,976	1,176	1,144	187	396	996	1,077

Deterred by Zika	187
Planning on having children soon	996
Total	1183

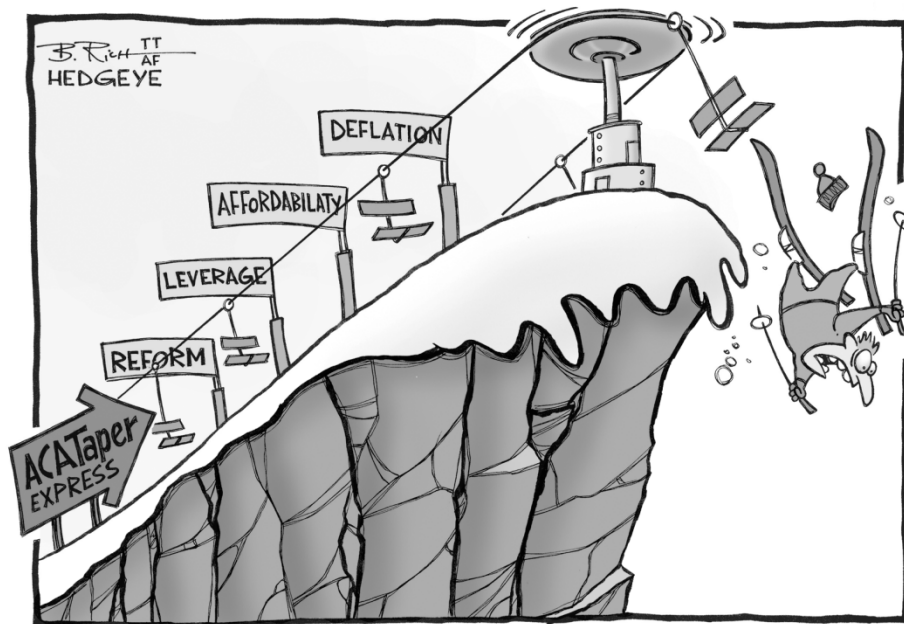
Numerator - Zika's Deterrant Effect	187
Denominator - (Planning to have children soon + Zika's Deterrant Effect)	1183

Zika's potential impact on maternity rates (Numerator / Denominator)	15.8%
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Number of births (2014), CDC	3,988,076
Zika's potential impact	(630,406)

Source: Hedgeye, CDC

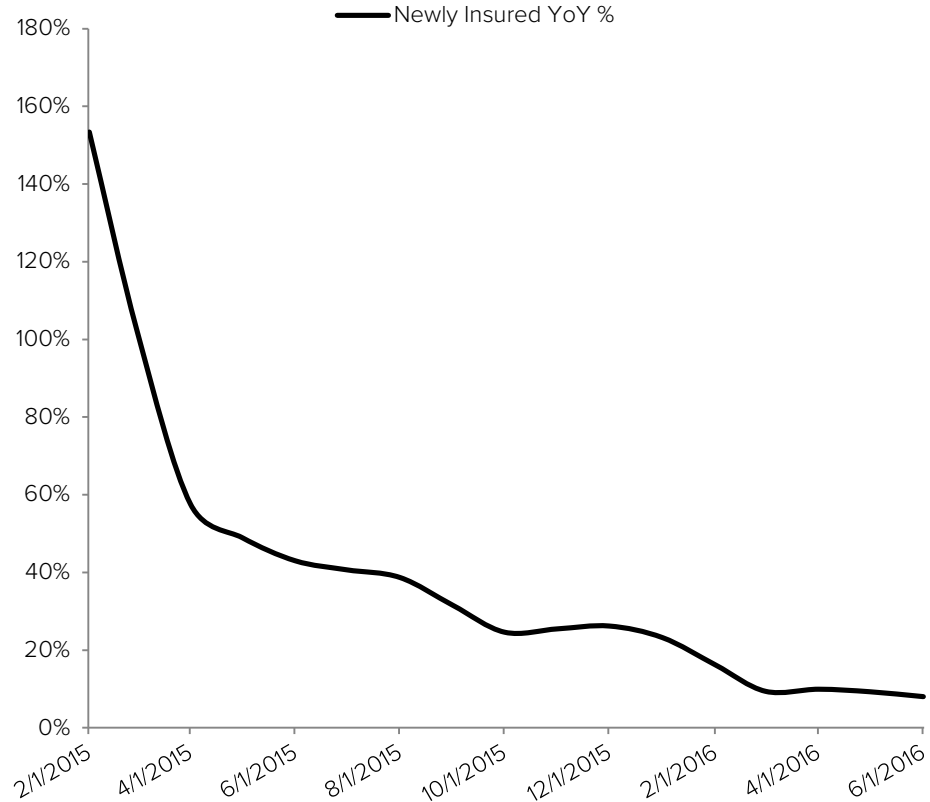
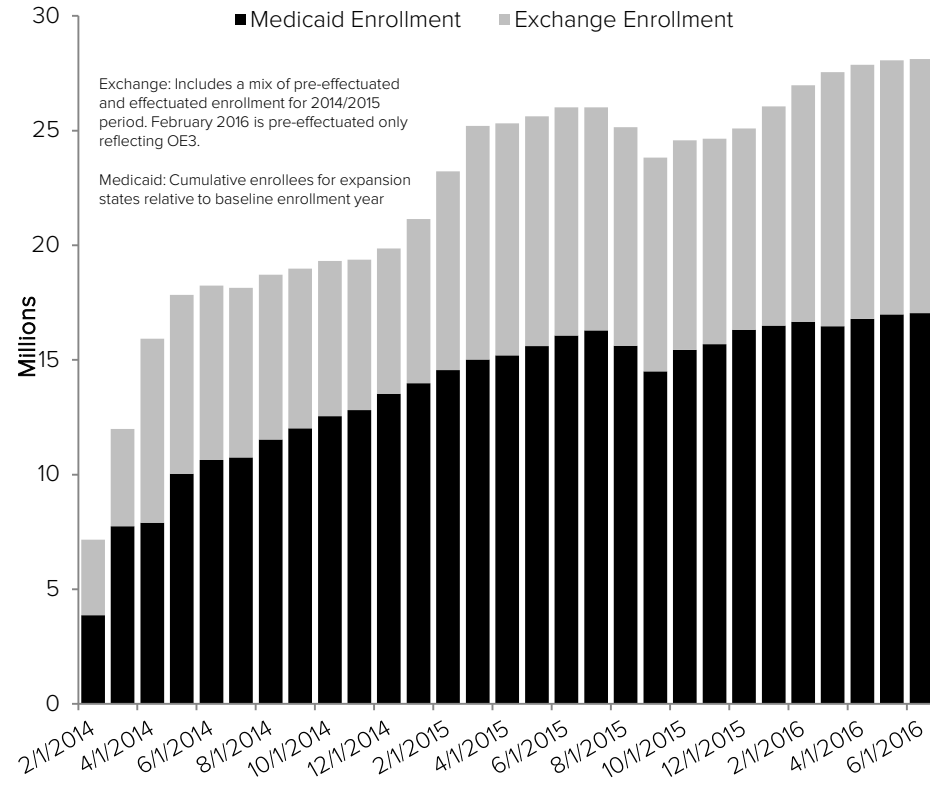
The potential impact to births stemming from Zika concerns is not inconsequential at almost 16%.



# #ACATAPER

# 28+ MILLION NEWLY INSURED

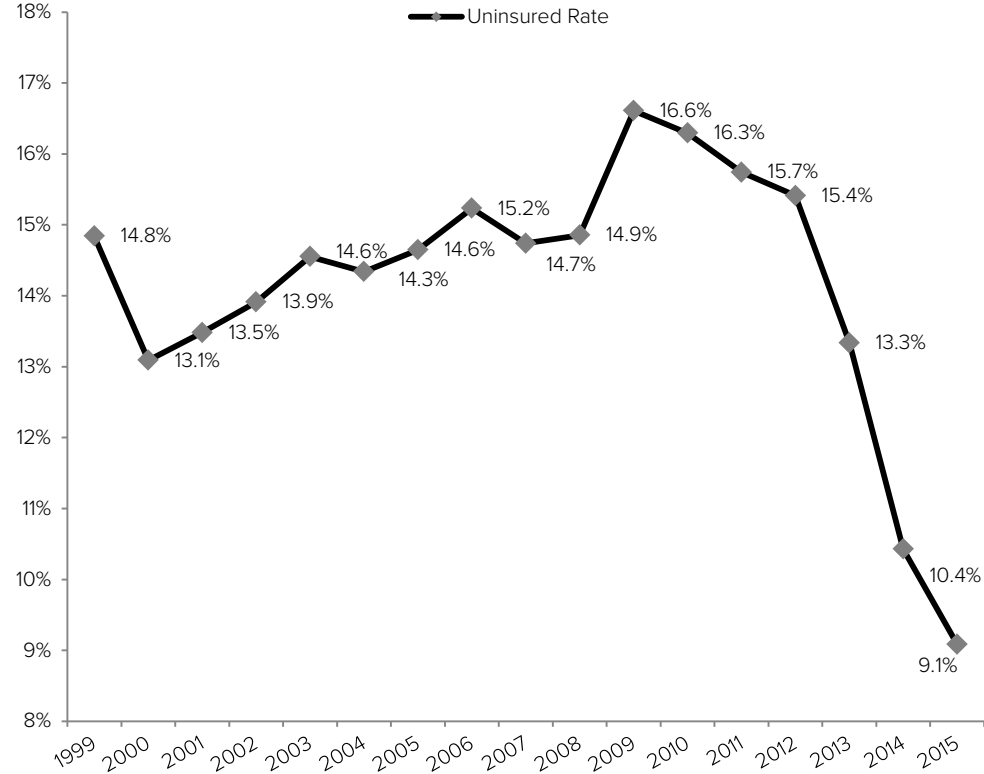
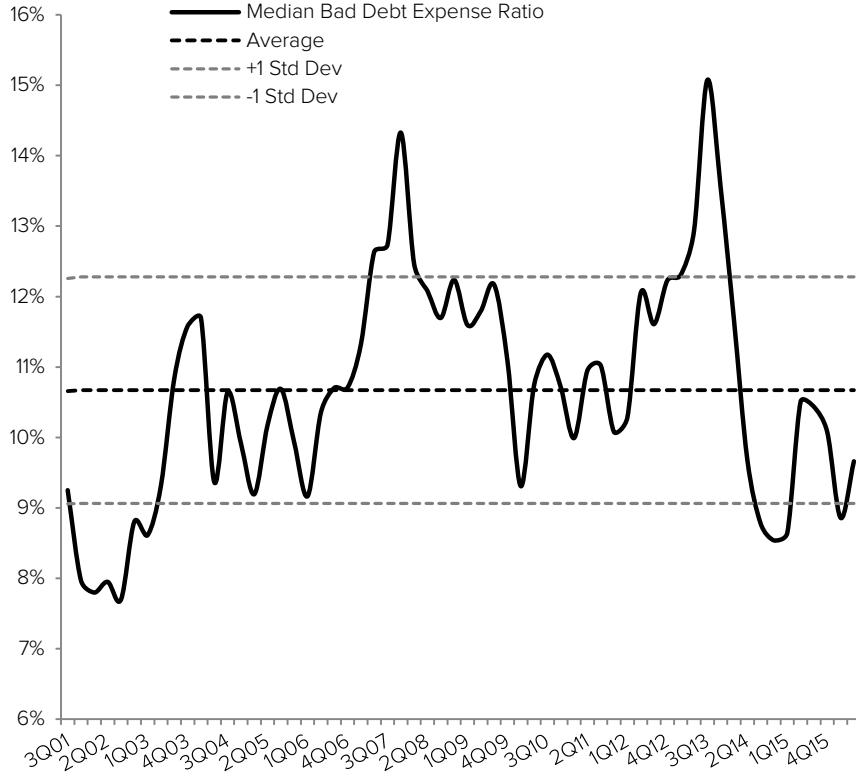
## 60% MEDICAID EXPANSION / 40% EXCHANGE





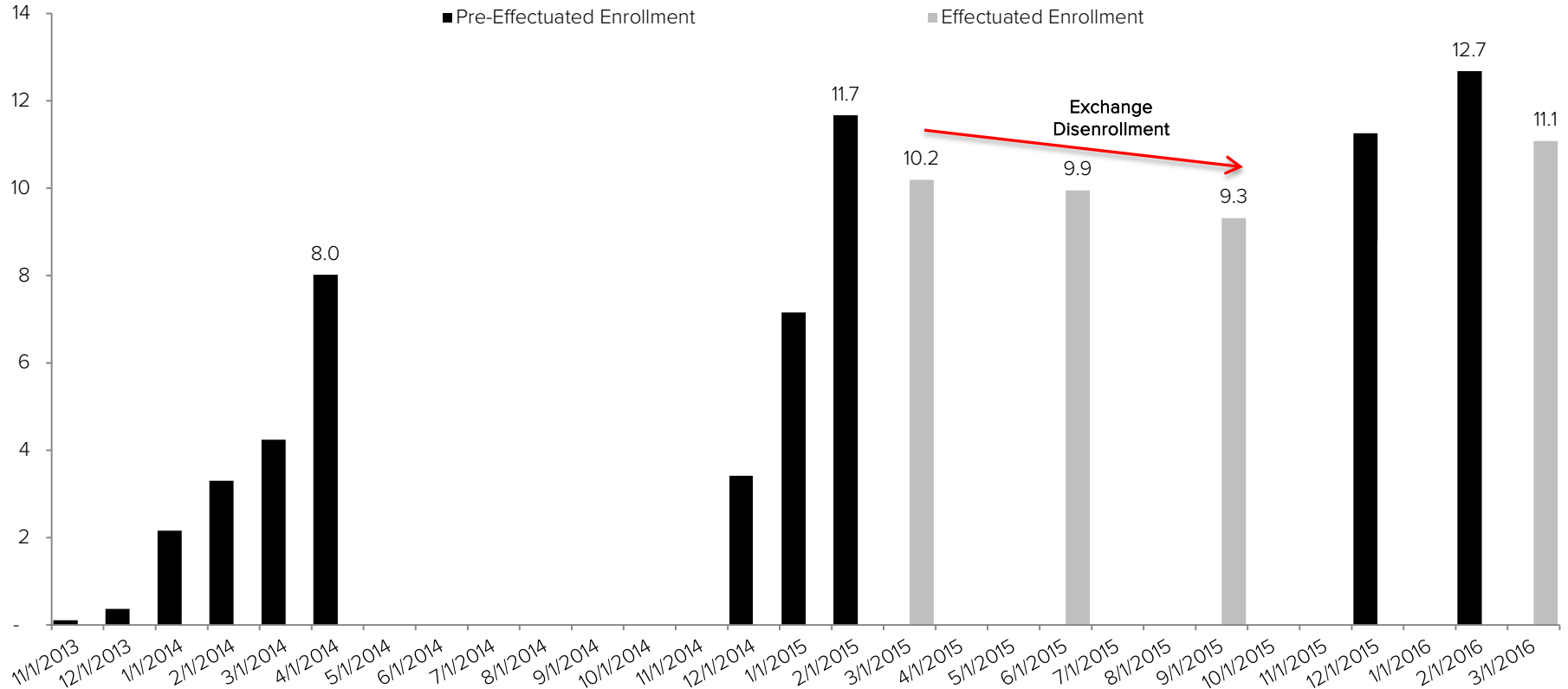
# UNINSURED RATE ALL-TIME LOW

## SHARP DECLINE IN HOSPITAL BAD DEBT EXPENSE

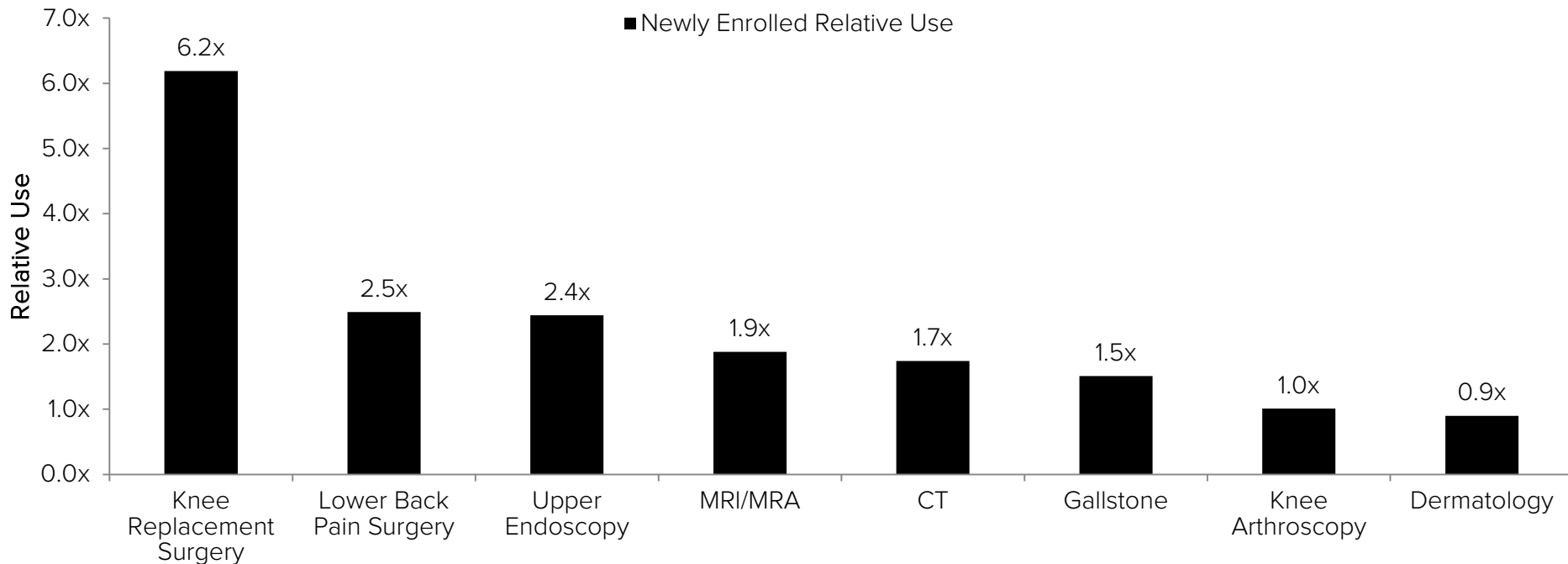


# EXCHANGE ENROLLMENT SLOWING

## 8.7% GROWTH IN EFFECTUATED ENROLLMENT MARCH 2016



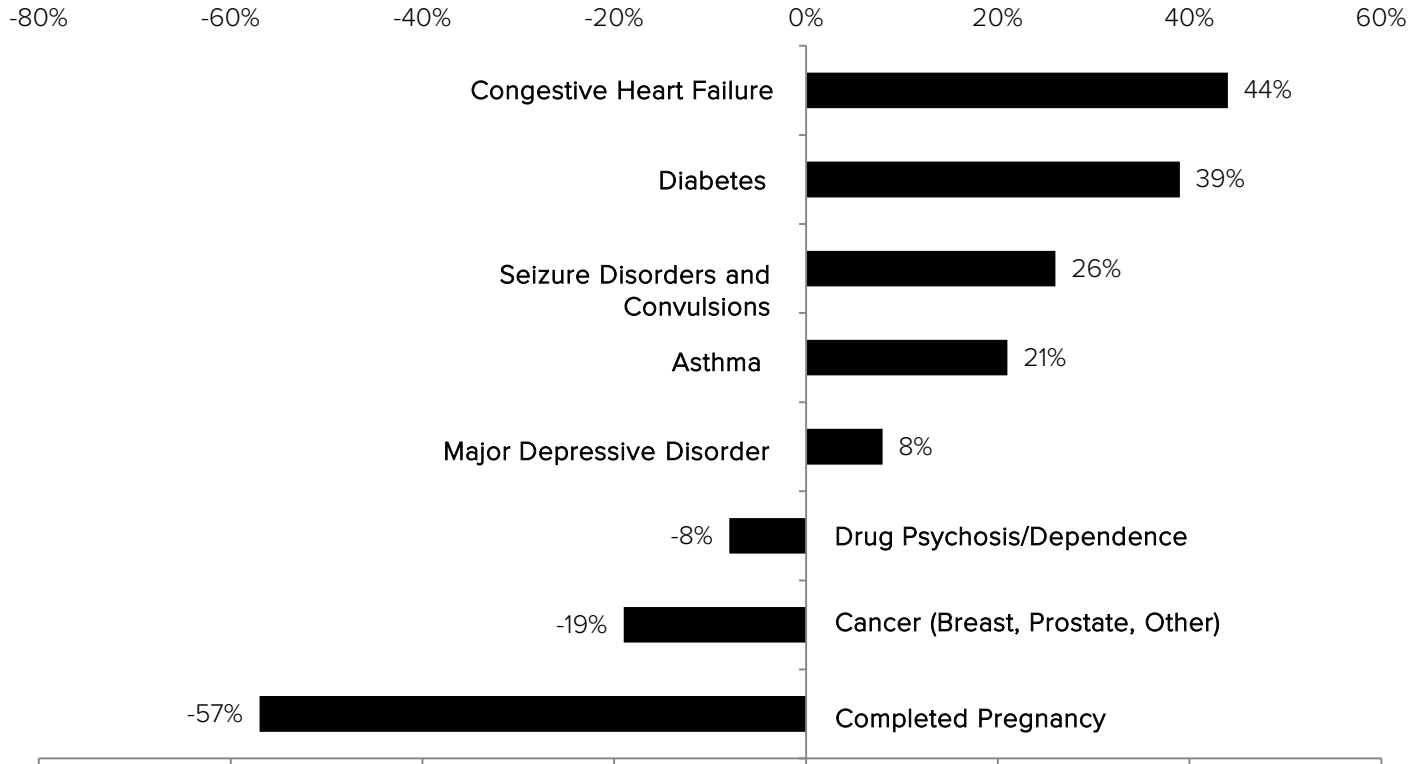
# PENT-UP DEMAND NEWLY INSURED



## SOCIETY OF ACTUARIES ANALYSIS OF KS CLAIMS DATA

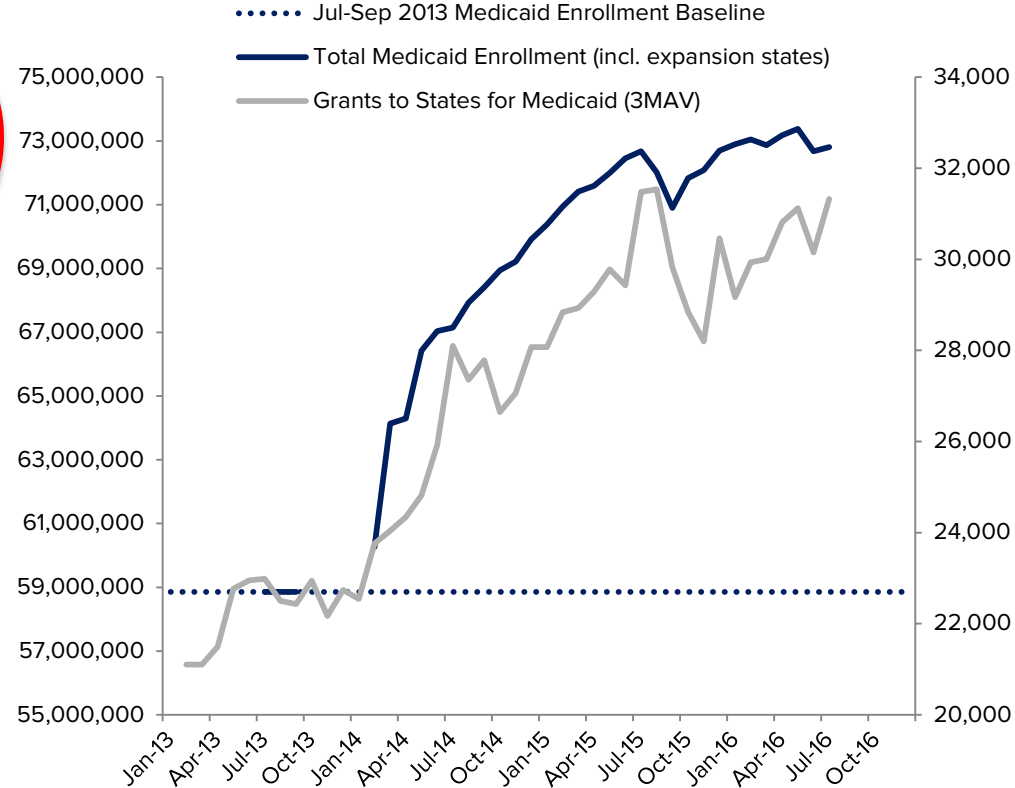
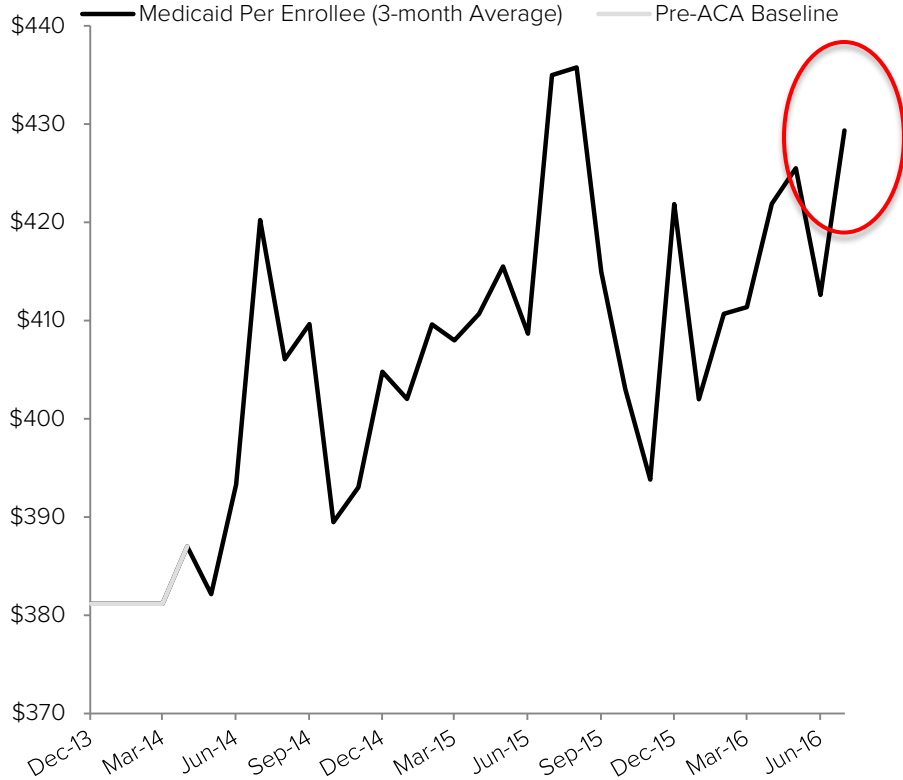
# HIGHER PREVALENCE OF DISEASE

Prevalence Rates of Specific Top Conditions, Exchange Compared to



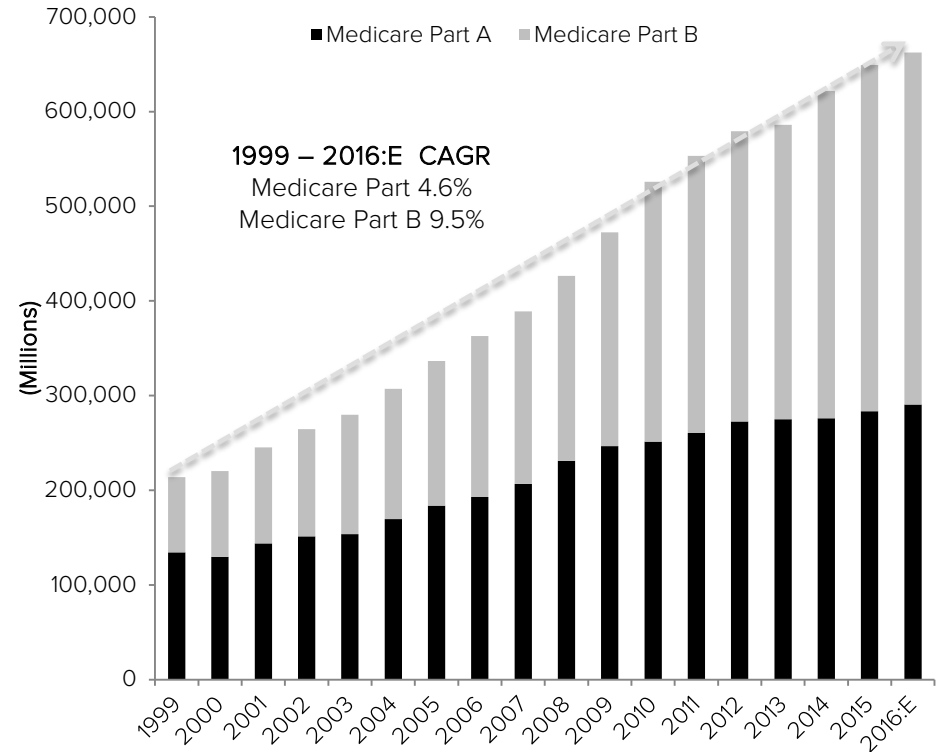
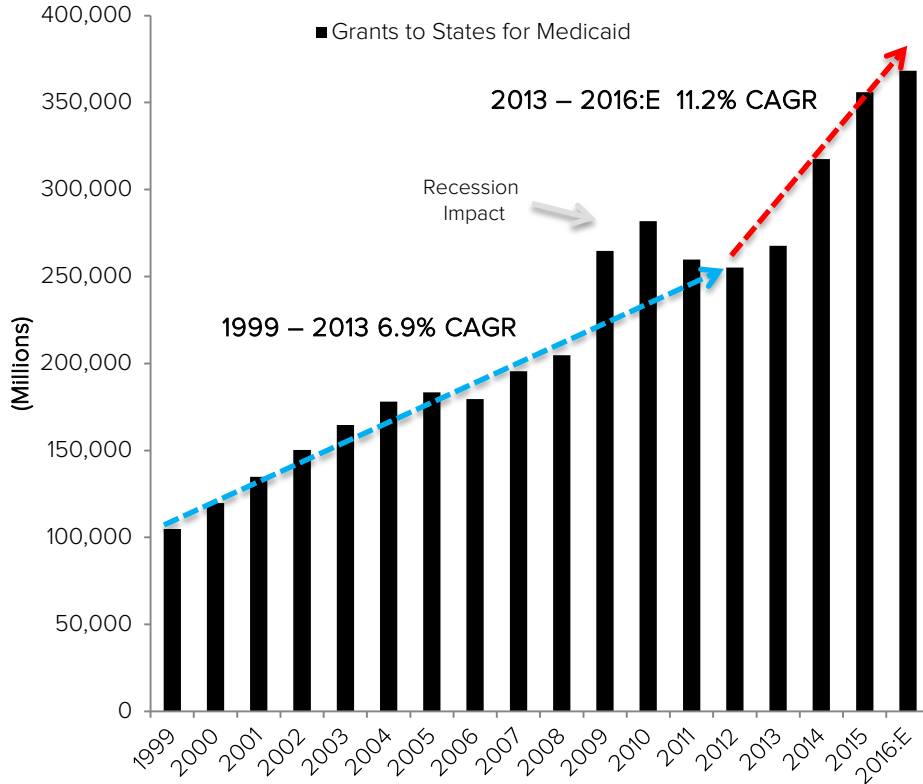
# MEDICAID PER ENROLLEE SPEND

## ENROLLMENT AND SPENDING PAST PEAK



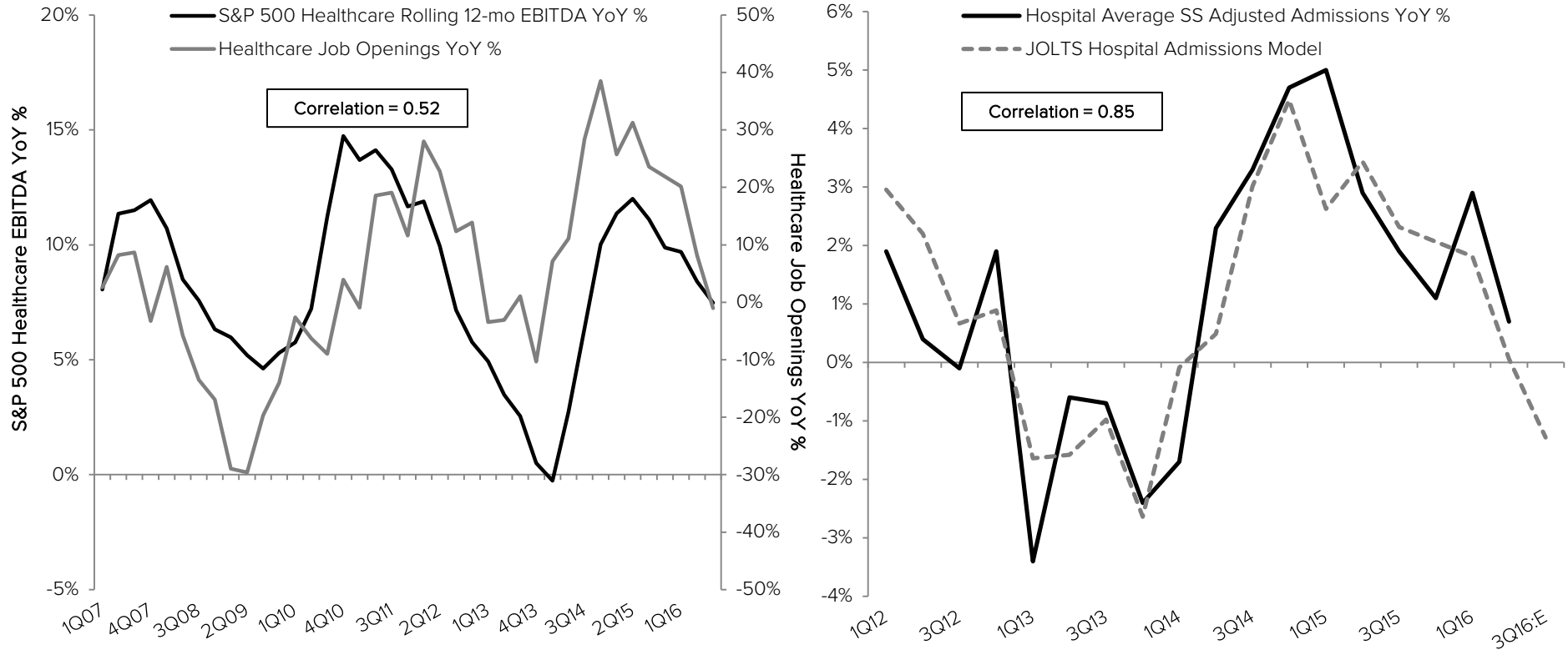
# FEDERAL GOVERNMENT OUTLAYS

## 2013-2015 FASTEST GROWTH IN MEDICAID EX-RECESSION



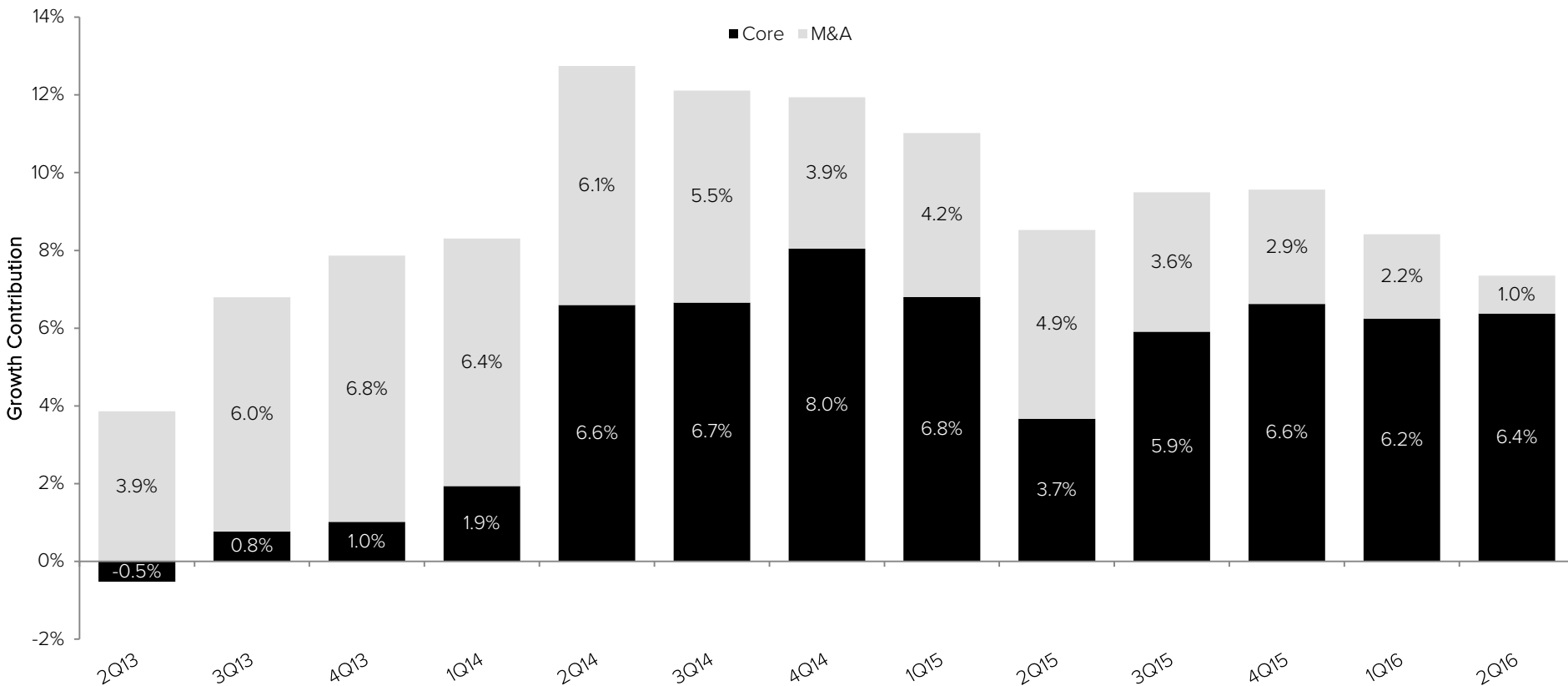
# HEALTHCARE GROWTH SLOWING

## EBITDA AND ADMISSION GROWTH TIED TO JOB OPENINGS



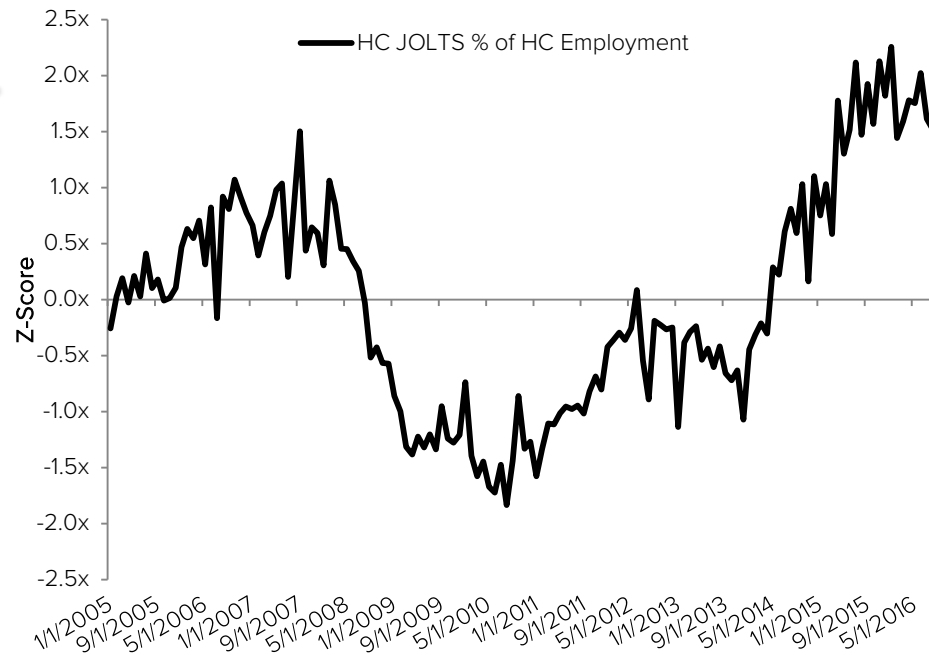
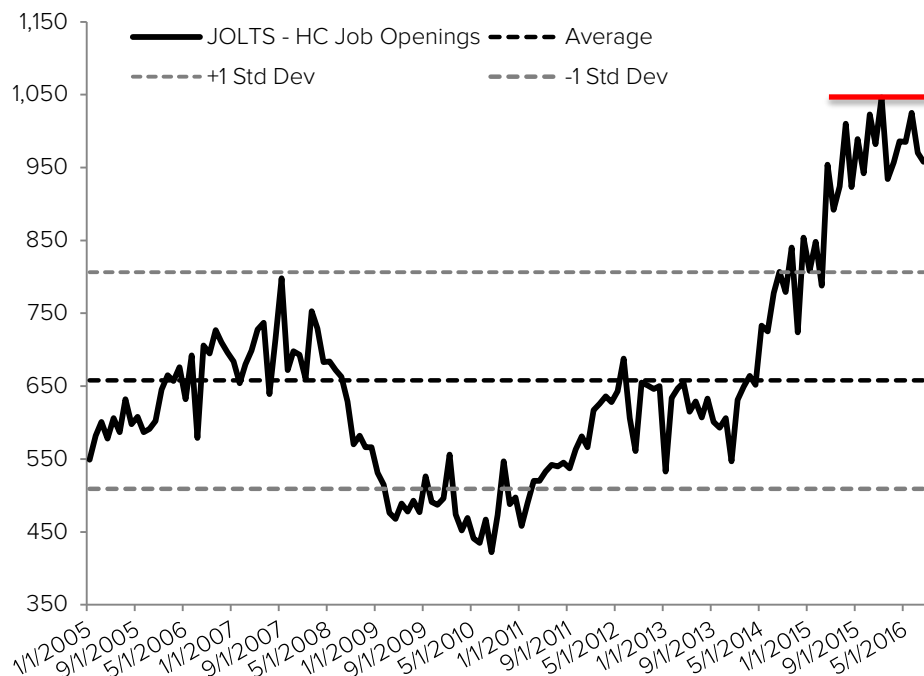
# SALES GROWTH CONTRIBUTION

## S&P 500 HEALTHCARE CORE AND M&A GROWTH





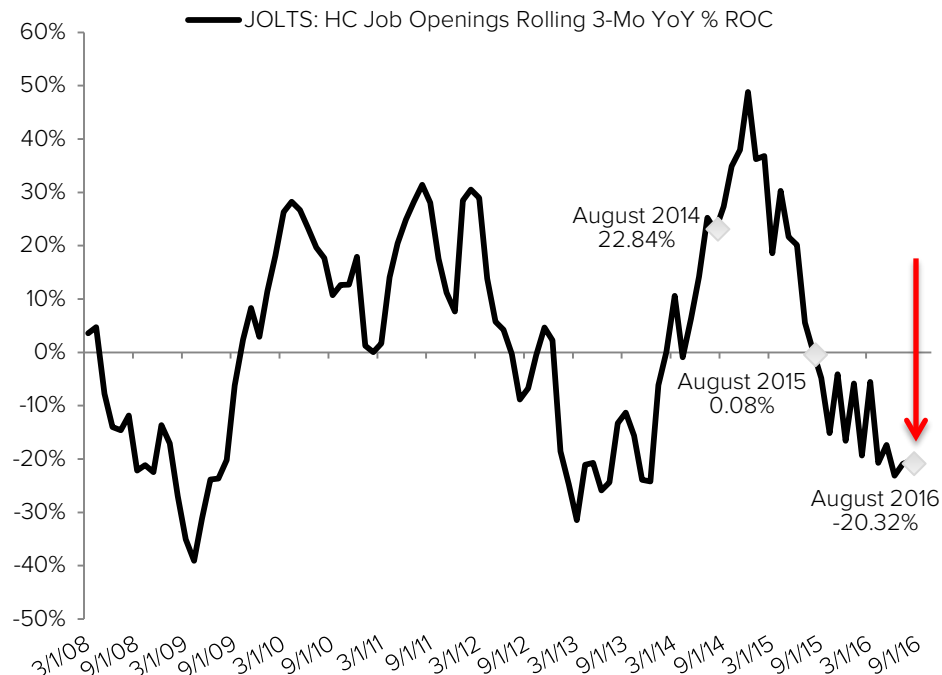
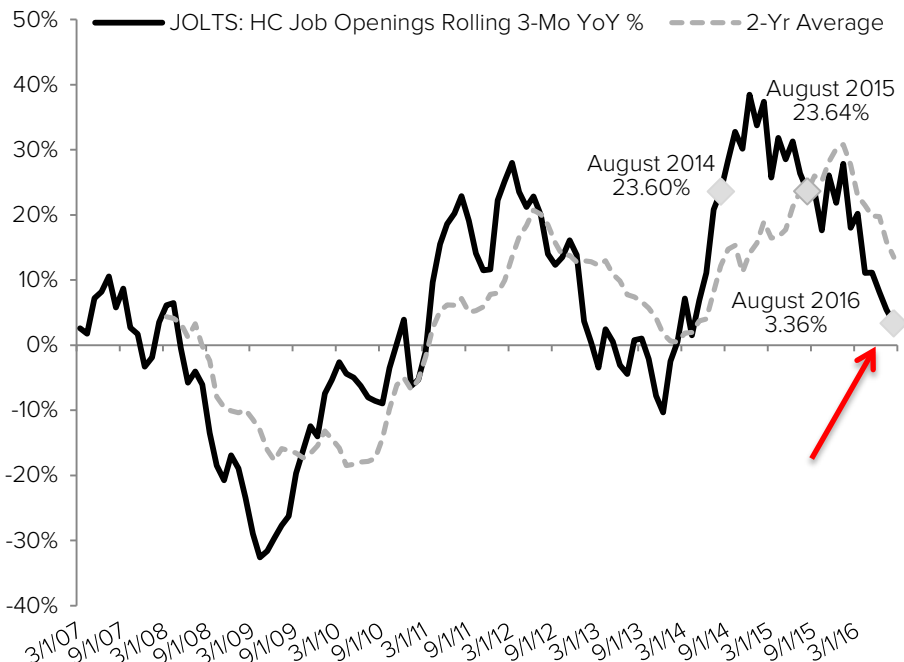
# HEALTHCARE JOB OPENINGS (JOLTS)



## HEALTHCARE JOB OPENINGS EXTENDED...

We have observed similar patterns across multiple metrics tied to medical consumption, enrollment, and employment suggesting that the Healthcare Economy is extended.

# HEALTHCARE JOB OPENINGS (JOLTS)

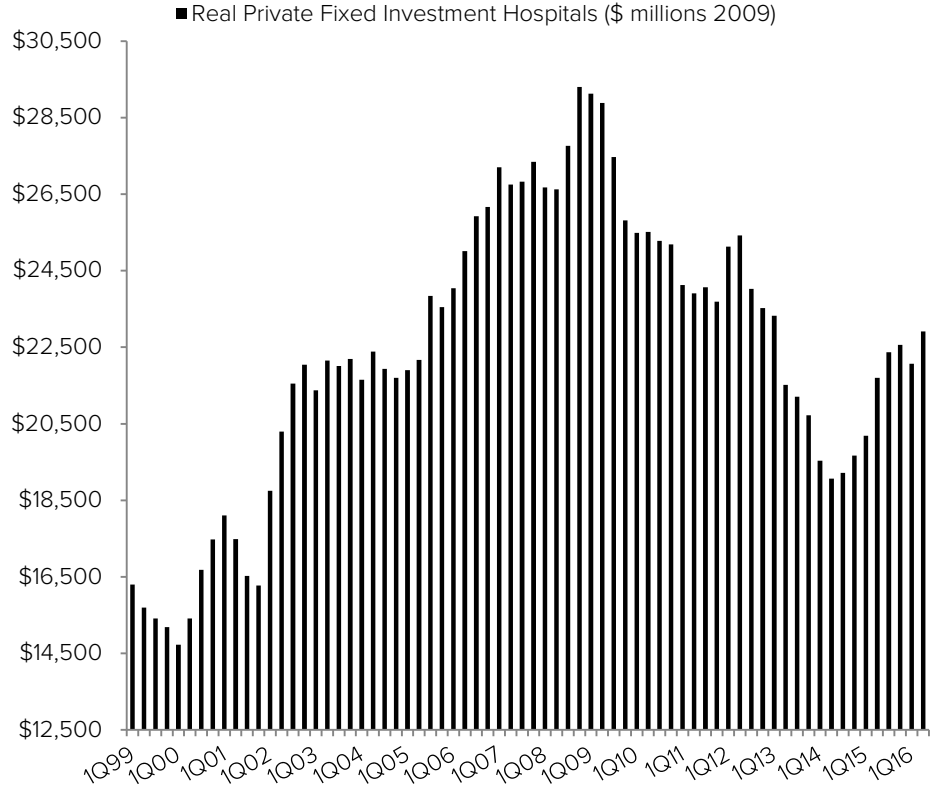
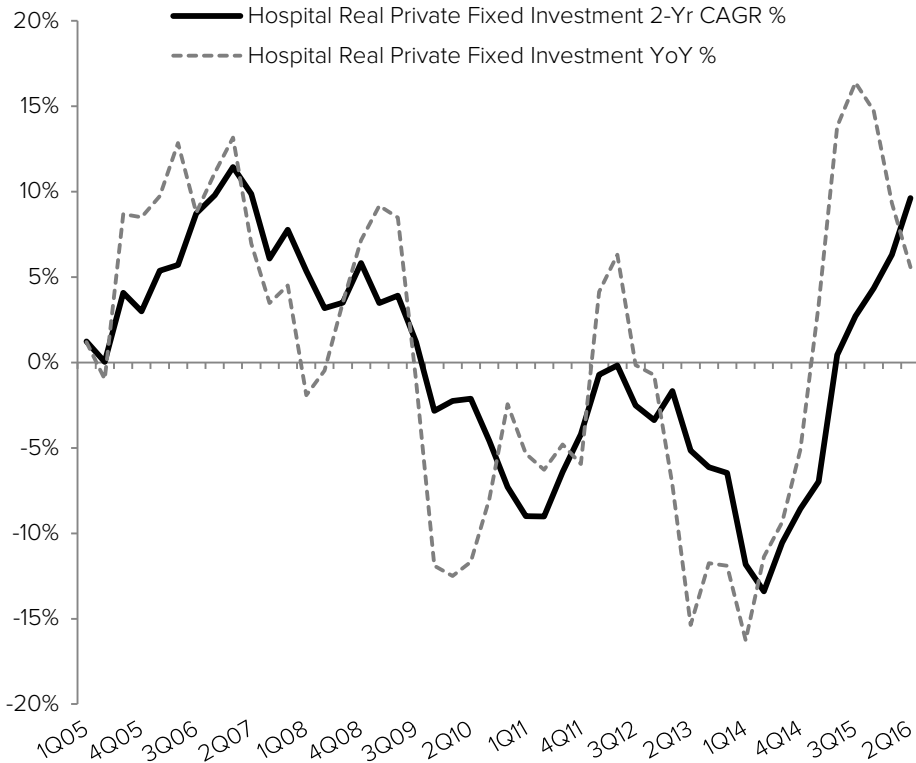


## HEALTHCARE JOB OPENINGS SLOWING...

After peaking in December 2014, Healthcare Job Openings posted the slowest growth in approximately 2-years. We expect growth to slow further as we comp out of stimulus.

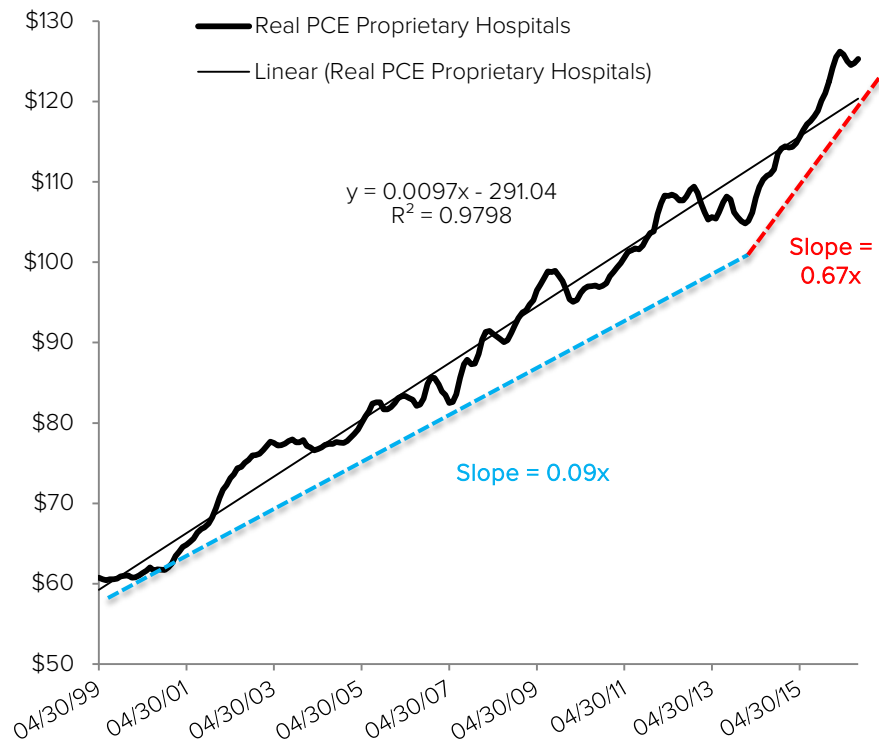
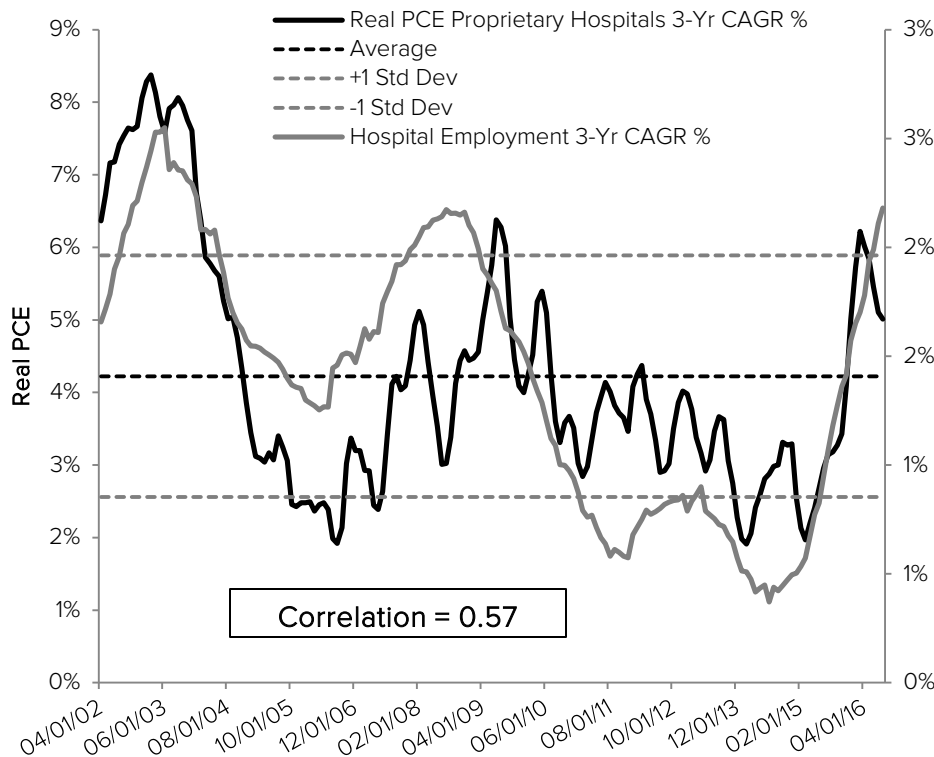
# HOSPITAL PRIVATE FIXED INVESTMENT

## HOSPITAL CAPEX COINCIDES WITH STIMULUS

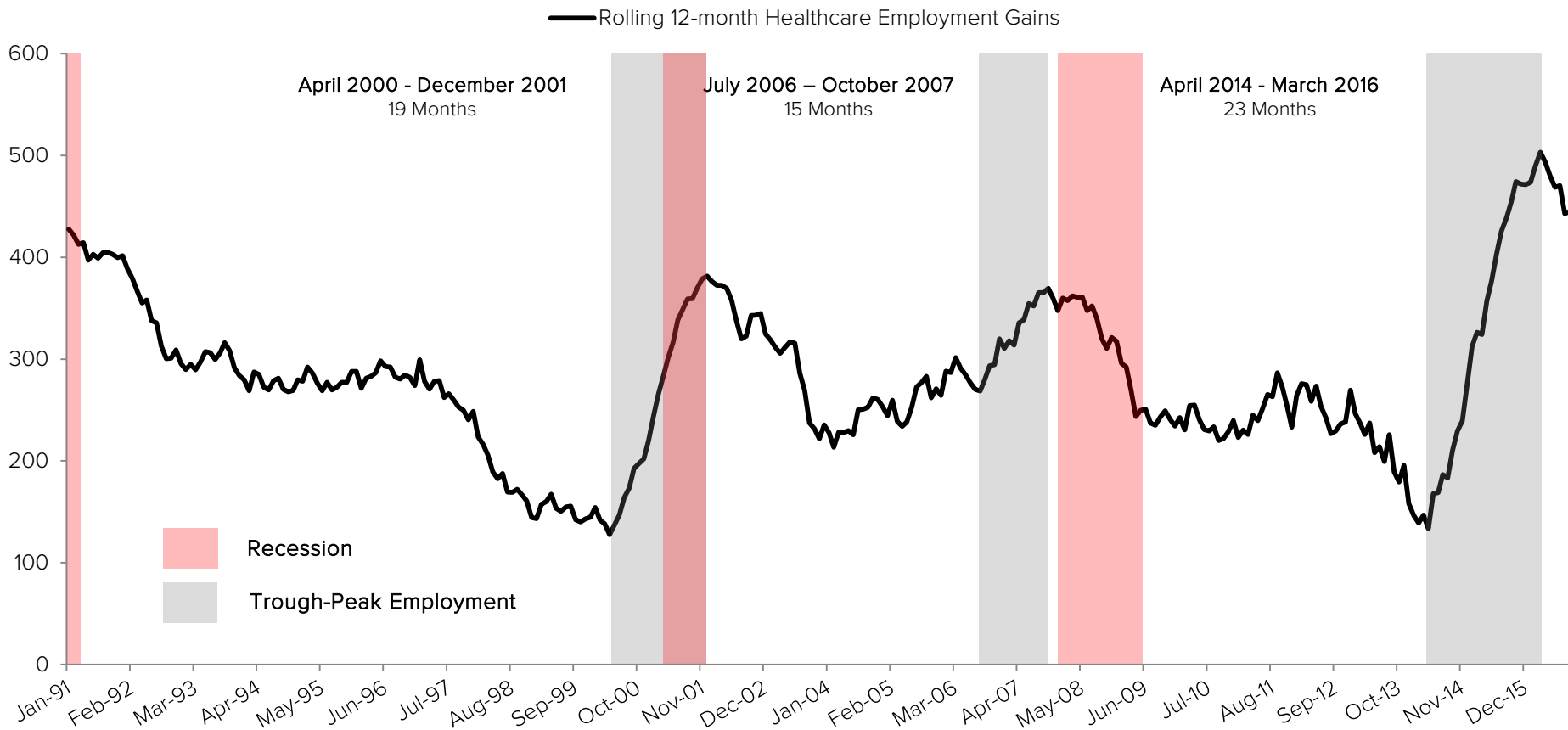


# REAL PCE PROPRIETARY HOSPITALS

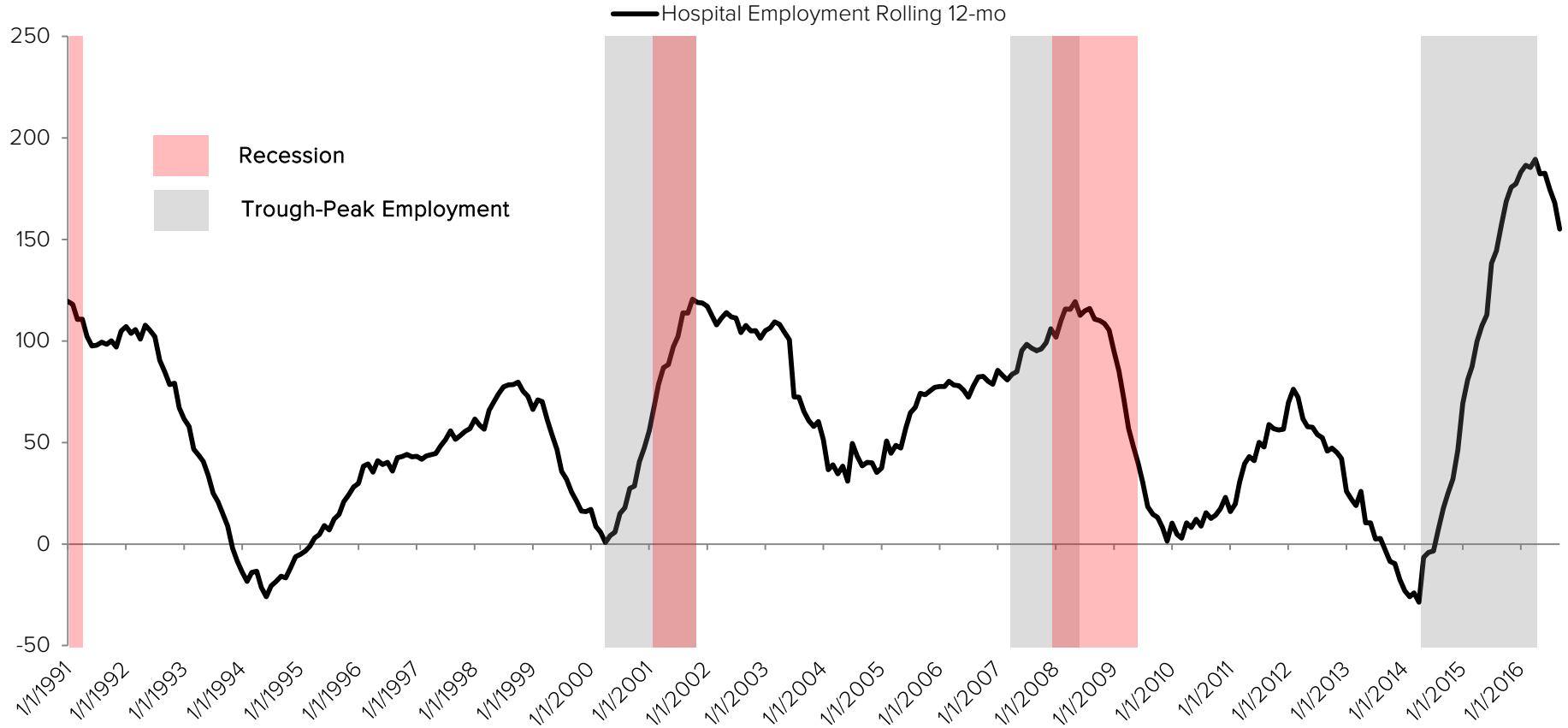
## REAL PCE GROWTH ACCELERATED WITH NEWLY INSURED



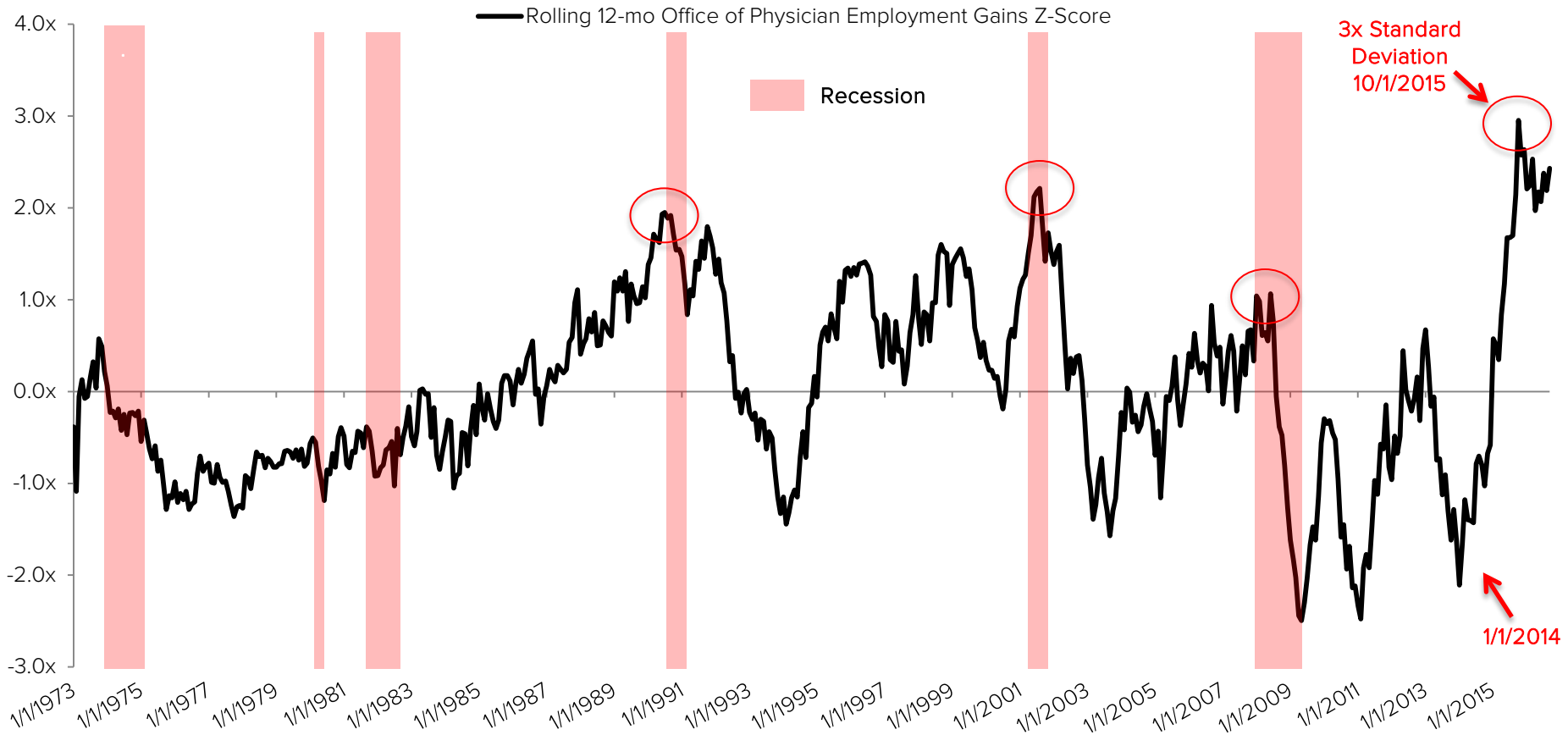
# HEALTHCARE EMPLOYMENT GAINS



# HOSPITAL EMPLOYMENT GAINS

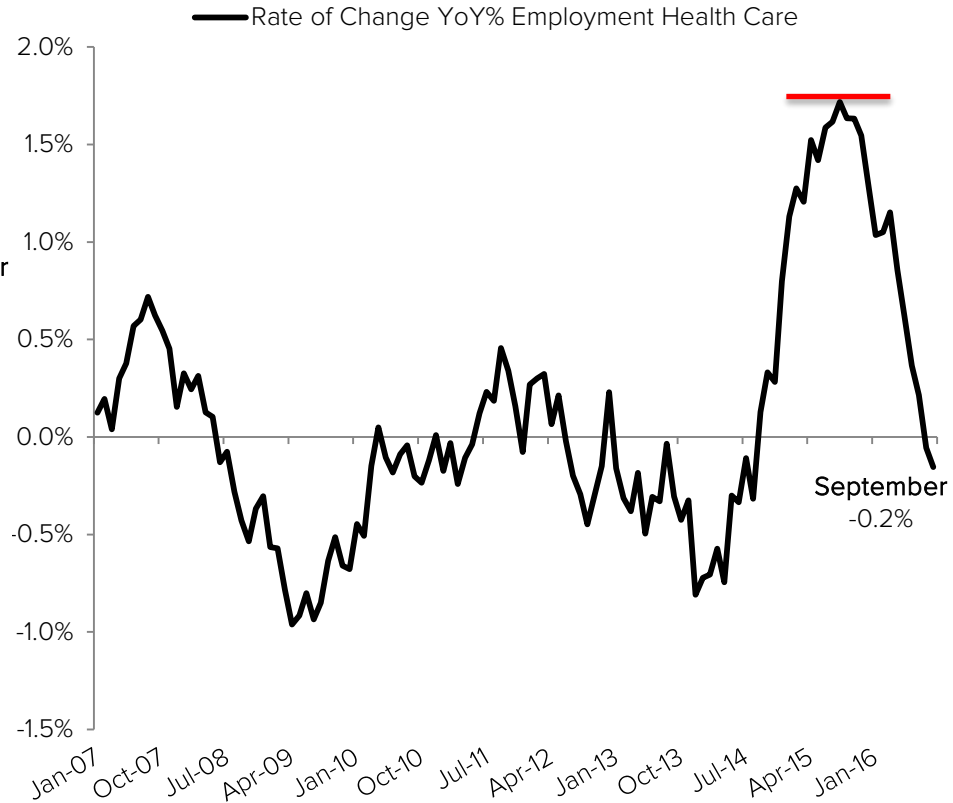
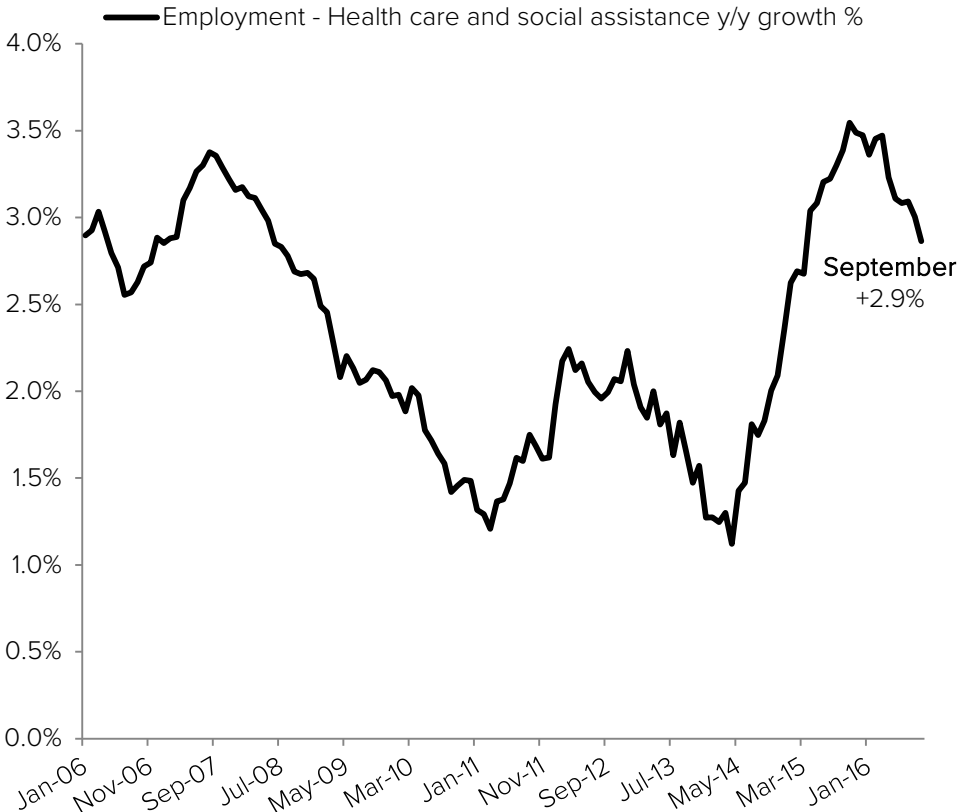


# PHYSICIAN EMPLOYMENT GAINS



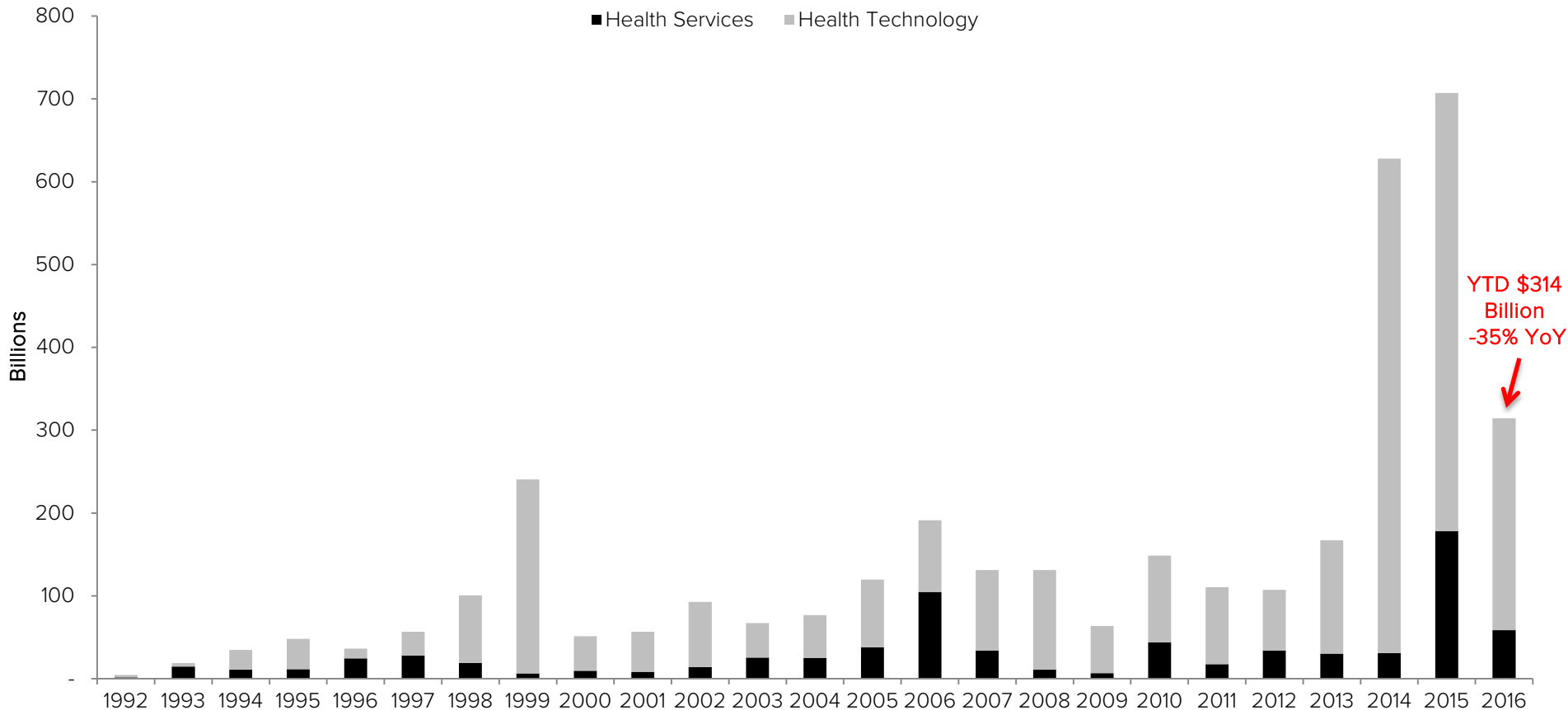
# HEALTHCARE EMPLOYMENT

## CONTINUES TO SLOW...

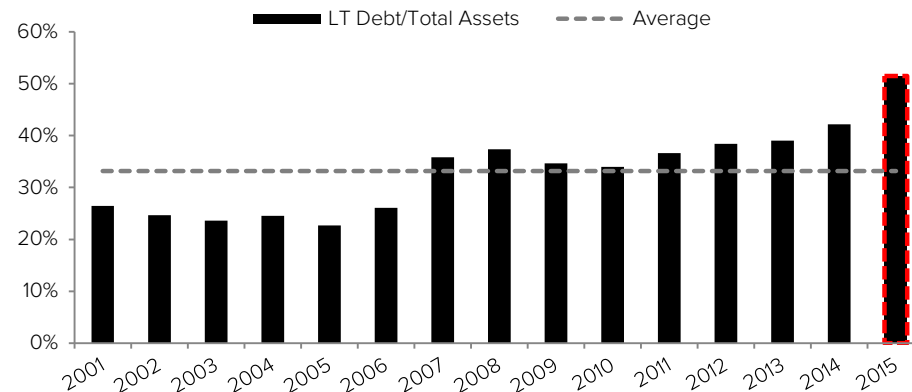
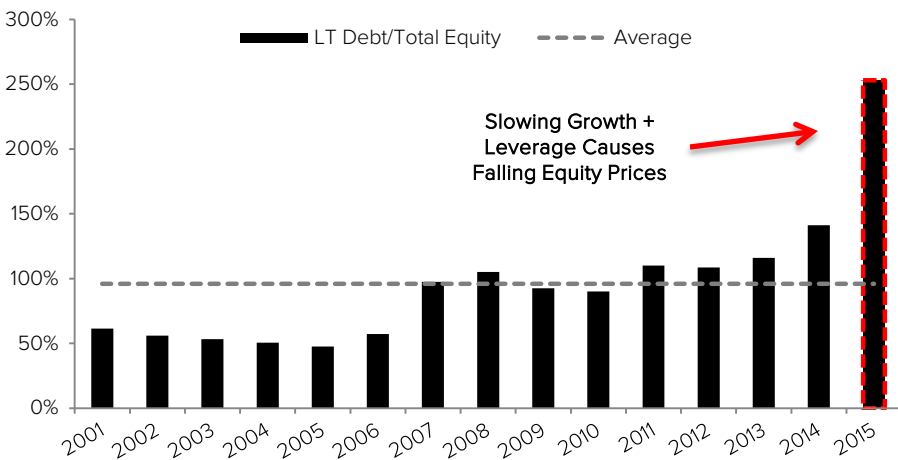
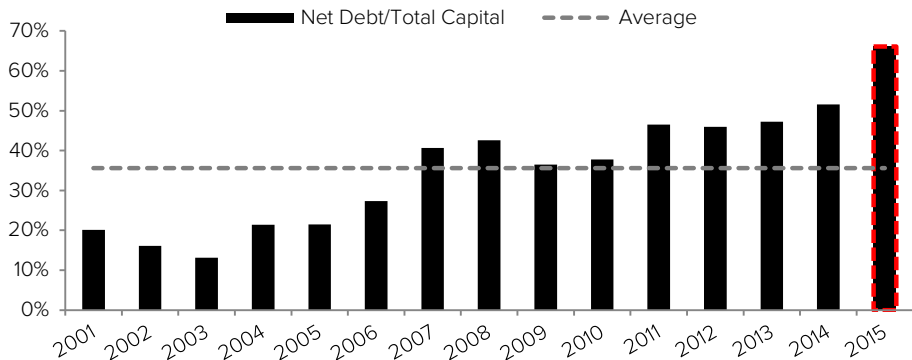
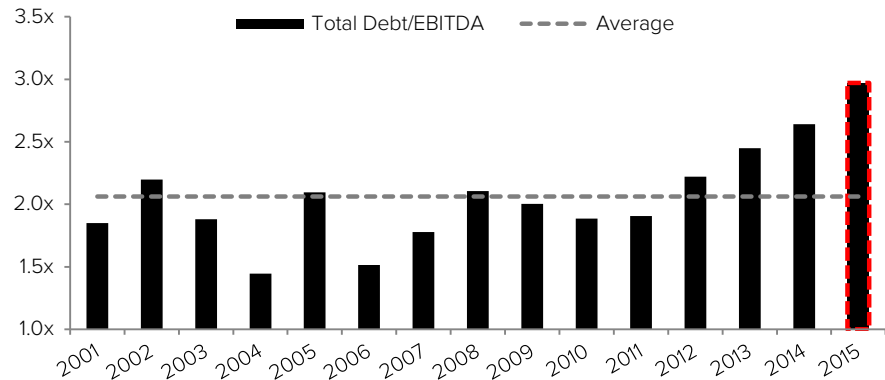




# GLOBAL HEALTHCARE M&A ACTIVITY

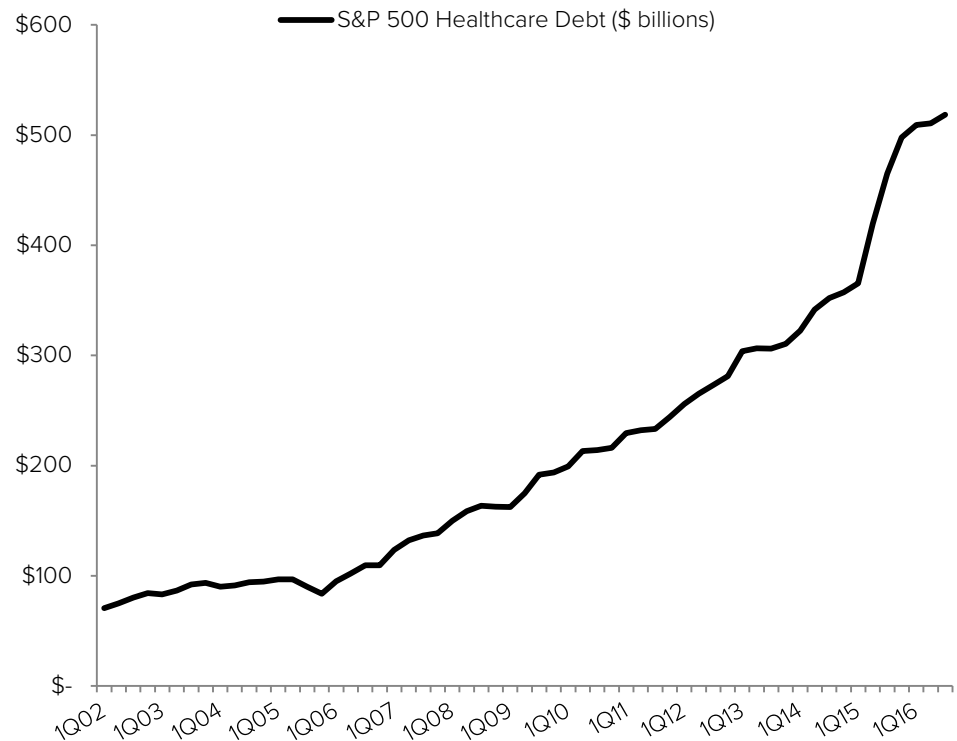
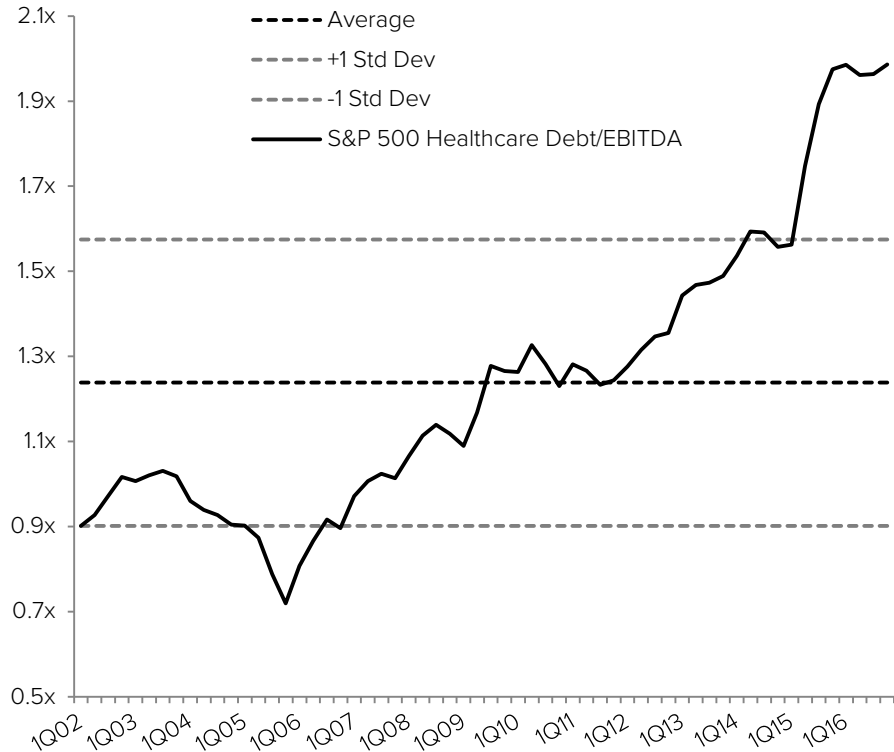


# LEVERAGE AT 15-YEAR HIGH

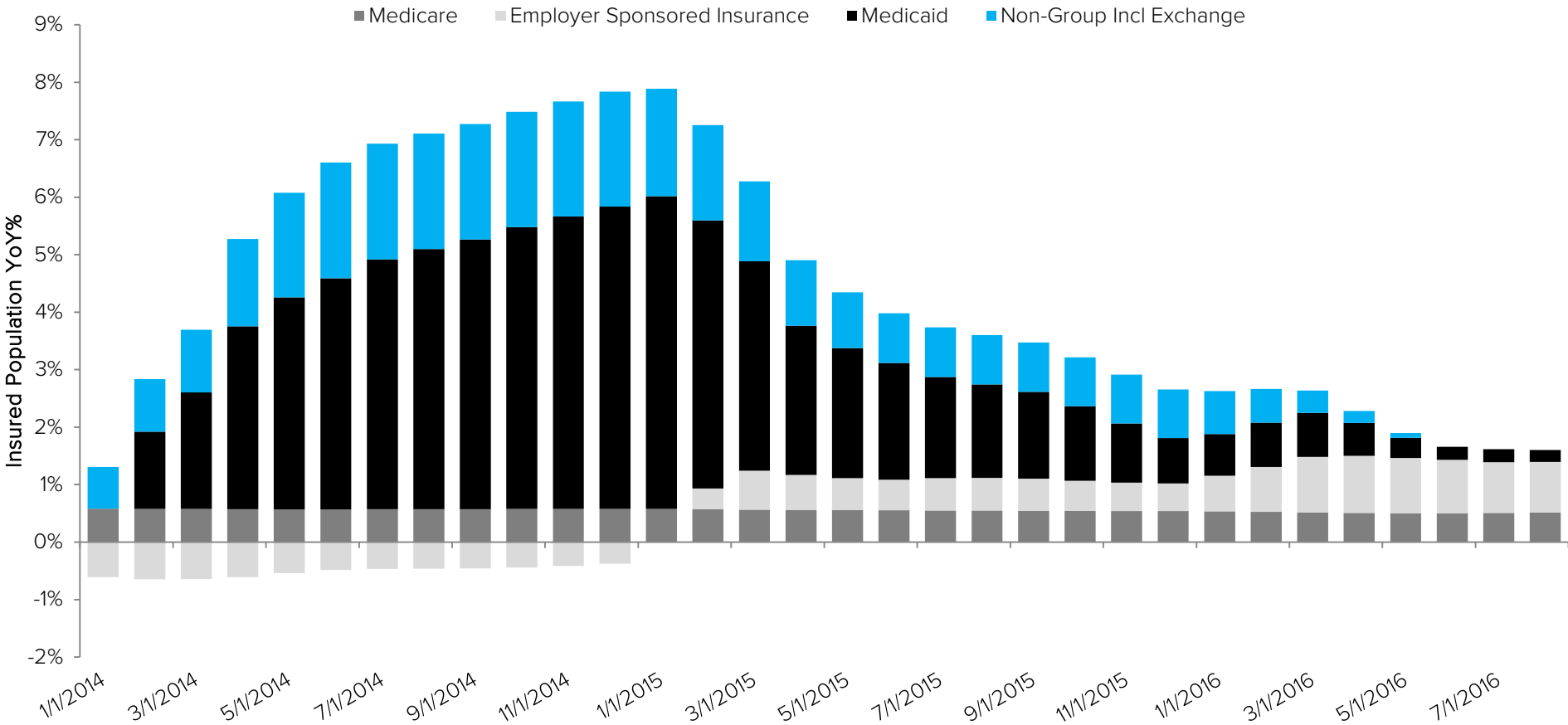


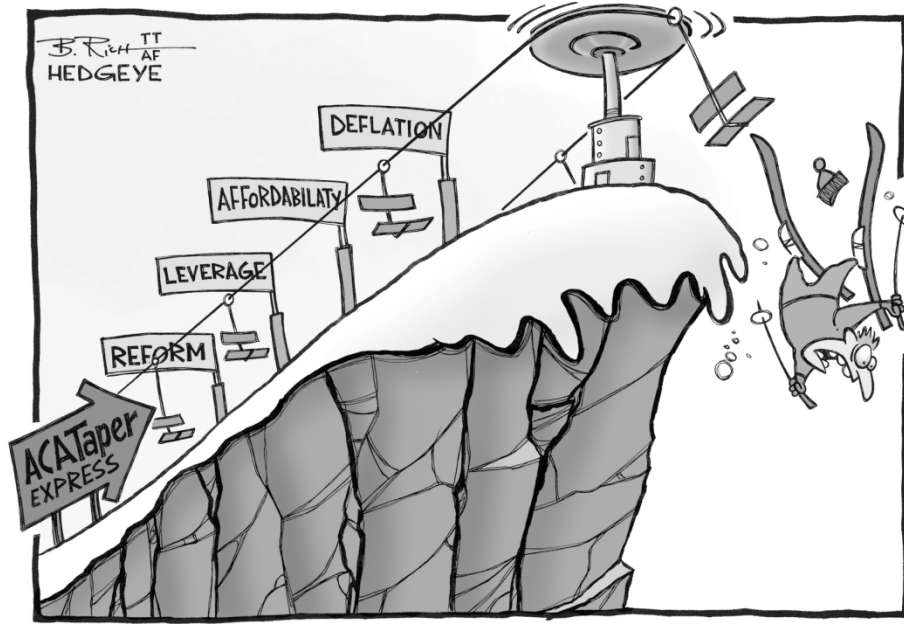
# LEVERAGE NEARING A PEAK?

## 500% DEBT INCREASE LAST 10-YEARS



# INSURED POPULATION SLOWING

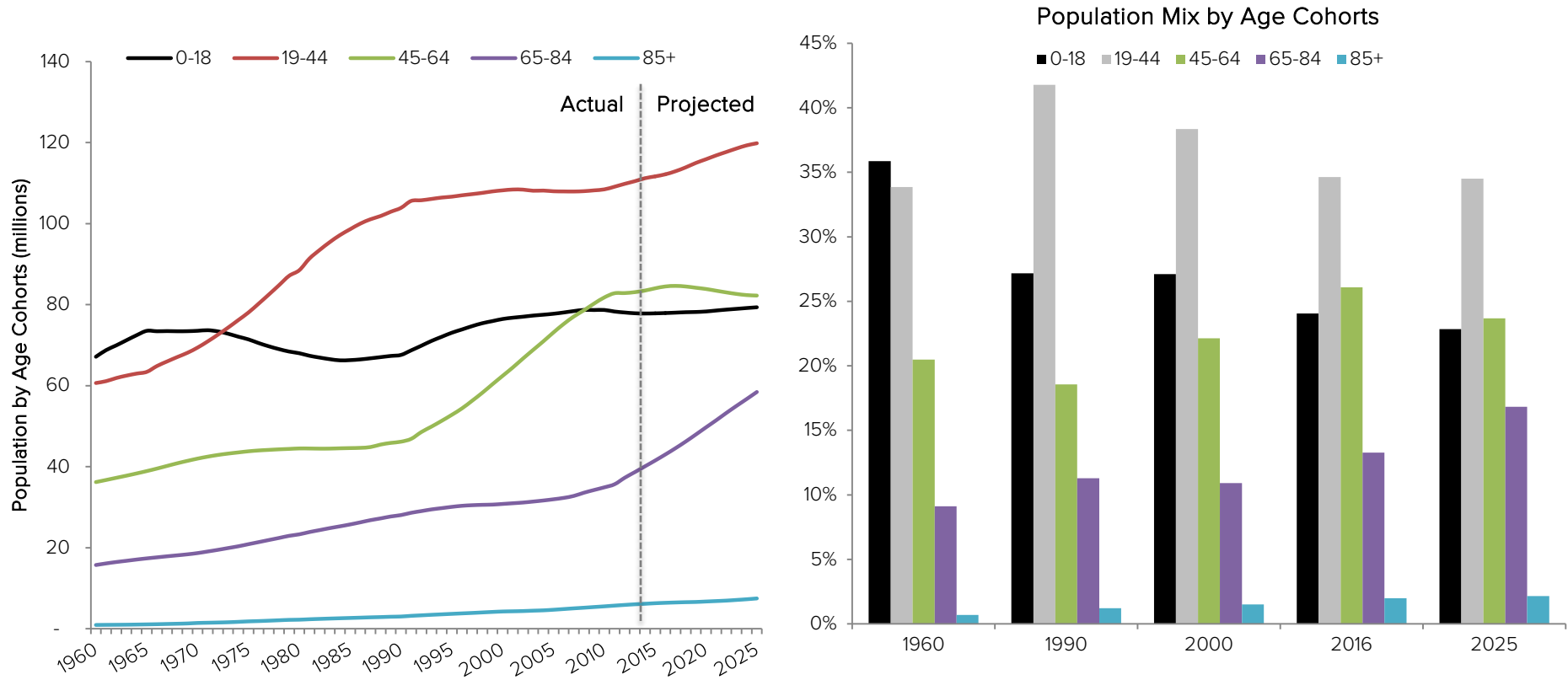




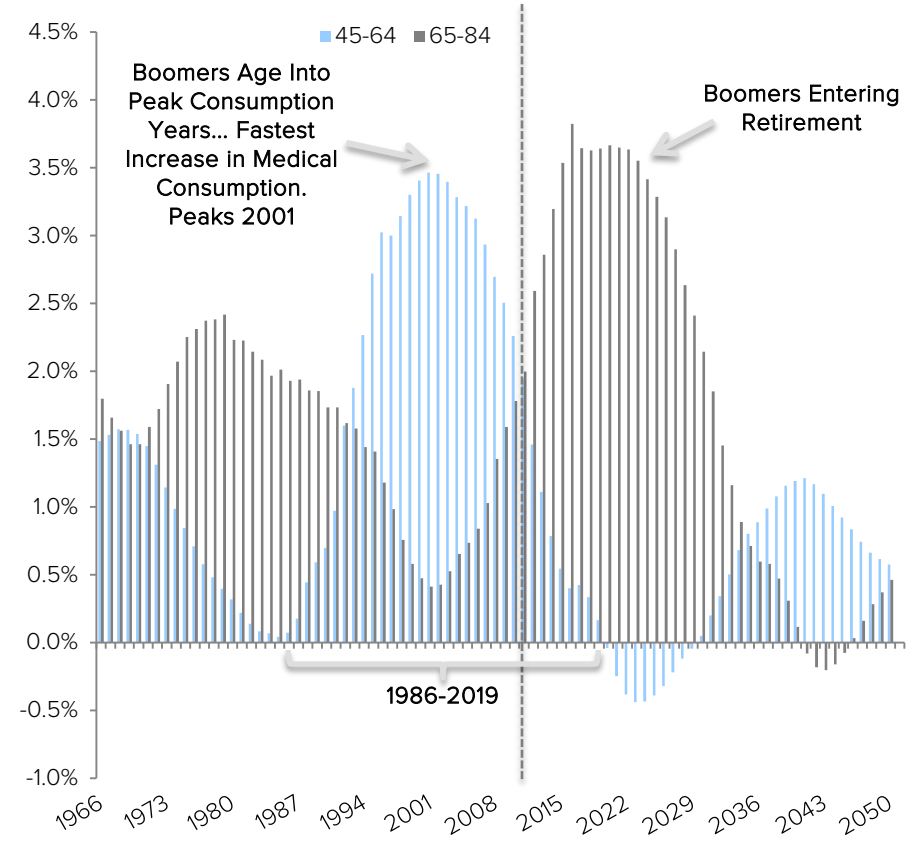
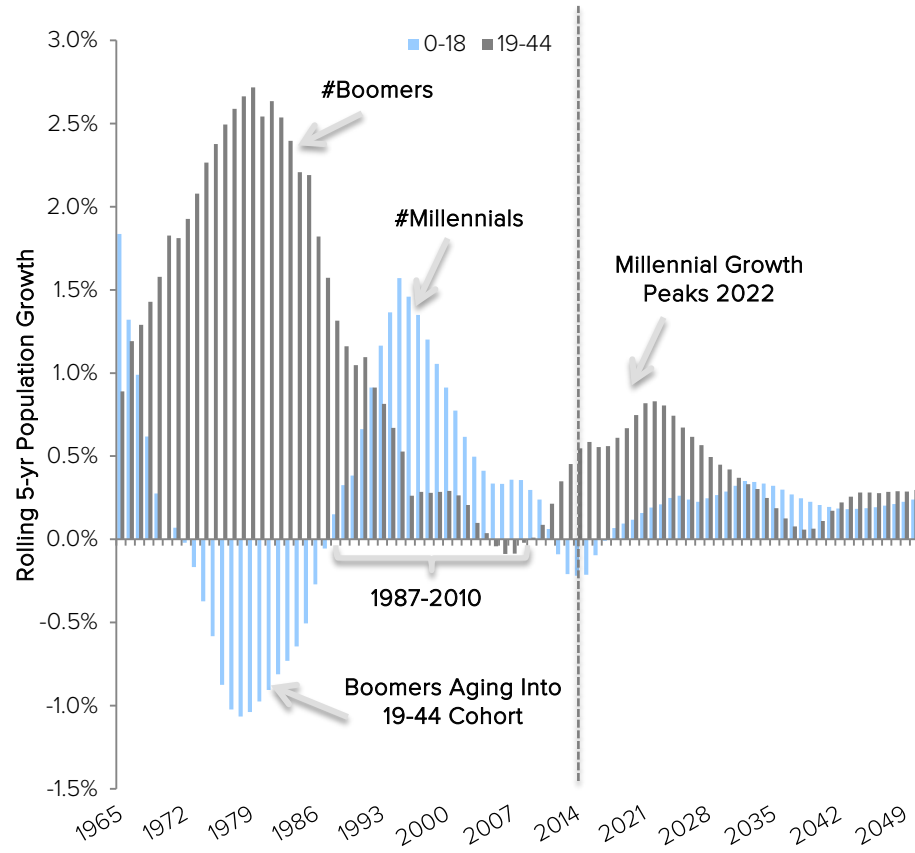
# #DEMOGRAPHICS

# CENSUS POPULATION ESTIMATES

## “THE GRAYING OF AMERICA” IS OVERSTATED



# POPULATION GROWTH OVER TIME



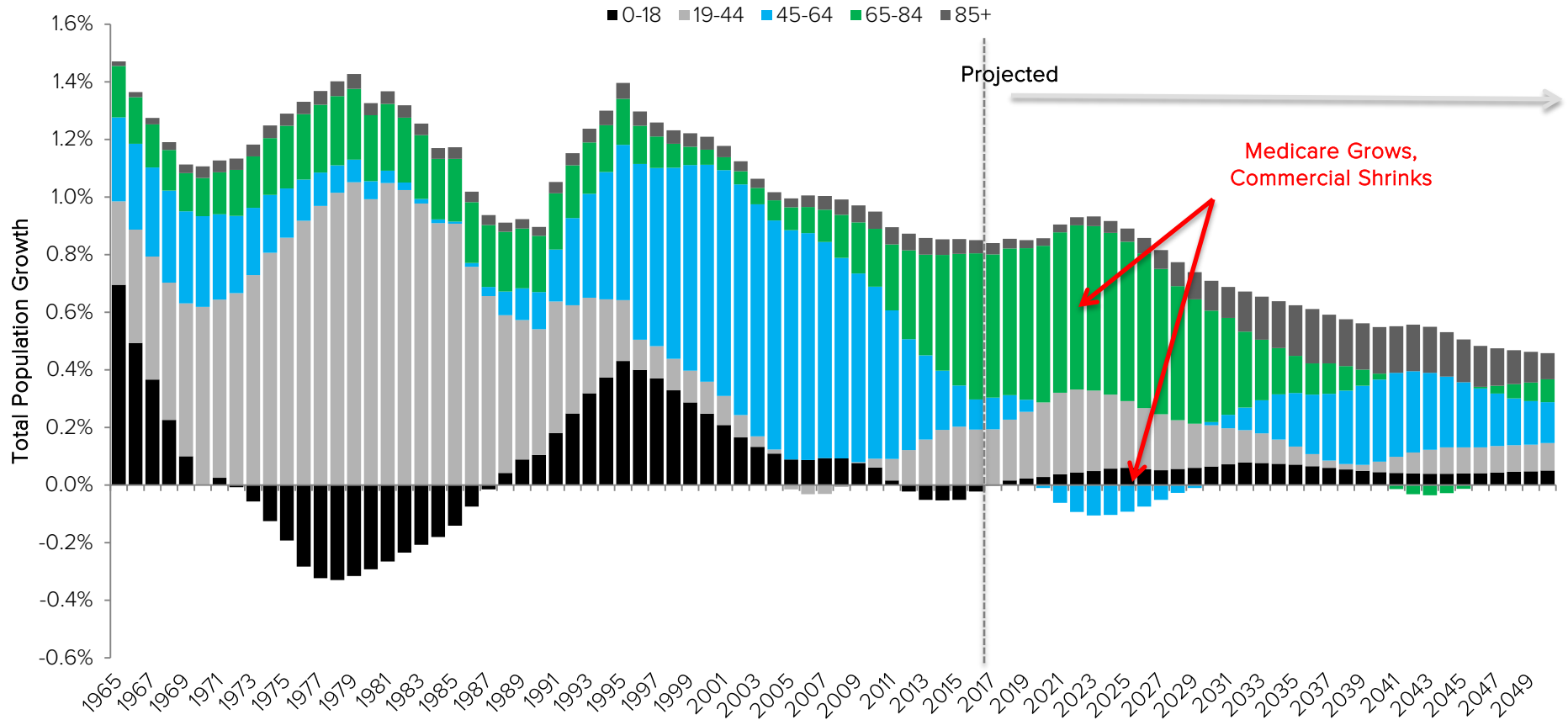
# \$124K + NEEDED FOR 90% CHANCE

**Amount of Savings Needed for Health Expenses for People Eligible for Medicare: Unlike the Last Few Years, the News Is Not Good**, by Paul Fronstin, Dallas Salisbury, and Jack VanDerhei, EBRI ([Click Here](#))

- Medicare beneficiaries pay a share of their health expenses out-of-pocket because of program deductibles and other cost sharing. In 2012, Medicare covered 60 percent of the cost of health care services for Medicare beneficiaries ages 65 and older, while out-of-pocket spending accounted for 13 percent, and private insurance covered 15 percent.
- In 2015, a 65-year-old man needs \$68,000 in savings and a 65-year-old woman needs \$89,000 if each has a goal of having a 50 percent chance of having enough money saved to cover health care expenses in retirement. If either instead wants a 90 percent chance of having enough savings, \$124,000 is needed for a man and \$140,000 is needed for a woman. This analysis does not factor in the savings needed to cover long-term care expenses.
- Savings targets increased between 6 percent and 21 percent between 2014 and 2015. For a married couple both with drug expenses at the 90th percentile throughout retirement who want a 90 percent chance of having enough money saved for health care expenses in retirement by age 65, targeted savings increased from \$326,000 in 2014 to \$392,000 in 2015.

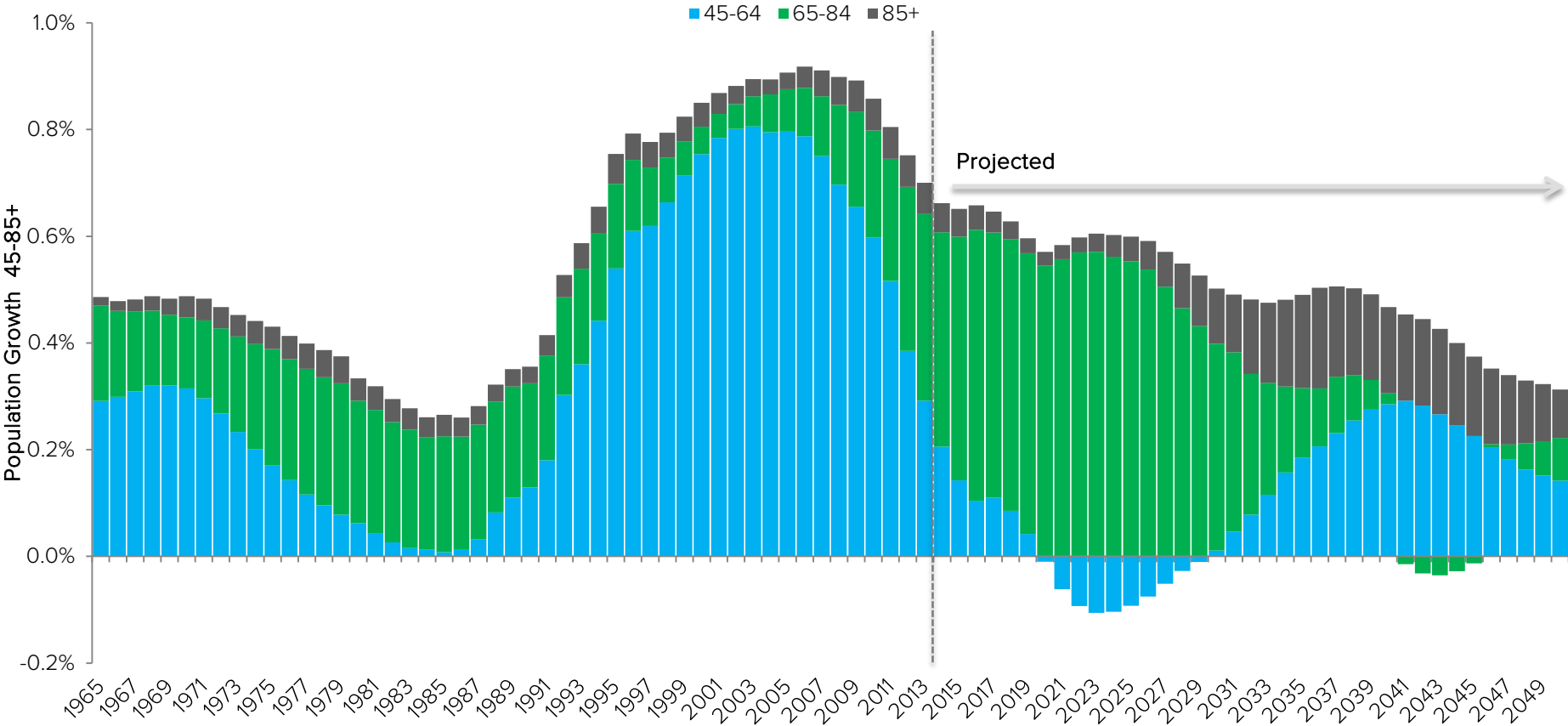


# AGING POPULATION GROWTH



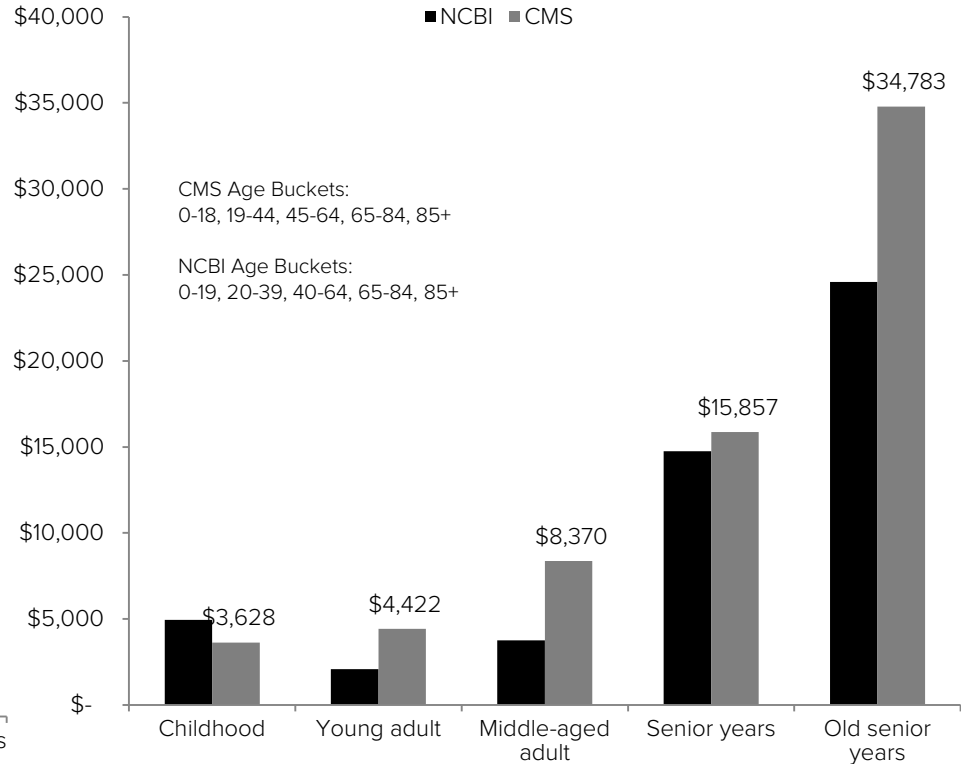
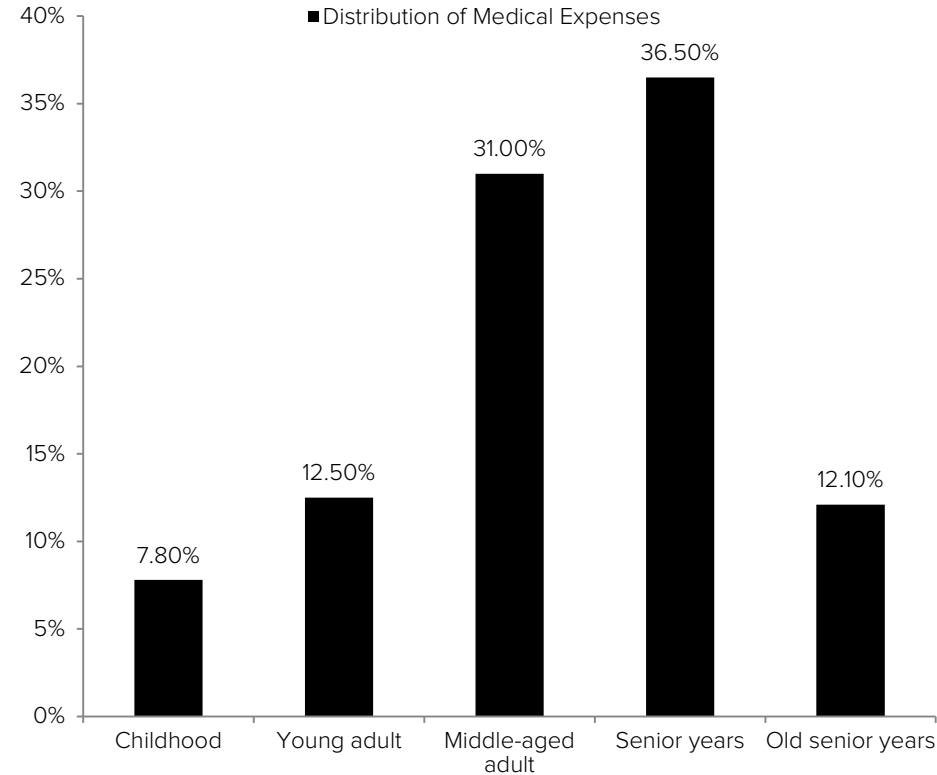
Medicare Grows,  
Commercial Shrinks

# AGING POPULATION GROWTH



# DISTRIBUTION MEDICAL EXPENSES

## AGE 40-84 PEAK MEDICAL CONSUMPTION



# DISTRIBUTION MEDICAL EXPENSES

Table 3

Age-Specific Annual and Lifetime Per Capita Expenditure. Life Table Cohort, and Survivors

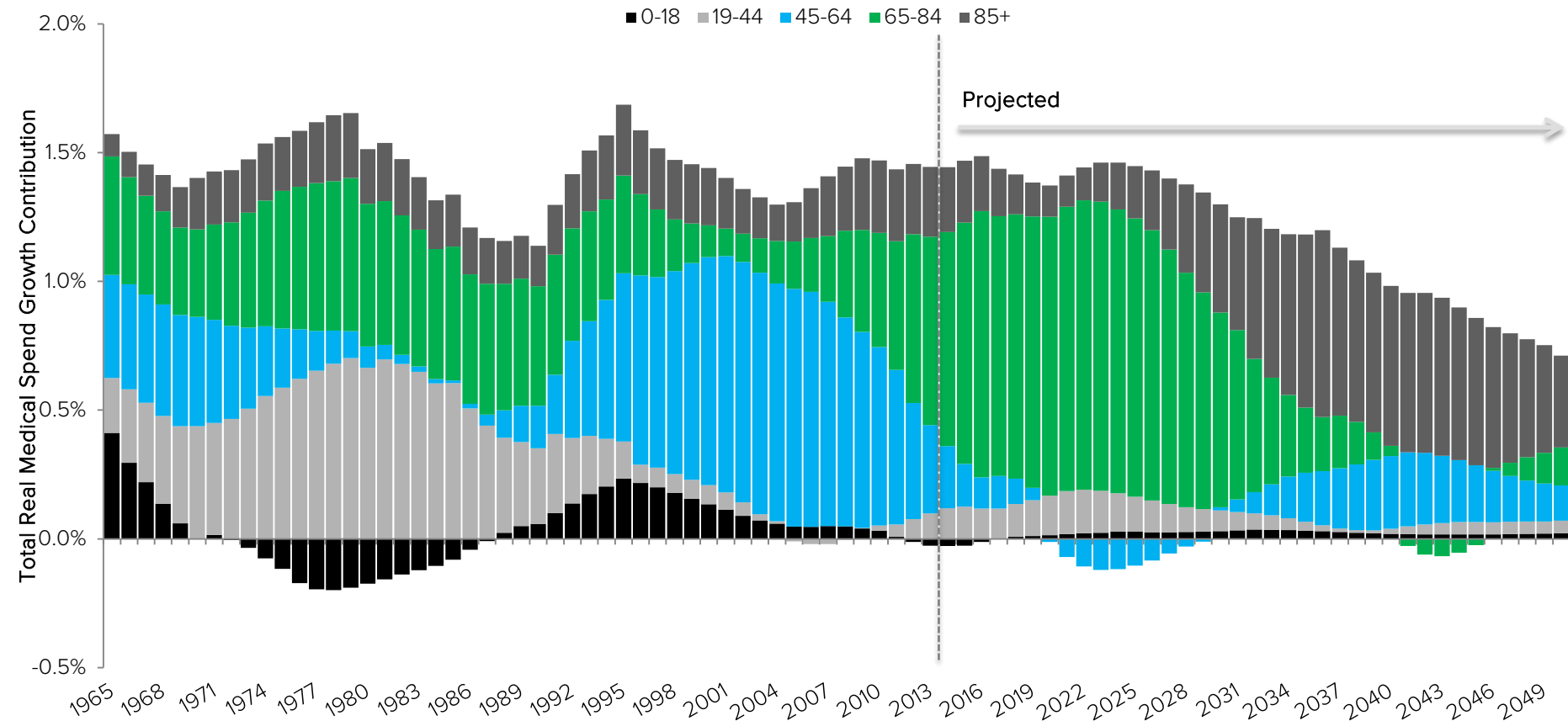
Age	Life Table Cohort			Survivors	
	Annual Per Capita Expenditure	Lifetime Per Capita Expenditure (LEba)	Relative Lifetime Expenditure (RLEba)	Annual Per Capita Expenditure	Lifetime Per Capita Expenditure
0	\$ 3,432	\$ 316,579	100.0%	\$ 2,920	\$ 316,579
20	\$ 1,448	\$ 291,745	92.2%	\$ 1,255	\$ 296,363
40	\$ 2,601	\$ 252,082	79.6%	\$ 1,929	\$ 262,124
65	\$ 10,245	\$ 153,944	48.6%	\$ 7,702	\$ 188,658
85	\$ 17,071	\$ 38,400	12.1%	\$ 7,688	\$ 113,685

Table 4

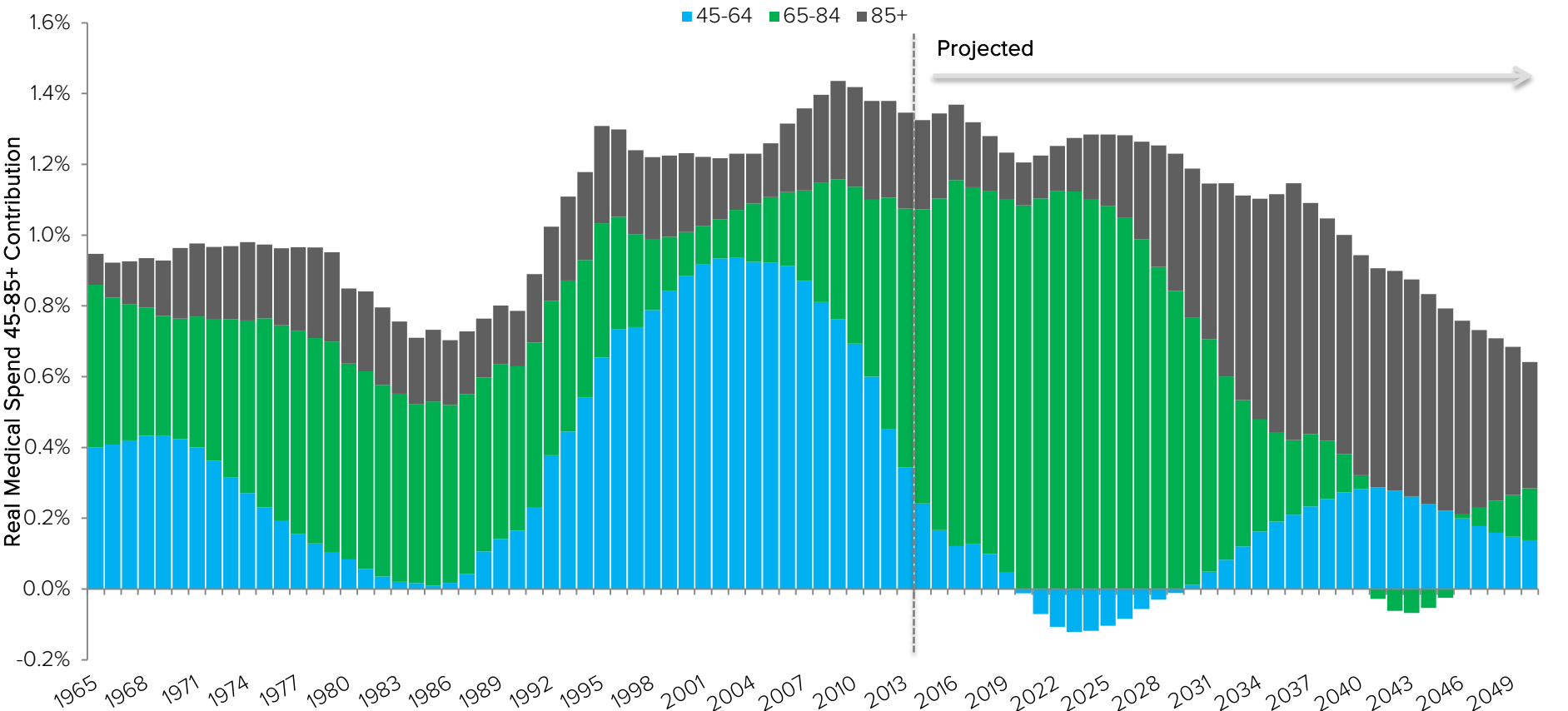
Relative Lifetime Per Capita Expenditure at Different Age Intervals, Life Table Cohort, and Survivors (Year 2000 Dollars)

Relative Lifetime Expenditure During	Life Table Cohort	Survivors
Childhood (0-19)	7.8%	6.4%
Young Adult (20-39)	12.5%	10.8%
Middle-Aged Adult (40-64)	31.0%	23.2%
Senior Years (65-84)	36.5%	23.7%
Old Senior Years (85+)	12.1%	35.9%

# AGING AND MEDICAL SPEND

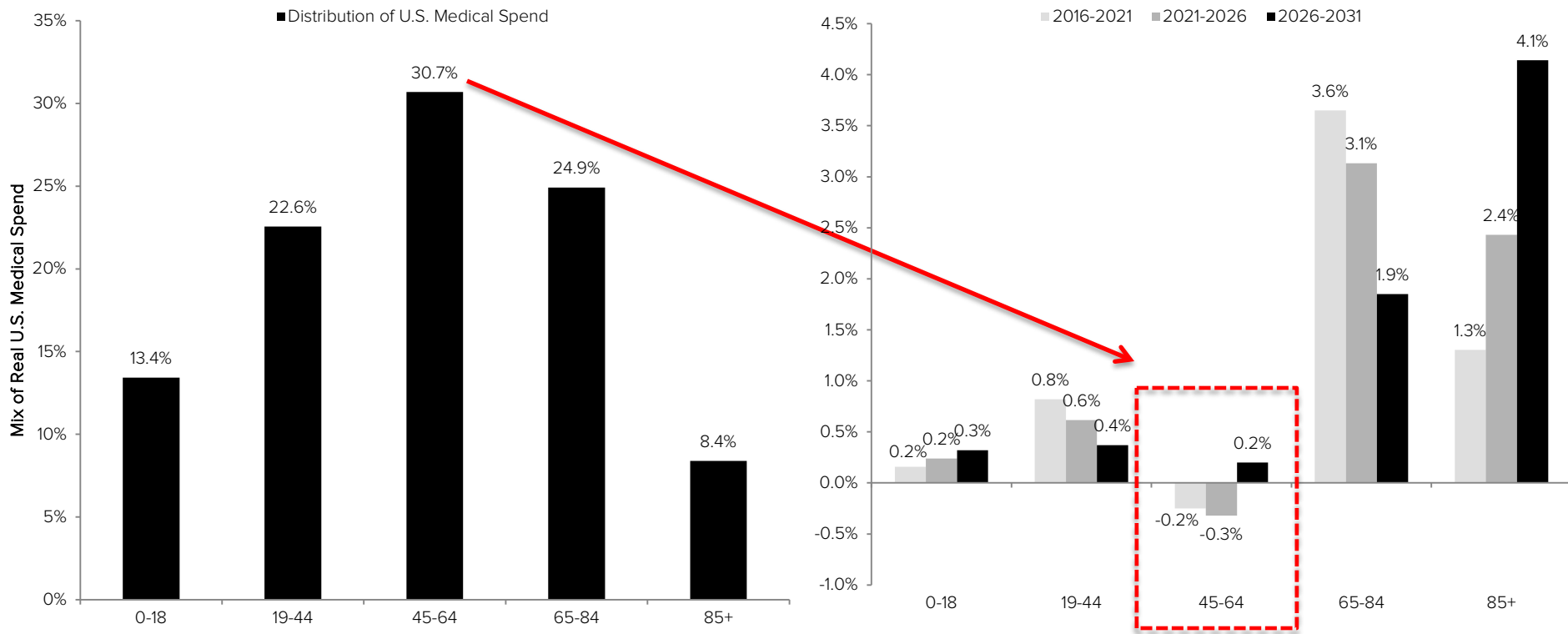


# AGING AND MEDICAL SPEND



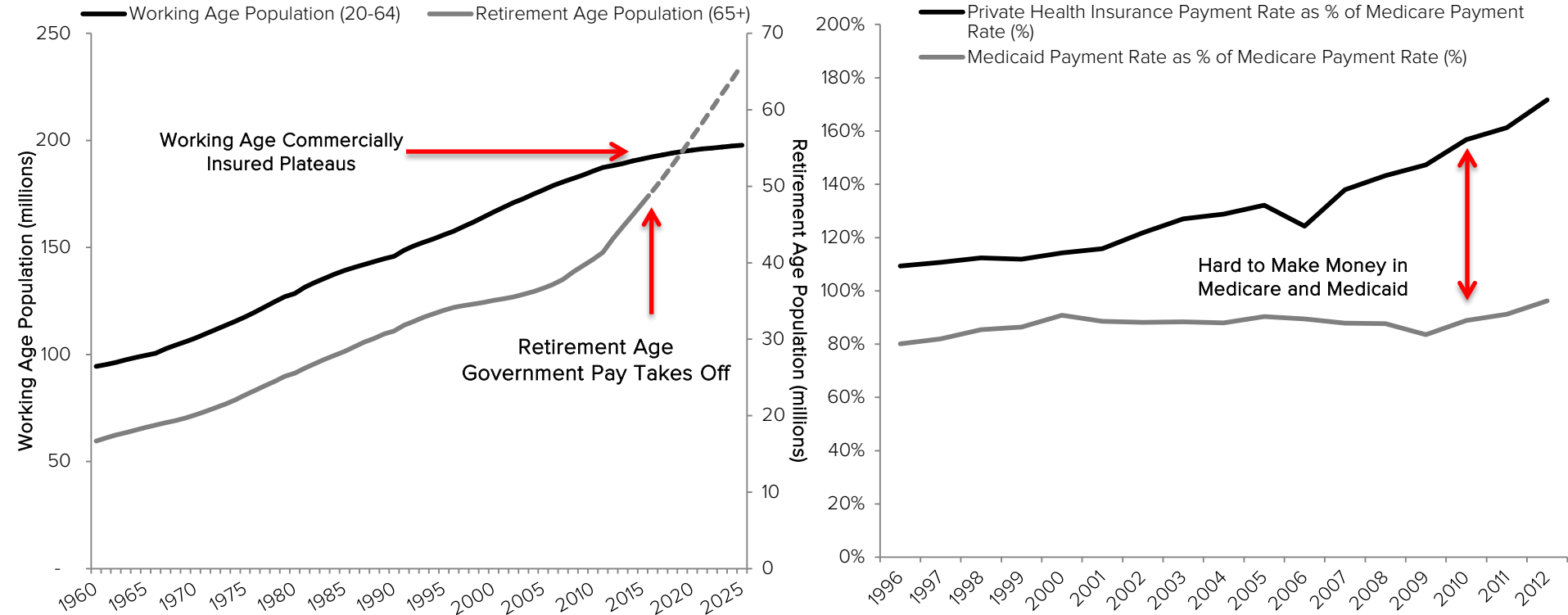
# DISTRIBUTION TOTAL MEDICAL SPEND

## NEGATIVE GROWTH IN LARGEST SPENDING COHORT



# MIX SHIFT TOWARD GOVERNMENT PAY

## HARD TO MAKE MONEY IN MEDICARE AND MEDICAID

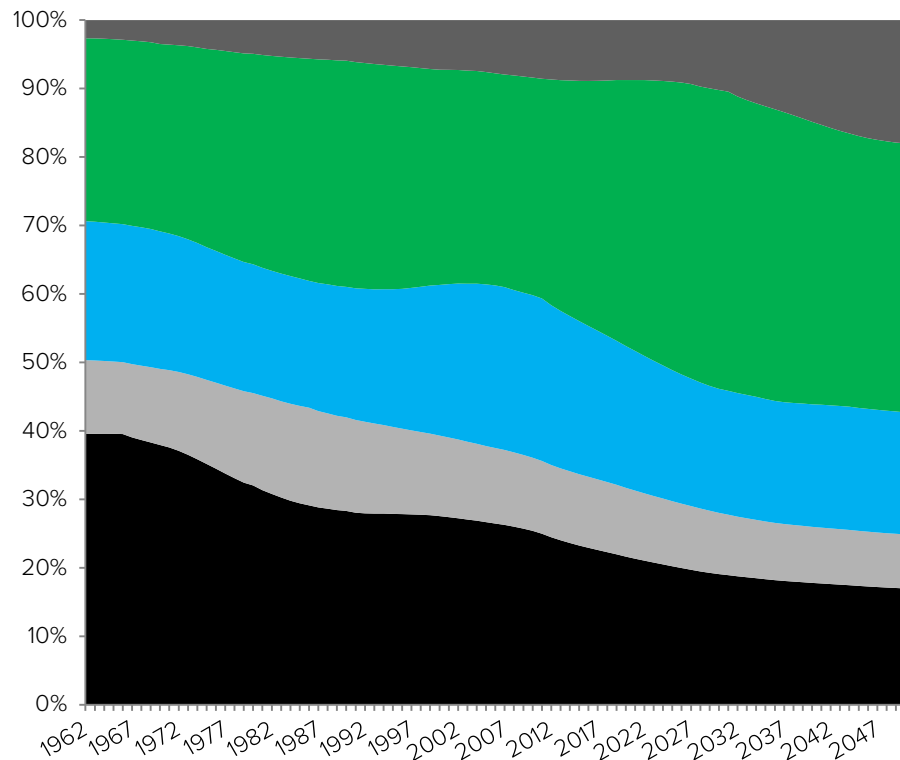
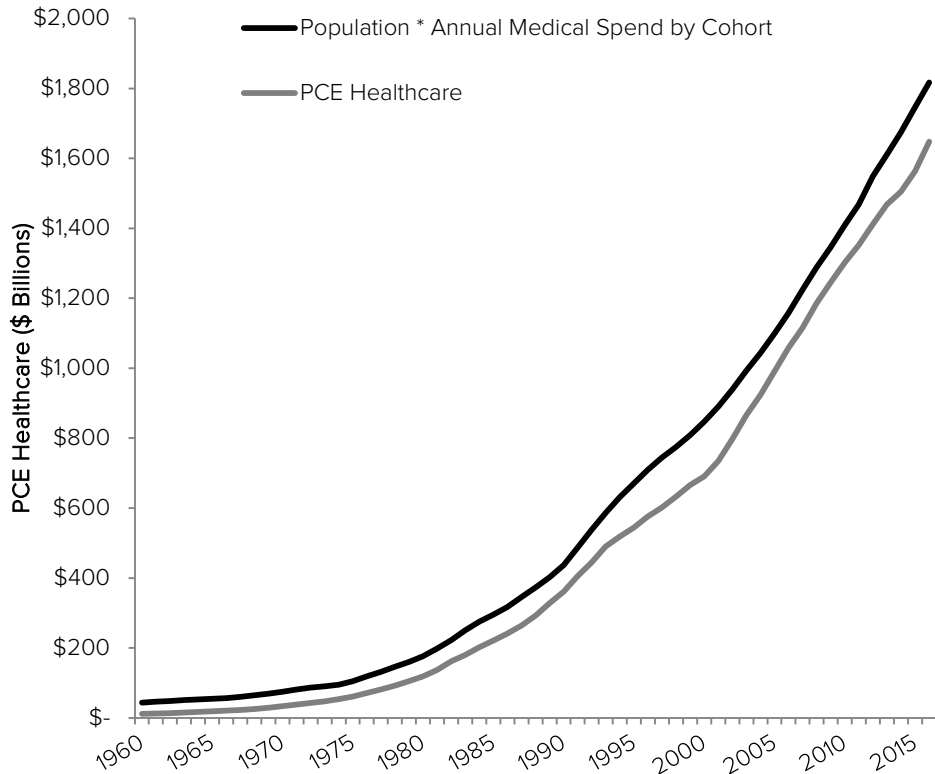




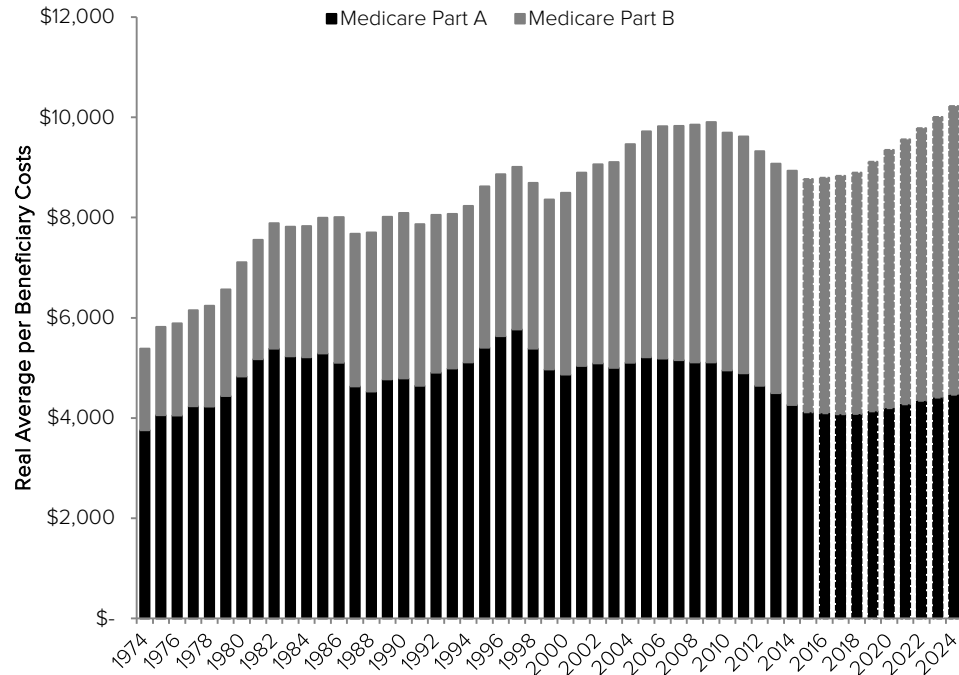
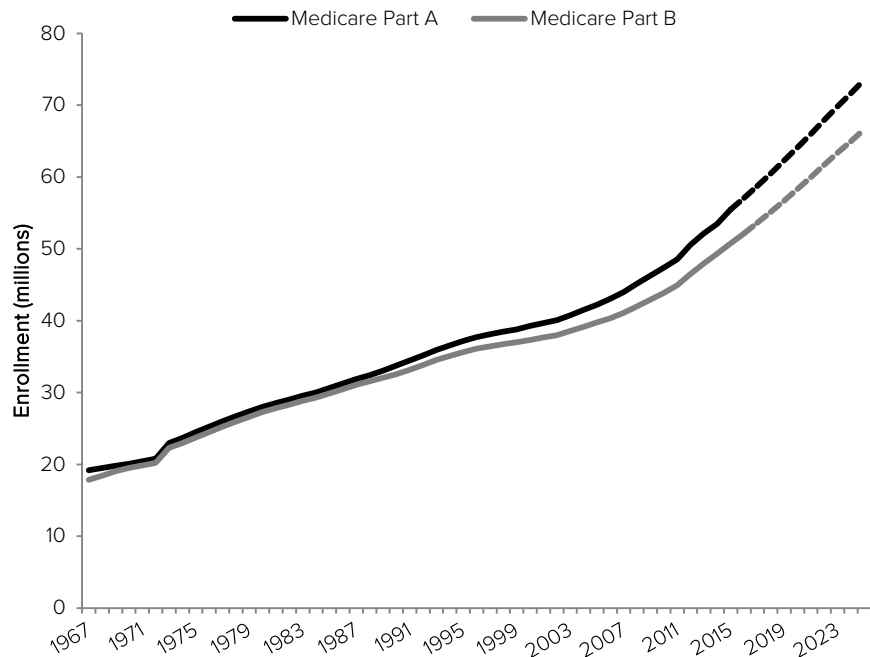
# PCE AND MIX OF MEDICAL SPEND

## COMMERCIALLY INSURED BUCKET SHRINKING

■ 0 - 19 ■ 20-39 ■ 40-64 ■ 65 - 84 ■ 85+



# PROJECTED MEDICARE ENROLLMENT



## REAL AVERAGE PER BENEFICIARY COST FLAT

While Medicare Enrollment increases, the real average per beneficiary cost is forecasted to remain essentially flat compared to 2009 peak. CMS forecasting decline in Part A expense, which is consistent with reform efforts.

# CONCLUSIONS

1

## COMMERCIAL INSURANCE DOLLARS SLOWING

The number and spending level in the most valuable part of the market is slowing. The annual contribution to growth from aging is too modest to offset the larger trend of population deceleration.

2

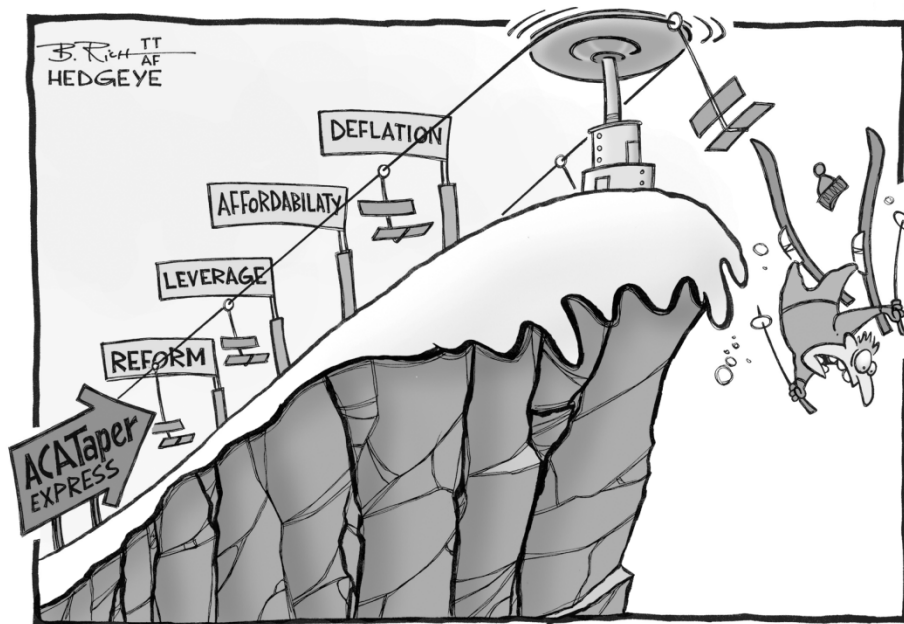
## MEDICARE POPULATION ACCELERATES, BUT...

Margins in Medicare already trail privately insured reimbursements across many care areas. While the population is accelerating, it will displace higher margin business. The resulting mix will be of lower value per unit.

3

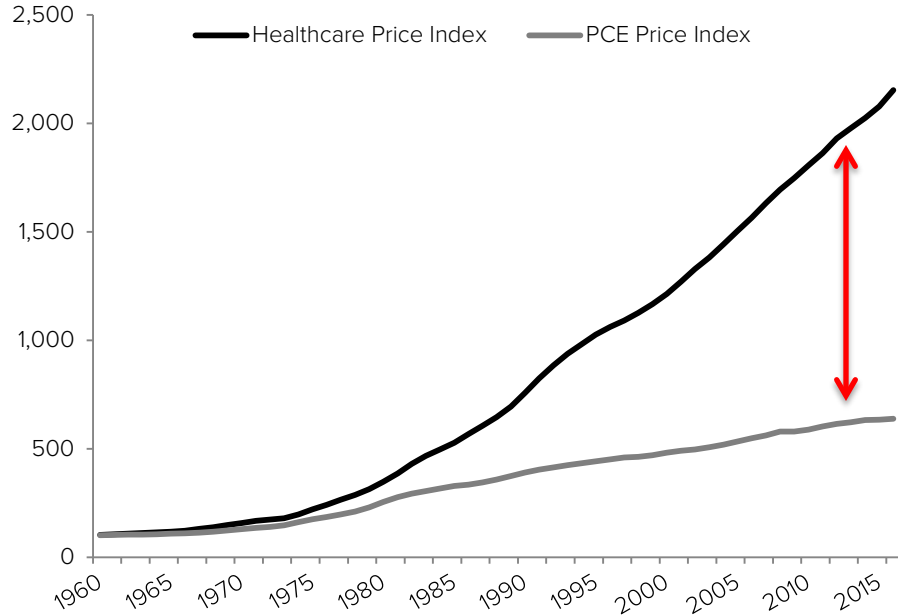
## MEDICARE PER CAPITA SPENDING FORCED LOWER

As limited federal spending grows slower than the Medicare population expands, real spending per beneficiary will fall, driving efforts to curb costs for providers.



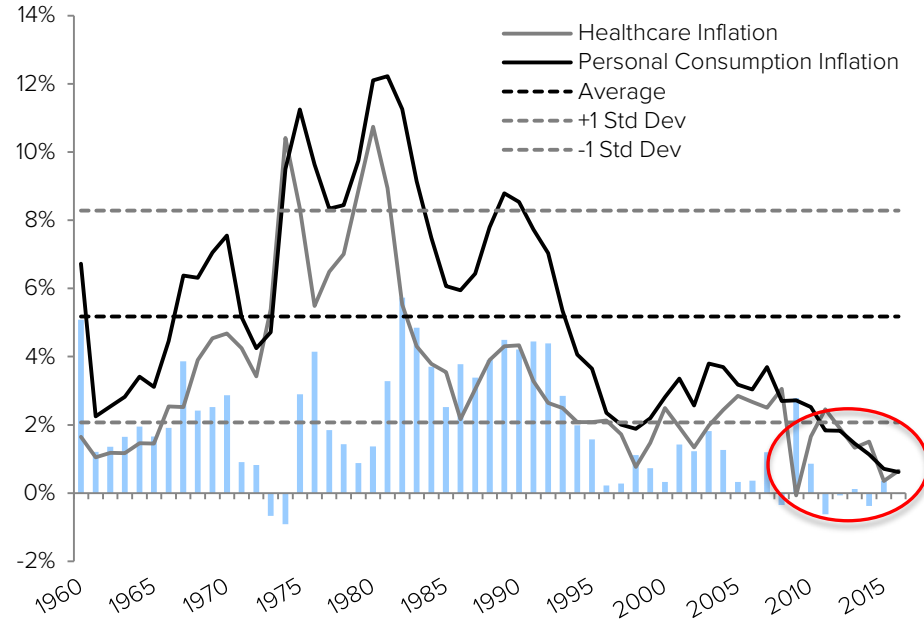
# #AFFORDABILITY

# LONG HISTORY OF EXCESS



## 400% HIGHER AFTER 50 YEARS

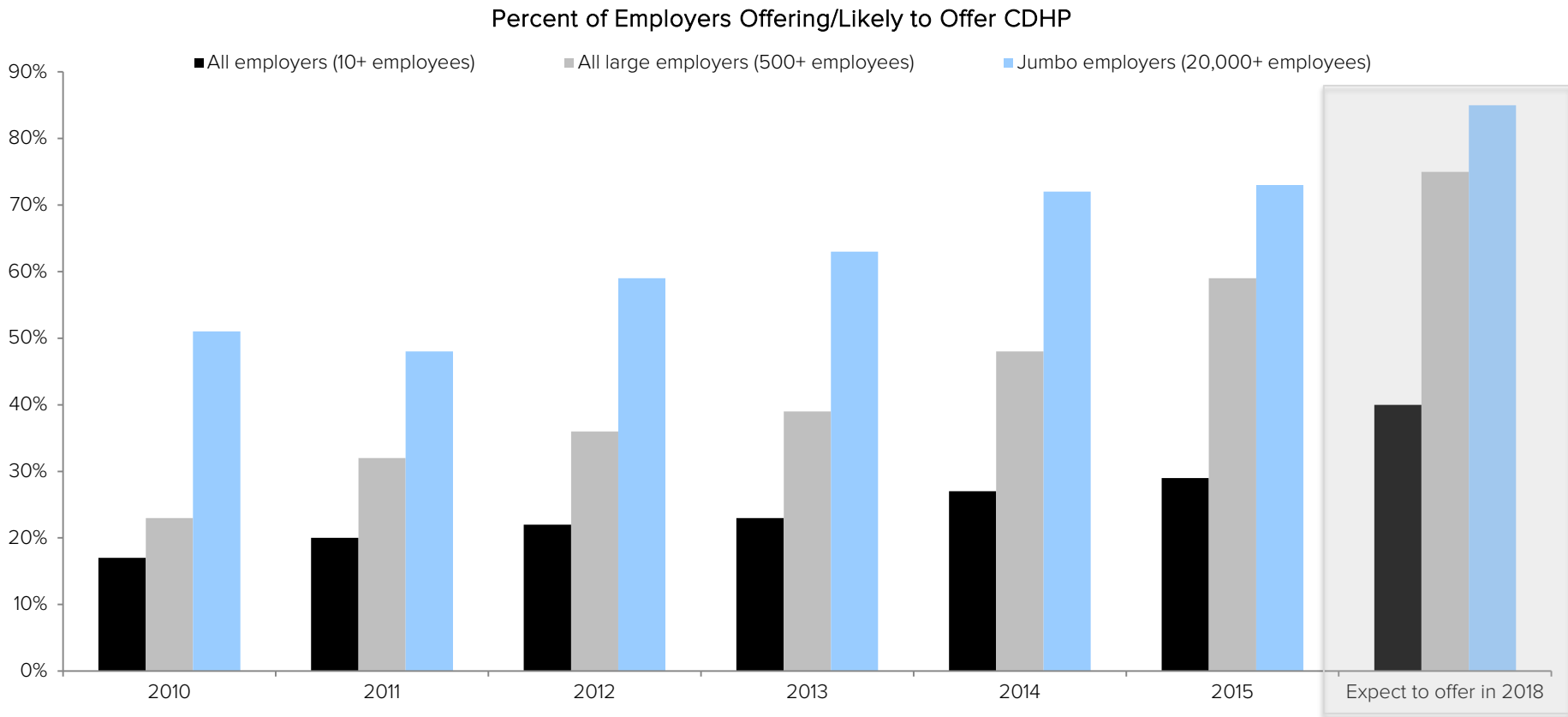
Healthcare inflation has exceeded broader market inflation for over 50 years with the cumulative increase now 400% higher.



## HEALTHCARE DISINFLATION

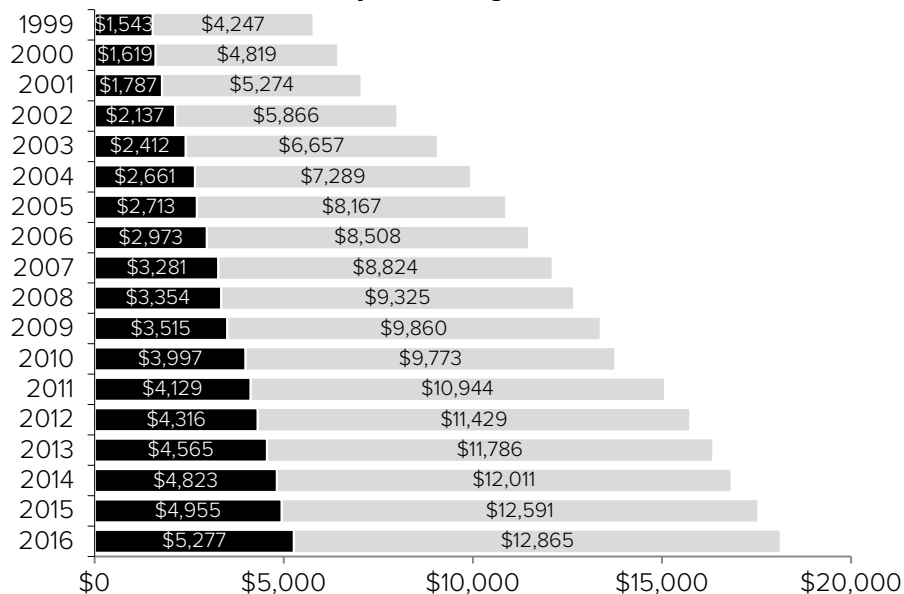
4 of the 6 years where Healthcare inflation has been **lower** than the broader market have occurred since 2008.

# GROWTH IN CDHP ACCELERATING

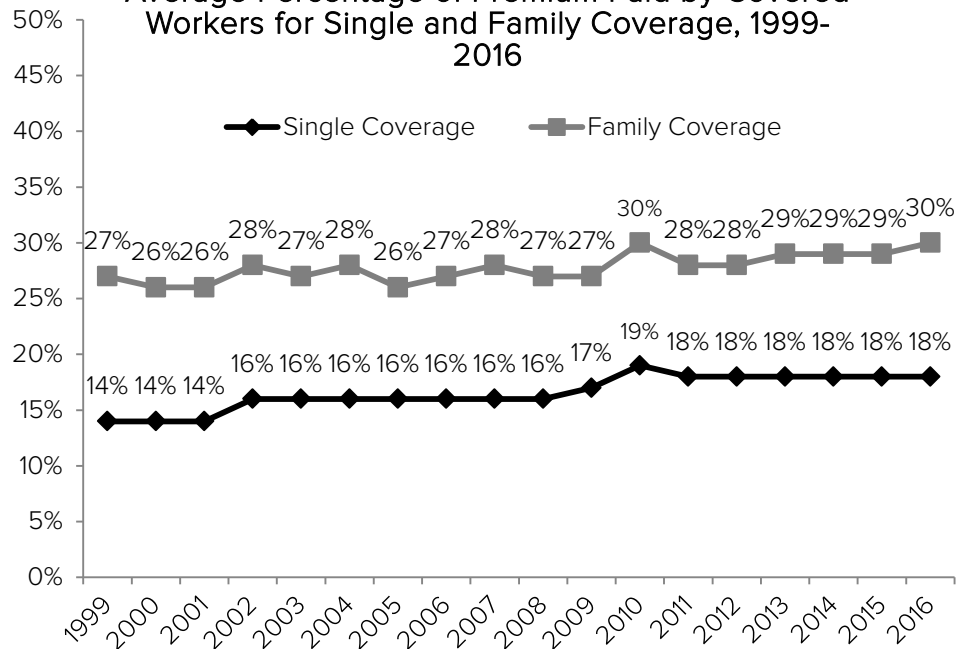


# PREMIUM GROWTH EXCESSIVE

Average Annual Worker and Employer Contributions to Premiums and Total Premiums for Family Coverage, 1999-2016



Average Percentage of Premium Paid by Covered Workers for Single and Family Coverage, 1999-2016

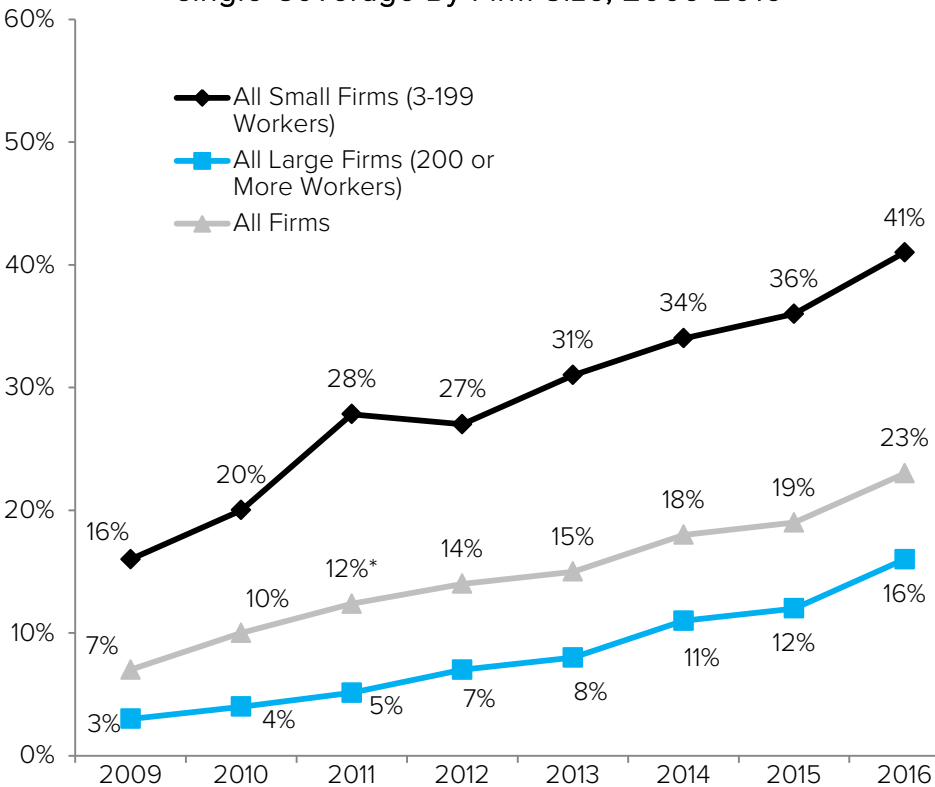


## EMPLOYEES PAY FOR EXCESS INFLATION

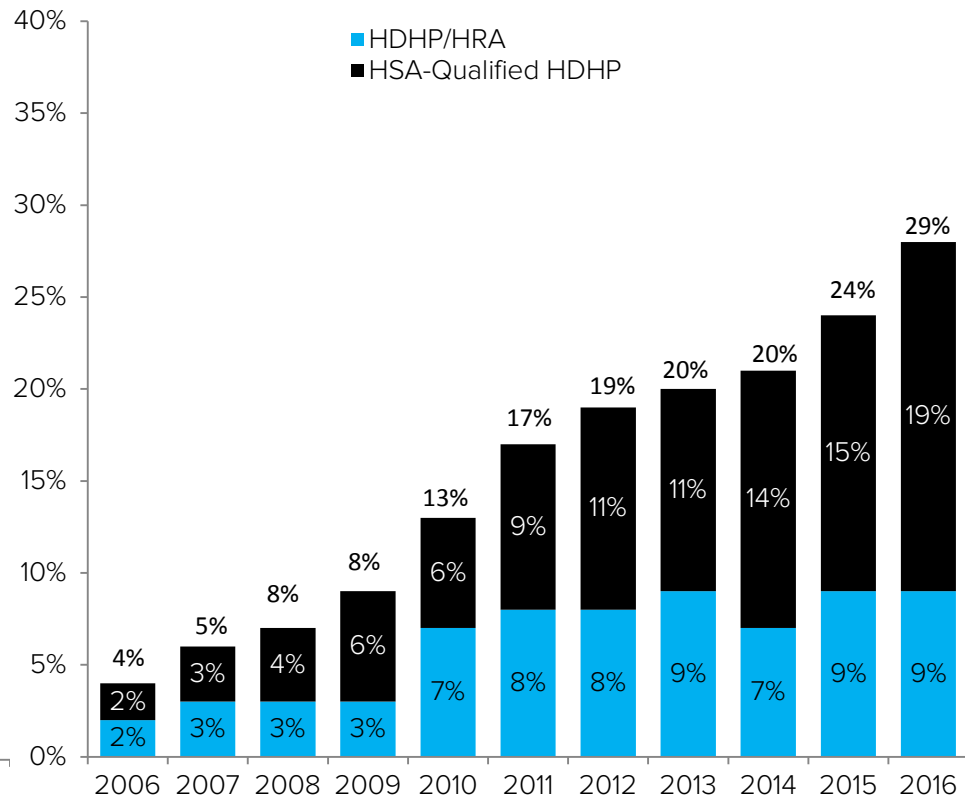
Excess inflation is paid for in large part by accelerating premiums. Aging accounts for a very small part of these dramatic increases.

# ENROLLEES VARY BY FIRM SIZE

% of Covered Workers Enrolled in a plan with a General Annual Deductible of \$2,000 or more for single Coverage By Firm Size, 2009-2016

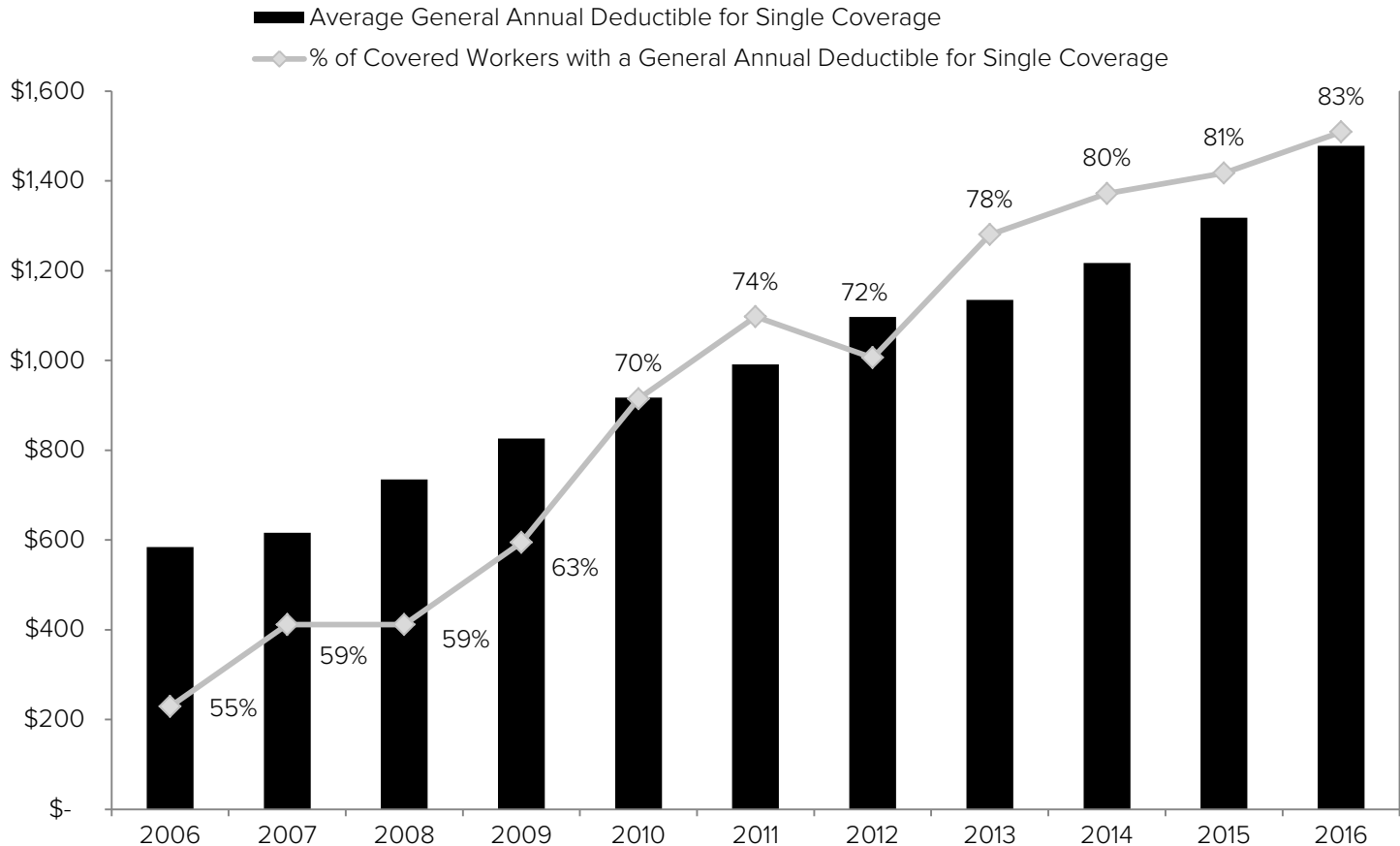


% of Covered Workers Enrolled in an HDHP/HRA or an HSA-Qualified HDHP, 2006-2016



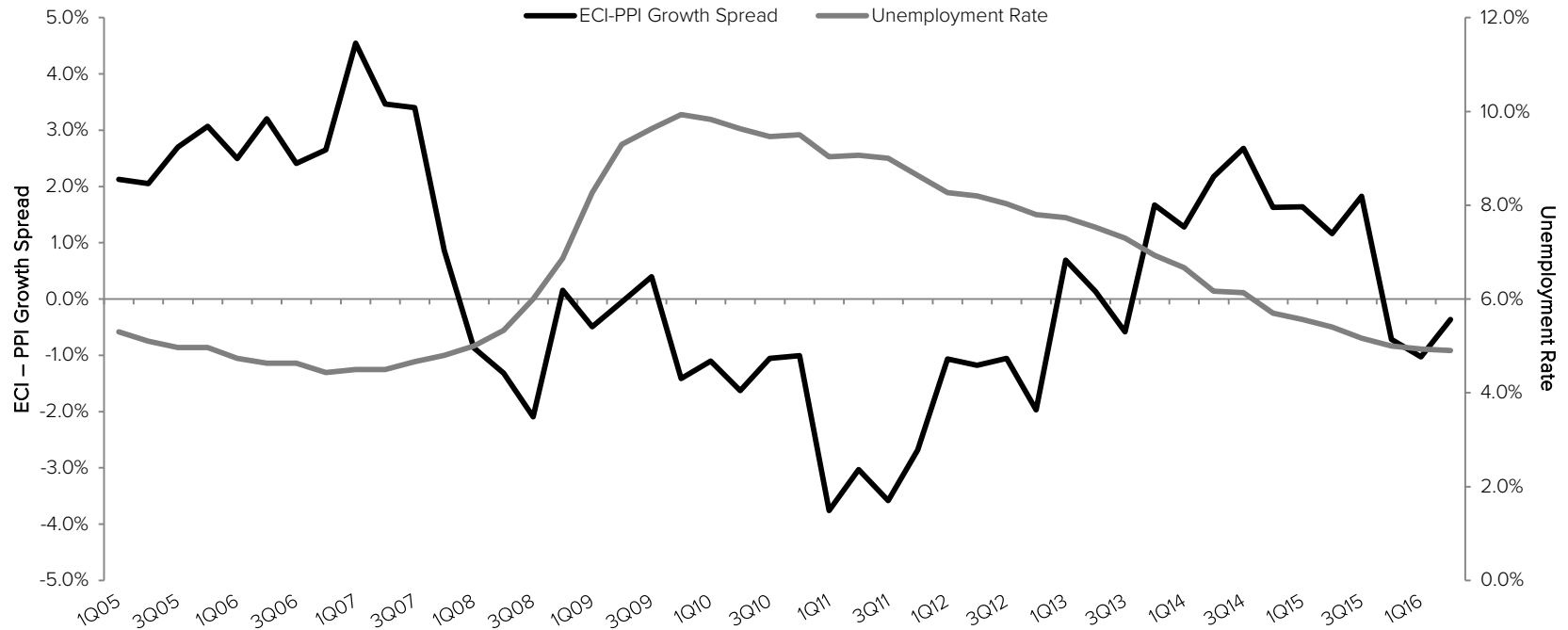


# DEDUCTIBLES NOW SIGNIFICANT



Growth in deductible prevalence, including HDHP, placing greater burden on employees.

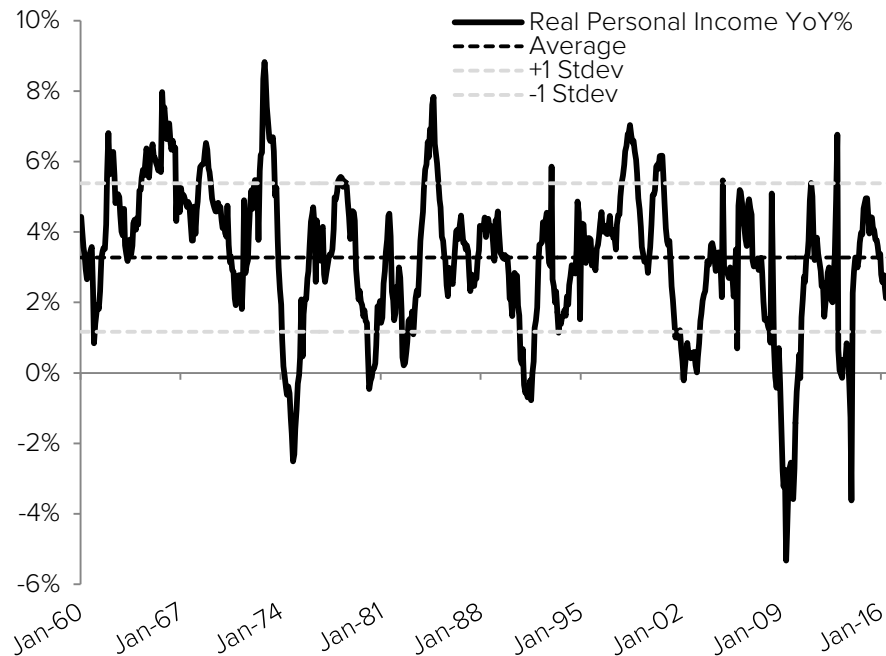
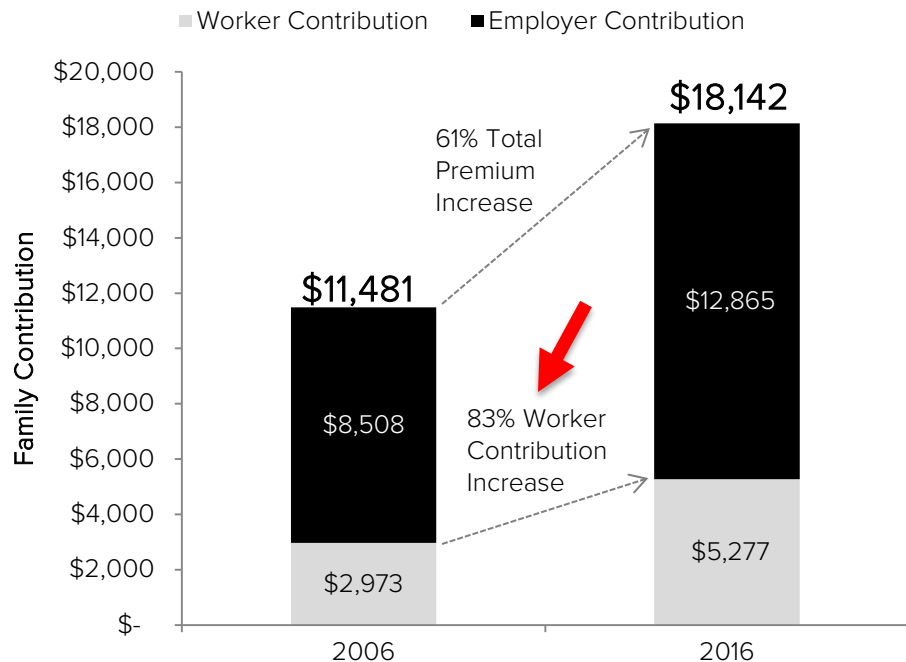
# COST SHIFTING



## EMPLOYEES ABSORB THE MARGINAL COST

PPI includes co-pays and deductibles and ECI does not. A negative spread means employers are pushing cost sharing to their employees.

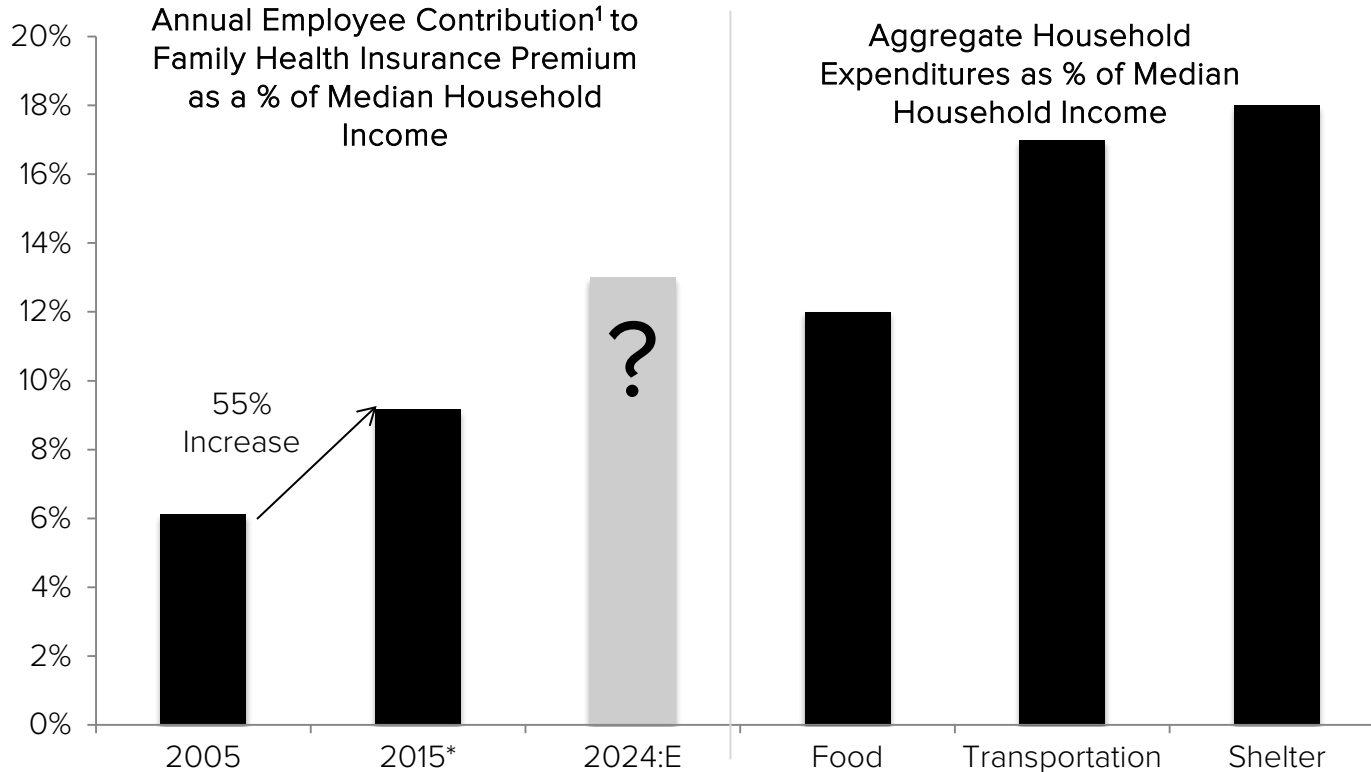
# EMPLOYEE PREMIUM SHARE +83%



## PREMIUMS HAVE GROWN FASTER THAN WAGES

Out-of-pocket worker contribution has increased 83% over the last decade (6.2% CAGR). Real personal income growth has averaged 2-3%.

# INSURANCE VS MAJOR EXPENSES



<sup>1</sup>Employee Sponsored Health Plans

\*Based on 2013 Median Household Income Rolled Forward by 2-years Inflation 2%

Data Source: Kaiser Family Foundation, St. Louis Federal Reserve and HRM Estimates

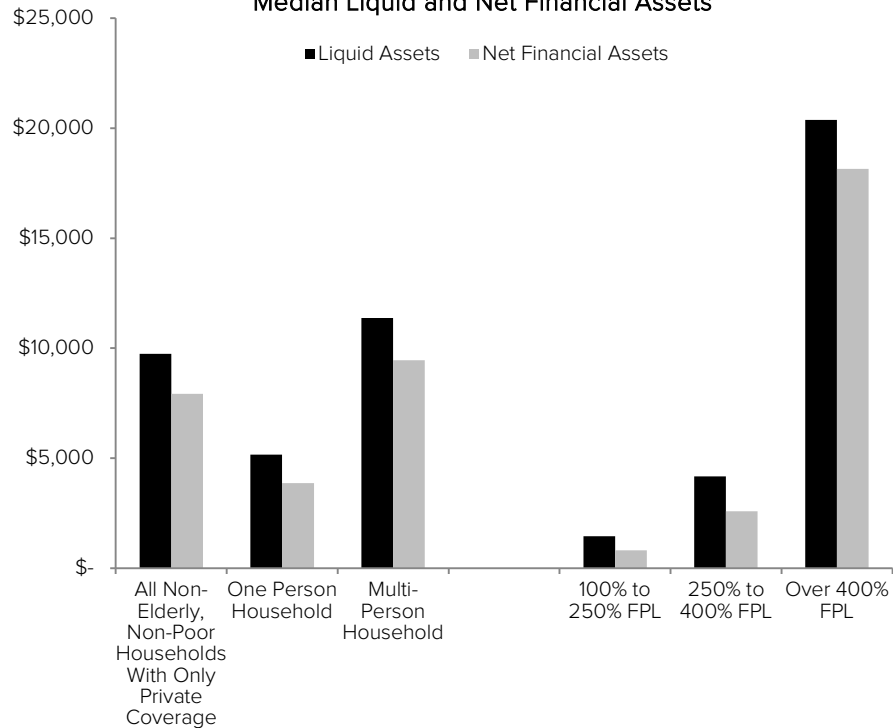
Annual employee contribution to annual premium has grown to almost 10% of Household Income. Food makes up 12%, while shelter 18%.

How much higher can it go?

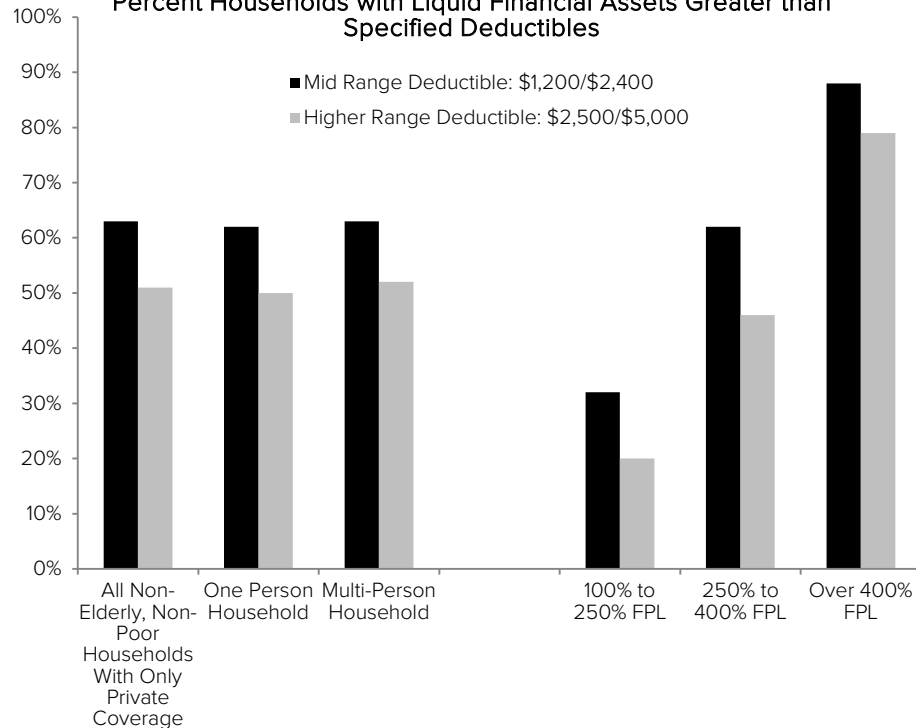
# TOUGH TO COVER THE DEDUCTIBLE

## LOW SAVINGS AND NO CASH ON HAND

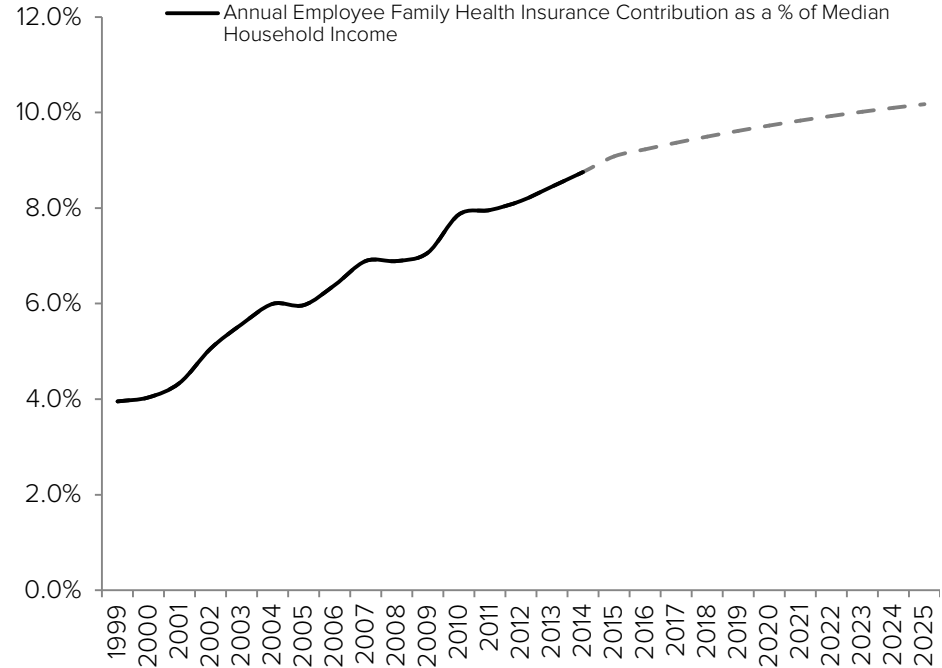
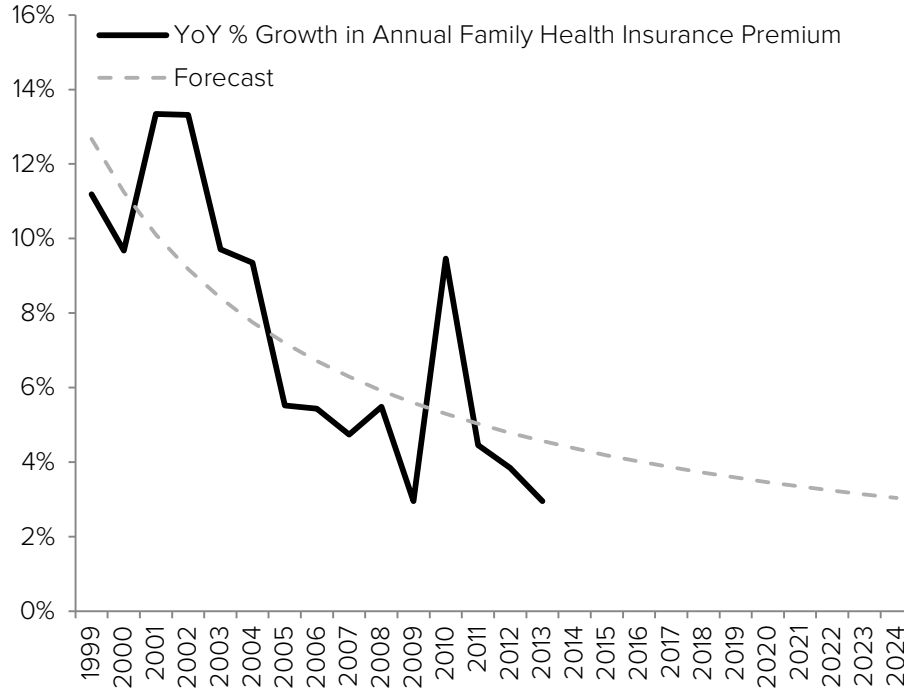
Median Liquid and Net Financial Assets



Percent Households with Liquid Financial Assets Greater than Specified Deductibles



# PREMIUM GROWTH SLOWING

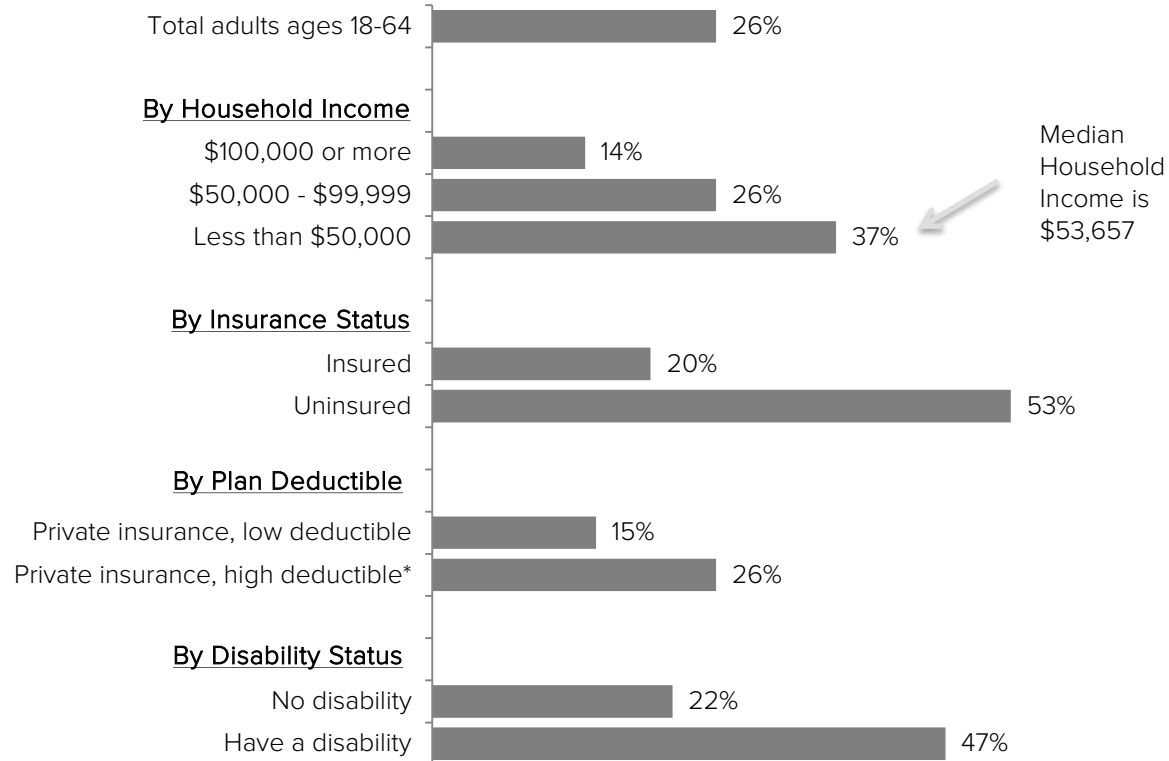


## ON TARGET FOR 10% OF MEDIAN HOUSEHOLD INCOME

Growth in annual family insurance premium is slowing and long-term will ultimately reach parity with GDP (2-3%) and nominal household incomes.

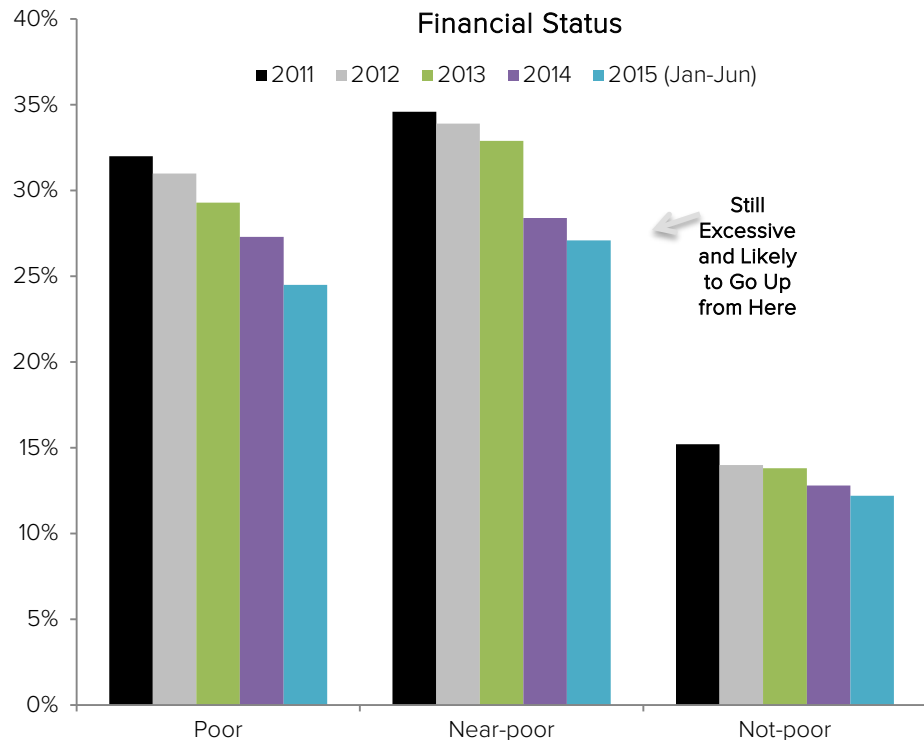
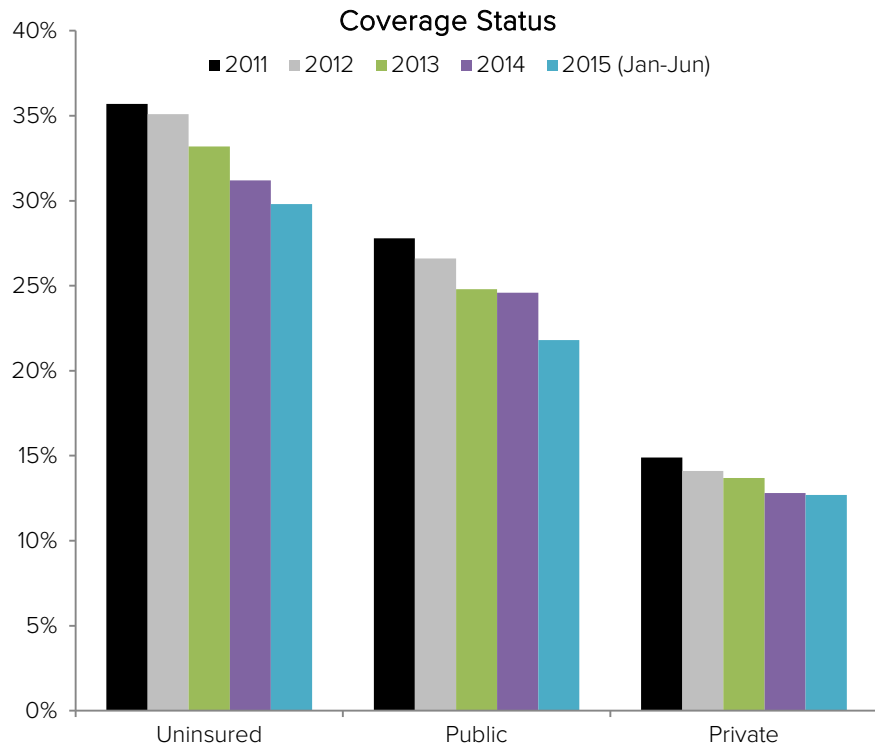
# DIFFICULT PAYING MEDICAL BILLS

Reporting Problems Paying Medical Bills in Past Year (June 2016)



# DIFFICULT PAYING MEDICAL BILLS

Percentage of persons under age 65 who are in families having problems paying medical bills in past 12 months





# EXCHANGE ECONOMIC DISINCENTIVE

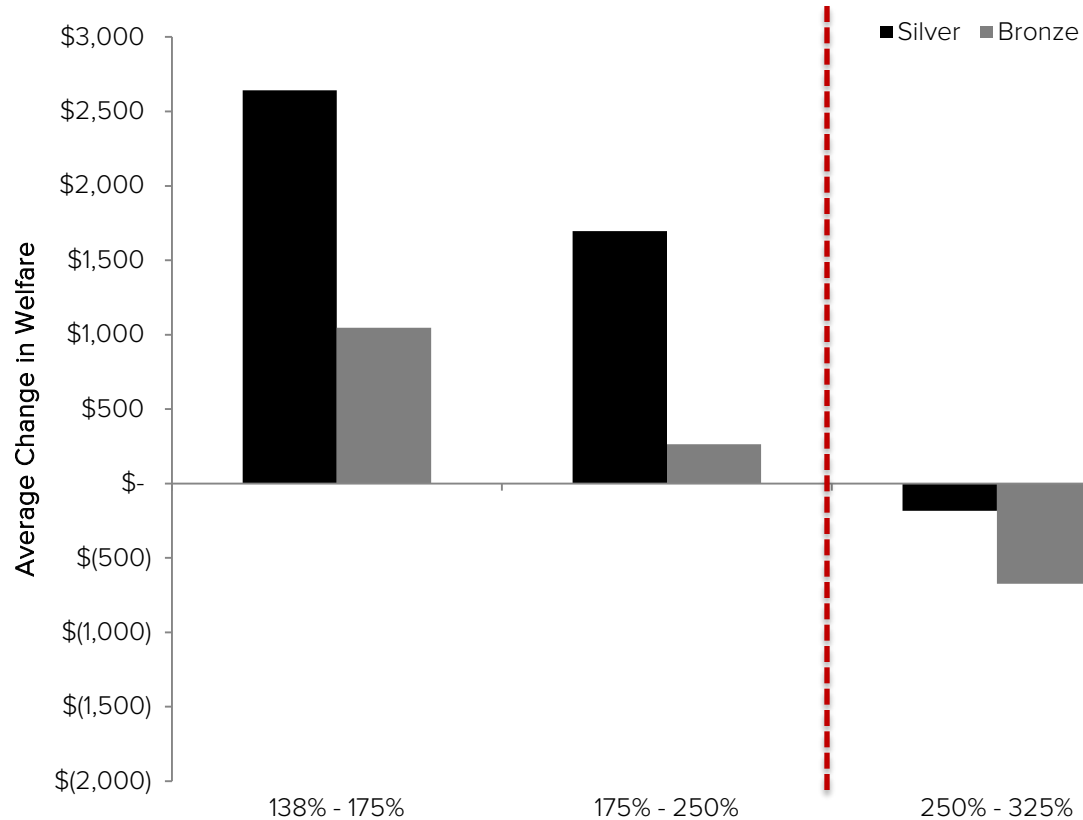


Table 8. Average change in welfare under “Best-case” scenario for alternative spending distributions (\$):

Income group (%FPL)	Silver		Bronze	
	Previous uninsured spending	Individually insured spending	Previous uninsured spending	Individually insured spending
138 – 175	-279	2,642	-725	1,046
175 – 250	-1,081	1,695	-1,358	263
250 – 325	-2,728	-183	-2,565	-674
325 – 400	-3,188	-640	-2,973	-1,087
>400	-3,832	-1,279	-3,598	-1,709
Total	-1,982	712	-2,060	-277

Note: The welfare estimates in this table assume a coefficient of absolute risk aversion  $\gamma = 0.001$  and the value of additional care equals its cost. All changes are significantly different from zero at the 0.01 level based on tests from running an OLS regression of welfare change for each observation against indicator variables, clustering by age-state pairs.

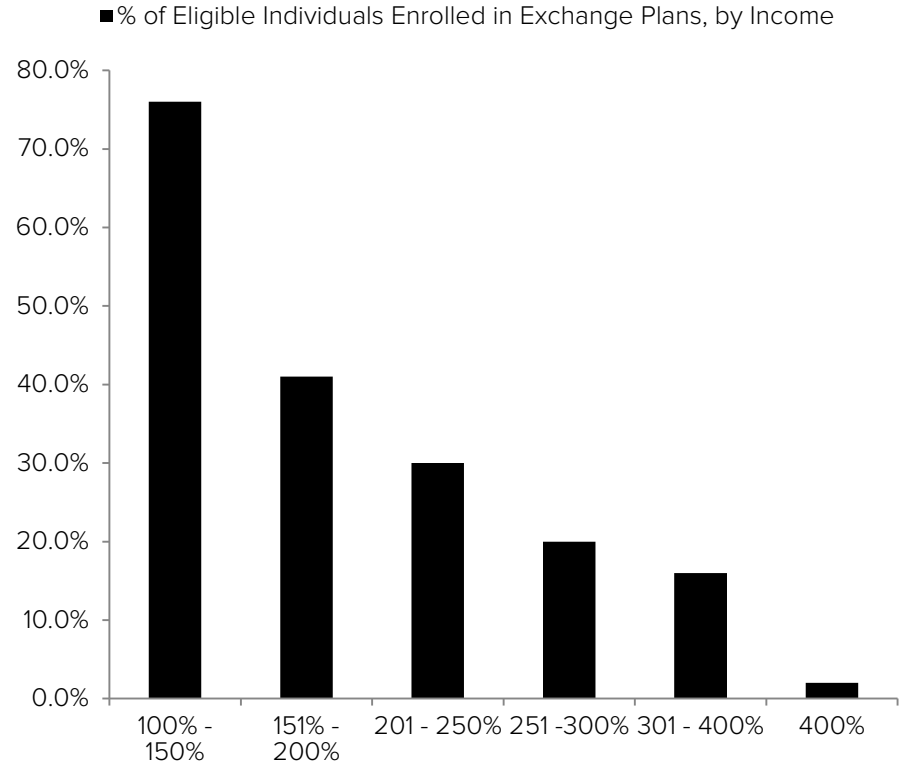
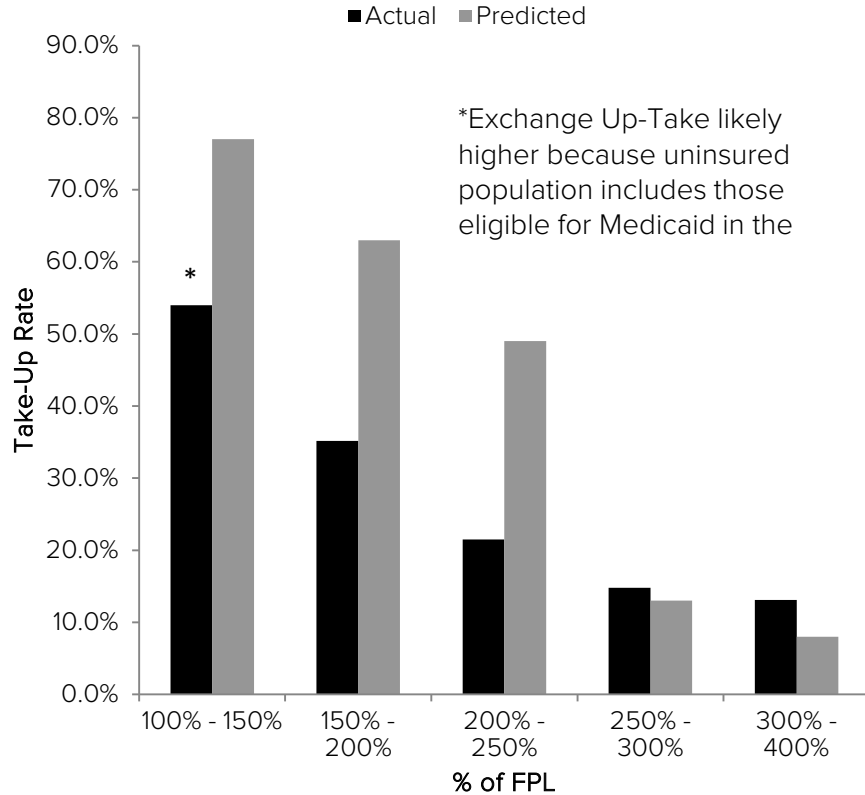
# ACA PREDICTED TAKE-UP RATES

Table 9. Predicted take-up rates by income for alternative spending distributions (\$)

Income group	Previous uninsured spending		Privately insured spending		"Best case" scenario			
	Silver		Bronze		Previous uninsured spending		Privately insured spending	
	Silver	Bronze	Silver	Bronze	Silver	Bronze	Silver	Bronze
138 – 175	8%	0%	75%	77%	26%	16%	100%	74%
175 – 250	0%	0%	46%	49%	16%	5%	90%	57%
250 – 325	0%	1%	7%	13%	2%	1%	53%	37%
325 – 400	1%	1%	3%	8%	1%	1%	38%	25%
>400	1%	1%	5%	5%	1%	1%	34%	21%
Total	2%	0%	32%	35%	11%	5%	69%	46%

Note: For the base scenario (columns 1-4), the coefficient of absolute risk aversion  $\gamma$  equals 0.0003 and the value of additional care is assumed to equal one-half its cost. For the "Best-case" scenarios, risk aversion  $\gamma = 0.001$  and value of additional care equals its cost.

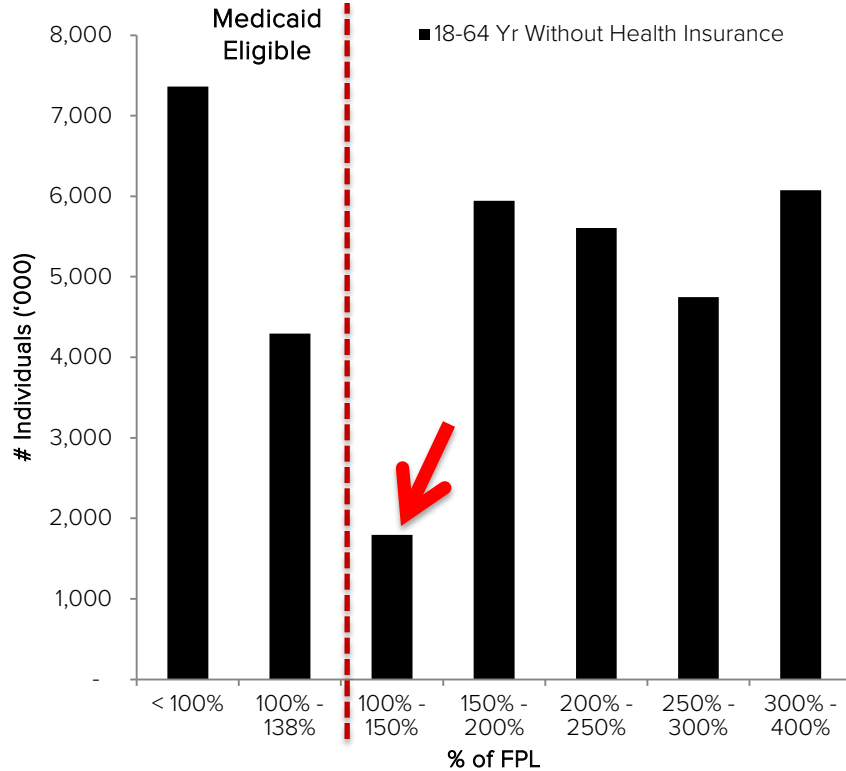
# ACA GREAT IF YOU'RE SUPER POOR



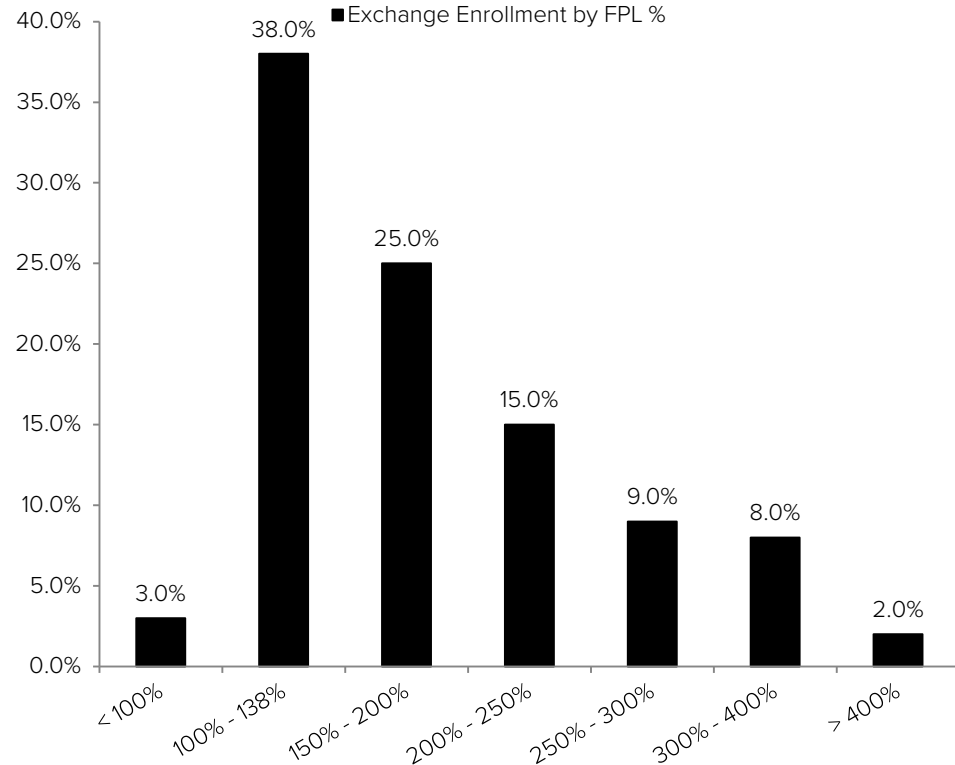
Number of potential eligible exchange enrollees determined using 2013 American Community Survey data on the Uninsured and Non-group populations prior to implementation of the health insurance exchanges. Analysis is limited to the 37 states relying on healthcare.gov in 2015.

# ACA ENROLLMENT BY FPL

2013 Pre-ACA



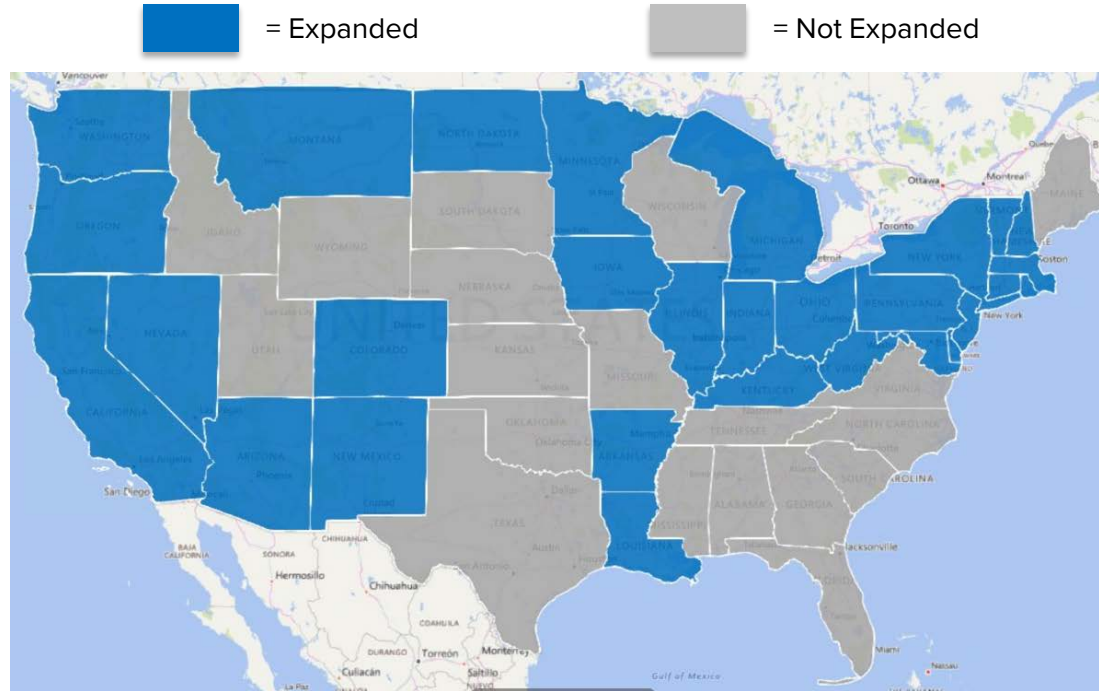
2015





# #POLICY

# MEDICAID EXPANSION



## NINETEEN STATES HAVE NOT EXPANDED MEDICAID

Includes high population states of Texas, Florida, Virginia, North Carolina and Georgia

# MEDICAID EXPANSION

1

## LITTLE HOPE FOR MUCH CHANGE TO MAP IN 2017

- Florida and Georgia will have open race for governor in 2018
- Texas's current governor is up for re-election in 2018
- Possible legacy building in Florida
- Pressure from insurers

2

## MODIFIED EXPANSIONS

- Strategy to address highest cost medical consumers especially for behavioral health and SUD
- Addressing key populations like homeless people recently released from prison
- Triggers to slow or accelerate expansion to protect budget

3

## INFLUENCE OF EXCHANGE POLICIES

- Most successful insurers on ACA exchanges are experienced with Medicaid Managed Care
- Bridge programs in Washington and Tennessee

# ACA EXCHANGE ENROLLMENT

1

## ANEMIC GROWTH

- CBO estimates 12 million subsidized enrollees in 2017 – about same as Feb., 2016
- Unsubsidized enrollees estimated as 3 million in 2017 according to CBO
- Off-exchange enrollment also status quo at 9 million enrollees
- New projections well below previous 21 million enrollee estimate

2

## PRIMARILY A LOWER INCOME BENEFIT

- Most enrollees have incomes at 100-200 percent of poverty threshold
- Enrollees likely to churn in and out of Medicaid
- Insurers having most luck are in MCO business like MOH and CNC

3

## FIXES NO FIX AT ALL

- Administration and insurers attacking wrong problem
- Ignores behavior of people living near poverty threshold
- Not politically likely anyway



# ACA EXCHANGE ENROLLMENT

## ANEMIC GROWTH

	2016	2017	2018	2019	2020
Total Population Under 65	272	273	274	275	276
Employment-based Coverage	155	155	153	152	152
Medicaid and ChiP	68	67	67	67	67
Purchased Through Marketplace					
Subsidized	10	12	15	16	15
Unsubsidized	2	3	3	4	4
Total Marketplace	12	15	18	20	19
Purchased Off-Exchange	9	9	8	8	8
Medicare	9	9	9	9	9
Other	5	5	5	5	5
Uninsured	27	26	26	27	27

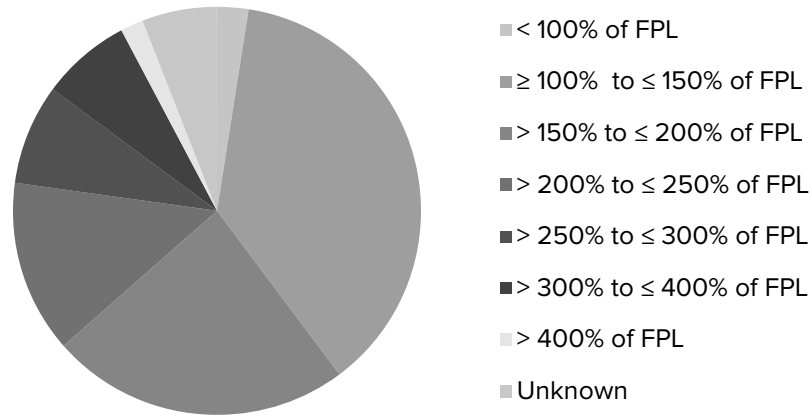
## CBO ESTIMATES NOW WELL BELOW 21 MILLION EXPECTED

Most change is accounted for by lower un-subsidized enrollees (6 million v 3 million) but subsidized enrollees estimate now lower also (15 million v 12 million)

# ACA EXCHANGE ENROLLMENT

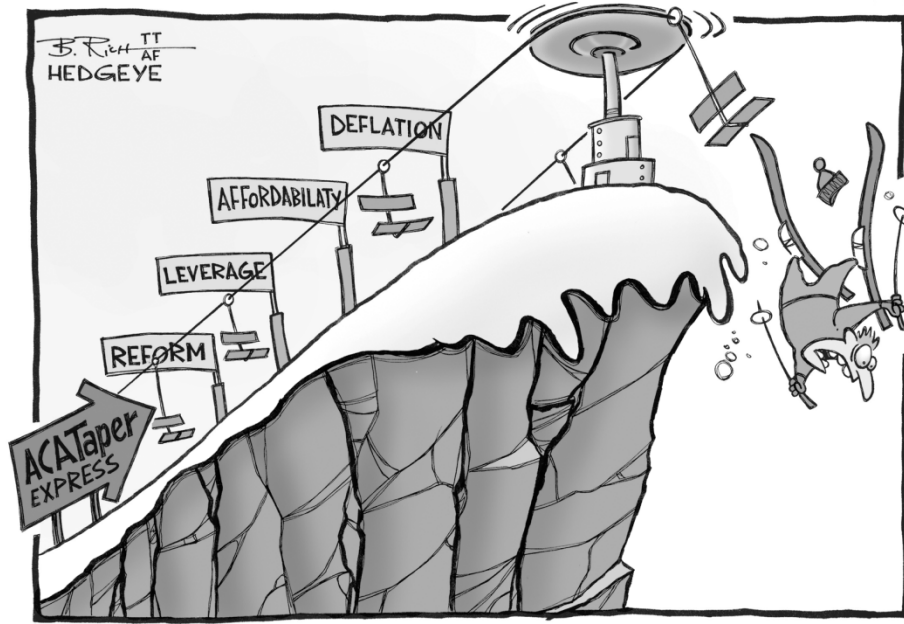
## PRIMARY LOW INCOME BENEFIT

Percent of 2015 Qualifying Health Plan Selections by Household Income



## VAST MAJORITY OF ENROLLEES ARE LOWER INCOME

Over 60 percent are  $\geq 100\%$  to  $\leq 200\%$  of FPL or between \$24,300 and \$48,600 for a family of four.



# MEDICARE COST CONTAINMENT

# MEDICARE COST CONTAINMENT

1

## ALTERNATIVE PAYMENT MODELS

- No let up in bundled payments and other alternative payment models
- APMs necessary for MACRA's success
- Election will likely perpetuate Obama policies
- Mostly likely vehicle for drug cost containment

2

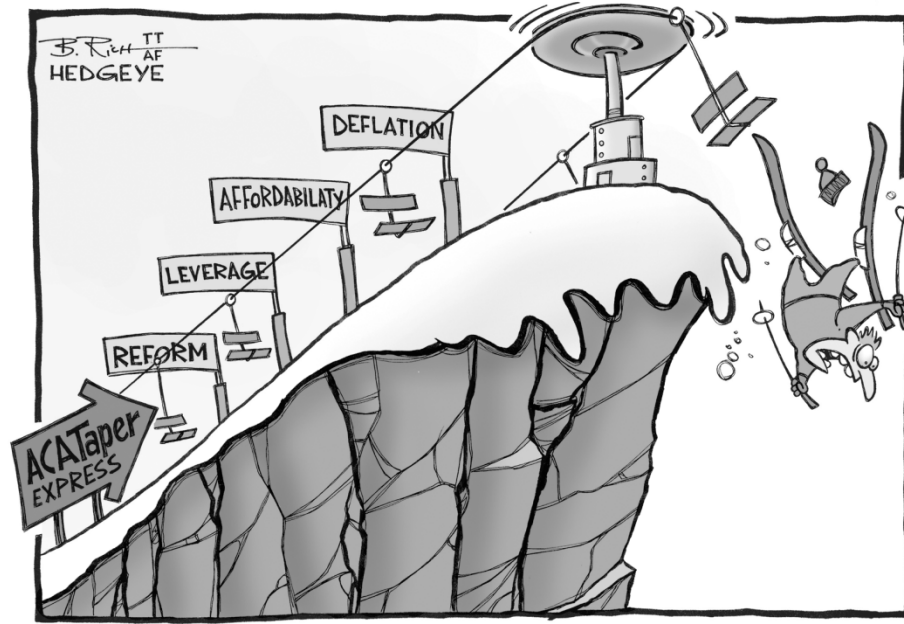
## POST ACUTE REFORM

- Reform under way but many would like to speed things up
- Easiest source of budgetary offsets

3

## MANAGED CARE

- Medicare Advantage plans pay on average 5.6 percent less than Medicare FFS
- Politically protected with broad bi-partisan support
- Pushes utilization to lowest cost provider



**AGAINST TREND**

# AGAINST TREND – SOME BRIGHT SPOTS

1

## BEHAVIORAL HEALTH & SUBSTANCE ABUSE

- Bi-partisan support – major feature of House Republicans and Clinton campaigns
- Enforcement of parity
- De-stigmatization of issue in public's mind

2

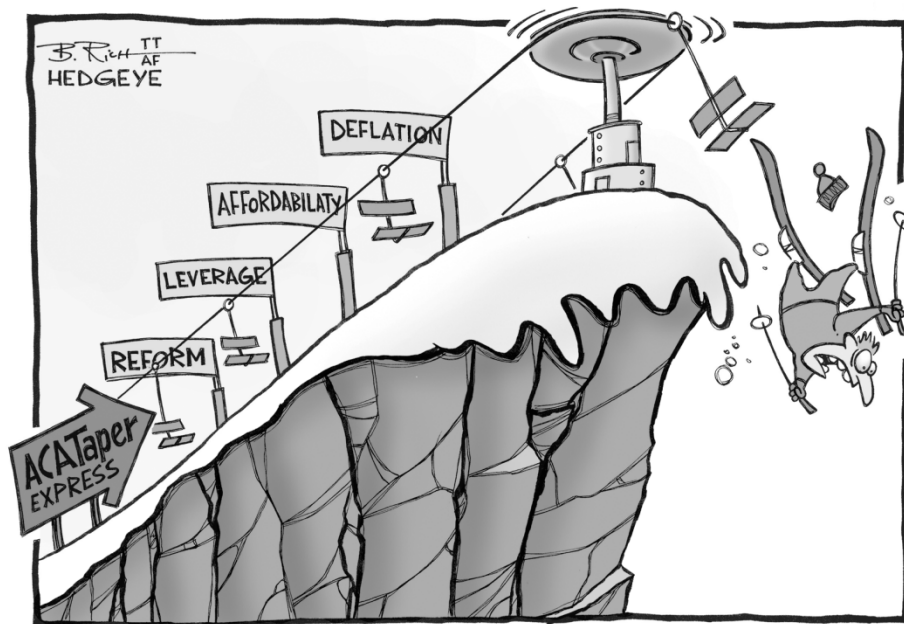
## TELEMEDICINE

- Federal and state policy catching up to technology
- Still some obstacles but hard to ignore low cost provider

3

## AMBULATORY CARE

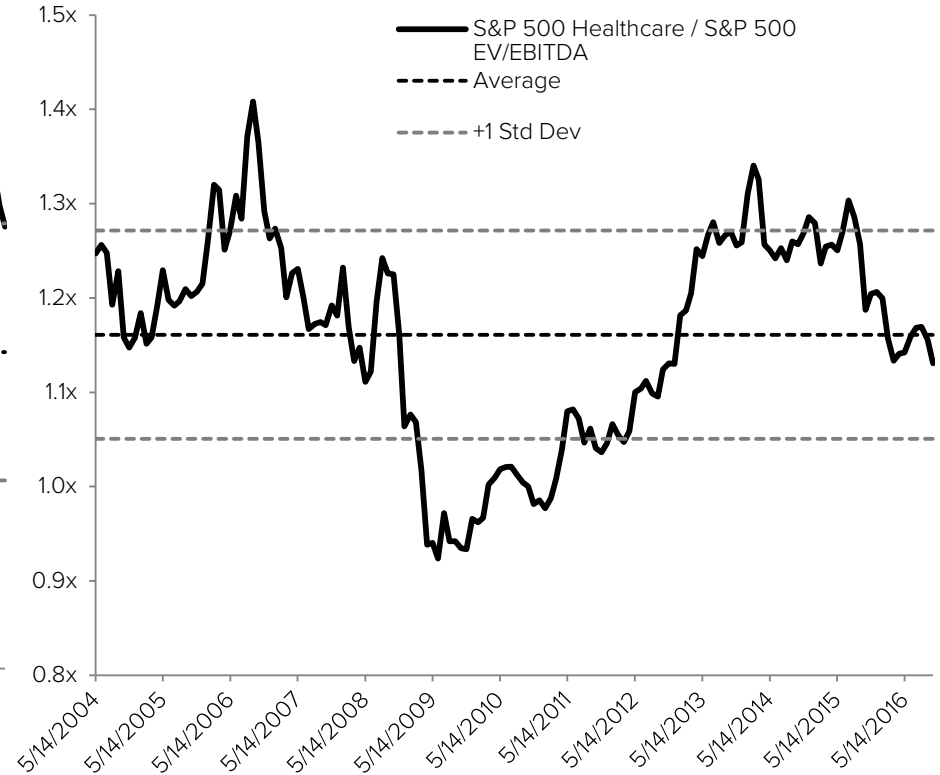
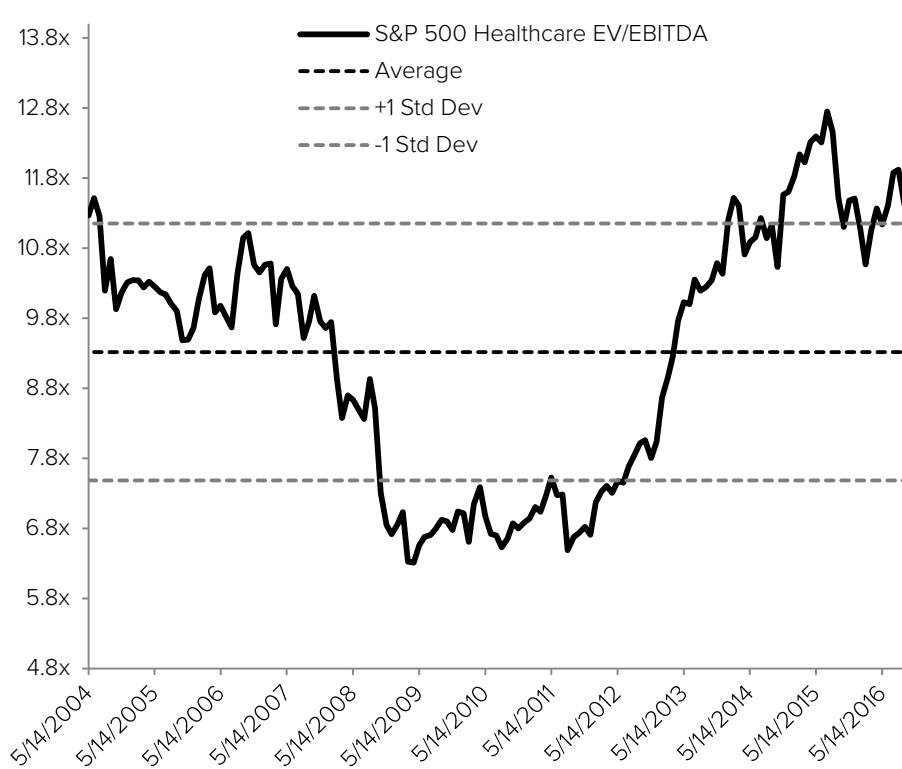
- Shift of inpatient procedures to ambulatory setting like Total Knee Replacement
- More in-home care



# VALUATION, SENTIMENT AND PRICE

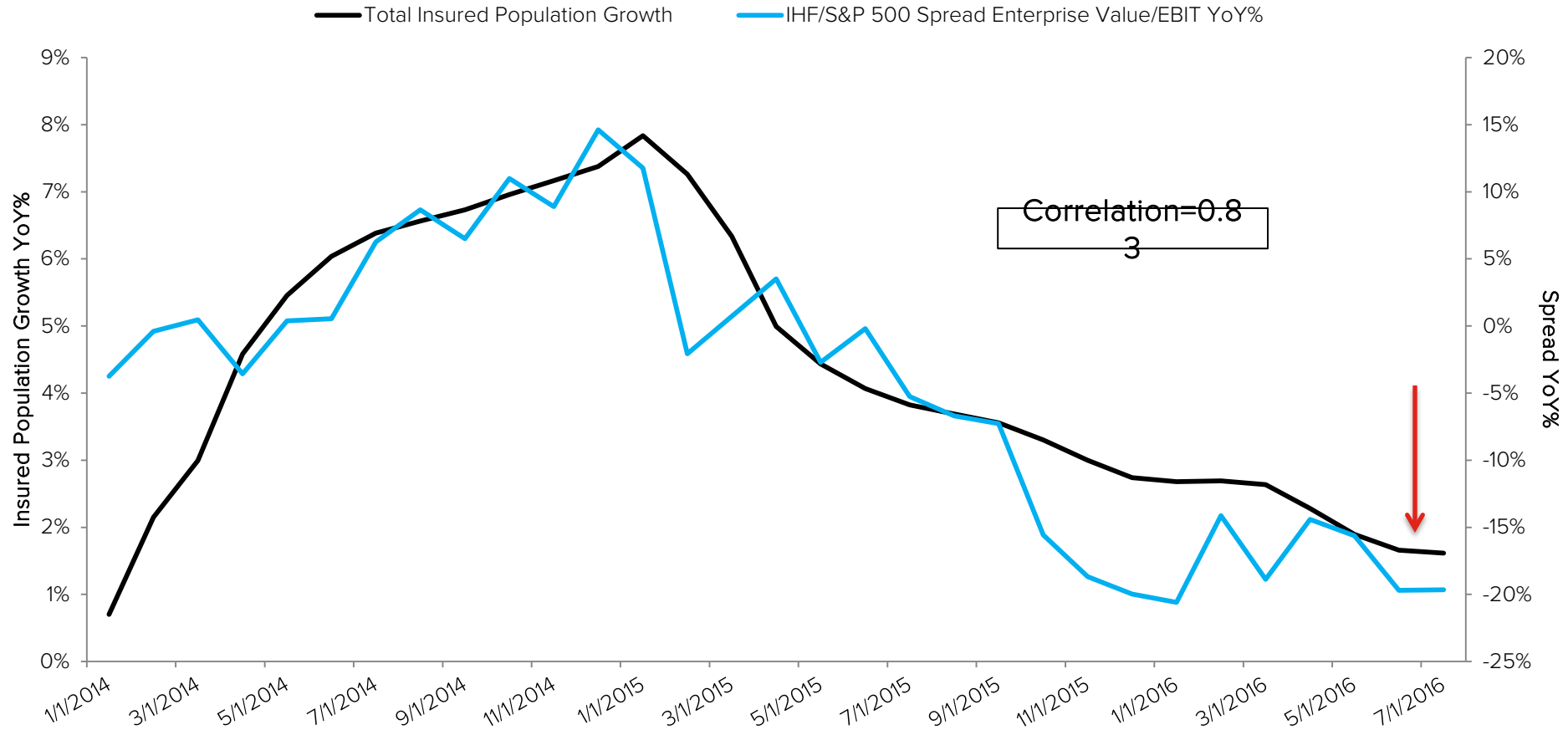
# HEALTHCARE NTM EV/EBITDA

## EXTENDED ABSOLUTE / IN-LINE RELATIVE

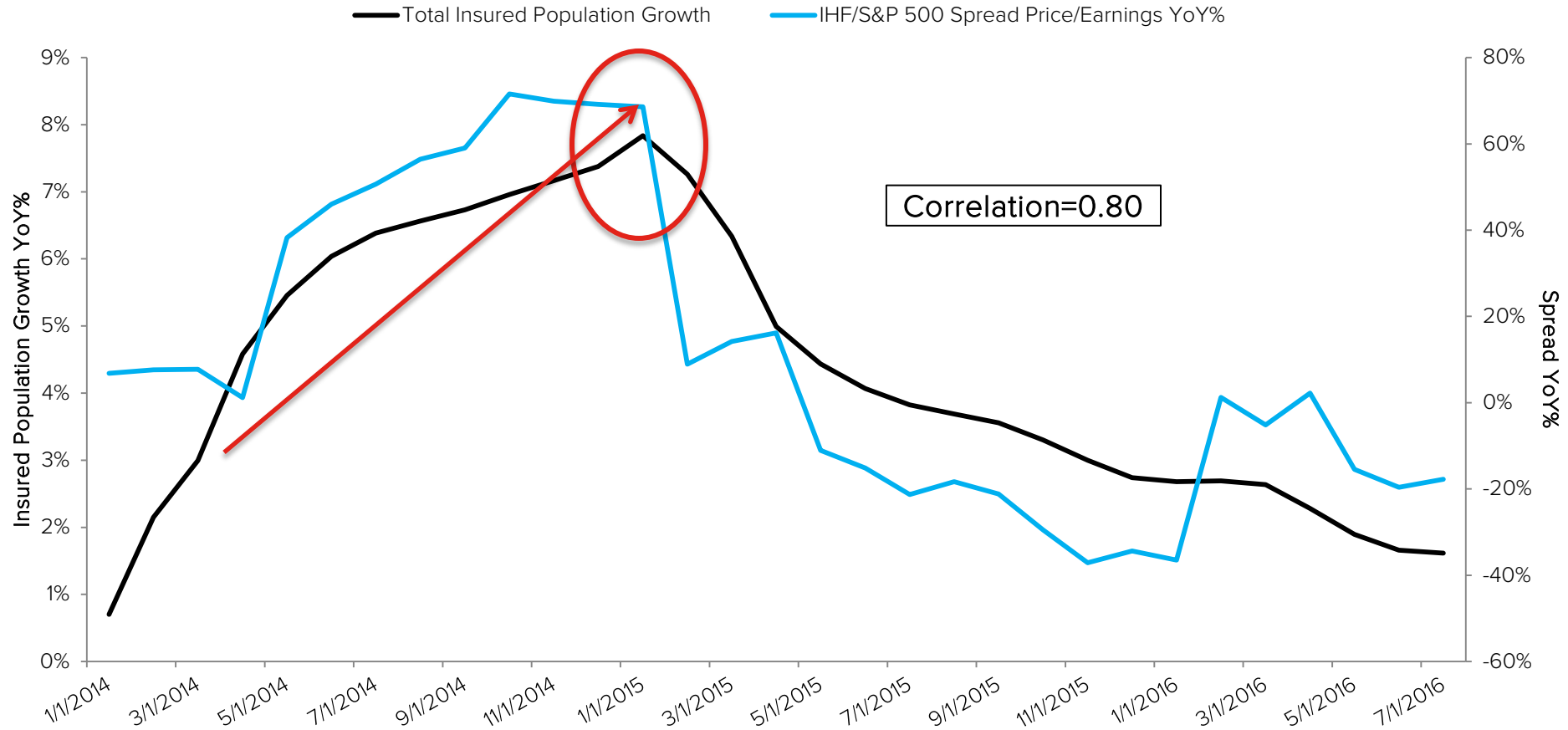




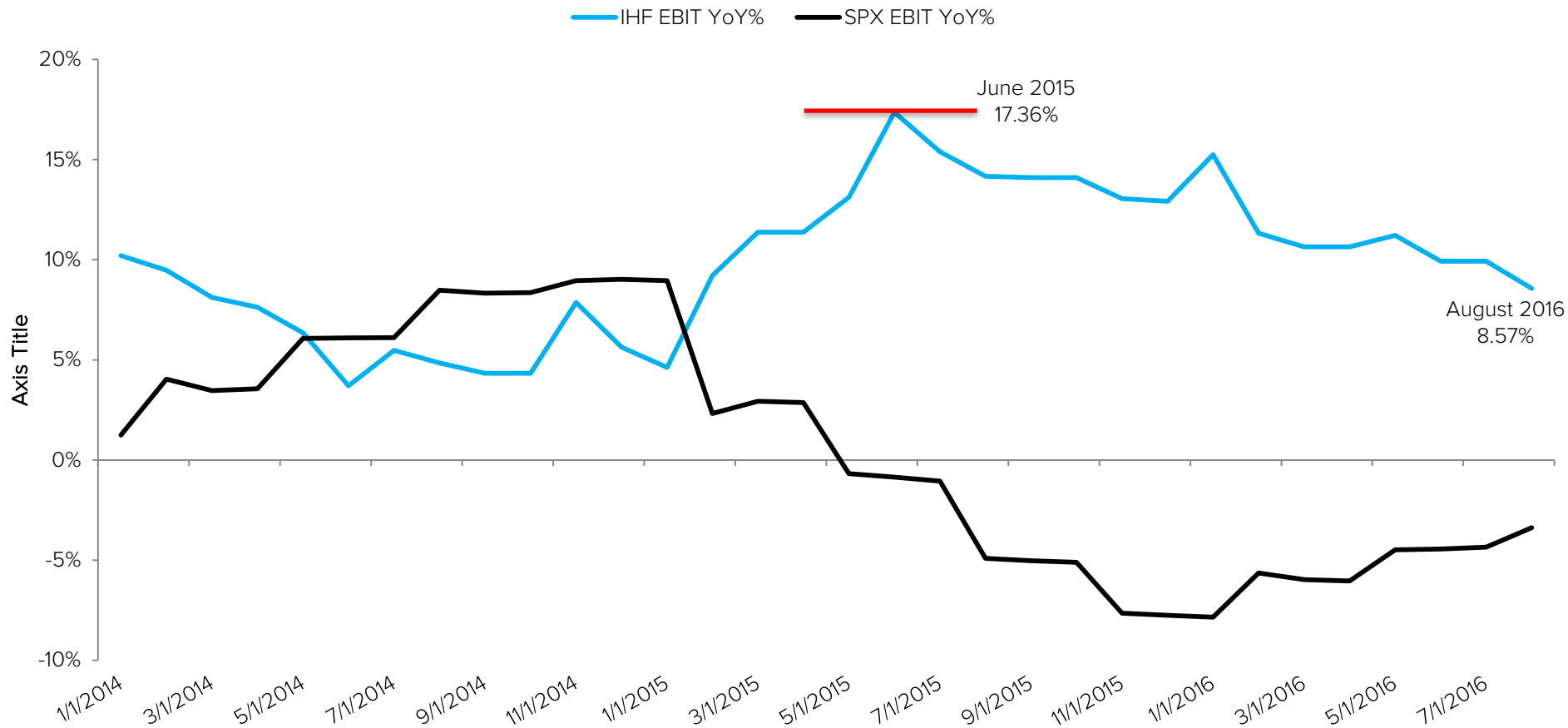
# LOW GROWTH GETS LOW MULTIPLES



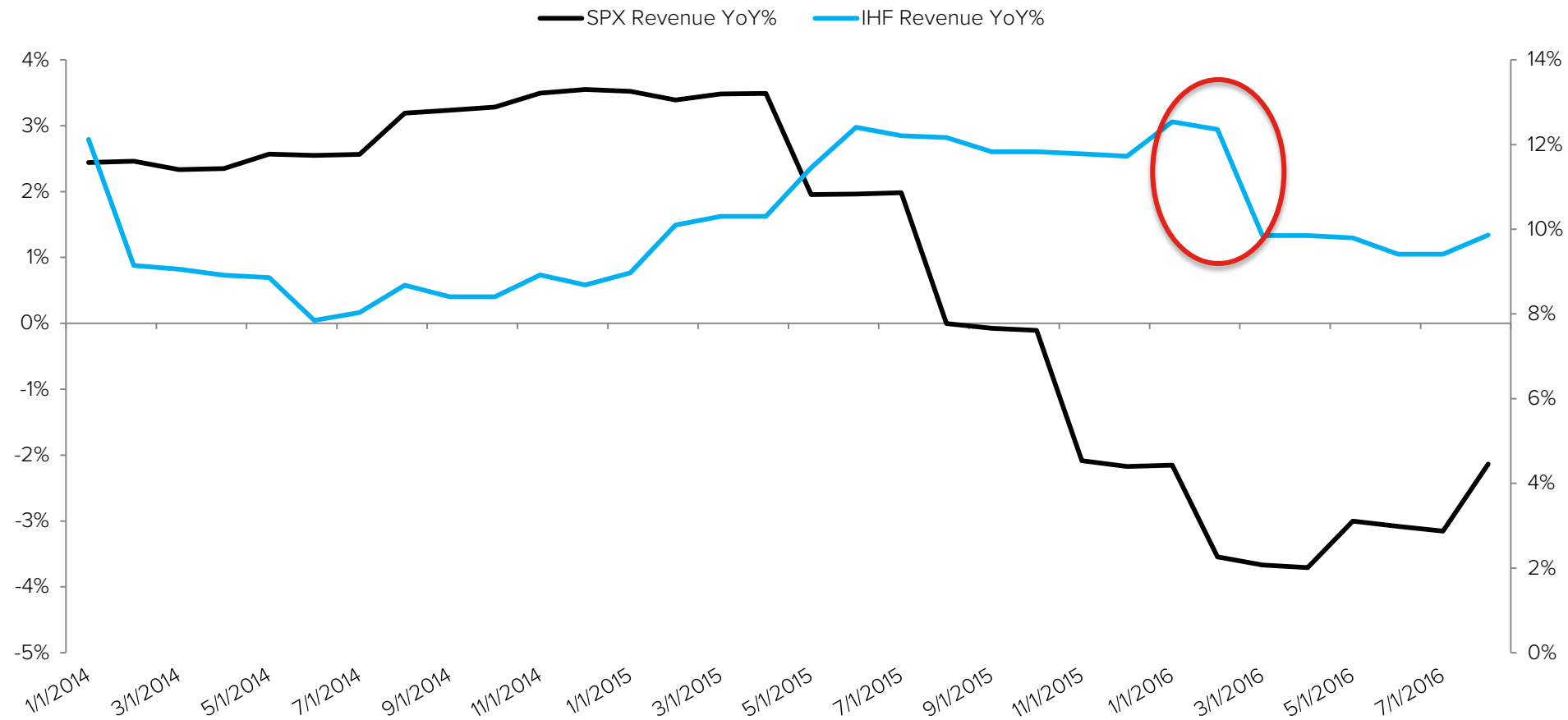
# INSURED POPULATION DRIVES PRICE



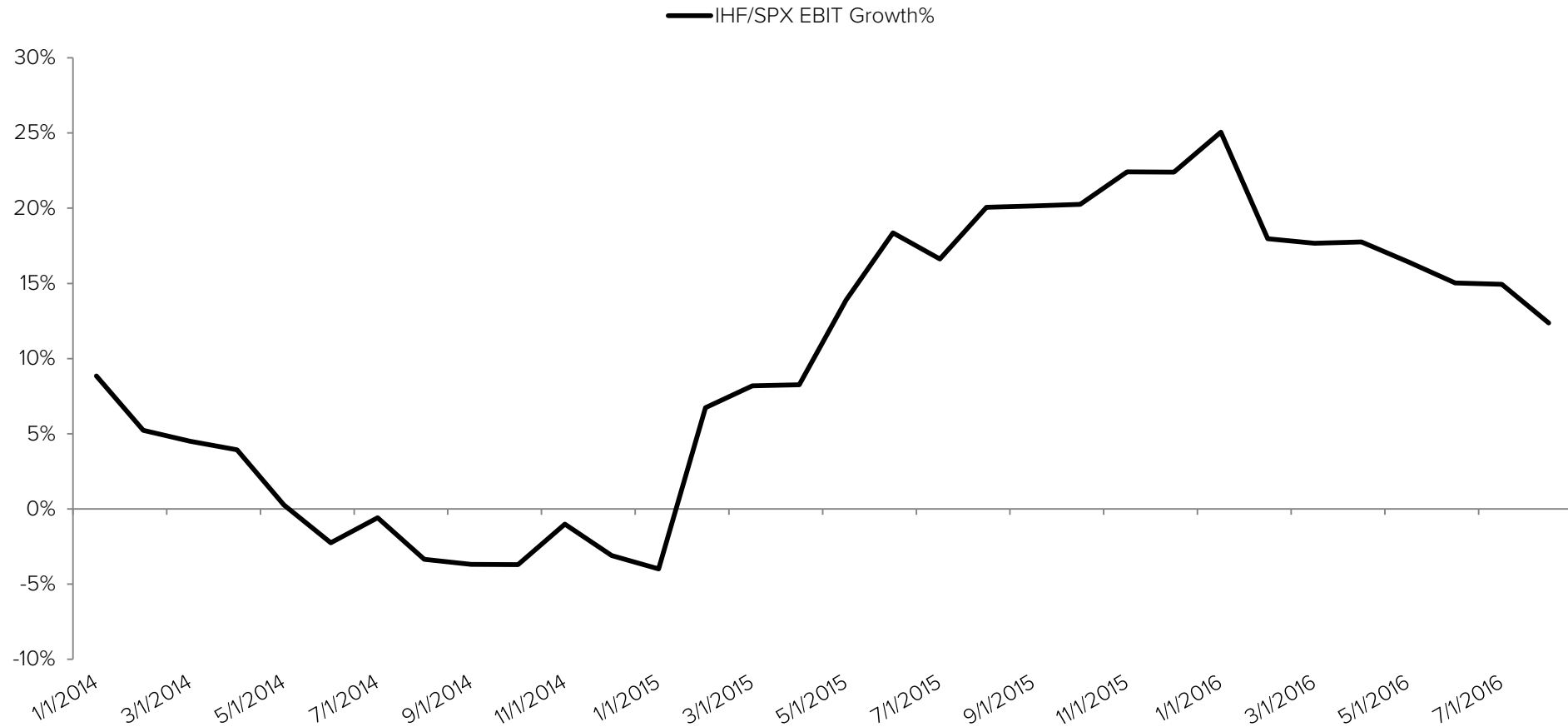
# GROWTH PREMIUM HAS PEAKED



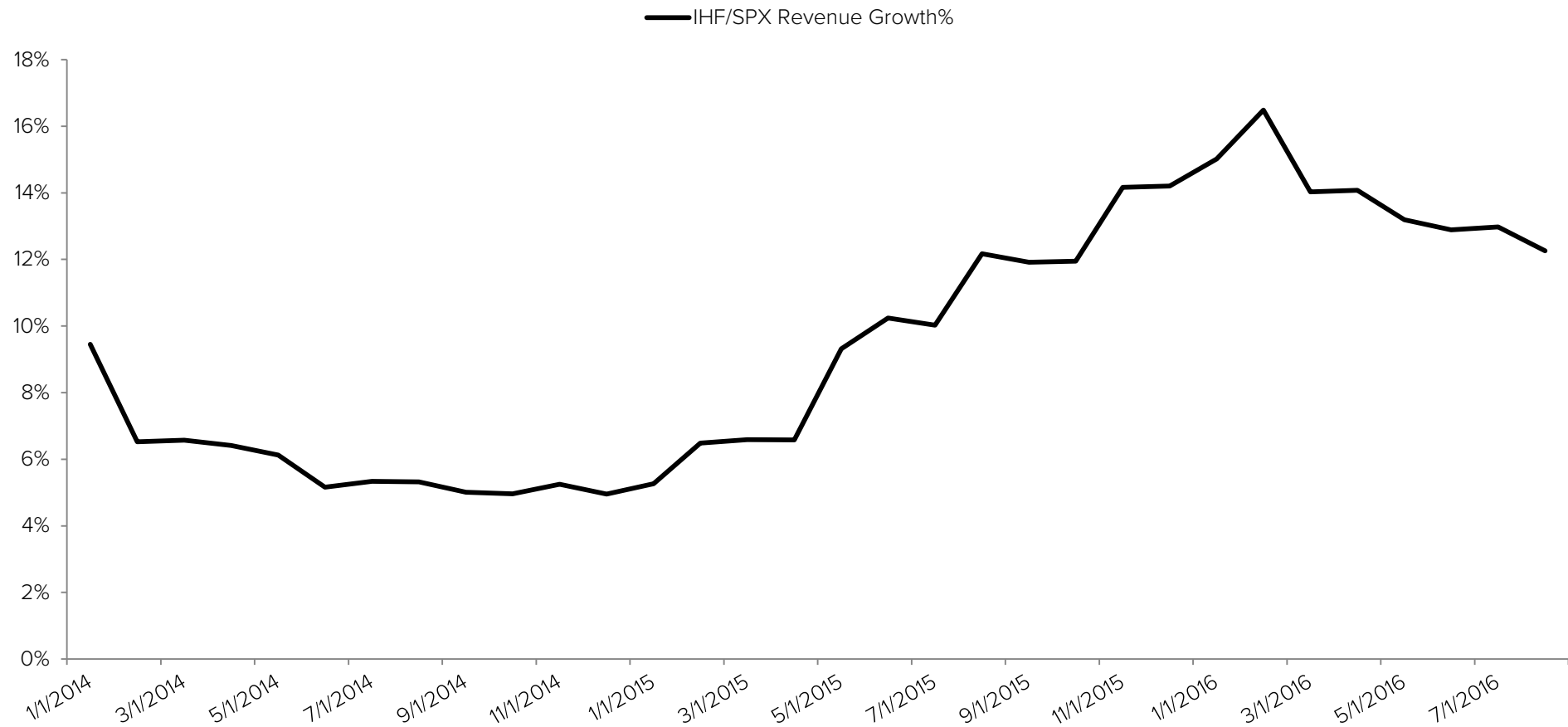
# S&P 500 MORE ATTRACTIVE?



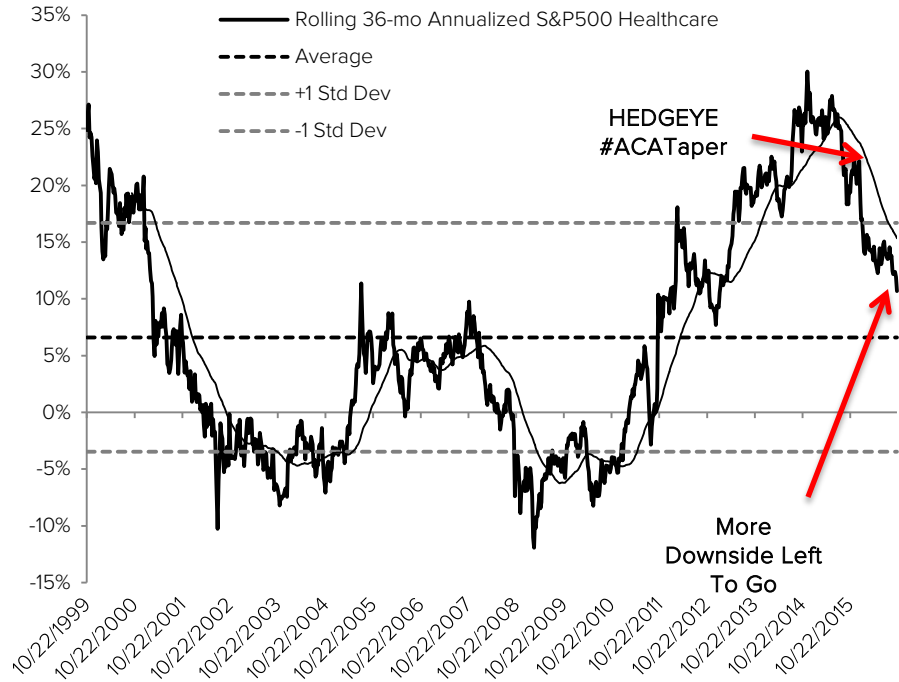
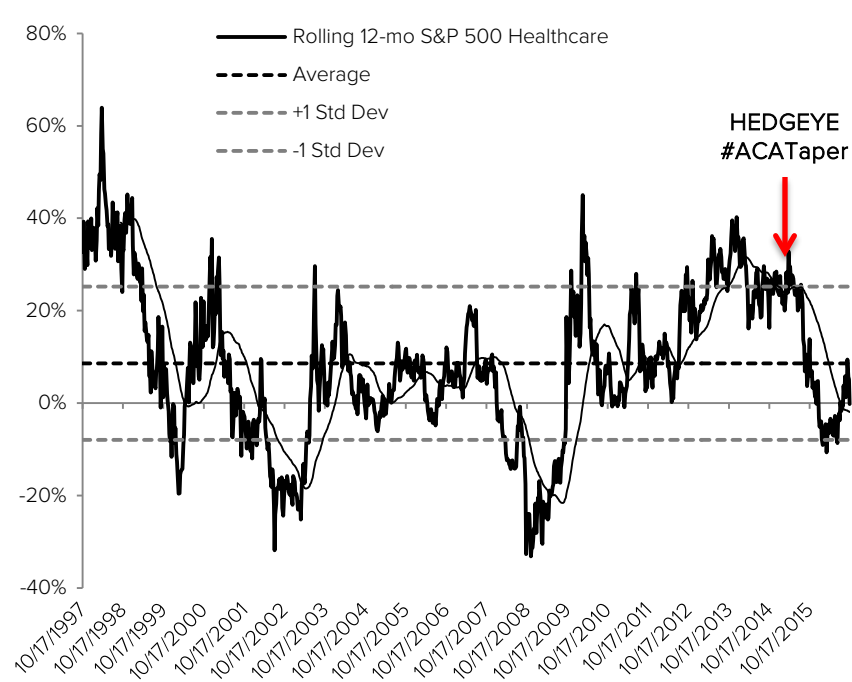
# PROFITS SLOWING FOR PROVIDERS



# TOP-LINE DECELERATION VS S&P 500



# HISTORICAL PERFORMANCE



## HEALTHCARE UNDERPERFORMANCE TO CONTINUE

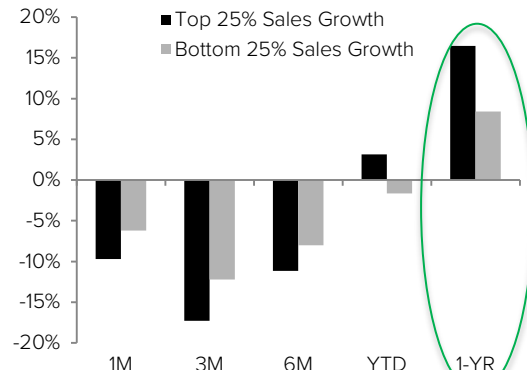
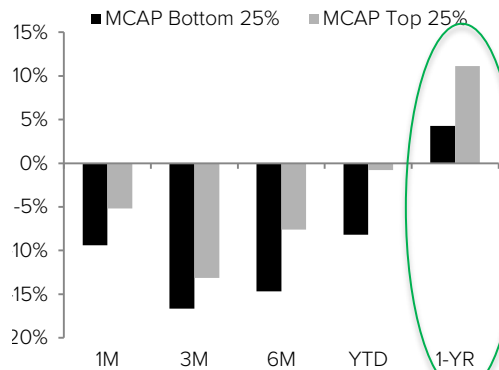
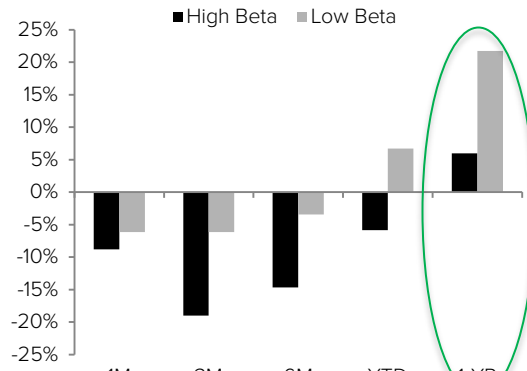
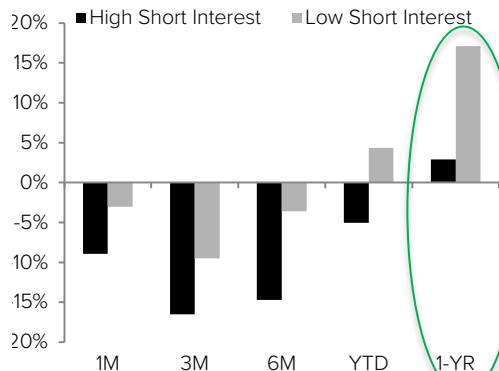
We expect Healthcare to continue to underperform due to the factors we addressed previously and that we remain extended on a 3-yr absolute basis.

# STYLE FACTOR PERFORMANCE (10/8/15)

	FACTOR	1M	3M	6M	YTD	1-YR
DEBT	High Debt/EBV	-3.7%	-0.2%	2.5%	-1.8%	-2.5%
	Low Debt/EBV	-3.5%	-0.7%	11.8%	4.8%	11.2%
SI	High Short Interest	-5.7%	-9.2%	-4.7%	-12.9%	-11.9%
	Low Short Interest	-2.4%	-1.4%	4.7%	8.7%	12.0%
BETA	High Beta	-5.8%	-2.8%	3.7%	-1.1%	5.6%
	Low Beta	-1.6%	2.4%	9.4%	7.1%	7.2%
YIELD	High Yield	-2.1%	-6.5%	-0.7%	0.9%	3.8%
	Low Yield	-3.9%	-0.9%	6.3%	0.3%	4.8%
VALUE	High EV/Sales	-5.6%	-3.6%	6.8%	5.0%	7.7%
	Low EV/Sales	-2.4%	-6.6%	-3.9%	-6.4%	-4.6%
MKT CAP	MCAP Bottom 25%	-2.9%	-1.2%	4.1%	-3.1%	1.1%
	MCAP Top 25%	-4.1%	-4.8%	-0.4%	-2.4%	2.2%
Sales Growth	Top 25% Sales Growth	-4.9%	0.8%	9.4%	3.3%	7.0%
	Bottom 25% Sales Growth	-3.6%	-5.6%	-2.1%	-4.9%	-4.6%
EPS Growth	Top 25% EPS Growth	-5.5%	-2.9%	1.3%	-6.8%	-1.7%
	Bottom 25% EPS Growth	-2.7%	-0.1%	9.0%	1.6%	3.4%

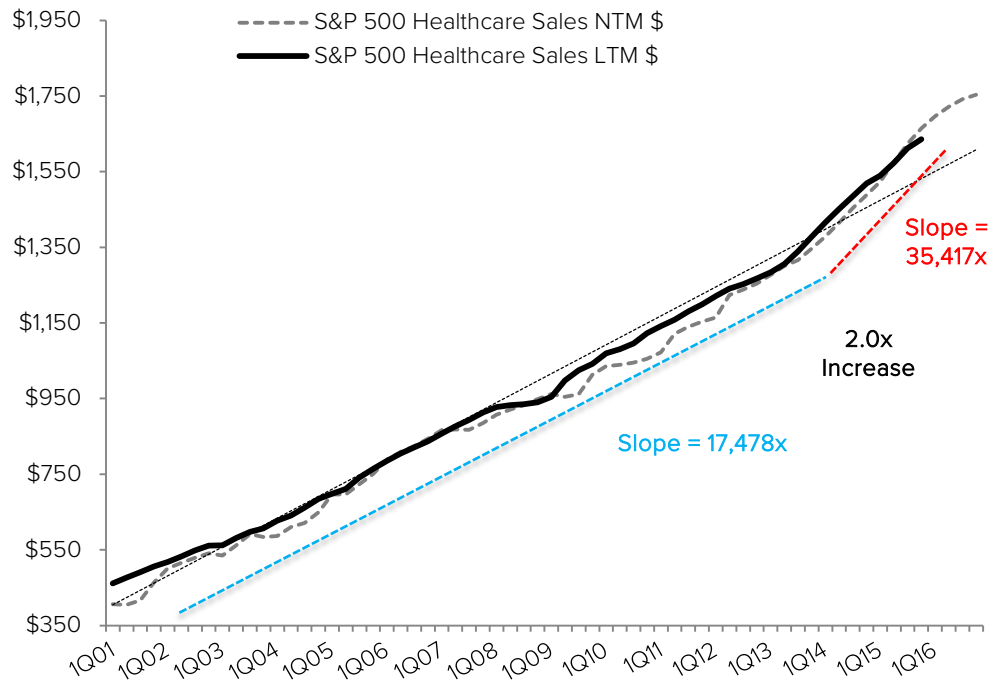
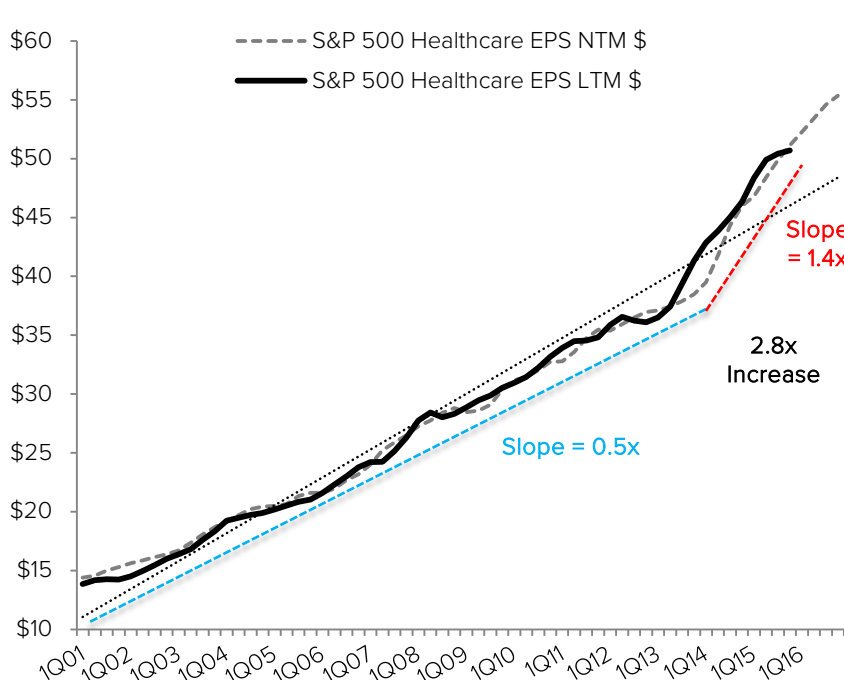
GREEN = Relative Outperformance Over Given Duration

\*Percentage change reflects performance for top & bottom quartile of companies in the Universe (n=195) for the given style factor





# ABSOLUTE SALES AND EPS ESTIMATES



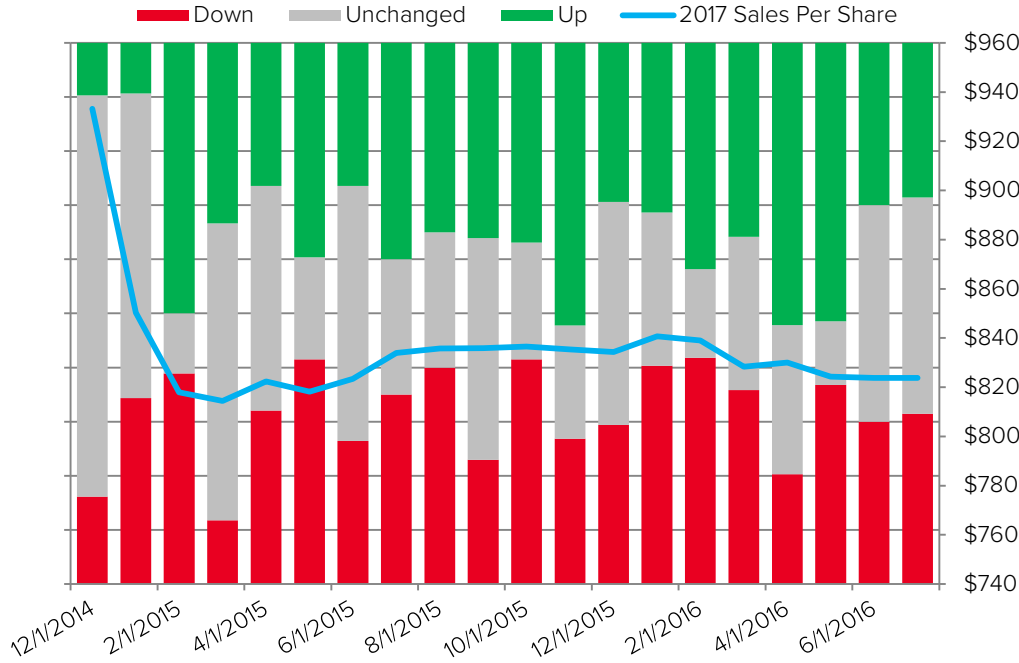
## CONSENSUS DEVIATING FROM LONG-TERM TREND

Reasonable given level of M&A and Stimulus.... but likely to mean revert amid slowing growth. Rate of change significant with slope increase 2.0x for Sales and 2.8x for EPS (> Sales due to operating leverage).

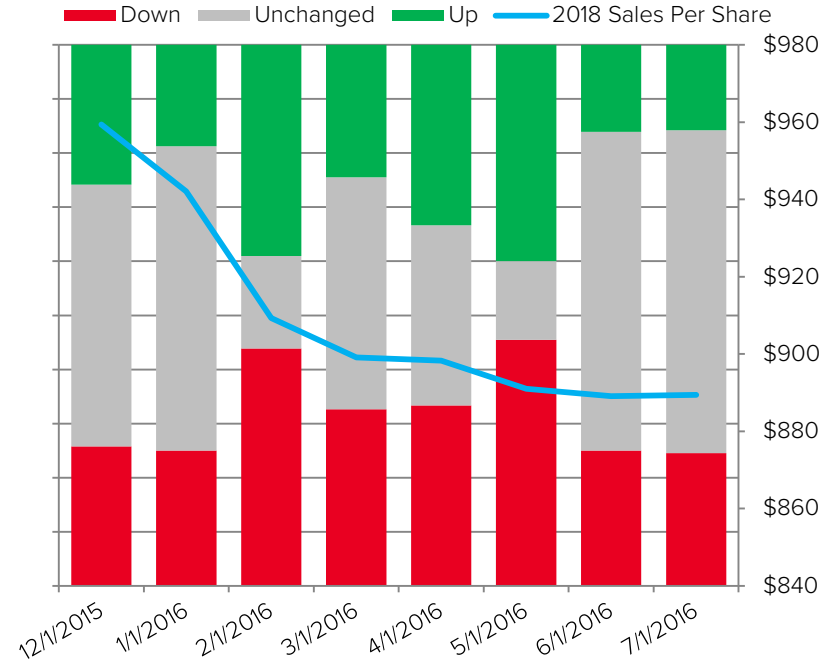
# CONSENSUS ESTIMATE REVISIONS

## 2017/2018 SALES ESTIMATES TRENDING LOWER

2017 Sales Per Share Estimates  
North American Health Services



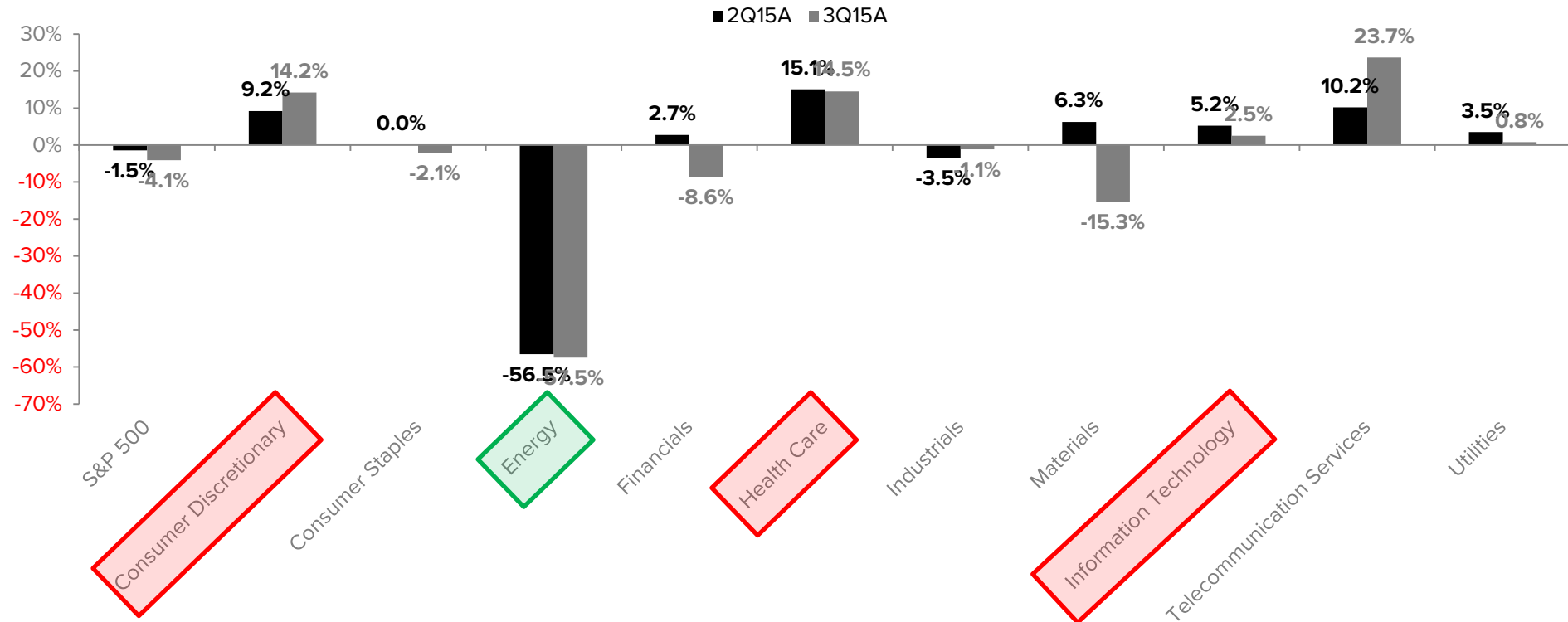
2018 Sales Per Share Estimates  
North American Health Services



# BASE EFFECTS FOR EPS GROWTH

COMPARES ARE DIFFICULT FOR #LATECYCLE CONSUMPTION-ORIENTED SECTORS SUCH AS CONSUMER DISCRETIONARY, HEALTH CARE AND, TO A LESSER EXTENT, TECH. ENERGY COMPARES ARE A LAYUP TO THE EXTENT CRUDE OIL PRICES CAN STAY AROUND/ABOVE CURRENT LEVELS.

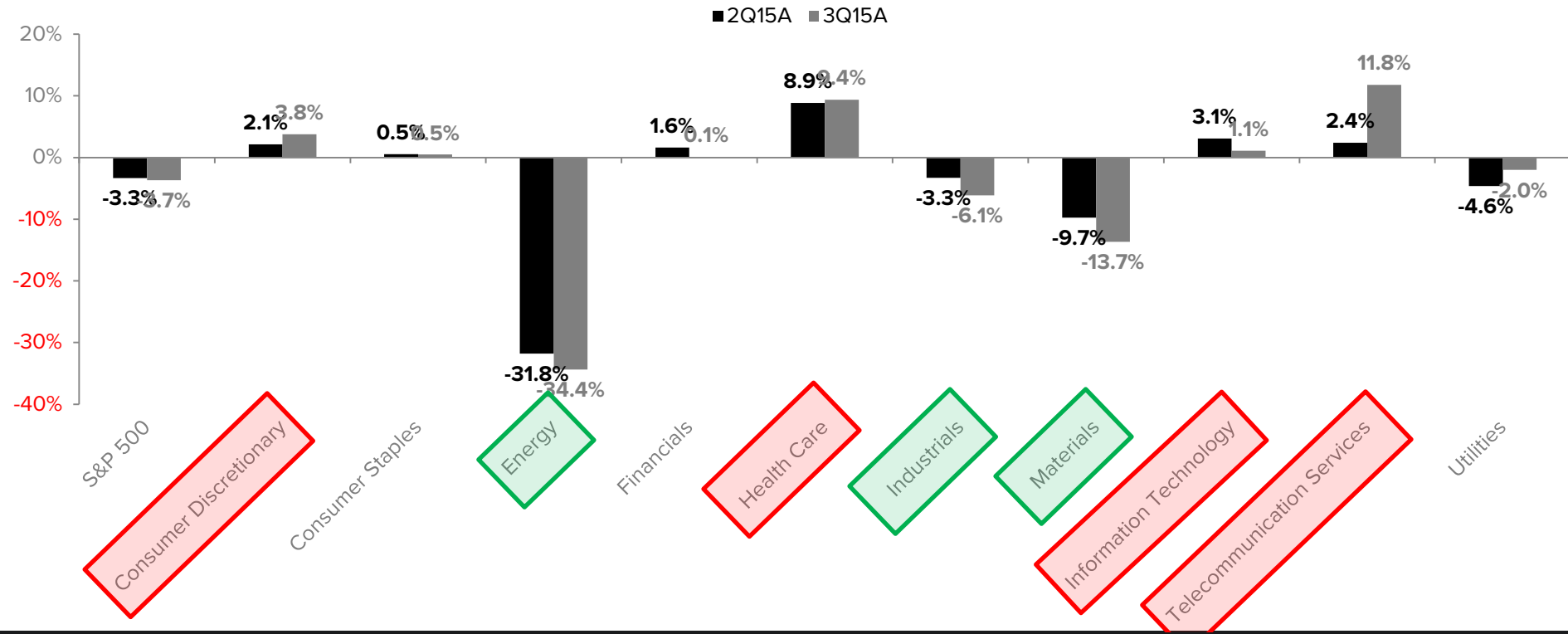
YoY % Change in EPS by S&P 500 Sector (Annual Compares)



# BASE EFFECTS FOR REVENUE GROWTH

CONSUMER DISCRETIONARY, HEALTH CARE, TECH AND TELECOM HAVE THE MOST DIFFICULT COMPARES ACROSS SECTORS, WHILE ENERGY, MATERIALS AND INDUSTRIALS HAVE EASY COMPARES.

YoY % Change in Sales by S&P 500 Sector (Annual Compares)



# VALUATION MONITOR

Friday, October 14, 2016

## Absolute

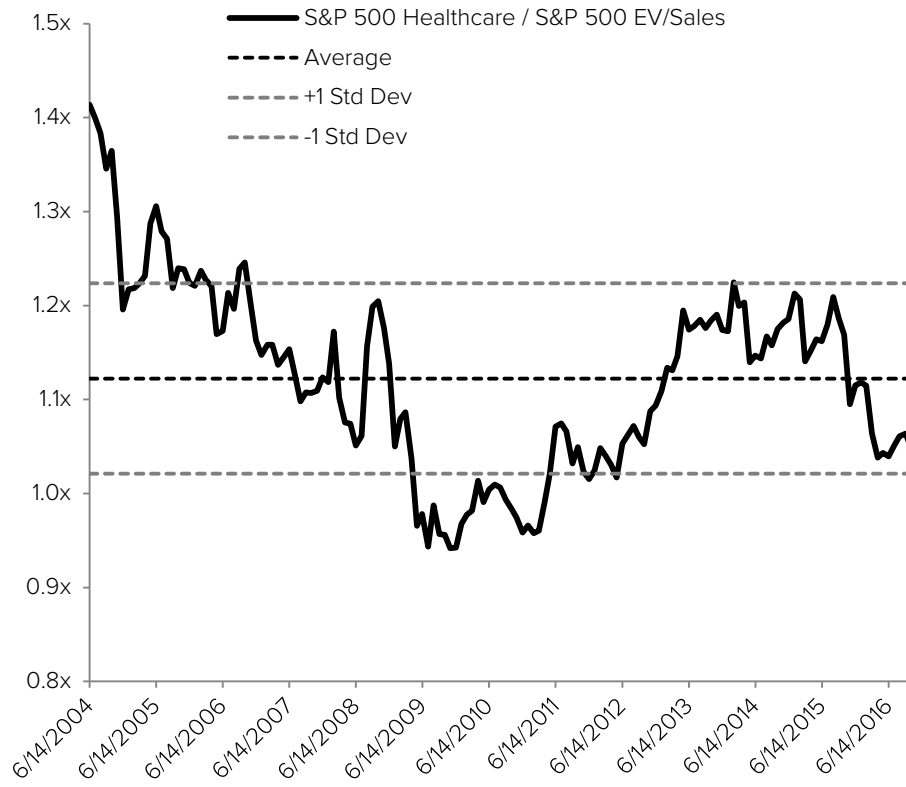
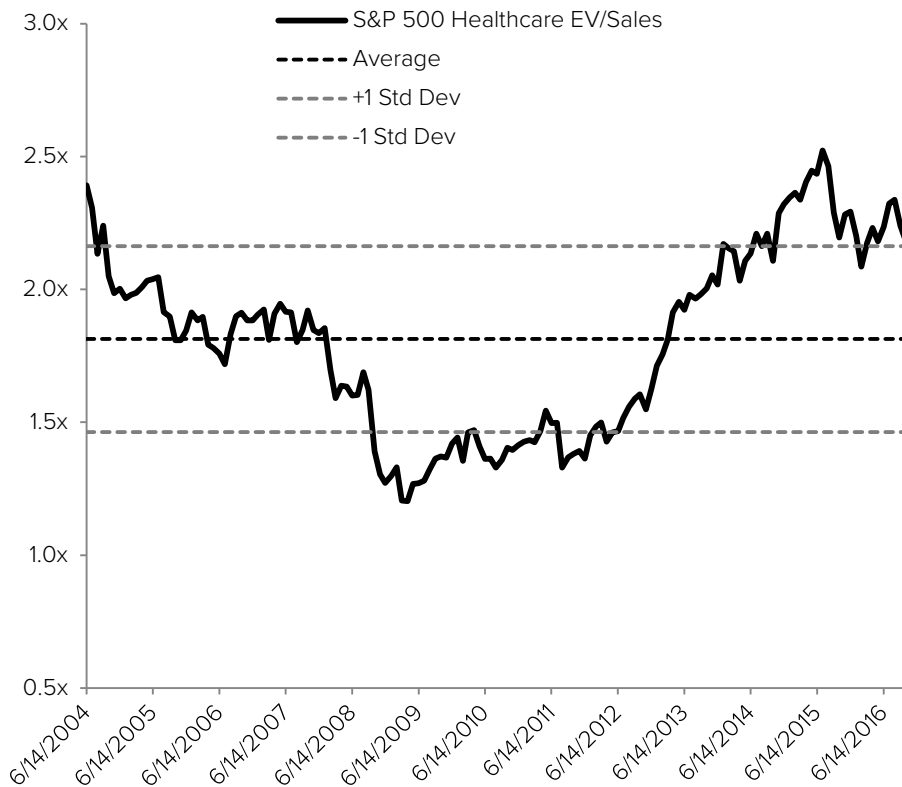
Index	Multiple Current	EV/EBITDA				Multiple Current	EV/Sales				Multiple Current	P/E			
		Z-Score					Z-Score					Z-Score			
		1 Yr.	3 Yr.	5 Yr.	10 Yr.		1 Yr.	3 Yr.	5 Yr.	10 Yr.		1 Yr.	3 Yr.	5 Yr.	10 Yr.
S&P 500	10.3x	0.2	1.0	1.2	1.7	2.1x	0.4	1.1	1.3	1.9	16.6x	0.0	0.7	1.0	1.4
S&P 500 Health Care	11.1x	-0.8	-0.6	0.5	1.0	2.2x	-0.9	-0.5	0.5	1.1	14.6x	-1.5	-1.9	-0.2	0.3
Industry															
Equipment & Supplies	13.7x	0.7	1.4	1.5	2.1	4.0x	1.0	1.6	1.8	2.3	18.8x	0.6	1.3	1.4	1.4
Providers & Services	8.2x	-1.2	-1.6	-0.3	0.0	0.4x	-1.4	-1.9	-0.8	0.4	13.2x	-1.9	-1.4	-0.1	0.2
Technology	11.4x	-0.1	-1.2	-1.4	-0.2	3.9x	-0.2	-1.2	-1.3	0.1	23.3x	-0.4	-1.3	-1.7	-0.9
Biotechnology	9.5x	-1.1	-1.5	-1.4	-1.0	5.1x	-1.3	-2.0	-0.9	-0.3	11.6x	-1.4	-1.5	-1.7	-1.6
Pharmaceuticals	11.7x	-1.4	0.0	0.7	1.3	4.4x	-1.2	0.2	0.8	1.4	14.9x	-2.1	-1.9	0.0	0.6
Life Sciences	15.7x	-0.8	0.0	0.7	1.3	4.1x	-0.6	0.3	0.9	1.6	20.1x	-0.8	-0.8	0.5	0.7

## Relative to S&P 500

Index	Multiple Current	EV/EBITDA				Multiple Current	EV/Sales				Multiple Current	P/E			
		Z-Score					Z-Score					Z-Score			
		1 Yr.	3 Yr.	5 Yr.	10 Yr.		1 Yr.	3 Yr.	5 Yr.	10 Yr.		1 Yr.	3 Yr.	5 Yr.	10 Yr.
S&P 500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S&P 500 Health Care	1.1x	-1.3	-1.8	-0.8	-0.1	1.0x	-1.4	-2.0	-1.6	-0.8	0.9x	-1.6	-2.0	-2.2	-1.0
Industry															
Equipment & Supplies	1.3x	1.0	1.6	1.7	1.9	1.9x	1.3	1.9	2.2	1.8	1.1x	1.1	1.7	2.1	0.6
Providers & Services	0.8x	-1.2	-1.8	-2.4	-2.7	0.2x	-1.4	-1.8	-2.3	-1.0	0.8x	-1.8	-2.1	-1.8	-1.1
Technology	1.1x	-0.1	-1.2	-1.6	-1.1	1.8x	-0.3	-1.2	-1.6	-0.8	1.4x	-0.4	-1.3	-1.6	-1.5
Biotechnology	0.9x	-1.1	-1.4	-1.8	-2.0	2.4x	-1.3	-1.8	-2.1	-2.1	0.7x	-1.3	-1.4	-1.9	-2.2
Pharmaceuticals	1.1x	-1.9	-1.6	0.0	0.7	2.0x	-1.8	-1.9	-0.2	0.5	0.9x	-1.8	-2.4	-1.6	-0.1
Life Sciences	1.5x	-1.4	-1.1	0.2	0.7	1.9x	-1.3	-0.6	0.4	1.1	1.2x	-1.2	-1.7	-0.2	-0.3

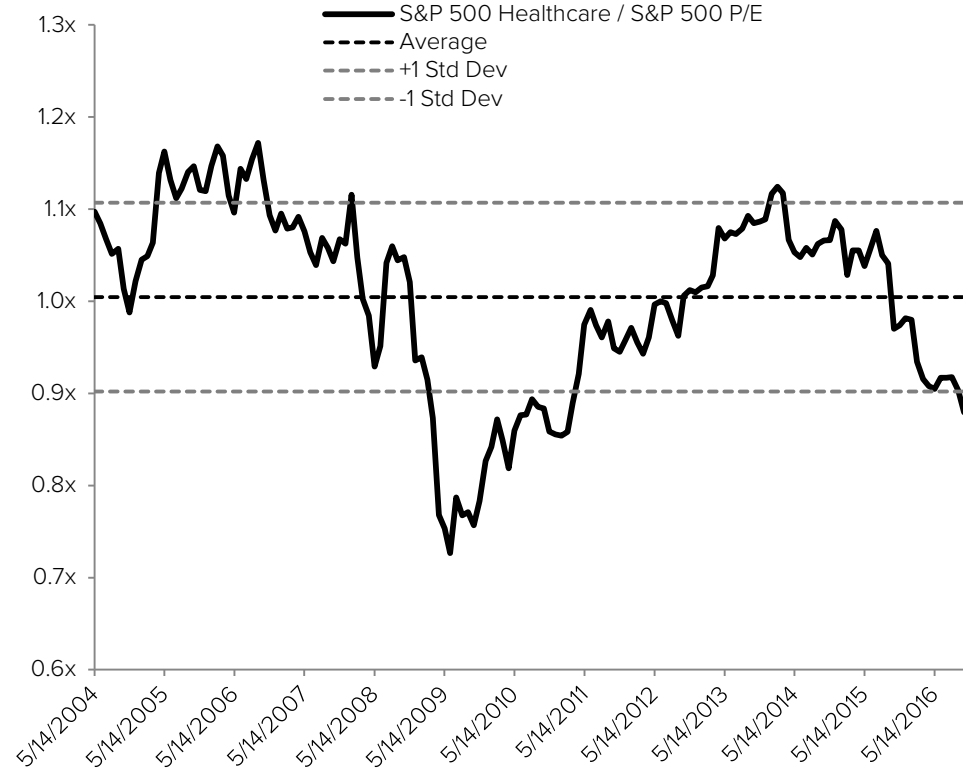
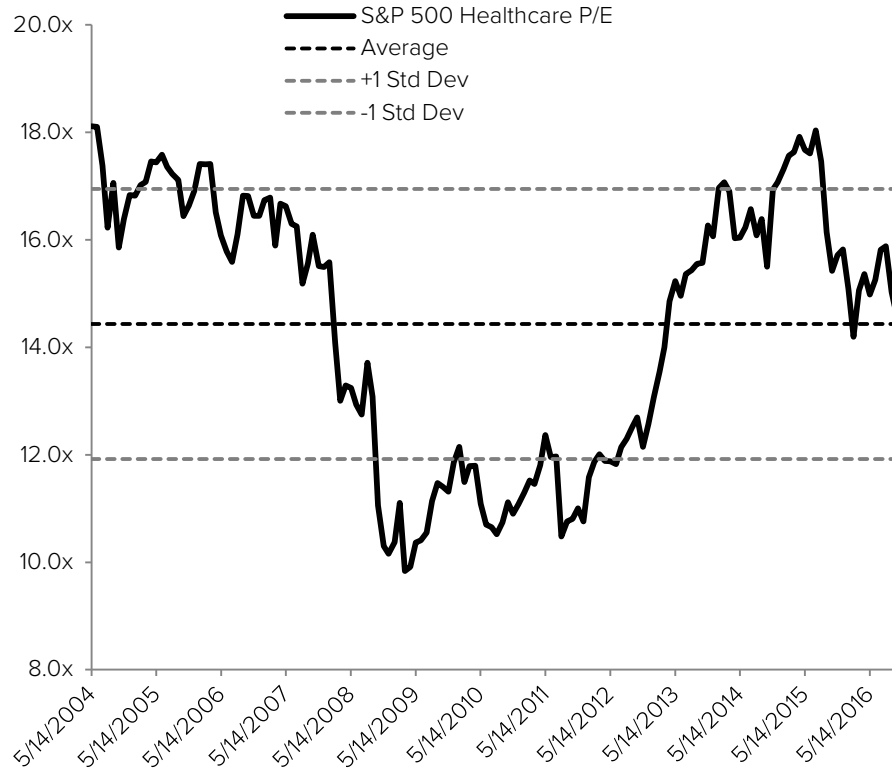
# HEALTHCARE NTM EV/SALES

## EXTENDED ABSOLUTE / IN-LINE RELATIVE



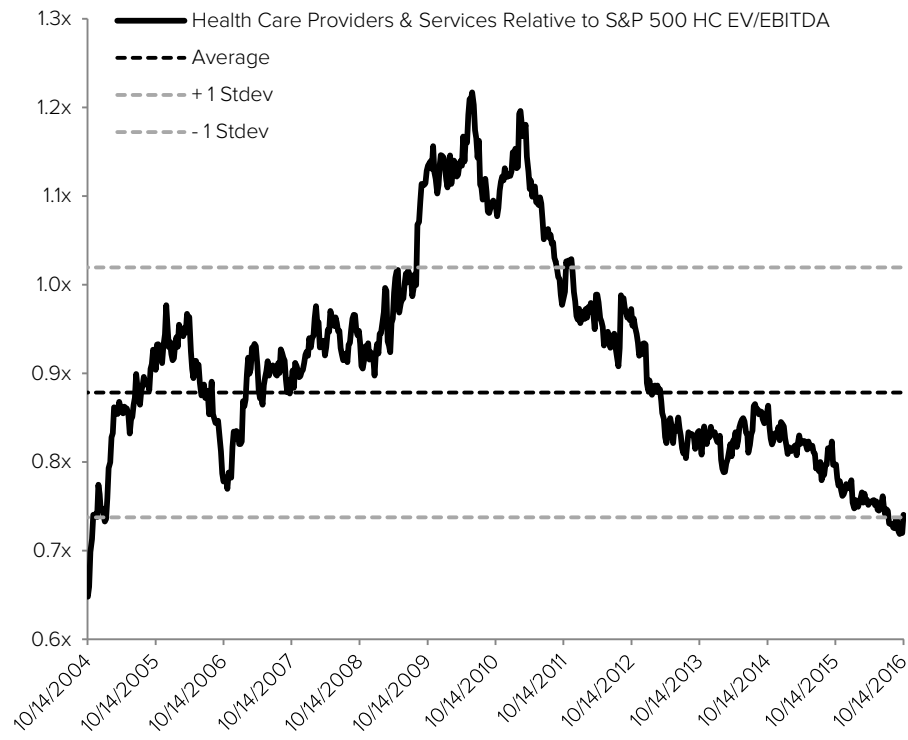
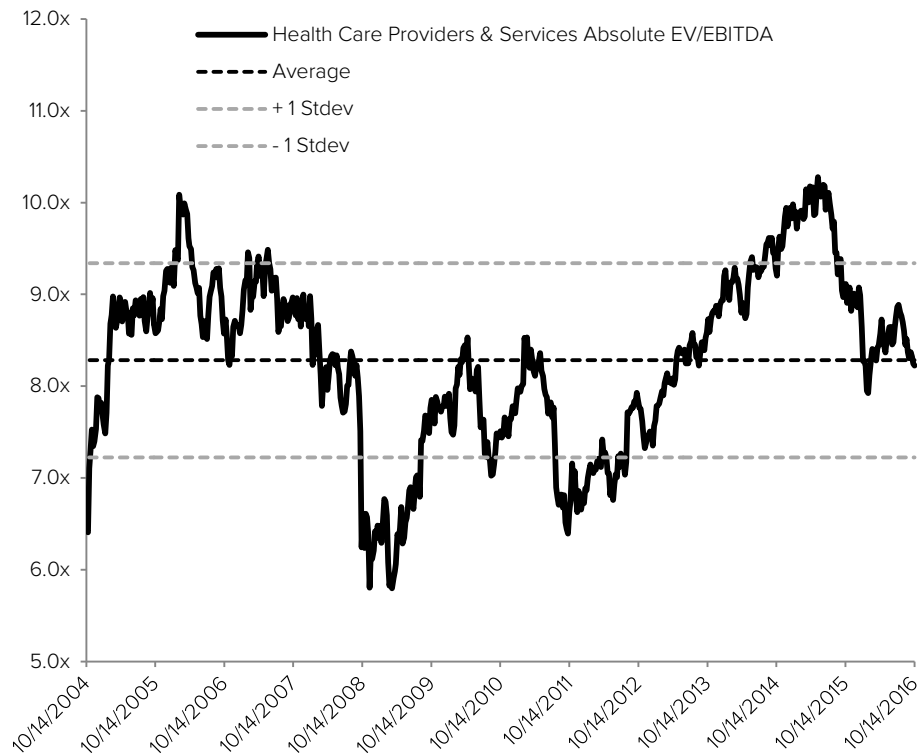
# HEALTHCARE NTM P/E

IN-LINE ABSOLUTE / BELOW RELATIVE <- LEVERAGE HIGH



# PROVIDERS/SERVICES NTM EV/EBITDA

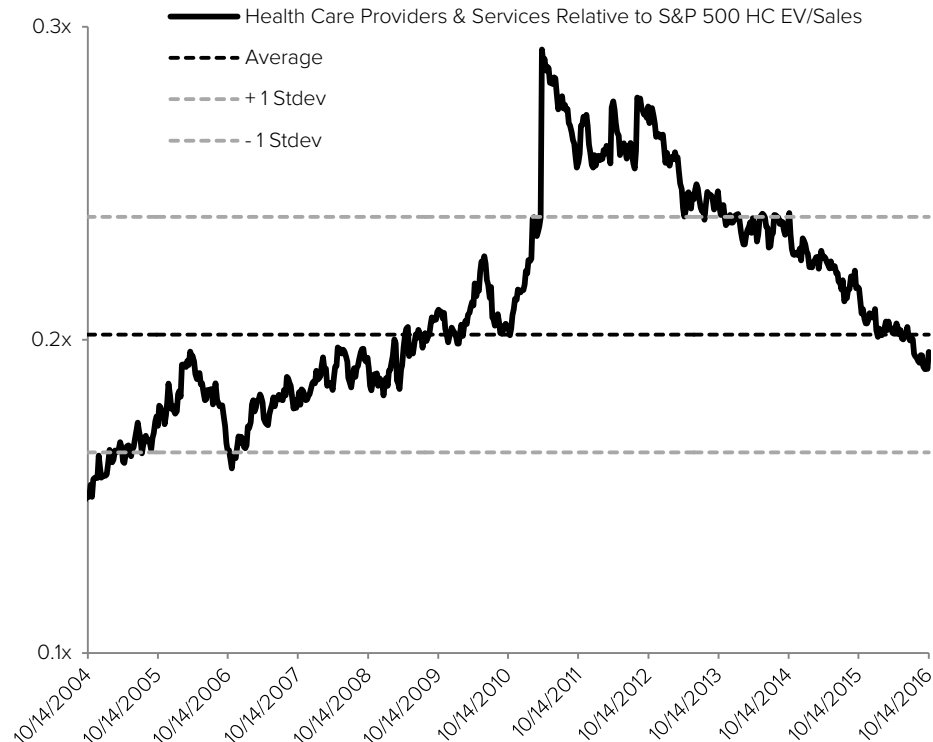
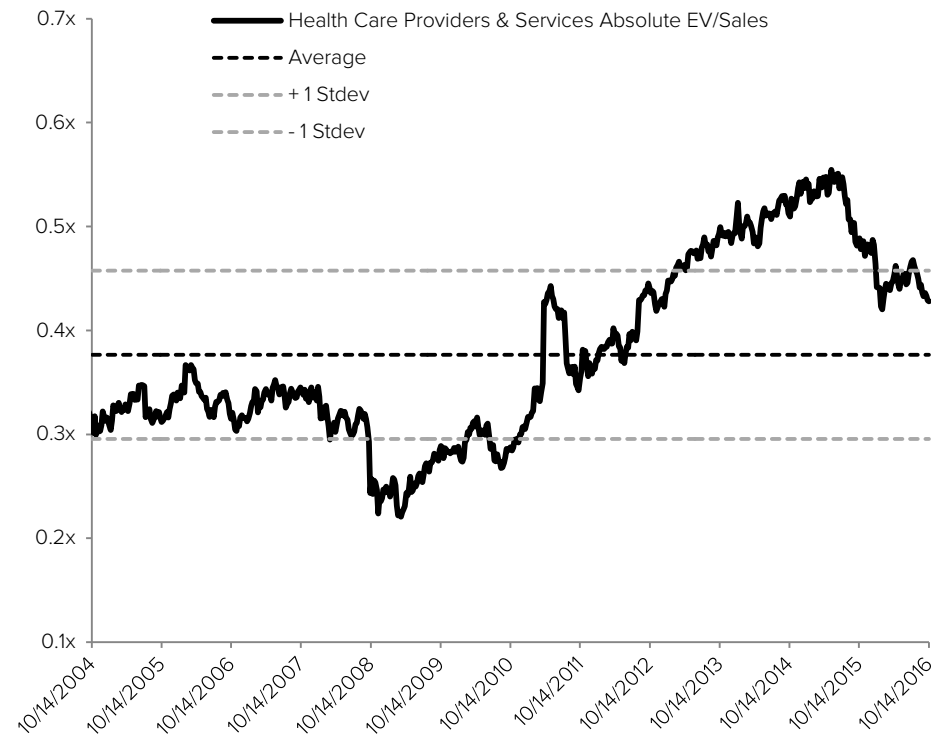
## IN-LINE ABSOLUTE / BELOW RELATIVE





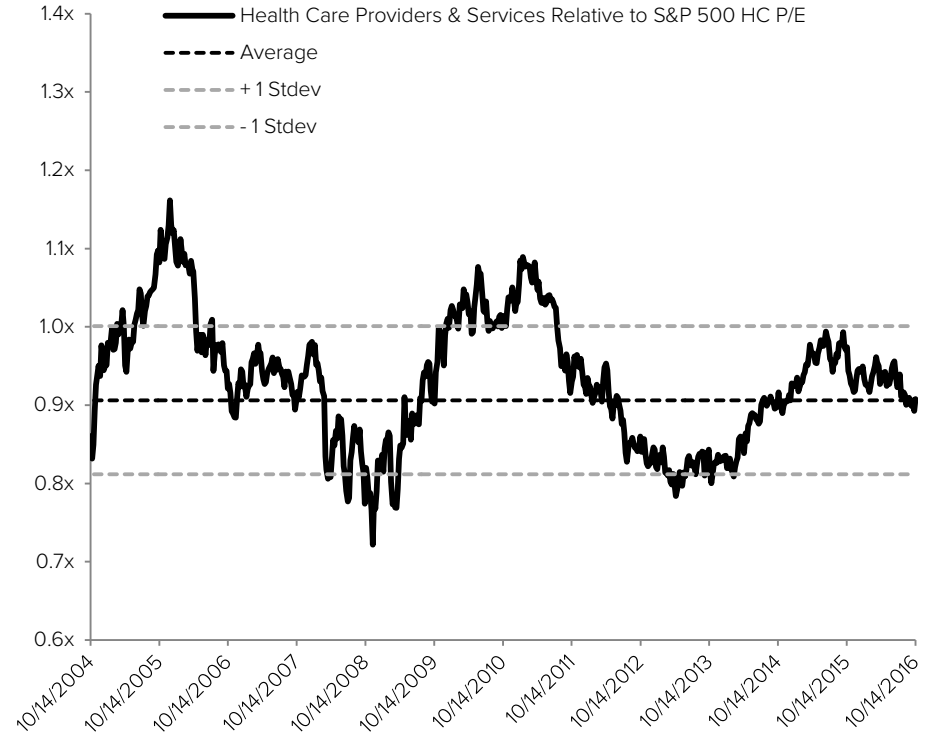
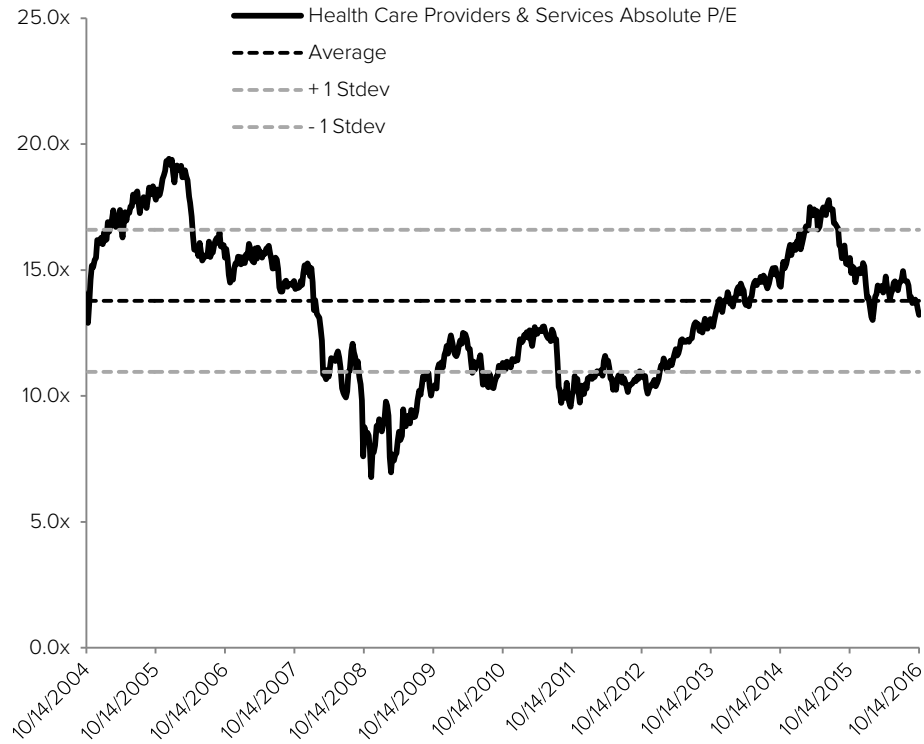
# PROVIDERS/SERVICES NTM EV/SALES

## EXTENDED ABSOLUTE / IN-LINE RELATIVE



# PROVIDERS/SERVICES NTM P/E

## IN-LINE ABSOLUTE / IN-LINE RELATIVE



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**Q&A**

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