The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured*

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www.healthcarepricingproject.org

Health Care Pricing Project

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Introduction

- The average premium for employer-sponsored family health coverage was $17,545 in 2015; 20% of those under 65 with full insurance report problems paying medical bills
  [Kaiser Family Foundation, 2015; Kaiser Family Foundation, 2016]

- Wide ranging analysis of variation in health care spending via Medicare suggests quantity of care given drives spending variation
  [Dartmouth Atlas work: i.e. Fisher et al., 2009; Wennberg et al., 2002]

- However, results may not generalize to private markets where prices are not set administratively
  [Philipson et al. 2010;Chernew et al., 2010; IOM, 2013; Franzini et al. 2010]

- However, almost no nation-wide hospital-specific price data and scant data on spending for privately insured

This Paper

- Analyzes employer sponsored insurance claims from Aetna, UnitedHealth, and Humana that includes negotiated transaction prices

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Key Findings – Price Plays Crucial Role in Spending by Privately Insured

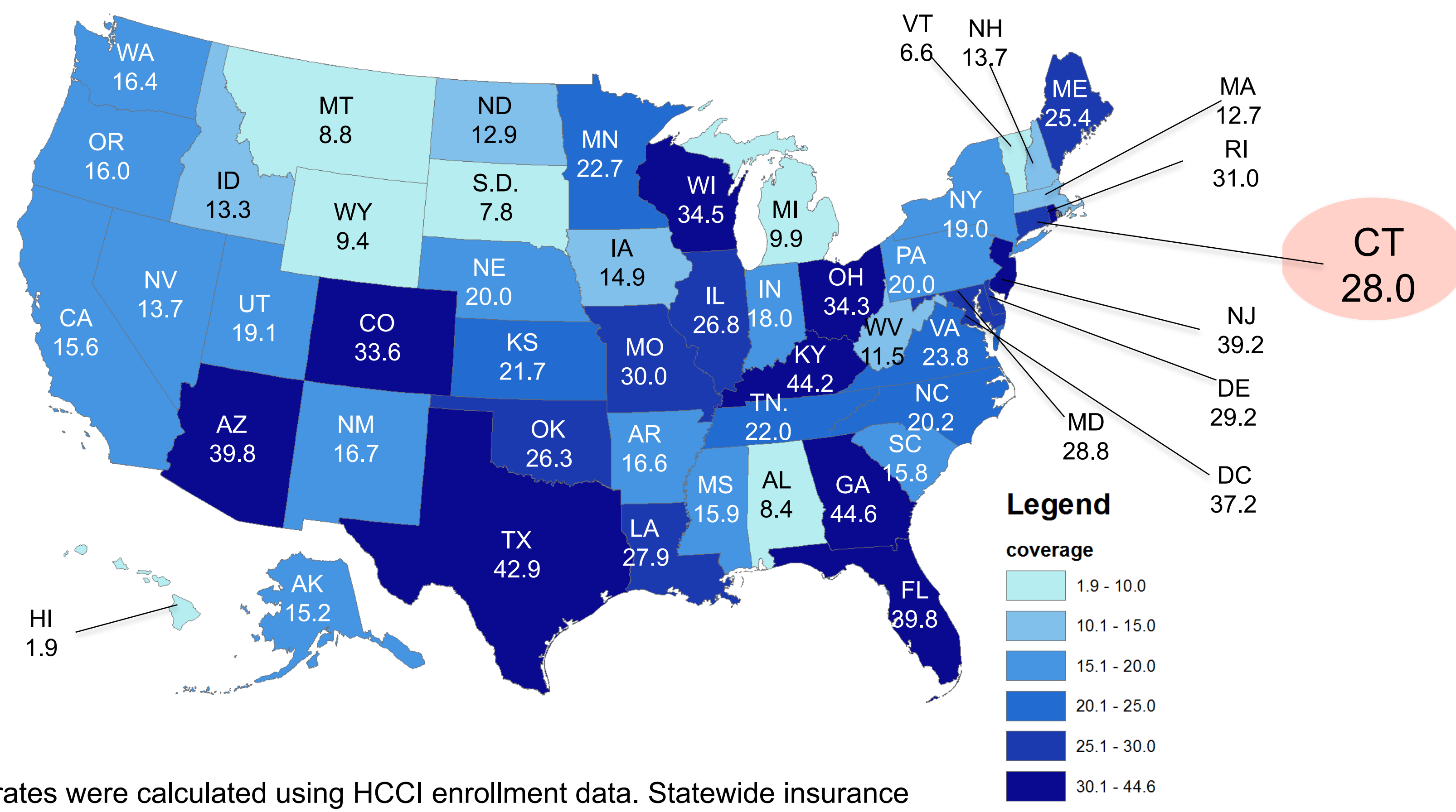
1. Low correlation (0.140) between Medicare and private spending per person;
2. Price explains large portion of national variation in inpatient private spending;
3. Substantial variation in prices, both within and across markets;
4. Higher hospital market concentration is associated with higher hospital prices;

The Data and Our Price Measures

National Coverage of Data

•**High Shares:** Texas, Arizona, Colorado, Florida, Georgia, Kentucky, Ohio, Wisconsin, New Jersey, DC, and Rhode Island have a high share of HCCI data.

•**Low Shares**: Vermont, Michigan, Alabama, Wyoming, Montana, South Dakota, and Hawaii

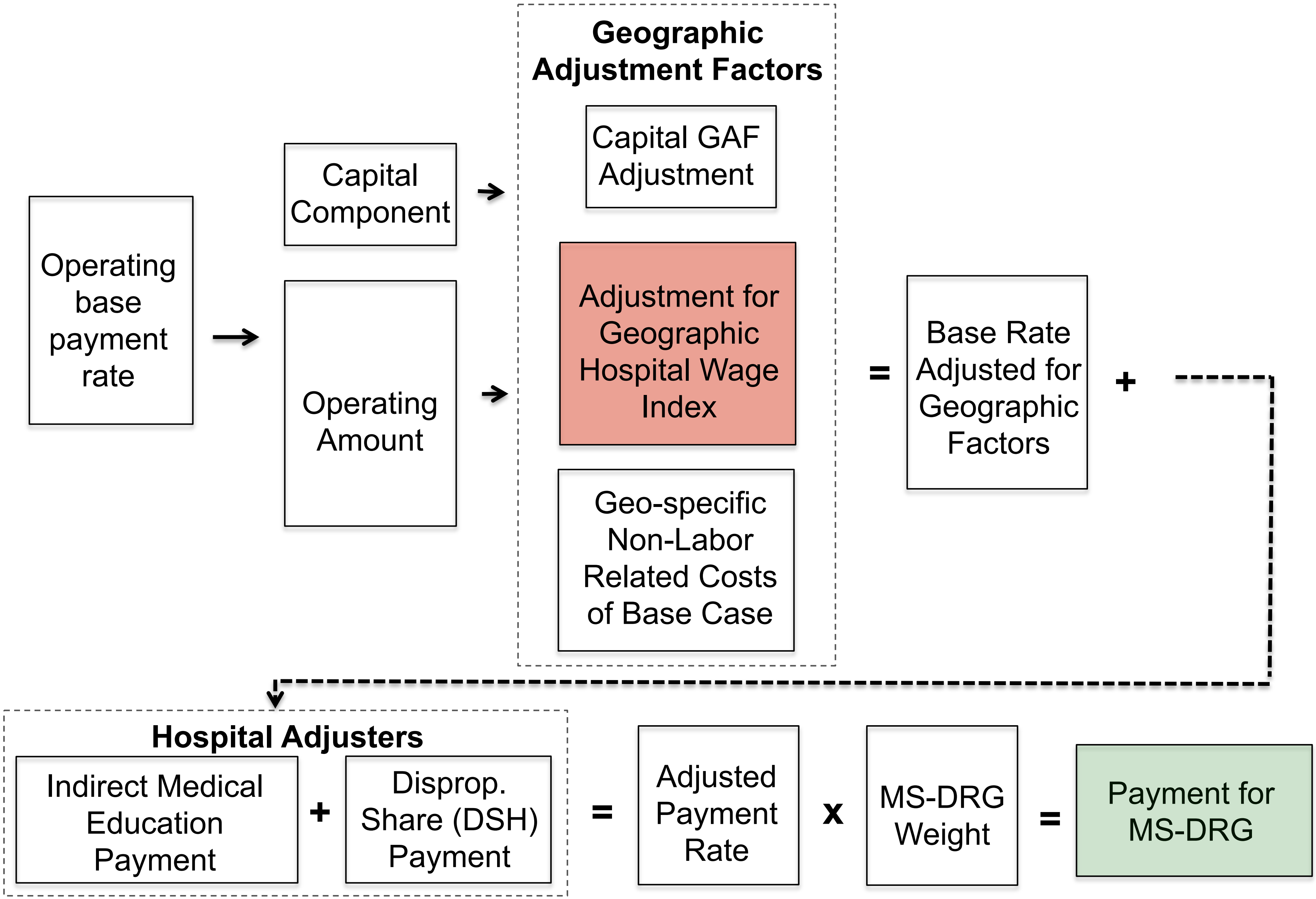


Note: Coverage rates were calculated using HCCI enrollment data. Statewide insurance coverage totals were derived from the American Community Survey for 2011.

Analyze Three Areas in Connecticut

Source: The Dartmouth Atlas

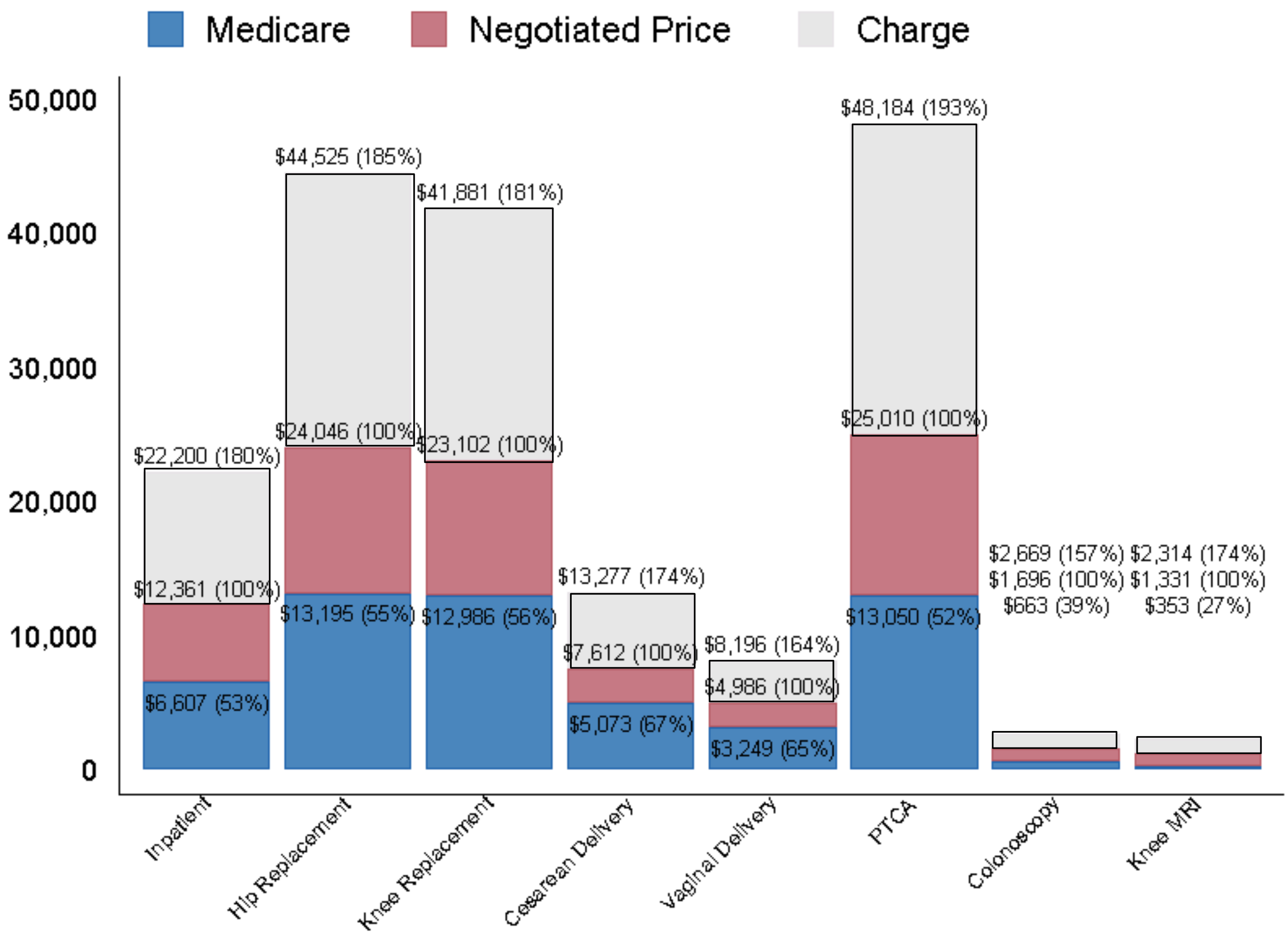
How Medicare Sets Prices



Calculating Medicare PPS Payments

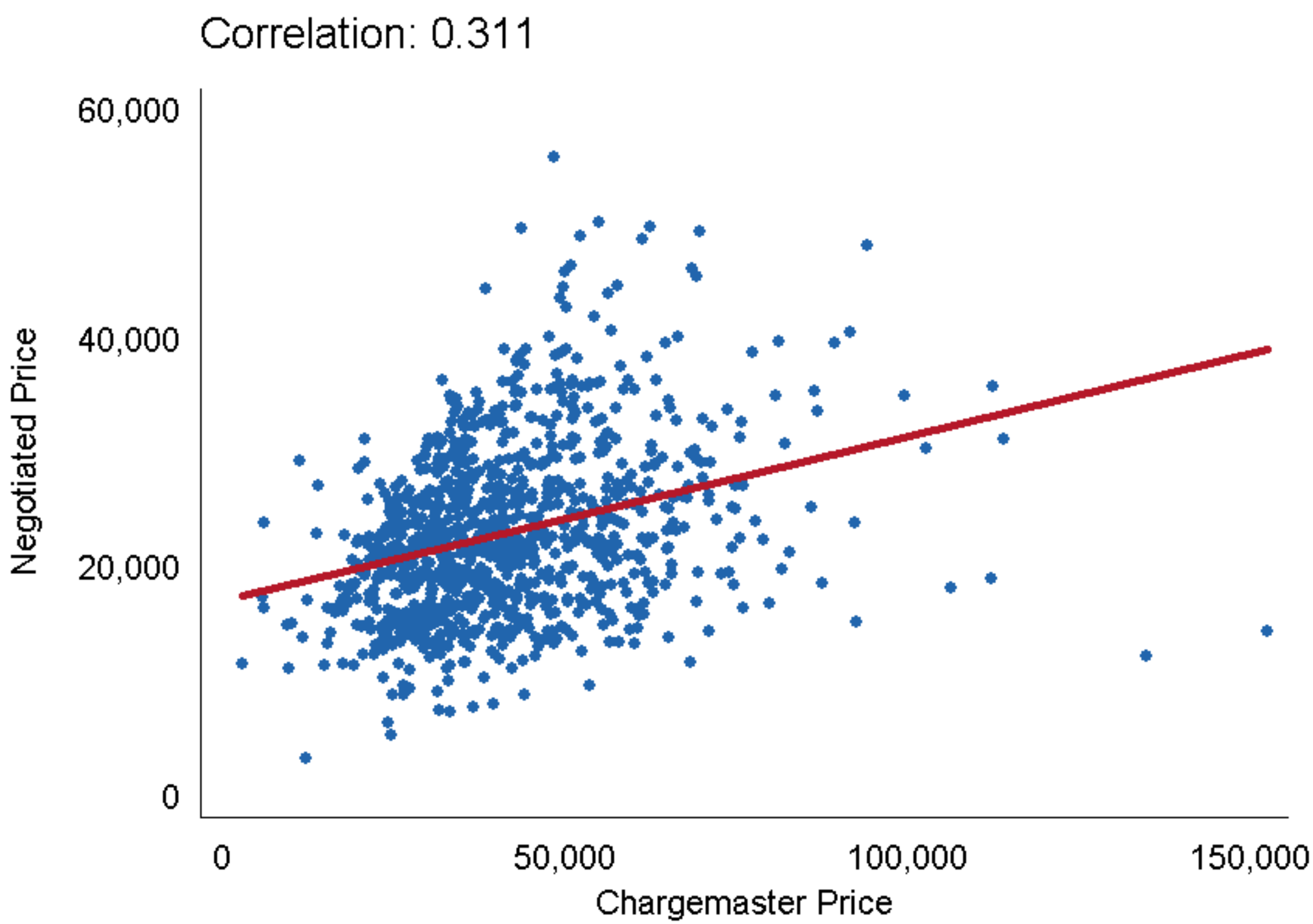
	Palo Alto, CA Stanford Hospital[a] 416 IPPS beds Case Mix Index = 2.09	Atlanta, GA Emory University Hospital 506 IPPS beds Case Mix Index = 2.40	Columbia, MO University of Missouri Hospital 307 IPPS beds Case Mix Index = 2.04	Enterprise, AL Medical Center Enterprise 117 IPPS beds Case Mix Index = 1.07
National Standardized Amount[b]	$5,164.11	$5,164.11	$5,164.11	$5,164.11
× Labor-related percent	68.8%	62.0%	62.0%	62.0%
= Labor-related portion	$3,552.91	$3,201.75	$3,201.75	$3,201.75
× Wage index	1.6379	0.9522	0.8227	0.7436
= Labor-adjusted portion	$5,819.31	$3,048.70	$2,634.08	$2,380.82
+ Non-labor related portion	$1,611.20	$1,962.36	$1,962.36	$1,962.36
= Labor-adjusted standardized amount	$7,430.51	$5,011.07	$4,596.44	$4,343.18
IME & DSH Add-ons[c]	$3,454.15	$1,528.22	$2,343.49	$255.34
Operating Payment Amount, MS-DRG wt = 1.000	$10,884.66	$6,539.29	$6,939.94	$4,598.52
Example: Stroke with Complication or Comorbidity (CC)				
MS-DRG 065 (intracranial hemorrhage or cerebral infarction with CC weight = 1.1667)	$12,699.13	$7,629.39	$8,096.82	$5,365.09

Charge/Negotiated Price/Medicare Fee Ratio



Notes: Prices are averaged from 2008 – 2011, put in 2011 dollars. Note that we only include hospital-based prices – so we exclude, for example, colonoscopies performed in surgical centers and MRIs that are not carried out in hospitals.

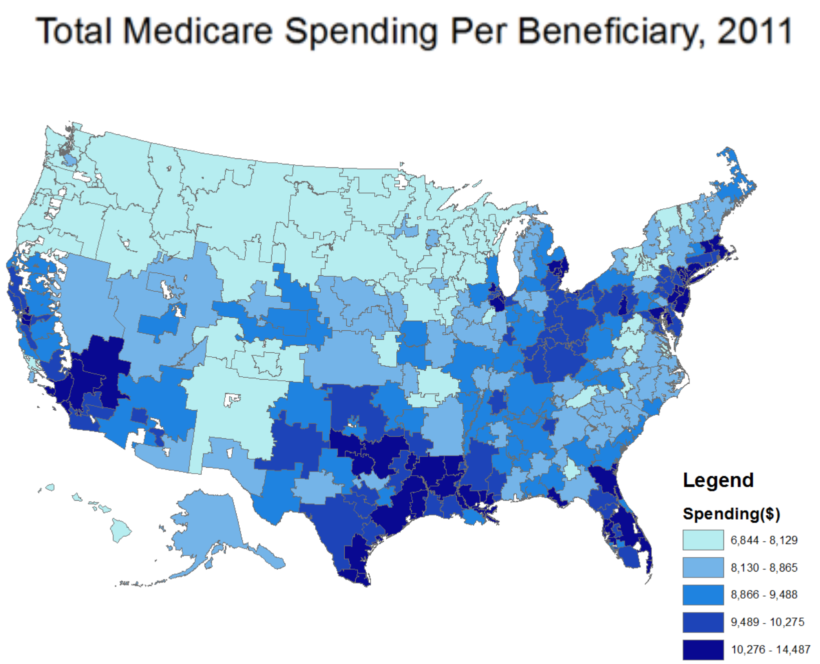
Knee Replacement Negotiated Prices and Charges '08 – '11

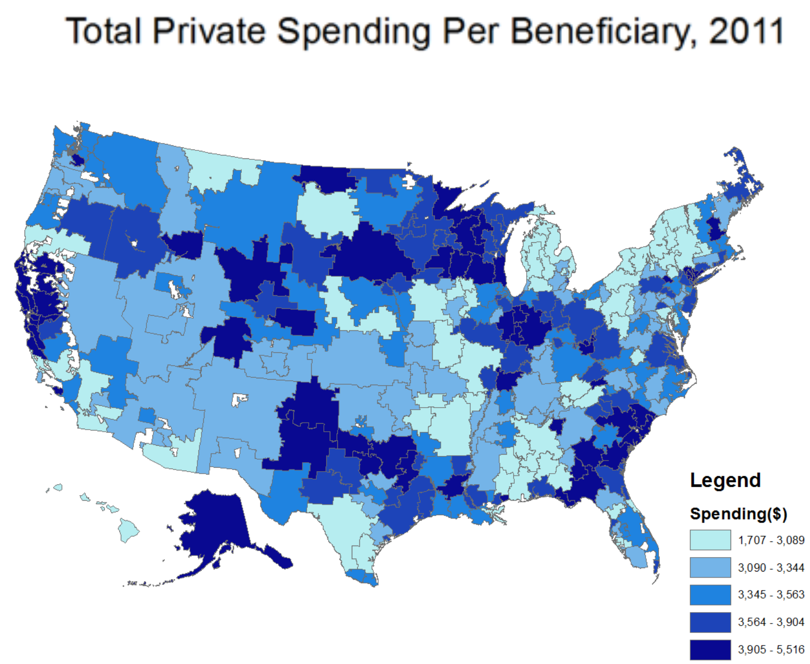


Notes: Regression-adjusted prices presented in 2011 dollars

Spending Analysis and Decomposition

Medicare and ESI Overall Spending Per Beneficiary

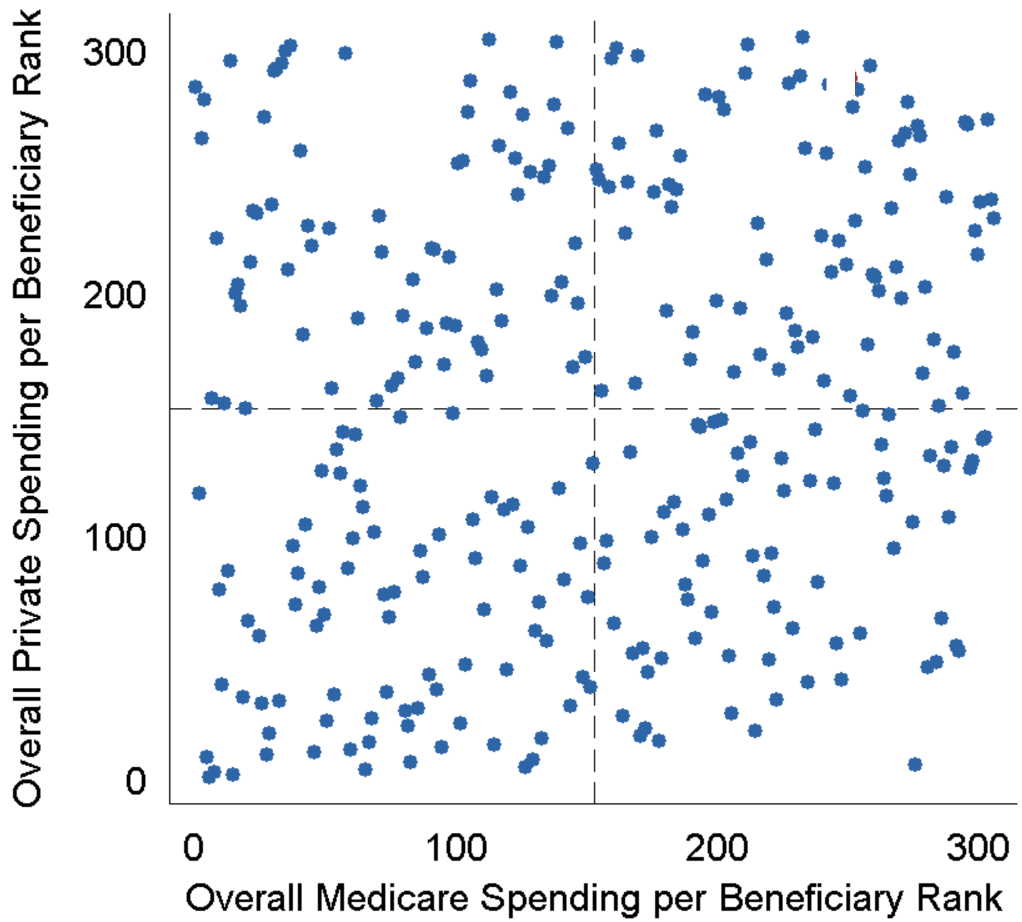




Correlation of Public and Private Total Spending Per Beneficiary: 0.140

Note: Data on Medicare is for 2011 and from the Dartmouth Atlas. Spending for Medicare beneficiaries includes Part A & B and is risk adjusted by age, race, and sex. Spending on private enrollees is adjusted by age and sex and includes all inpatient, outpatient, and physician claims

Scatter Plot of Ranking of Medicare Spending Per Beneficiary and Private Spending Per Beneficiary



Notes: Data on Medicare spending was downloaded from the Dartmouth Atlas http://www.dartmouthatlas.org/. An HRR with a rank of 1 has the lowest spending per beneficiary of all HRRs. An HRR with a rank of 306 has the highest spending per beneficiary of all HRRs. Overall spending does not include pharmaceutical spending. Private data from Cooper et al. 2015.

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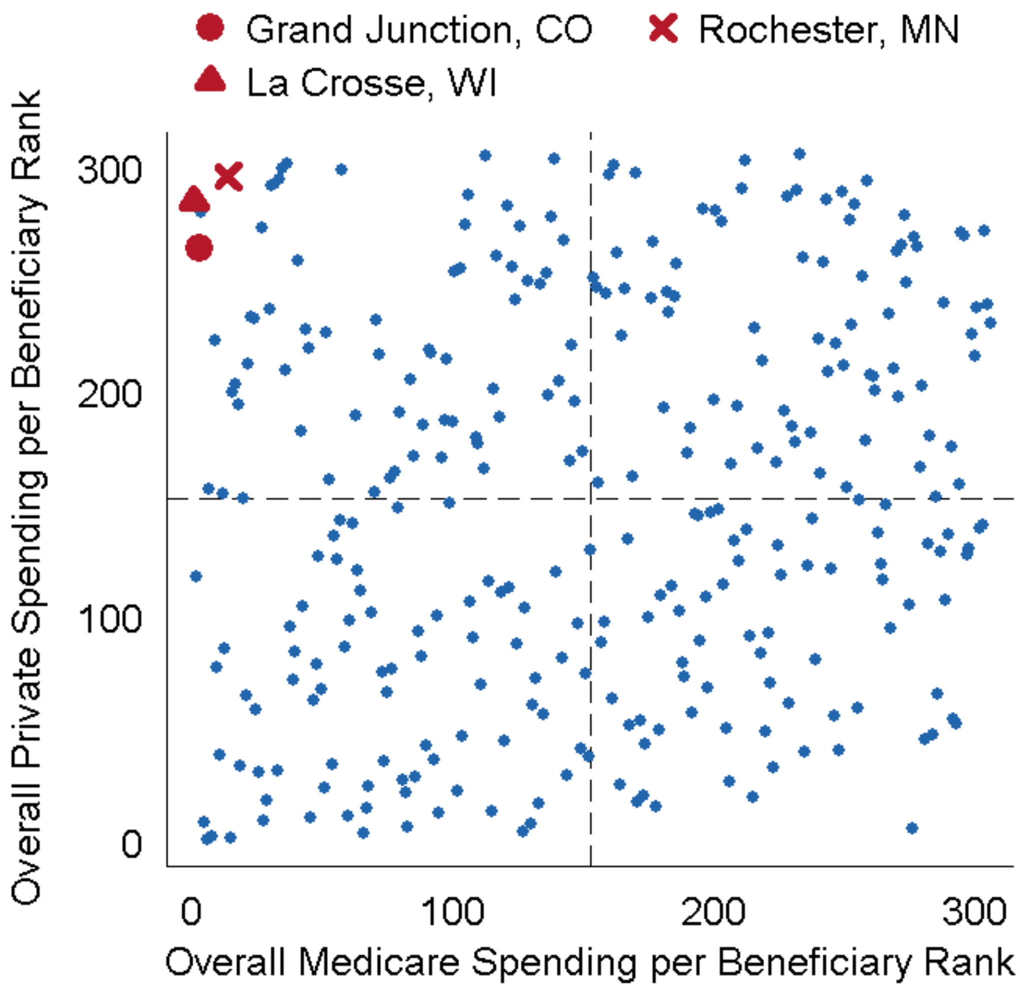

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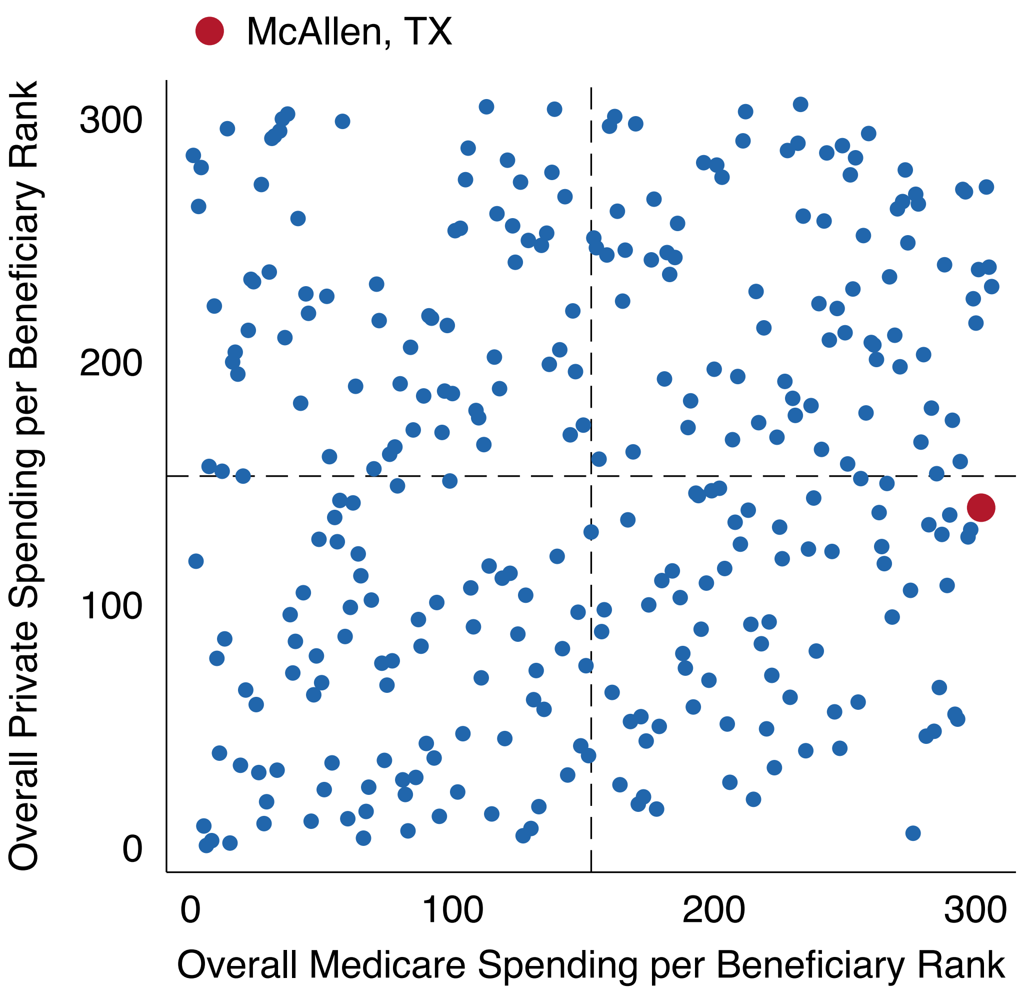

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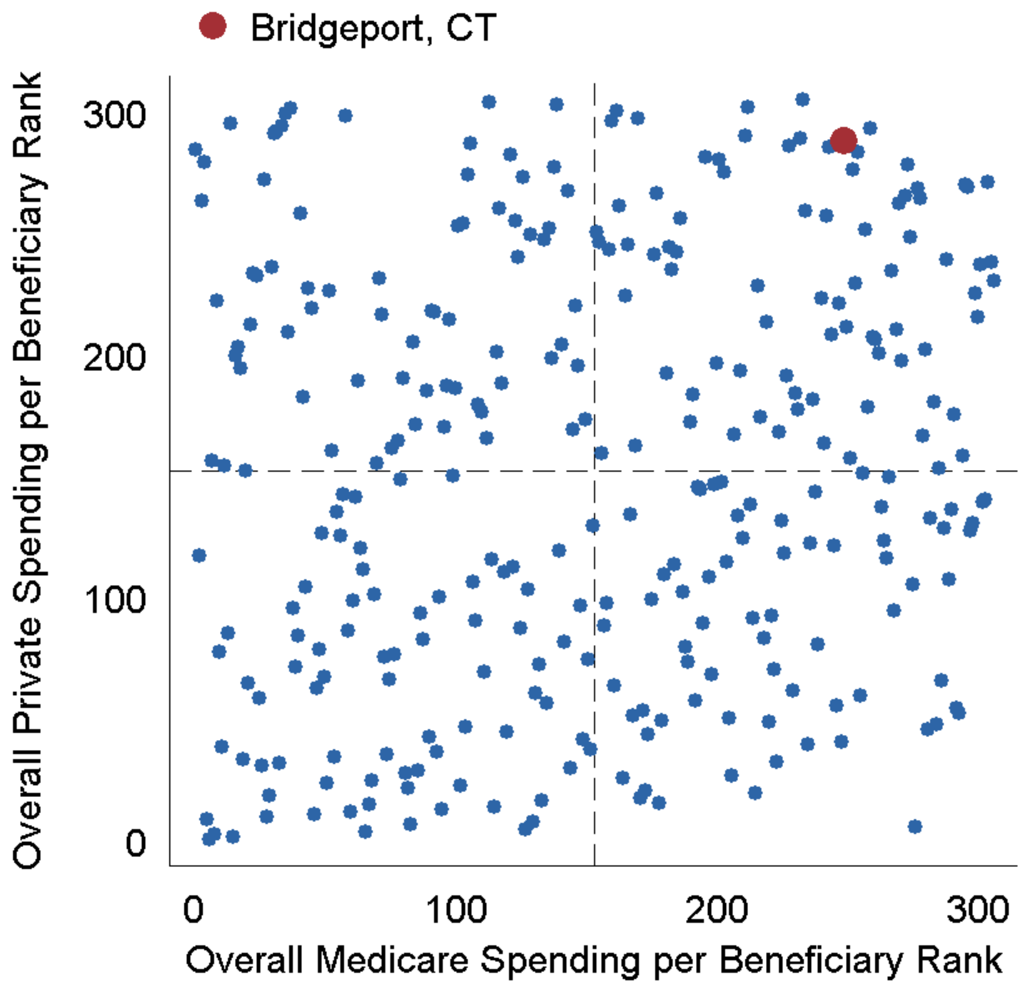

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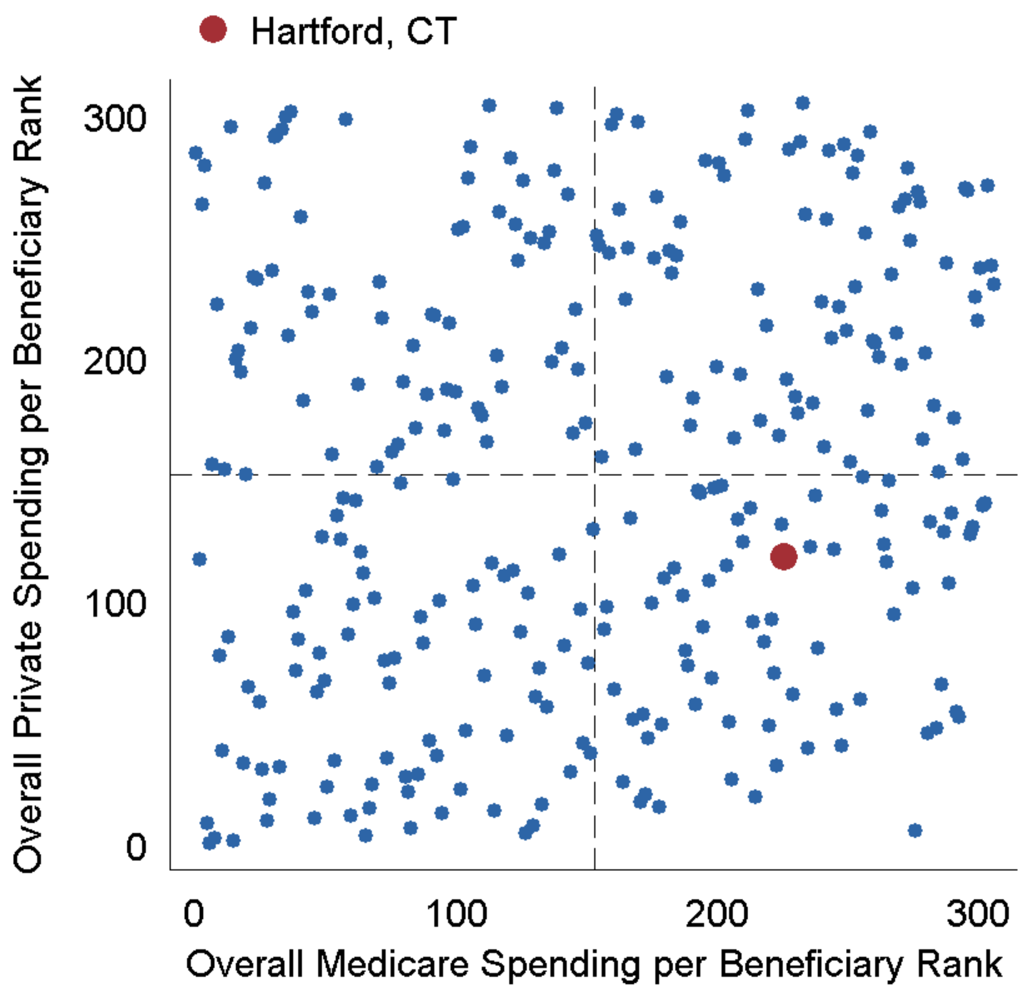

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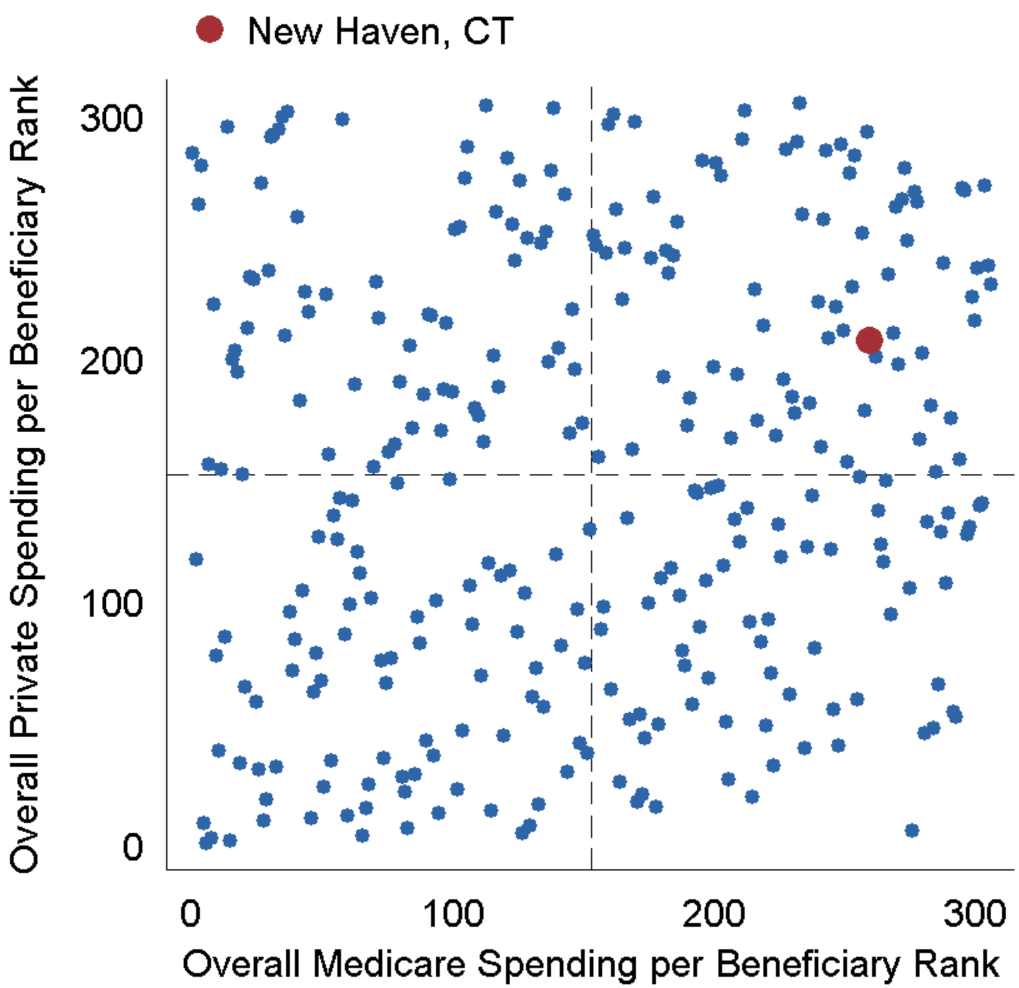

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Decomposition Results

	Medicare Spending Drivers		
	Share Price	Share Quantity	Share Covar.
Variation in Spending per Beneficiary	9.37%	76.65%	13.95%

Note: This is based on a formal decomposition where: $var(ln(p_d q_d)) = var(ln(p_d)) + (var(ln(q_d)) + 2cov(ln(p_d), ln(q_d))$. This is carried out by DRG. To capture the share of variance in spending attributable to variation in price across HRRs, we divide the $var(ln(p_d))$ term by the variation in total spending. To capture the share in spending attributable to the variation in quantity of care across HRRs, we divide the $var(ln(q_d))$ term by the variation in total spending. We come up with the price/quantity contribution by averagin for decomposition results for each DRG by spending per DRG.

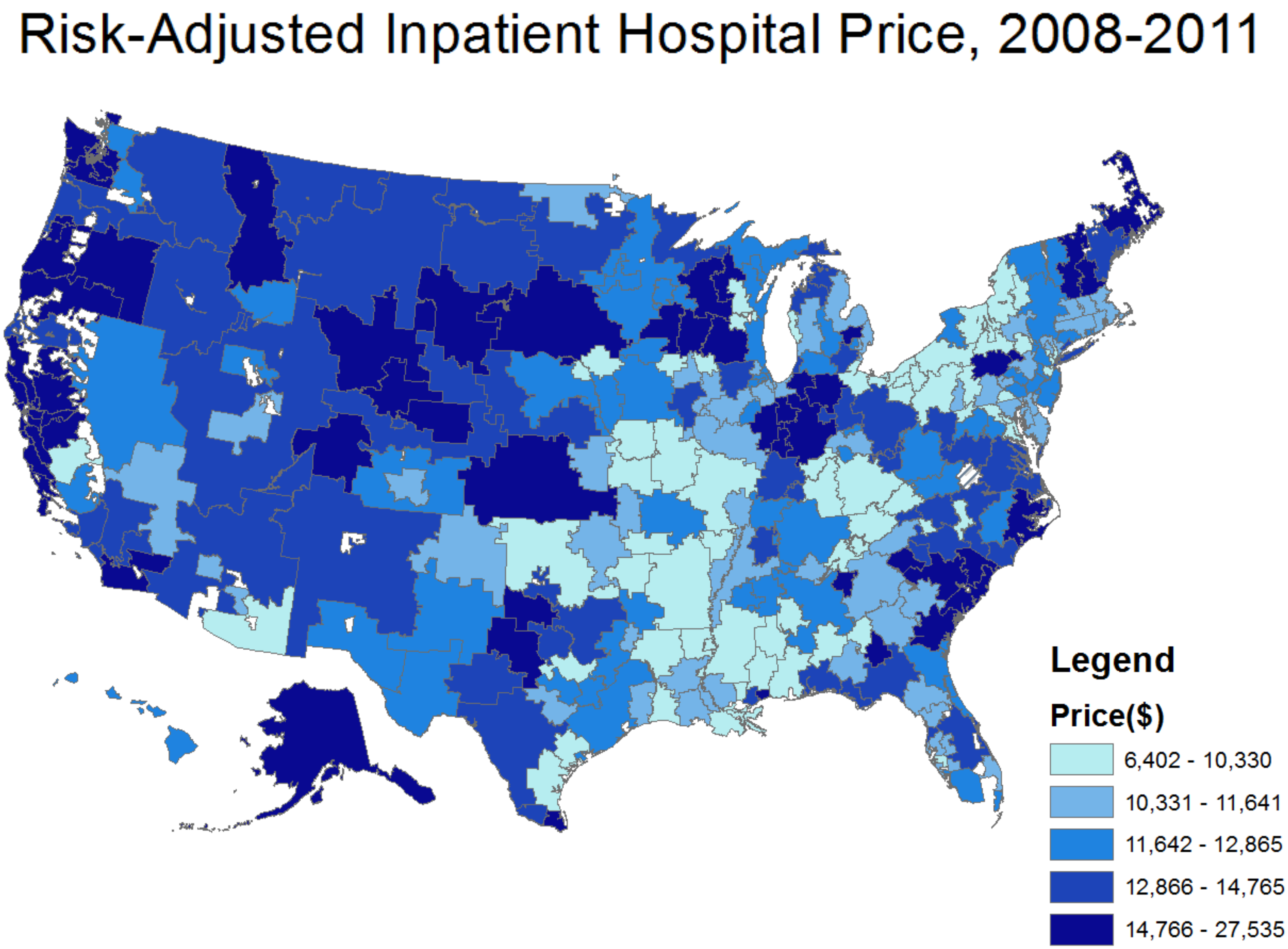
Decomposition Results

	Medicare Spending Drivers			Private Spending Drivers		
	Share Price	Share Quantity	Share Covar.	Share Price	Share Quantity	Share Covar.
Variation in Spending per Beneficiary	9.37%	76.65%	13.95%	45.89%	36.19%	17.92%

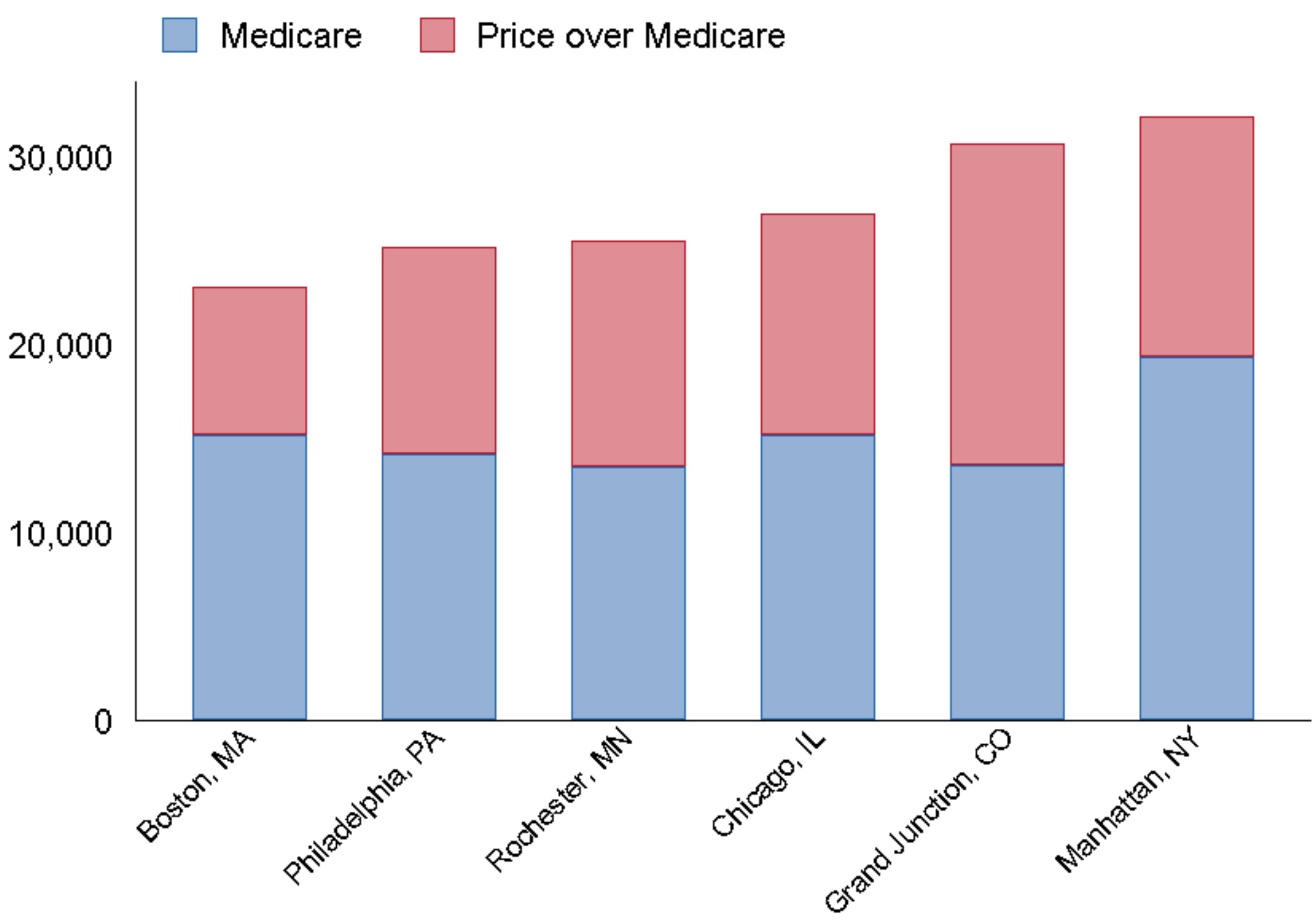
Note: This is based on a formal decomposition where: $var(ln(p_d q_d)) = var(ln(p_d)) + (var(ln(q_d)) + 2cov(ln(p_d), ln(q_d))$. This is carried out by DRG. To capture the share of variance in spending attributable to variation in price across HRRs, we divide the $var(ln(p_d))$ term by the variation in total spending. To capture the share in spending attributable to the variation in quantity of care across HRRs, we divide the $var(ln(q_d))$ term by the variation in total spending. We come up with the price/quantity contribution by averagin for decomposition results for each DRG by spending per DRG.

National Variation in Prices

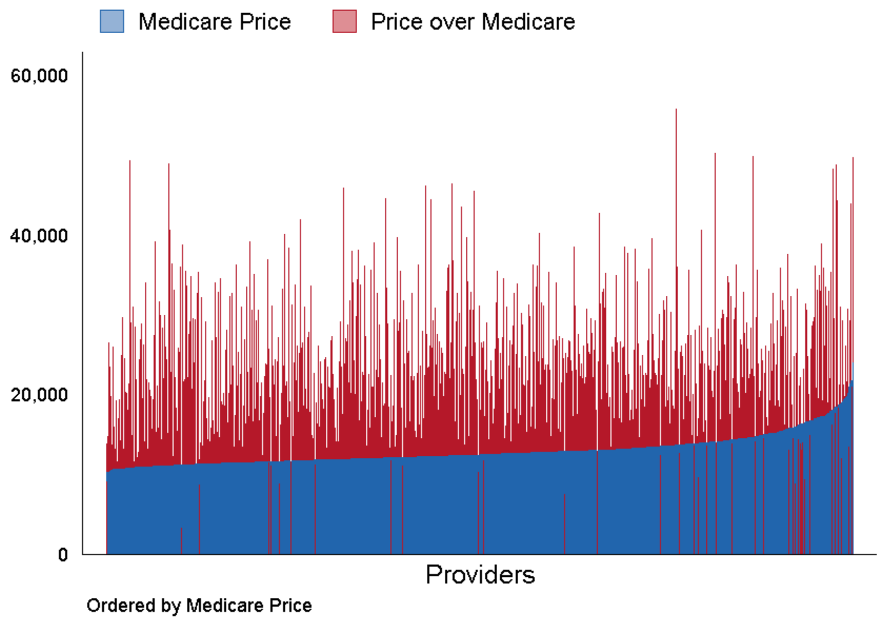
Inpatient Prices

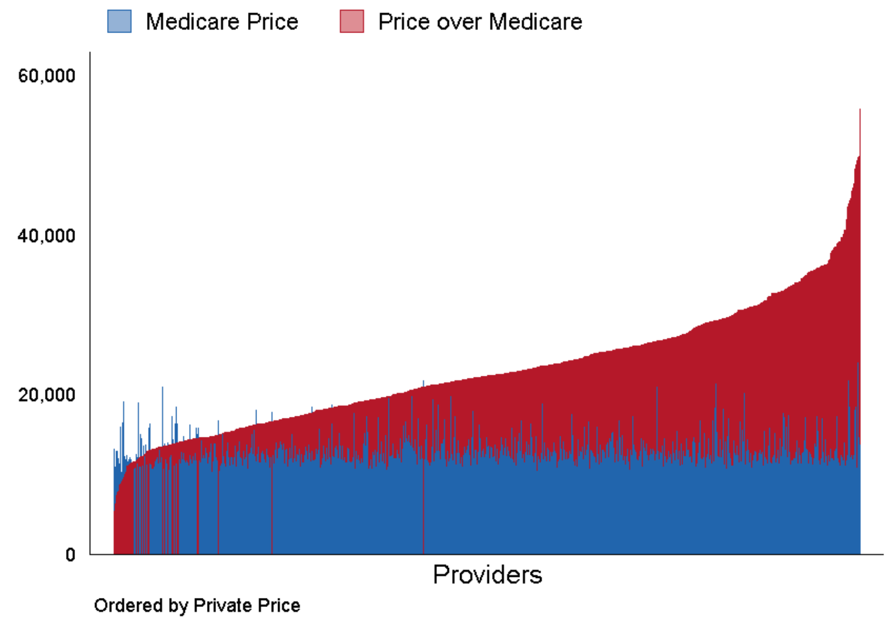


The Price of a Knee Replacement is Higher in Grand Junction than it is in Boston



National Variation in Prices and Medicare Fees: Knee Replacement



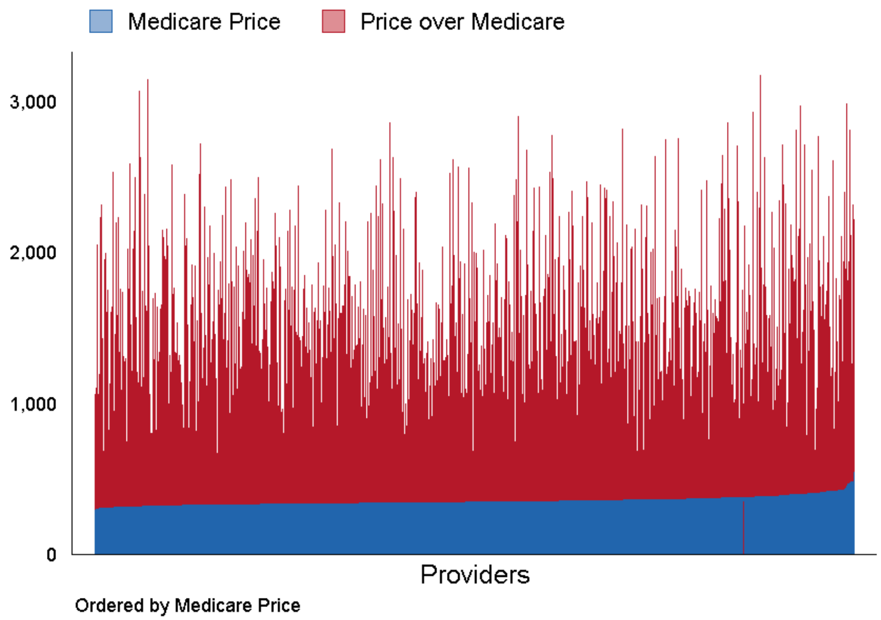


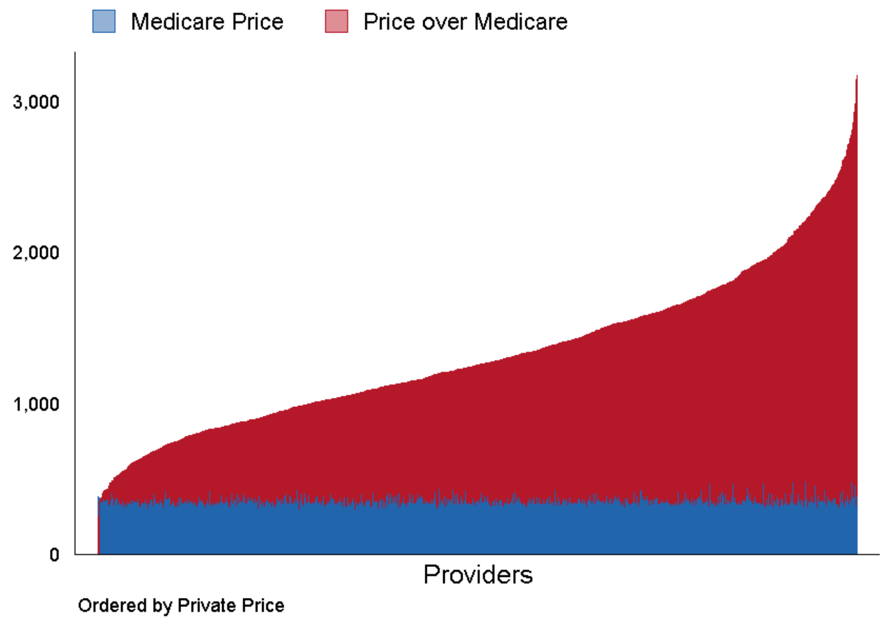
Medicare Knee Replacement Prices	
Mean	12,986
Min - Max	10,254 - 24,021
p10-p90	11,213 - 15,441
IQR	11,734 - 13,605
p90/10 ratio	1.38
IQR ratio	1.16
Coefficient of Variation	0.15
Gini Coefficient	0.07

Private Knee Replacement Prices	
Mean	23,102
Min - Max	3,298 - 55,825
p10-p90	14,338 - 33,236
IQR	17,365 - 27,151
p90/10 ratio	2.32
IQR ratio	1.56
Coefficient of Variation	0.33
Gini Coefficient	0.18

Note: Each column is a hospital; Medicare prices are calculated using Medicare Impact Files

National Variation in Prices and Medicare Fees: Knee MRI





Medicare Knee MRI Prices

Mean	353
Min - Max	293 - 546
p10-p90	325 - 389
IQR	335 - 366
p90/10 ratio	1.2
IQR ratio	1.09
Coefficient of Variation	0.08
Gini Coefficient	0.04

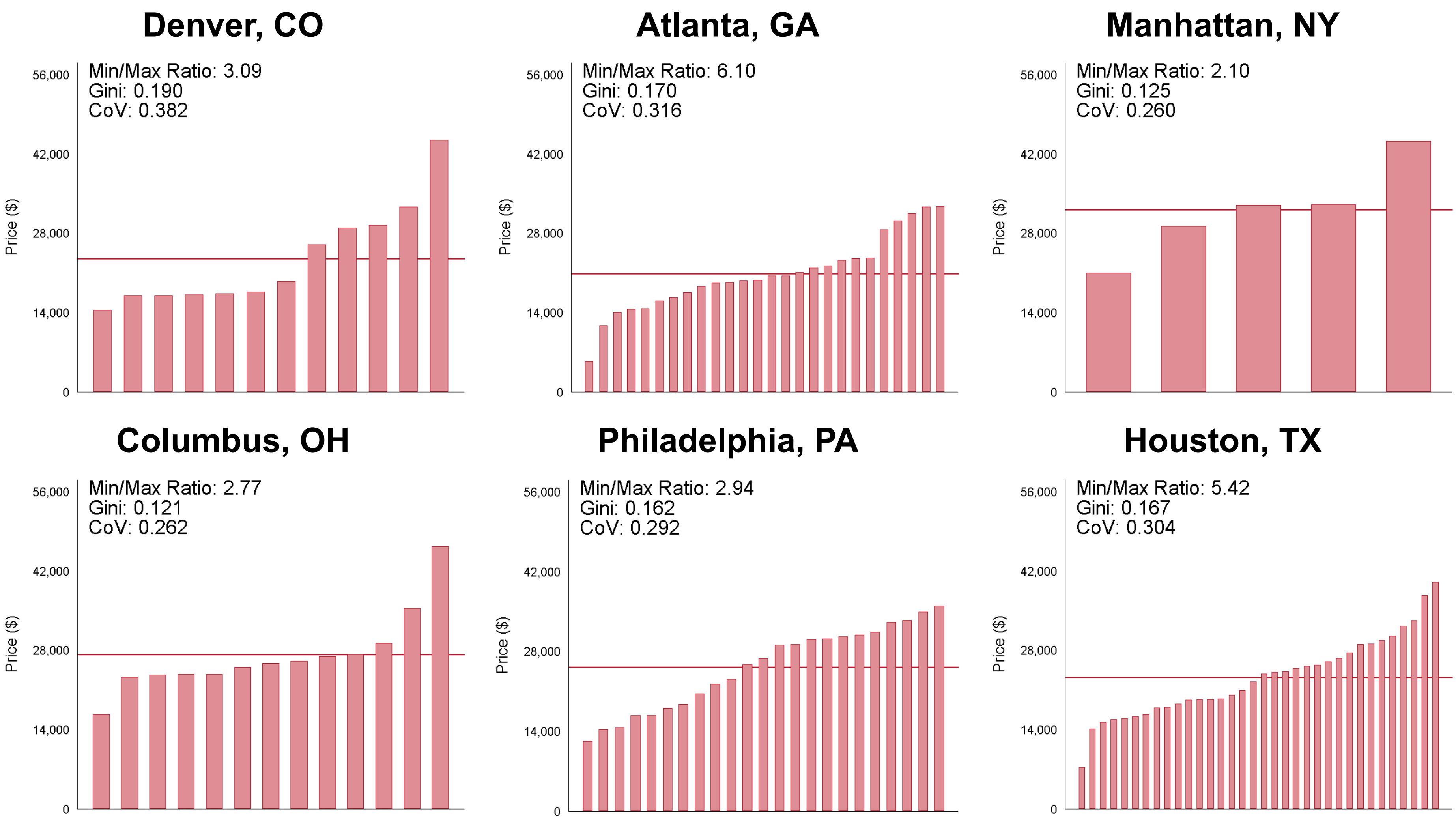
Private Knee MRI Prices

Mean	1,331
Min - Max	260 - 3,174
p10-p90	745 - 2,036
IQR	960 - 1,629
p90/10 ratio	2.73
IQR ratio	1.70
Coefficient of Variation	0.38
Gini Coefficient	0.21

Note: Each column is a hospital; Medicare prices are calculated using Medicare Impact Files

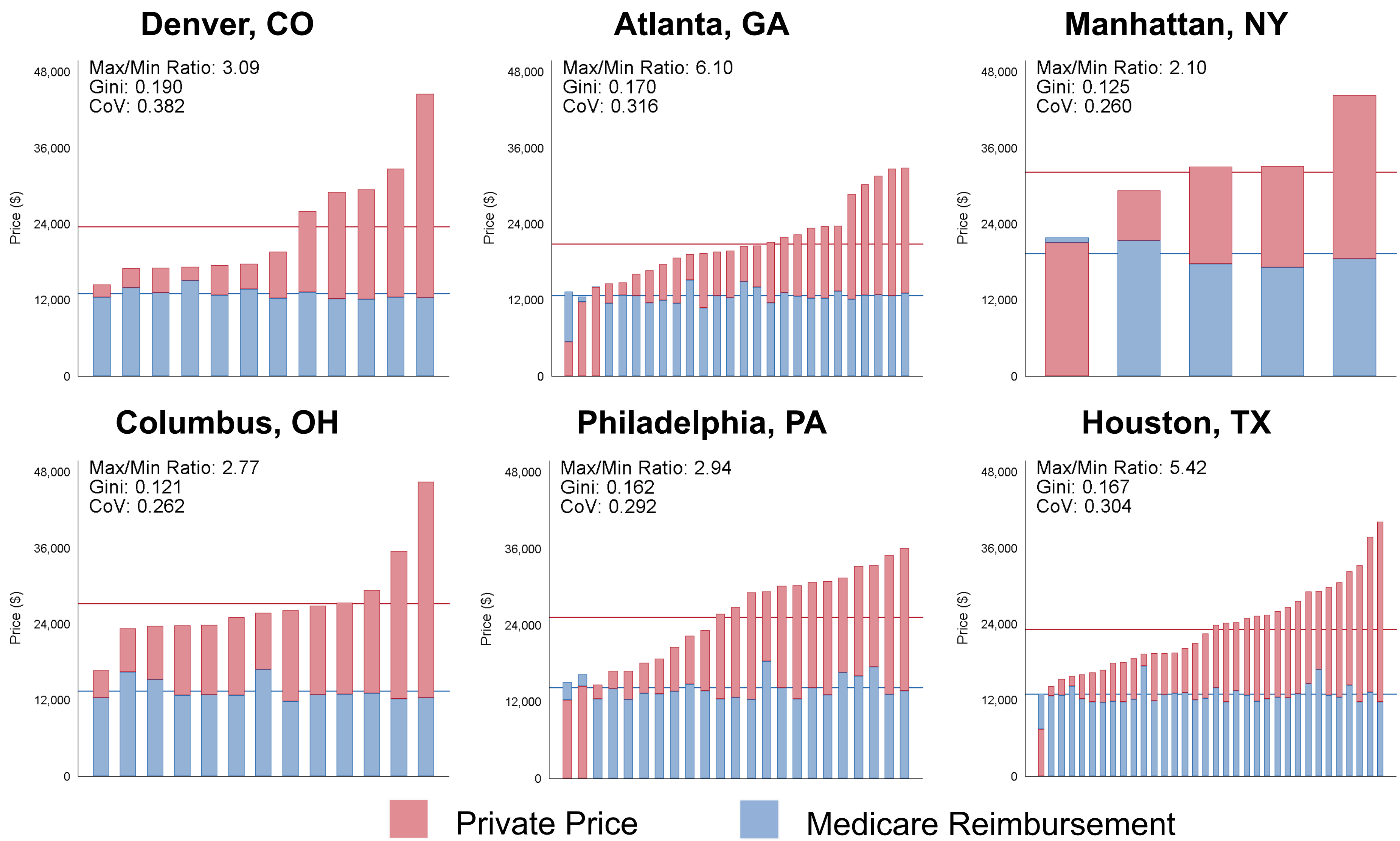
Within Market Variation in Prices

Knee Replacement Facility Prices Within Markets



Note: Each column is a hospital. Prices are regression-adjusted, measured from 2008 – 2011, and presented in 2011 dollars.

Knee Replacement Facility Prices Within Markets



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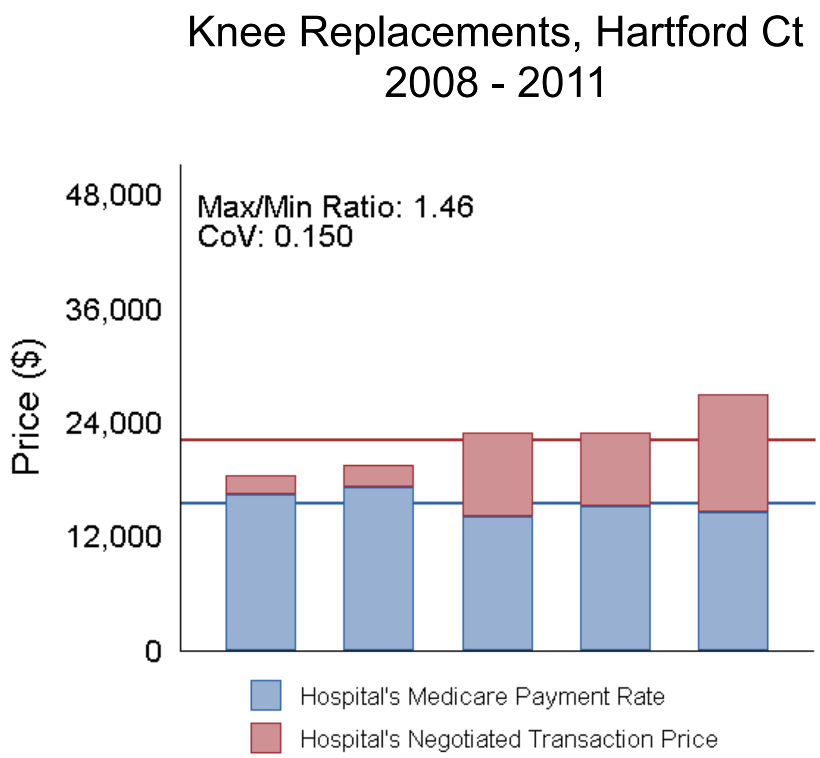
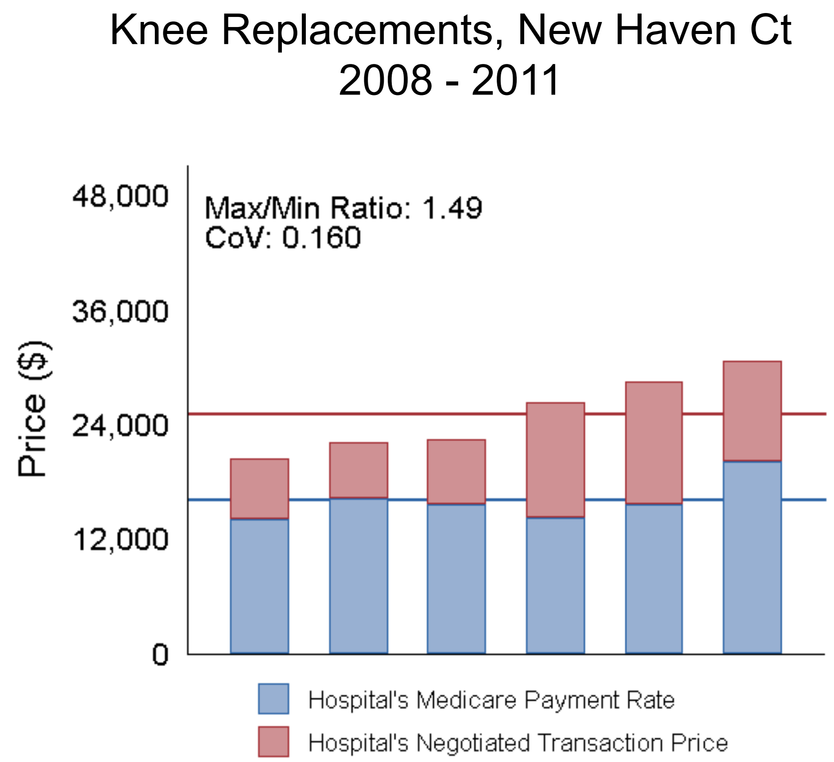
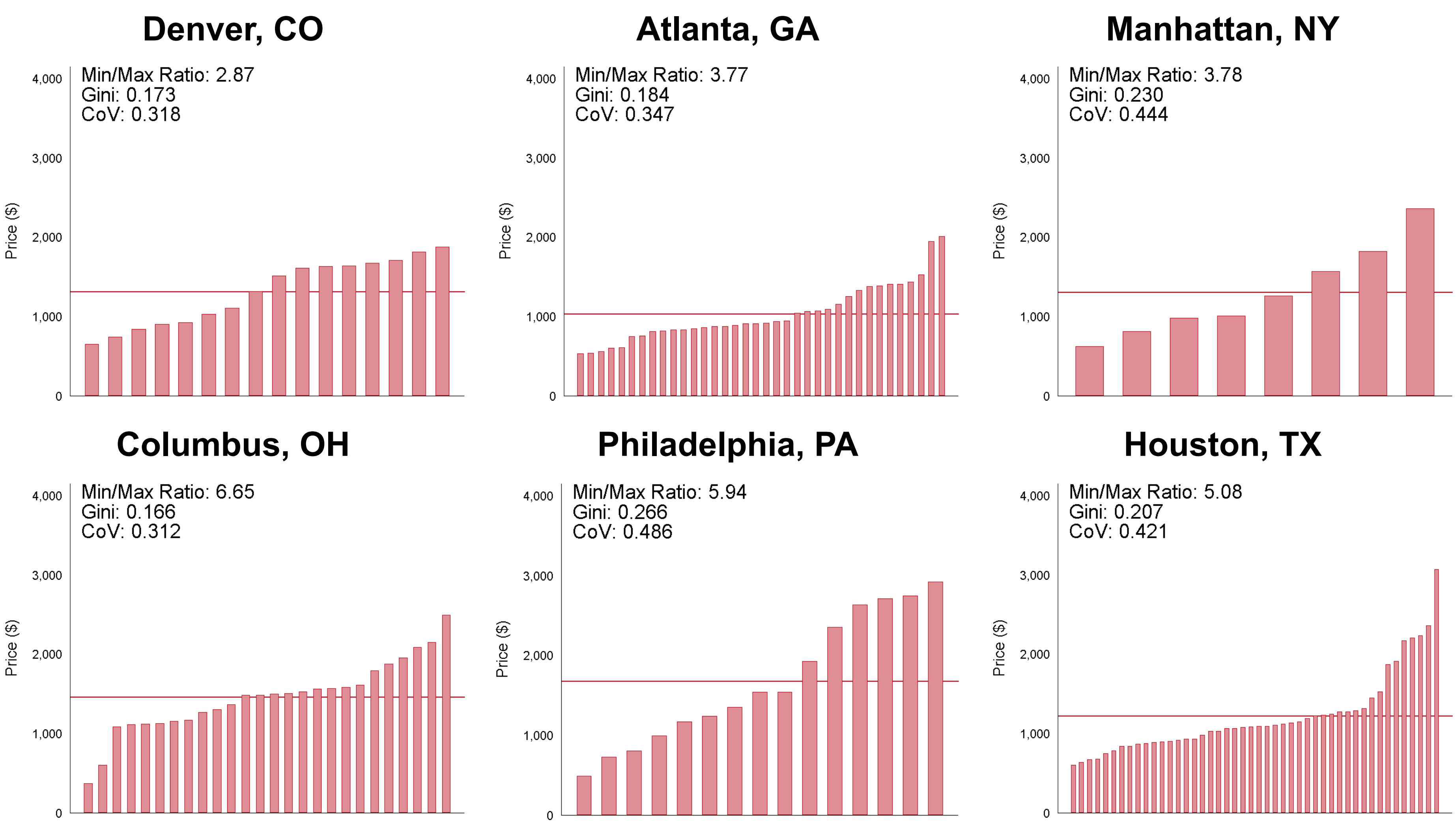
Knee Replacement Prices in New Haven and Hartford





Lower Limb MRI Facility Prices Within Markets



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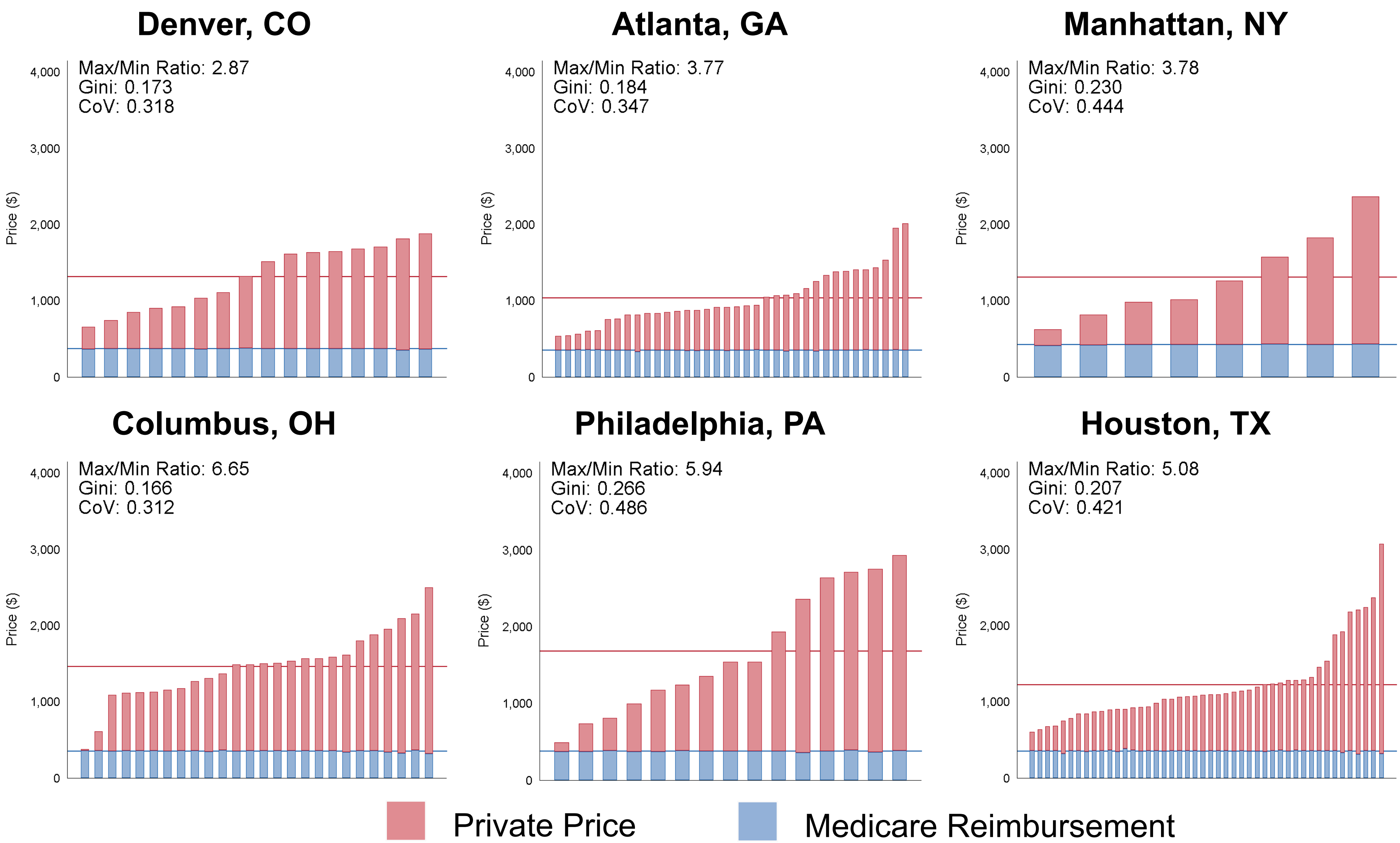
Lower Limb MRI Facility Prices Within Markets



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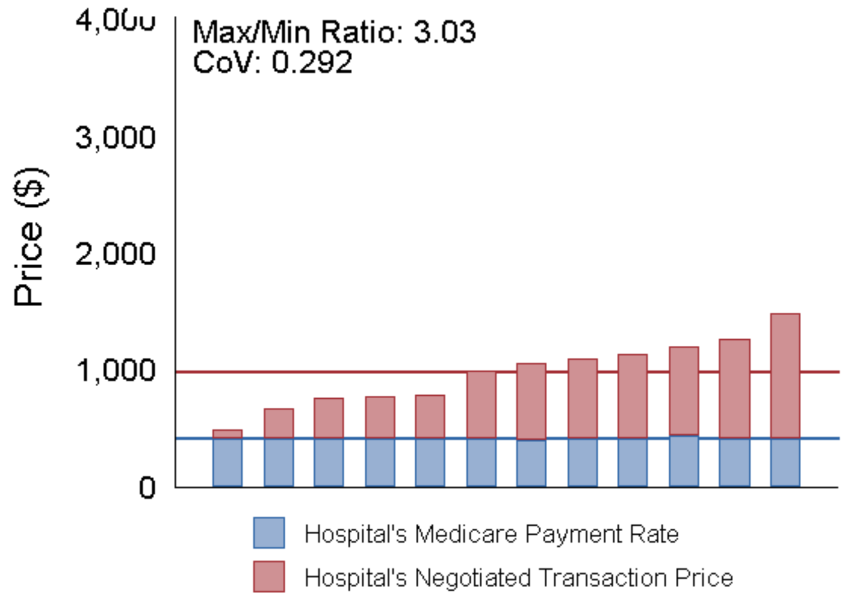
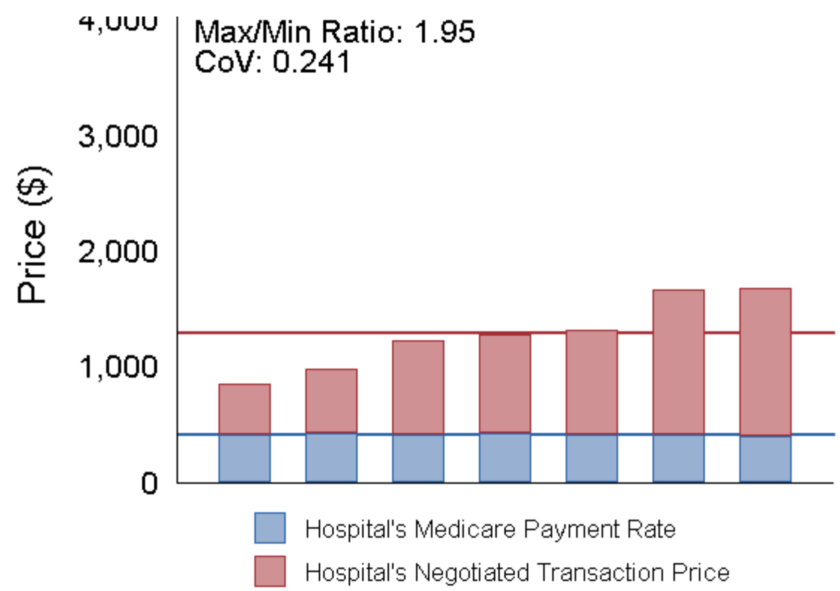
Knee Replacement Prices in New Haven and Hartford

Lower Limb MRIs, Hartford Ct
2008 - 2011



Lower Limb MRIs, New Haven Ct
2008 - 2011



Drivers of Price Variation

Drivers of Price Variation

Providers' Negotiated Prices

What is driving price growth and variation?

Quality of the Provider?

- Clinical quality
- Hotel-related services
- Perceived quality

Hospital & Local Area Characteristics?

- Teaching status
- Ownership
- Hospital size
- Local costs
- Local wage rates

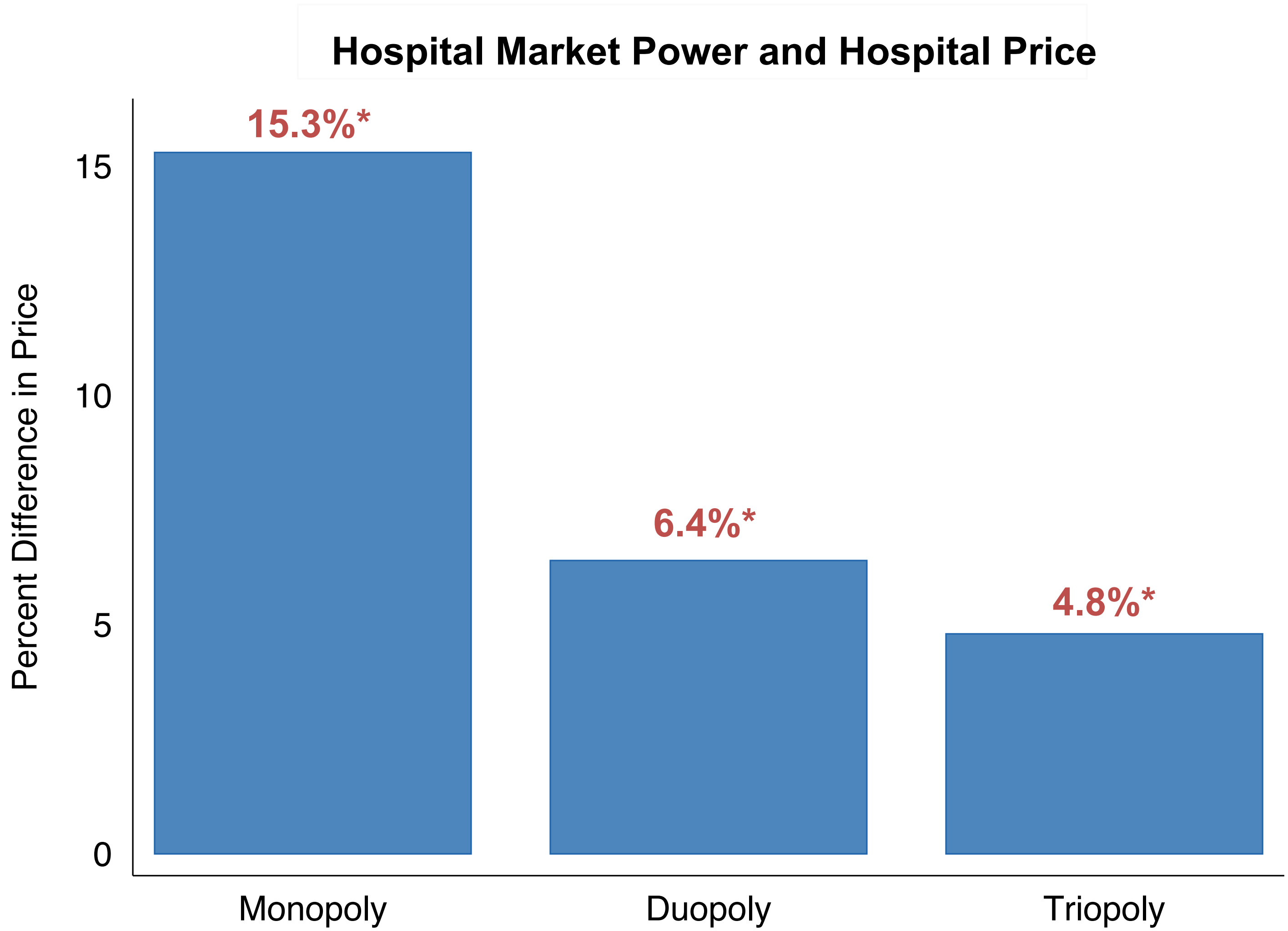
Medicare/Medicaid Penetration?

- Hospitals' share of patients funded by Medicare or Medicaid
- Medicare payment rates
- Share of uninsured

Market Structure?

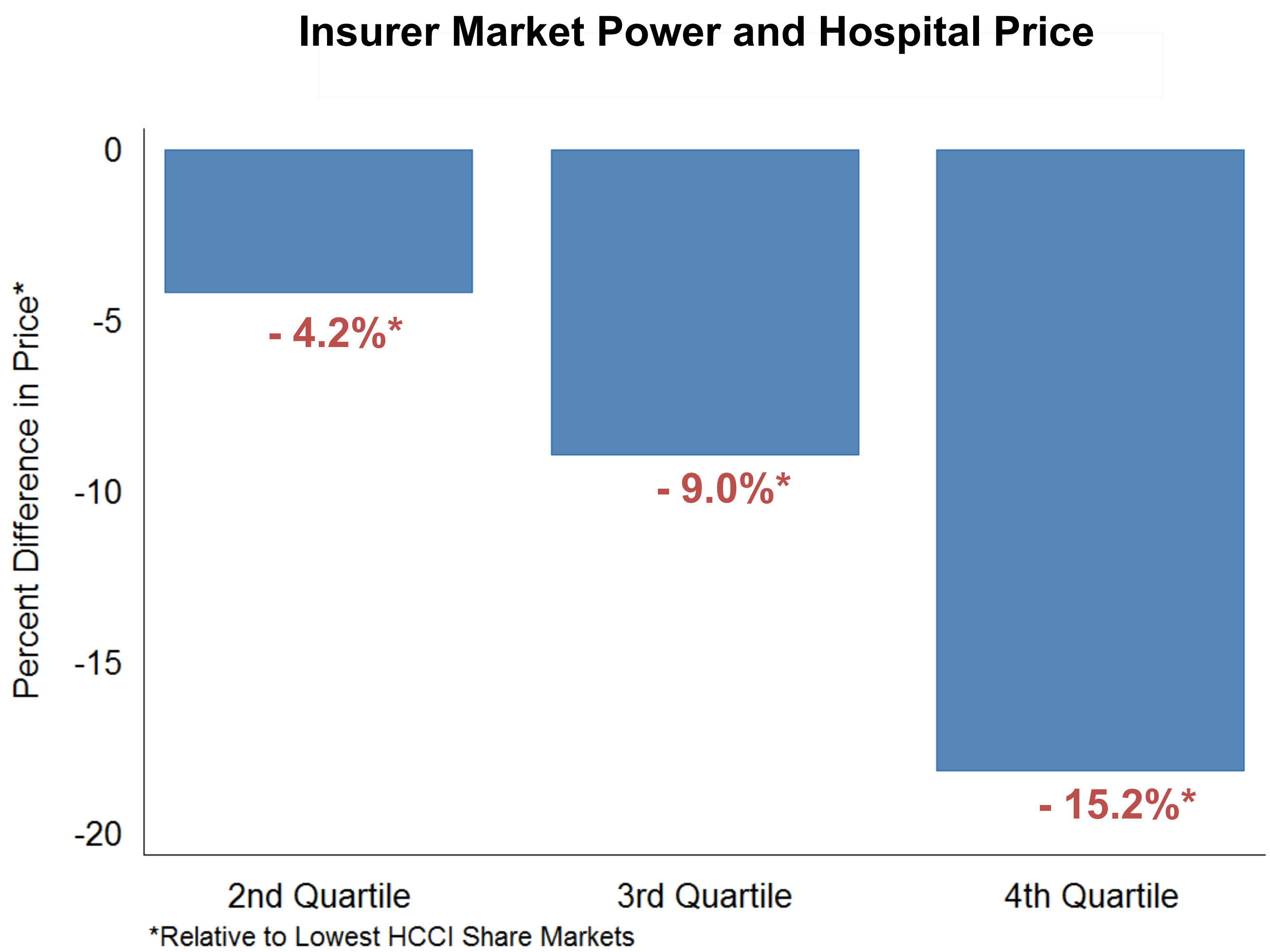
- Provider market structure
- Payer market structure

Hospital Market Power Raises Hospital Prices



Note: An asterisk indicates significance at the 5% level. This figure is based on OLS estimates for 8,176 hospital-year observations with standard errors clustered at the HRR-level in parentheses. The controls include insurance market structure, HCCI insurer share by county, hospitals use of technology, U.S. News & World Report Ranking, hospital beds, indicators for teaching hospitals, government-owned hospitals, and not for profit hospitals, the Medicare base payment rate, the share of hospitals' patients that are funded by Medicare, and the share funded by Medicaid. The regressions also include HRR fixed effects and year fixed effects.

Greater Insurance Market Power Lowers Hospital Prices



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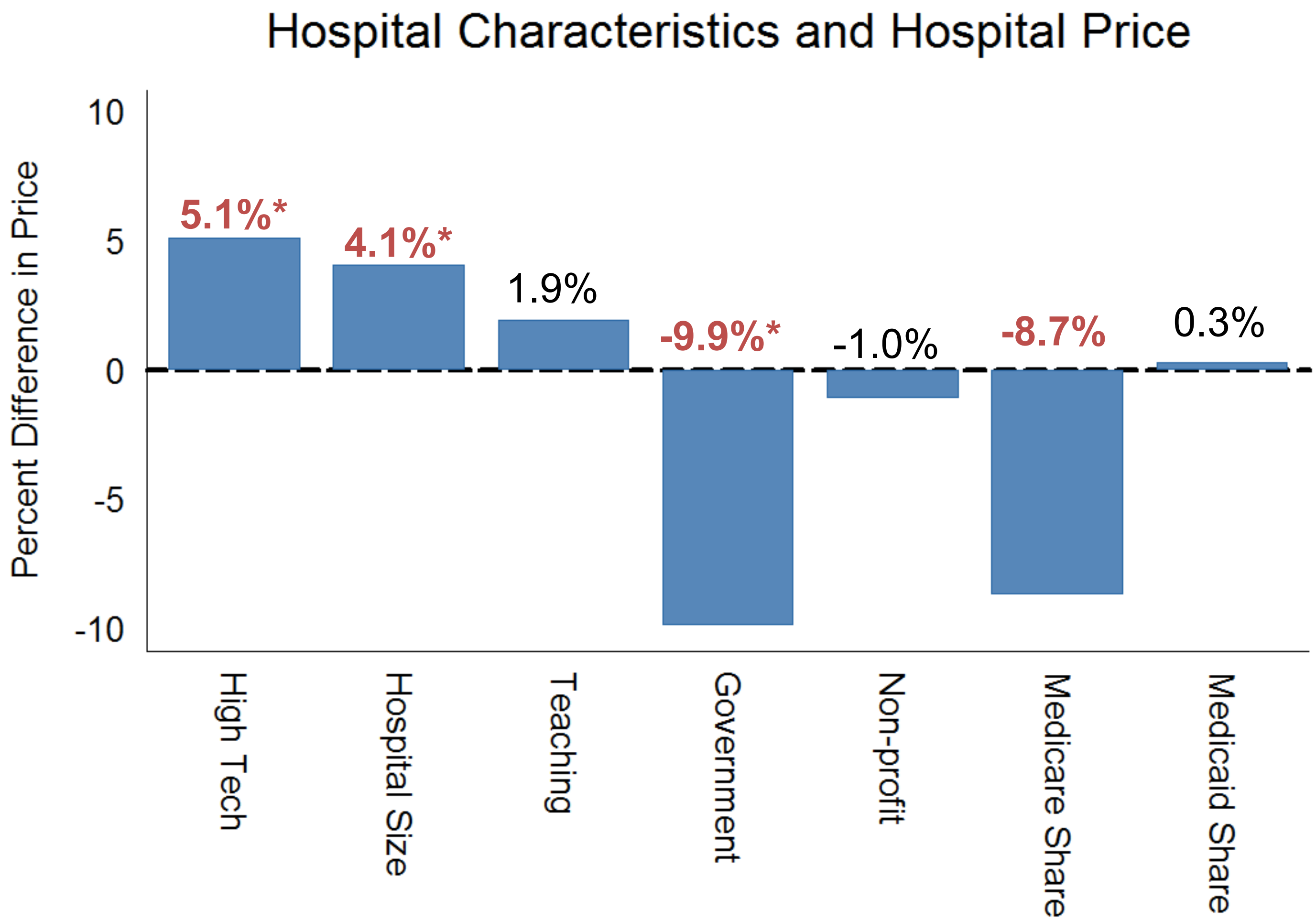
Bigger, High Tech Hospitals Have Higher Prices



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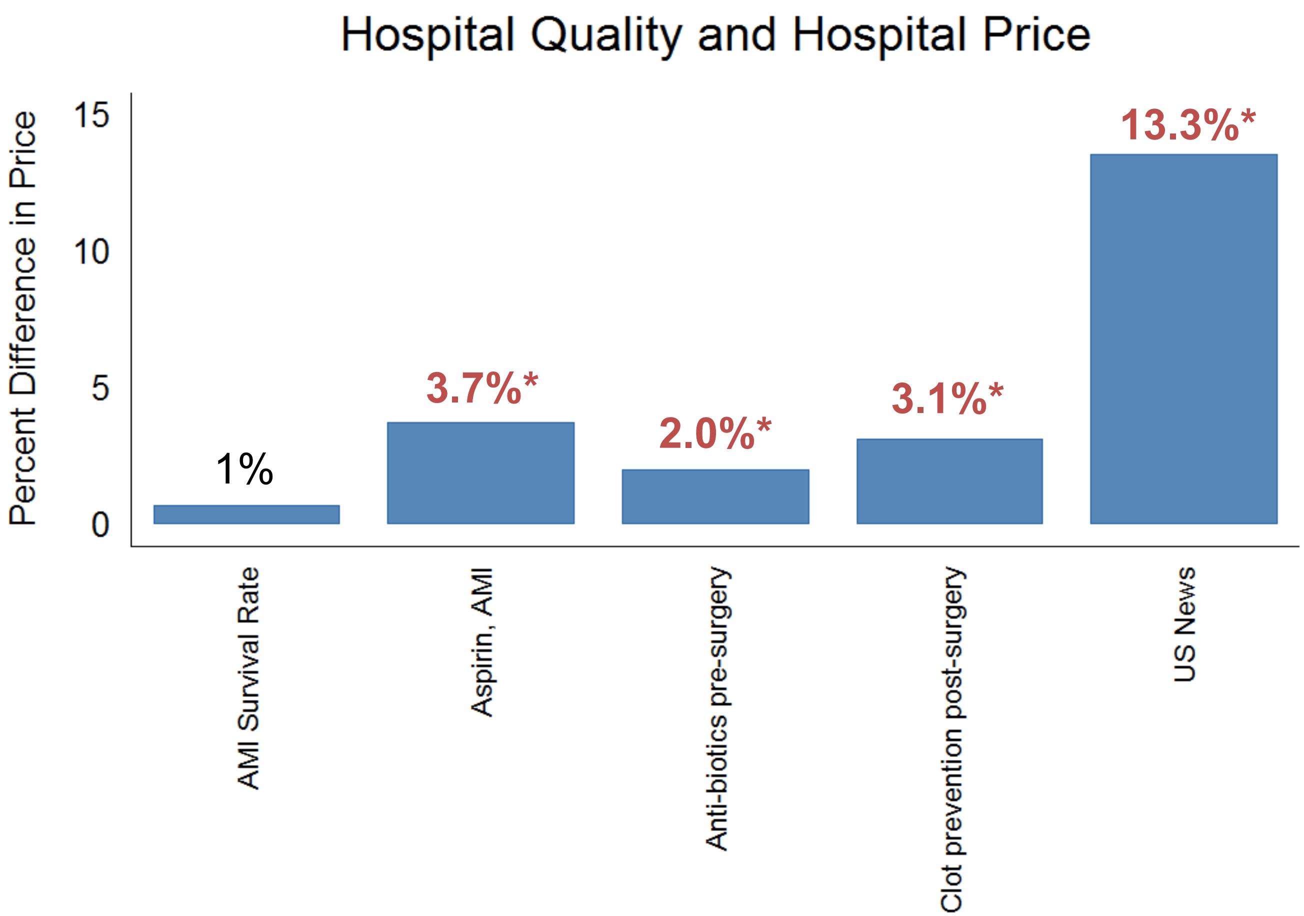
Quality is Weakly Related to Price



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Conclusions

Fact 1: Low correlation between Medicare spending per beneficiary and private spending per beneficiary

- We need to look beyond Grand Junction, Colorado, Rochester, Minnesota, and La Crosse, Wisconsin → Rochester, New York, Dubuque, Iowa, Lynchburg, VA, De Moines, Iowa;

- We need data on all payers: Medicare, Medicaid, and the privately insured

Fact 2: Providers' prices drive spending variation for the privately insured

- Areas that are high spending for the privately insured are areas with high prices;

- Applying Medicare rates +30% lowers private inpatient spending by 11%

Conclusions

Fact 3: Providers' Prices Vary Significantly Within and Across Geographies

- Rather than attending current provider, if everyone paying above median prices got Median pries in their HRR, it would lower inpatient spending by 20.3%.

- We need price transparency. It alone won't address all issues, but it's imperative

Fact 4: Hospitals with Market Power Have Higher Prices

- Monopoly hospitals have a 15.3% price premium;

- Consistent with wider body of evidence: hospital mergers can raise prices by more than 20%;

- Evidence that hospital competition raises quality (Kessler and McClellan, 2000; Cooper et al., 2010)

- No evidence that mergers bring gains to consumers

Policy Changes to Address Price

Fundamental Tension:

- **Bigger hospitals** often have better quality; integration has virtues; in a push towards pay-for performance, size gives stability;

- **Bigger Hospitals** also clearly have market power, which allows them to raise prices and it stymies incentives for quality;

Policy Options

1. More vigorous antitrust enforcement (including vertical integration)

2. Regulating prices (particularly out-of-network billing and trauma charges)

3. Make patients more price sensitive (leveraged by price transparency where the devil is in the details)