

Appendix C: Regression Results

A. Non-Medicare Prices

Explanatory Variables	Dependent Variable		
	Avg. Non-Medicare IP Price per Discharge		
	Model 1	Model 2	Model 3
Case-Mix Index (CMI)	1.705*** (0.042)	1.155*** (0.050)	1.070*** (0.052)
Medicare Wage Index	1.097*** (0.056)	0.760*** (0.057)	0.554*** (0.055)
Teaching Intensity (Interns and Residents per Bed)	-0.015 (0.065)	-0.219*** (0.070)	-0.227*** (0.067)
Percentage of Medicare Discharges	0.034* (0.019)	0.084*** (0.019)	0.056*** (0.018)
Percentage of Medicaid Discharges	-0.038*** (0.010)	-0.022* (0.012)	-0.017 (0.012)
Time Trend (December 2004=1)	-0.018 (0.011)	-0.013 (0.010)	-0.002 (0.010)
Rural Hospital Indicator		0.062*** (0.019)	-0.020 (0.018)
DSH amount per Bed		-0.019*** (0.002)	-0.010*** (0.002)
Operating Outlier Payments (%)		0.218*** (0.013)	0.187*** (0.013)
Uncompensated Cost per Discharge		0.020*** (0.003)	0.019*** (0.003)
Organ Transplants per Bed		0.349*** (0.129)	0.215* (0.121)
Percentage of Outpatient Charges over Total Charges		-0.264*** (0.023)	-0.490*** (0.024)
Total Hospital Assets per Bed			0.254*** (0.012)
Total Discharges per Bed			-0.299*** (0.024)
Hospital Size (Beds)			-0.093*** (0.012)
Constant	8.402*** (0.093)	9.036*** (0.126)	8.161*** (0.172)
Total Observations	15,098	14,872	14,870
Number of Hospitals	3,461	3,415	3,415
R-Squared Value	48%	56%	61%

Notes: Variables in logarithmic form. Standard errors in parentheses.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.

Explanatory Variables	Dependent Variable		
	Avg. Non-Medicare IP Price per Discharge		
	Model 4	Model 4b	Model 5
Case-Mix Index (CMI)	1.013*** (0.051)	0.973*** (0.053)	0.348*** (0.049)
Medicare Wage Index	0.608*** (0.076)	0.621*** (0.077)	-0.044 (0.069)
Teaching Intensity (Interns and Residents per Bed)	-0.187*** (0.067)	-0.149** (0.071)	-0.665*** (0.060)
Percentage of Medicare Discharges	0.061*** (0.019)	0.068*** (0.019)	0.008 (0.017)
Percentage of Medicaid Discharges	-0.026** (0.012)	-0.025** (0.012)	-0.006 (0.010)
Time Trend (December 2004=1)	0.002 (0.010)	0.005 (0.010)	-0.023*** (0.009)
Rural Hospital Indicator	-0.012 (0.021)	-0.012 (0.021)	-0.001 (0.018)
DSH amount per Bed	-0.008*** (0.002)	-0.008*** (0.002)	-0.006*** (0.002)
Operating Outlier Payments (%)	0.179*** (0.013)	0.177*** (0.013)	0.051*** (0.012)
Uncompensated Cost per Discharge	0.020*** (0.003)	0.020*** (0.003)	0.014*** (0.002)
Organ Transplants per Bed	0.179 (0.118)	0.108 (0.137)	0.232** (0.103)
Percentage of Outpatient Charges over Total Charges	-0.543*** (0.025)	-0.556*** (0.025)	-0.127*** (0.025)
Total Hospital Assets per Bed	0.232*** (0.012)	0.227*** (0.012)	0.092*** (0.012)
Total Discharges per Bed	-0.304*** (0.024)	-0.298*** (0.024)	0.027 (0.023)
Hospital Size (Beds)	-0.084*** (0.012)	-0.086*** (0.012)	0.022** (0.011)
Average Age in Hospital CBSA	-0.617*** (0.127)	-0.617*** (0.127)	-0.629*** (0.111)
% Population Male in Hospital CBSA	0.069 (0.356)	-0.001 (0.356)	-0.163 (0.310)
% Population Black in Hospital CBSA	0.000 (0.009)	0.004 (0.009)	0.004 (0.008)
% Population Hispanic in Hospital CBSA	-0.068*** (0.012)	-0.066*** (0.012)	-0.044*** (0.010)
% Population in Poverty in Hospital CBSA	-0.121*** (0.038)	-0.120*** (0.038)	-0.147*** (0.033)
% Population Under Age 65 Insured in CBSA	-0.021 (0.159)	0.002 (0.159)	-0.134 (0.139)
% Population Current Smoker in Hospital CBSA	0.051 (0.035)	0.055 (0.035)	0.077** (0.030)
% Population Heavy Drinker in Hospital CBSA	0.110*** (0.021)	0.106*** (0.021)	0.047** (0.019)
% Population with Checkup in Last 2 Yrs in CBSA	-1.026*** (0.157)	-1.007*** (0.157)	-0.906*** (0.137)
Mortality Rates (average for heart attack, heart failure, and pneumonia - 2008)		0.162** (0.064)	
Readmission Rates (average for heart attack, heart failure, and pneumonia - 2008)		-0.287*** (0.110)	
2010 US News Best Hospital in Any Specialty		0.058 (0.046)	
Average Hospital IP Cost per Discharge			0.944*** (0.029)
Constant	15.295*** (1.974)	15.923*** (1.998)	7.063*** (1.738)
Total Observations	14,833	14,833	14,833
Number of Hospitals	3,402	3,402	3,402
R-Squared Value	63%	63%	72%

Notes: Variables in logarithmic form. Standard errors in parentheses.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.

B. All-Payor Prices

Explanatory Variables	Dependent Variable		
	Avg. All-Payor IP Price per Discharge		
	Model 1	Model 2	Model 3
Case-Mix Index (CMI)	1.323*** (0.024)	0.960*** (0.028)	0.953*** (0.028)
Medicare Wage Index	0.887*** (0.032)	0.675*** (0.032)	0.564*** (0.031)
Teaching Intensity (Interns and Residents per Bed)	0.323*** (0.037)	0.180*** (0.039)	0.189*** (0.037)
Percentage of Medicare Discharges	0.047*** (0.011)	0.080*** (0.011)	0.060*** (0.010)
Percentage of Medicaid Discharges	-0.016*** (0.006)	-0.015** (0.007)	-0.010 (0.006)
Time Trend (December 2004=1)	0.034*** (0.006)	0.035*** (0.006)	0.043*** (0.006)
Rural Hospital Indicator		0.048*** (0.011)	-0.004 (0.010)
DSH amount per Bed		-0.009*** (0.001)	-0.003** (0.001)
Operating Outlier Payments (%)		0.142*** (0.007)	0.128*** (0.007)
Uncompensated Cost per Discharge		0.009*** (0.002)	0.009*** (0.002)
Organ Transplants per Bed		0.273*** (0.072)	0.190*** (0.067)
Percentage of Outpatient Charges over Total Charges		-0.183*** (0.013)	-0.317*** (0.013)
Total Hospital Assets per Bed			0.145*** (0.007)
Total Discharges per Bed			-0.200*** (0.013)
Hospital Size (Beds)			-0.071*** (0.006)
Constant	8.307*** (0.053)	8.794*** (0.071)	8.497*** (0.094)
Total Observations	15,464	15,233	15,231
Number of Hospitals	3,503	3,457	3,457
R-Squared Value	67%	73%	77%

Notes: Variables in logarithmic form. Standard errors in parentheses.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.

Explanatory Variables	Dependent Variable		
	Avg. All-Payor IP Price per Discharge		
	Model 4	Model 4b	Model 5
Case-Mix Index (CMI)	0.917*** (0.028)	0.901*** (0.029)	0.533*** (0.027)
Medicare Wage Index	0.655*** (0.043)	0.660*** (0.043)	0.279*** (0.038)
Teaching Intensity (Interns and Residents per Bed)	0.214*** (0.038)	0.220*** (0.040)	-0.061* (0.033)
Percentage of Medicare Discharges	0.064*** (0.011)	0.066*** (0.011)	0.035*** (0.009)
Percentage of Medicaid Discharges	-0.017*** (0.006)	-0.016** (0.006)	-0.006 (0.006)
Time Trend (December 2004=1)	0.044*** (0.006)	0.046*** (0.006)	0.027*** (0.005)
Rural Hospital Indicator	-0.009 (0.011)	-0.009 (0.011)	-0.001 (0.010)
DSH amount per Bed	-0.003* (0.001)	-0.003** (0.001)	-0.001 (0.001)
Operating Outlier Payments (%)	0.124*** (0.007)	0.123*** (0.007)	0.048*** (0.006)
Uncompensated Cost per Discharge	0.009*** (0.002)	0.009*** (0.002)	0.006*** (0.001)
Organ Transplants per Bed	0.178*** (0.066)	0.119 (0.077)	0.214*** (0.057)
Percentage of Outpatient Charges over Total Charges	-0.340*** (0.014)	-0.344*** (0.014)	-0.088*** (0.014)
Total Hospital Assets per Bed	0.134*** (0.007)	0.132*** (0.007)	0.048*** (0.006)
Total Discharges per Bed	-0.198*** (0.013)	-0.195*** (0.013)	-0.002 (0.013)
Hospital Size (Beds)	-0.064*** (0.007)	-0.065*** (0.007)	0.000 (0.006)
Average Age in Hospital CBSA	-0.333*** (0.071)	-0.331*** (0.071)	-0.326*** (0.061)
% Population Male in Hospital CBSA	0.026 (0.195)	0.004 (0.196)	-0.002 (0.167)
% Population Black in Hospital CBSA	-0.005 (0.005)	-0.004 (0.005)	-0.002 (0.004)
% Population Hispanic in Hospital CBSA	-0.039*** (0.007)	-0.038*** (0.007)	-0.024*** (0.006)
% Population in Poverty in Hospital CBSA	-0.024 (0.021)	-0.022 (0.021)	-0.037* (0.018)
% Population Under Age 65 Insured in CBSA	-0.073 (0.089)	-0.061 (0.089)	-0.130* (0.076)
% Population Current Smoker in Hospital CBSA	0.038* (0.020)	0.039** (0.020)	0.053*** (0.017)
% Population Heavy Drinker in Hospital CBSA	0.041*** (0.012)	0.040*** (0.012)	0.004 (0.010)
% Population with Checkup in Last 2 Yrs in CBSA	-0.542*** (0.088)	-0.539*** (0.088)	-0.467*** (0.075)
Mortality Rates (average for heart attack, heart failure, and pneumonia - 2008)		0.040 (0.036)	
Readmission Rates (average for heart attack, heart failure, and pneumonia - 2008)		-0.110* (0.062)	
2010 US News Best Hospital in Any Specialty		0.041 (0.026)	
Average Hospital IP Cost per Discharge (\$)			0.548*** (0.015)
Constant	12.474*** (1.087)	12.744*** (1.102)	7.164*** (0.941)
Total Observations	15,192	15,192	15,192
Number of Hospitals	3,444	3,444	3,444
R-Squared Value	77%	77%	83%

Notes: Variables in logarithmic form. Standard errors in parentheses.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.

C. Medicare Prices

Explanatory Variables	Dependent Variable Avg. Medicare IP Price per Discharge
Case-Mix Index (CMI)	0.921*** (0.012)
Medicare Wage Index	0.728*** (0.013)
Teaching Intensity (Interns and Residents per Bed)	0.788*** (0.016)
Percentage of Medicare Discharges	-0.079*** (0.004)
Percentage of Medicaid Discharges	0.032*** (0.003)
Time Trend (December 2004=1)	0.057*** (0.002)
Rural Hospital Indicator	0.011** (0.004)
DSH amount per Bed	0.005*** (0.001)
Operating Outlier Payments (%)	0.046*** (0.003)
Uncompensated Cost per Discharge	0.002** (0.001)
Organ Transplants per Bed	0.010 (0.029)
Percentage of Outpatient Charges over Total Charges	-0.066*** (0.006)
Total Hospital Assets per Bed	-0.004 (0.003)
Total Discharges per Bed	-0.043*** (0.006)
Hospital Size (Beds)	-0.009*** (0.003)
Constant	9.144*** (0.040)
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Total Observations	15,385
Number of Hospitals	3,468
R-Squared Value	94%

Notes: Variables in logarithmic form. Standard errors in parentheses.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.

D. Non-Medicare Prices in the Regions Analyzed by the Payment Variation Article

Explanatory Variables	Dependent Variable		
	Avg. Non-Medicare IP Price per Discharge		
	All U.S. Hospitals	States Analyzed in the Article	CBSAs Analyzed in the Article
Case-Mix Index (CMI)	1.070*** (0.052)	0.916*** (0.089)	0.928*** (0.142)
Medicare Wage Index	0.554*** (0.055)	0.674*** (0.093)	0.881*** (0.152)
Teaching Intensity (Interns and Residents per Bed)	-0.227*** (0.067)	0.090 (0.125)	0.295* (0.160)
Percentage of Medicare Discharges	0.056*** (0.018)	0.157*** (0.033)	0.160*** (0.053)
Percentage of Medicaid Discharges	-0.017 (0.012)	-0.092*** (0.020)	-0.138*** (0.032)
Time Trend (December 2004=1)	-0.002 (0.010)	0.001 (0.016)	0.037 (0.027)
Rural Hospital Indicator	-0.020 (0.018)	-0.006 (0.031)	0.321*** (0.104)
DSH amount per Bed	-0.010*** (0.002)	-0.010*** (0.004)	-0.003 (0.006)
Operating Outlier Payments (%)	0.187*** (0.013)	0.153*** (0.020)	0.164*** (0.032)
Uncompensated Cost per Discharge	0.019*** (0.003)	0.023*** (0.005)	0.009 (0.008)
Organ Transplants per Bed	0.215* (0.121)	0.285* (0.168)	0.226 (0.231)
Percentage of Outpatient Charges over Total Charges	-0.490*** (0.024)	-0.410*** (0.041)	-0.253*** (0.061)
Total Hospital Assets per Bed	0.254*** (0.012)	0.207*** (0.020)	0.147*** (0.032)
Total Discharges per Bed	-0.299*** (0.024)	-0.291*** (0.040)	-0.303*** (0.066)
Hospital Size (Beds)	-0.093*** (0.012)	-0.095*** (0.021)	-0.037 (0.035)
Constant	8.161*** (0.172)	8.376*** (0.290)	8.309*** (0.465)
Total Observations	14,870	4,139	1,267
Number of Hospitals	3,415	942	298
R-Squared Value	61%	62%	65%

Notes: Variables in logarithmic form. Standard errors in parentheses.

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level.