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Financial Trends of Florida Hospitals Pre and Post the Affordable Care Act

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Abstract

Although Florida did not expand Medicaid via the Affordable Care Act (ACA), the state transitioned all of its full-benefit Medicaid enrollees from fee-for-service to managed care in 2014. This paper explores the financial trends in Florida hospitals in light of these significant federal and state policy changes. A linear spline with a knot at year 2014 was used to estimate the change in the slope of hospital finances before and after 2014. Florida Agency for Health Care Administration provided the Florida hospital financial data for years 2010-2018. The study sample was a panel of 1,600 unique hospital-year observations with 187 unique hospitals. The growth of Florida not-for-profit hospitals operating profits have slowed down in the post ACA years. Investor-owned hospitals appear unaffected by the ACA and maintained their dominance in the Florida hospital market. Public hospitals may have turned a corner with improving profitability.

Keywords: Hospital Administration, Patient Protection and Affordable Care Act, Florida

Introduction

The implementation of the Affordable Care Act (ACA) was the largest expansion of health insurance coverage since Medicare and Medicaid [1]. The high and rising financial burden of the costs of health care on both patients and hospitals as a result of uncompensated care for the uninsured was a primary motivation behind the ACA [2]. The ACA anticipated that the insurance expansions would increase safety-net hospitals' revenues and reduce disproportionate-share hospital payments (DSH) accordingly, as their patient populations would gain access to insurance and thus increase safety-net hospital revenue [3]. The impact of reductions in DSH payments for public and safety-net hospitals is of significant concern [3], although these reductions were delayed for several years [4]. Even without the reductions, many patients who have gained insurance face high deductibles for their care. The proportion of Marketplace enrollees with a high deductible health plan was 46% in 2015 [5]. The average deductible in 2020 for enrollees not receiving cost sharing reductions was $5,316 [6]. On the one hand, marketplace plans are likely to be a steadier source of reimbursement than the uninsured making self-payments. On the other hand, marketplace enrollees may choose high-deductible plans, which continue to put hospital revenue at risk of enrollee's ability to pay and potentially lower reimbursement rates from the plan.

The Medicaid expansion and other key provisions of the ACA have increased access to care in terms of insurance coverage and use of health care services [7], [8]. The ACA expanded Medicaid eligibility for adults to up to 138 percent of the federal poverty level (FPL) beginning on January 1, 2014. The Supreme Court's interpretation of the ACA allowed states the option to expand Medicaid eligibility. As of 2020, Florida remains one of the 12 states that have not adopted the Medicaid Expansion [9]. States that expanded Medicaid in 2014 saw significant decreases in uninsured hospital stays, while those that did not, including Florida, saw no aggregate changes in payer mix [10]. The implementation of the ACA was associated with improved hospital profitability and operating margins in states that expanded Medicaid but not in the non-expansion states [11], as Medicaid reimbursement tends to be more generous than self-payments [12].

The ACA health insurance Marketplace exchanges and essential health benefits were implemented in 2014. By 2017, 10.3 million people purchased health insurance Marketplace plans [13]. These plans, and individual and small group plans more broadly, are required to provide 10 essential health benefits, including ambulatory patient services, emergency services, and inpatient care [14]. Florida opted to run a Federally-facilitated Marketplace rather than a state-based exchange. From 2015 to 2019, Florida had about 1.5 to 1.9 million enrollees each year, making it the state with the highest Exchange enrollment in the country [15]. In contrast to Florida, California and New York have state-based marketplaces and expanded Medicaid. A survey of the country's four largest states (California, Florida, New York, Texas) found that New York and California residents reported fewer problems getting needed care because of cost compared with Florida and Texas, two non-expansion states [16].

The juxtaposition of high Marketplace enrollment, lack of a Medicaid expansion, and mandatory Medicaid managed care make Florida an interesting case to study, with a focus on the financial performance of Florida hospitals. The Florida hospital market is unique in that it has a high

proportion of investor-owned hospitals that comprise about 40 percent of community hospitals [17]. Throughout the 2010s, hospitals saw increased mergers and acquisitions [18]–[20]. In Florida, notable mergers and acquisition activity occurred for both investor-owned and not-for-profit hospitals [19], [21], [22]. Furthermore, the Florida hospital market is concentrated. Three systems accounted for more than half of the hospitals operating in Florida in 2016 [23]. Bai and Anderson showed that Florida has 40 percent of the fifty hospitals in the country with the highest markups in 2012, which suggests that Florida hospitals were exercising significant market power [24]. In 2018, the South Florida hospital market was characterized by strong profit margins averaging 8% [25]. Therefore, both ownership status and system affiliation are important to hospital financial analysis.

The 2020 elections and COVID-19 pandemic have brought the economy and health care to the center of the national debate [26]. The outcome of the 2020 elections has the potential to expand the ACA provisions to improve coverage and access to health care or dismantle the ACA altogether. The financial performance of Florida hospitals over the past decade is important for understanding how hospitals have financially adapted to significant changes in the health care landscape.

In this study, we use data on Florida short-term general hospitals for years 2010-18 from the Florida Hospital Uniform Reporting System [27] to investigate the relationship between the ACA and other state-level changes and hospital financial performance. We construct a panel of financial performance measures that are calculated using data from income statements, balance sheets, and other financial statements. The changes in hospital finances associated with the rollout of the ACA were estimated using a spline regression to capture the period before and after the implementation year of 2014, when Medicaid transition to managed care, and there was increased acquisition of hospitals by investor-owned, for-profit entities.

Methods

Data and Sample

Florida hospitals are required to report their financial data, including the income statement, balance sheet, and hospital services, to the Florida Agency for Health Care Administration (AHCA). AHCA provided the Florida hospital financial data for fiscal years 2010-2018. AHCA collects financial data from hospitals through the FHURS, including income statements, balance sheets, and other financial statements [27]. Dollars were adjusted to 2014 dollars using GDP Deflator [28].

The study sample is restricted to short-term general or teaching hospitals. The raw AHCA data included 2,280 hospital-year observations. Non-unique hospital-year observations were present because of hospital ownership changes, audits, or multiple financial statements. Observations in the AHCA data are at the license level, not the facility level, multiple facilities can file under one license. Our analysis presents financial ratios that adjust for these size differences to make the financials comparable. Facilities that do not have a license identifier are omitted from the data. Duplicate hospital-years were dropped, keeping the earliest observation. Observations with non-positive operating revenue were removed as they are likely to be erroneous entries or non-

operational hospitals. The study sample yielded a panel of 1,600 unique hospital-year observations with 187 unique hospitals. Unique observations per year ranged from 175 to 180.

Financial Variables

Using American Hospital Association definitions, we calculated a number of standard financial ratios for hospitals [29]. Average pay period is the Number of days it takes for organization to pay off bills. Days Cash on Hand is the Number of days an organization can continue to pay its operating expense with cash. Current ratio is the ability to meet current liabilities with its current assets, where higher is better up to a certain point. Days in Net Patient Accounts Receivable is the Number of days it takes to collect accounts receivables. Long-term debt to net assets (equity) is the ability to meet debt obligations using nets assets. Total asset turnover is how effective an organization is using its assets to generate patient revenue. Total margin is the overall profitability, it shows total profit as a percentage of total revenue. Operating margin shows operating profit as a percentage of operating revenue.

Statistical Analysis

We estimate the relationship between year and each hospital financial variable using a spline regression with hospital fixed effects. A linear spline with a knot at year 2014 estimates the piecewise slope for intervals between 2010 and 2014, and between 2014 and 2018. The fixed effects regression controls for unobserved hospital-level confounders that do not vary over time. The model includes health system fixed effects to control for changes in system affiliation over time due to mergers and acquisitions. We do not include other time-varying hospital characteristics as independent variables to allow the piecewise year intervals to absorb the variation in the financial variables. We perform the analysis using Stata version 15 [30]. Standard errors are heteroskedasticity robust and allow for within-hospital correlation.

Select financial variables were plotted to show changes over time by ownership status. On the plot, a curve represents a fractional polynomial fit with a shaded area representing the 95% confidence interval [30]. Fractional polynomials provide flexible parameterization for fitting nonlinear relationships.

Limitations

Our analysis has several limitations. Non-unique hospital-year observations were present because of hospital ownership changes, audits, or multiple financial statements. An observation in the AHCA data is at the license level, not the facility level, and sometimes multiple facilities file under one license. A multi-facility licensee may report larger financial numbers than a single facility licensee. Therefore, means of financial variables in dollar amounts should be interpreted with caution. Our analyses are descriptive and do not allow for causal interpretation.

Results

Table 1 summarizes the key hospital characteristics and financial ratios by year. Means were tested across groups using ANOVA for continuous variables and chi-squared for categorical

variables. In Table 1, the mean number of available beds was relatively constant from 315 in 2010 to 325 in 2018. Total assets increased from $269.50 million in 2010 to $363.49 million in 2018, but the difference was not statistically significant. Operating profits significantly increased from $8.61 million in 2010 to $23.53 million in 2018 (P = .026). Total profits significantly increased from $14.36 million in 2010 to $27.72 million in 2018 (P = .032). However, operating margin and total margin fluctuated from 2010 to 2018. Days cash on hand increased from 39.16 days in 2010 to 62.14 days in 2018, but the difference was not statistically significant.

Table 1: Summary of hospital characteristics and financial ratios by year

	2010	2014	2018	p-value
	N=175	N=180	N=175	
Available beds total hospital services	315.37 (304.14)	328.88 (347.61)	325.76 (354.79)	0.92
Available bed days total hospital services (100,000 days)	1.1 (1.1)	1.2 (1.2)	1.2 (1.3)	0.94
Cash ($)	27.67 (108.59)	36.65 (145.61)	48.92 (214.80)	0.49
Accounts receivables ($)	29.93 (44.96)	35.63 (64.12)	36.87 (47.93)	0.43
Current assets ($)	75.14 (157.93)	85.26 (191.27)	98.43 (253.54)	0.57
Plant property equipment ($)	223.15 (308.78)	244.15 (363.47)	298.42 (458.80)	0.17
Capital expenditure ($)	NA	2.36 (28.63)	13.20 (29.52)	<.001
Total assets ($)	269.50 (377.97)	294.88 (440.21)	363.49 (606.78)	0.17
Current liabilities ($)	39.32 (82.48)	36.09 (70.83)	38.16 (71.92)	0.92
Total liabilities ($)	123.24 (223.24)	117.53 (210.60)	116.58 (256.83)	0.96
Equity ($)	146.27 (209.66)	177.35 (285.88)	246.91 (431.72)	0.012
Operating revenue ($)	214.10 (272.52)	228.06 (302.40)	271.45 (381.47)	0.22
Operating expense ($)	205.48 (266.42)	209.76 (278.75)	247.92 (339.62)	0.34
Operating profits ($)	8.61 (42.86)	18.30 (44.18)	23.53 (66.33)	0.026
Total profits ($)	14.36 (31.06)	22.38 (41.24)	27.72 (64.79)	0.032
Operating margin (%)	1.52 (13.88)	2.91 (22.30)	2.50 (26.22)	0.82
Total margin (%)	4.32 (13.73)	6.94 (16.01)	5.45 (20.90)	0.35
Proportion of hospitals with negative operating margin (%)	0.33 (0.47)	0.26 (0.44)	0.27 (0.45)	0.37

Notes: Authors' analysis of Florida Agency for Health Care Administration (AHCA) data, 2010-2018. Dollars were adjusted to 2014 dollars using GDP Deflator, in millions of dollars. Data are presented as mean (SD) for continuous measures, and n (%) for categorical measures. Continuous variables were tested using ANOVA. Categorical variables were tested using chi-square.

In Table 2, hospital characteristics and financial ratios show significant differences by ownership. On average, not-for-profit hospitals had the most number of beds (418.61), followed by investor-owned (259.55) and public (308.13) ($P < .001$). Similarly, not-for-profit hospitals had the largest total assets ($461.74 million, $P < .001$), which was 2.6 times that of investor-owned hospitals, and 1.5 times that of public hospitals.

Table 2. Summary of hospital characteristics and financial ratios by ownership

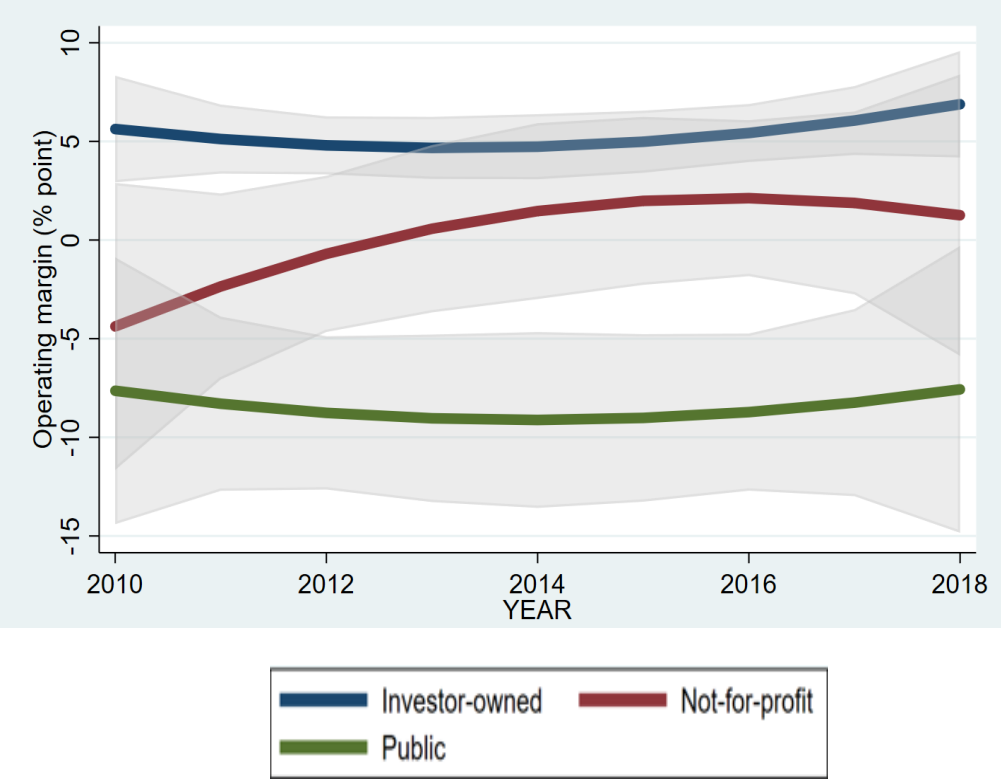
	Investor-owned	Not-for-profit	PUBLIC	p-value
	N=754	N=656	N=190	
Available beds total hospital services	259.55 (216.63)	418.61 (535.01)	308.13 (391.51)	<.001
Available bed days total hospital services (100,000 days)	0.9 (0.6)	1.5 (1.5)	1.1 (1.4)	<.001
Cash ($)	0.55 (4.35)	79.45 (220.39)	23.77 (61.27)	<.001
Accounts receivables ($)	22.59 (17.13)	46.09 (54.58)	45.90 (124.13)	<.001
Current assets ($)	29.10 (20.85)	150.40 (275.45)	79.50 (172.47)	<.001
Plant property equipment ($)	134.32 (94.47)	404.97 (530.55)	198.30 (211.29)	<.001
Capital expenditure ($)	3.71 (19.25)	16.56 (41.94)	2.41 (28.35)	<.001
Total assets ($)	175.16 (157.71)	461.74 (639.53)	298.83 (428.46)	<.001
Current liabilities ($)	13.76 (16.22)	58.17 (78.51)	51.41 (126.07)	<.001
Total liabilities ($)	38.81 (60.60)	212.06 (275.64)	120.11 (315.22)	<.001
Equity ($)	136.36 (164.41)	249.68 (422.62)	178.72 (247.10)	<.001
Operating revenue ($)	148.37 (104.64)	344.20 (433.09)	206.17 (276.18)	<.001
Operating expense ($)	134.78 (91.49)	316.68 (385.18)	218.86 (332.49)	<.001
Operating profits ($)	13.59 (21.05)	27.52 (57.24)	-12.69 (78.15)	<.001
Total profits ($)	11.82 (21.44)	31.16 (63.45)	16.97 (39.56)	<.001
Operating margin (%)	5.36 (15.30)	0.23 (38.38)	-8.48 (20.26)	<.001
Total margin (%)	6.89 (16.01)	2.80 (28.45)	3.00 (9.21)	<.001
Proportion of hospitals with negative operating margin (%)	0.26 (0.44)	0.25 (0.43)	0.70 (0.46)	<.001

Notes: Authors' analysis of Florida Agency for Health Care Administration (AHCA) data, 2010-2018. Dollars were adjusted to 2014 dollars using GDP Deflator, in millions of dollars. Data are presented as mean (SD) for continuous measures, and n (%) for categorical measures. Continuous variables were tested using ANOVA. Categorical variables were tested using chi-square.

Results in Table 2 show that operating profits varied widely, not-for-profit hospitals had $27.52 million, investor-owned hospitals had $13.59 million, and public hospitals had -$12.69 million (P < .001). Seventy percent of public hospitals had negative operating margins, compared to about 25 percent for the other two groups (P < .001). However, public hospitals made up for operating losses with non-operating income shown by their positive total profits of $16.97 million. Not-for-profit hospitals had a total profit of $31.16 million and investor-owned hospitals had $11.82 (P < .001). While not-for-profit hospitals saw the largest profits (or net revenue) in dollar amounts, investor-owned hospitals had the highest operating margin of 5.36 percent, which was significantly larger than the rest (not-for-profit: 0.23 percent; public: -8.48 percent; P < .001). Investor-owned hospitals also had a significantly larger total margin of 6.89 percent (P < .001), which was more than twice that of the other two groups. Days cash on hand varied widely among the three groups, not-for-profit hospitals had 104.64 days, while investor-owned hospitals had 4 days, and public hospitals had 38.97 days (P < .001). The low number of days cash on hand for investor-owned hospitals was not surprising because they have access to equity capital [31].

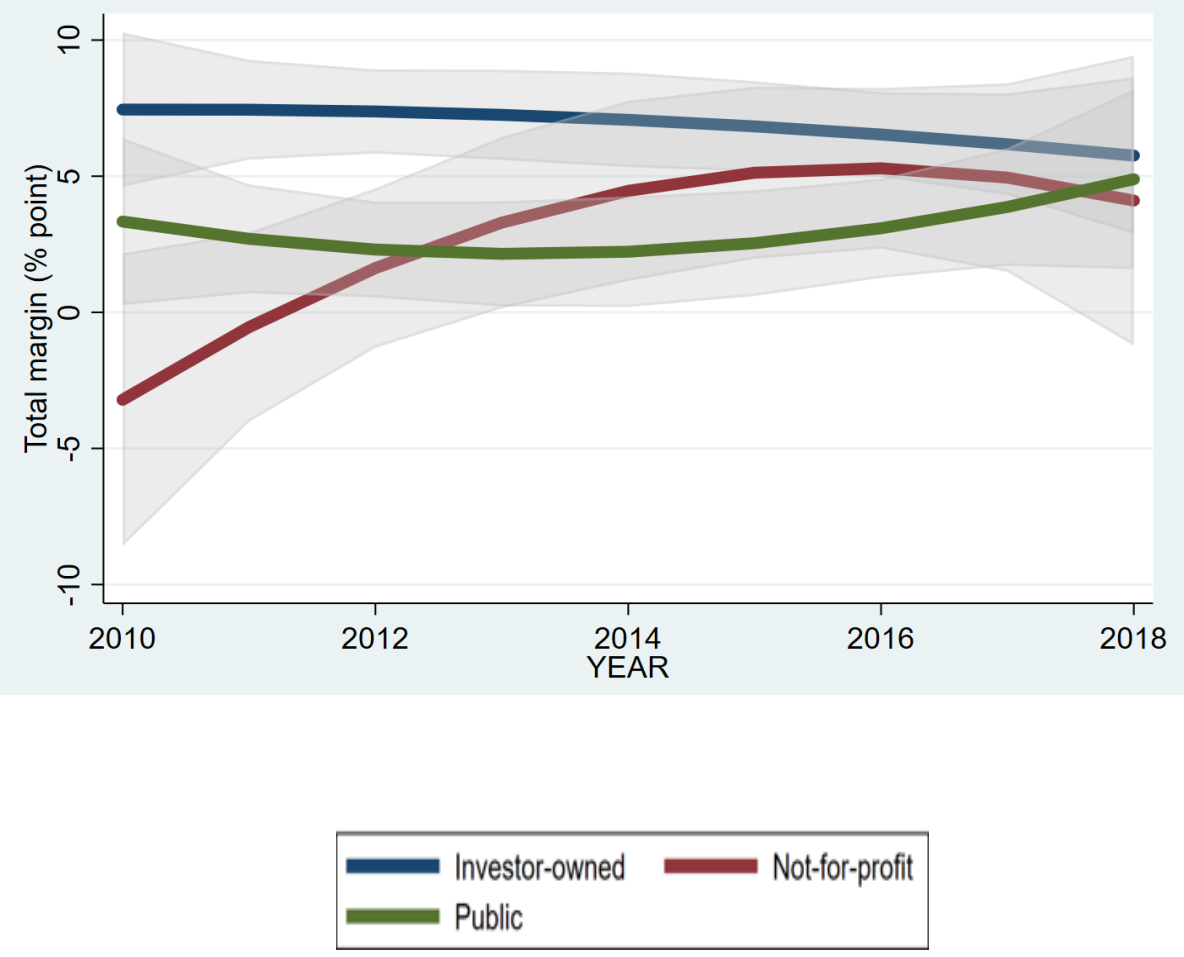
We further examine hospital profitability (profit margins) and liquidity (days cash on hand) by time period and ownership. The fractional polynomial curve of the financial performance over time revealed changes in trends before and after 2014, the year of the ACA implementation. In Figure 1, operating margin of not-for-profit hospitals grew rapidly from 2010 to 2014.

Figure 1. Summary of operating margins by ownership using a fractional polynomial fitted curve with a 95% confidence interval.



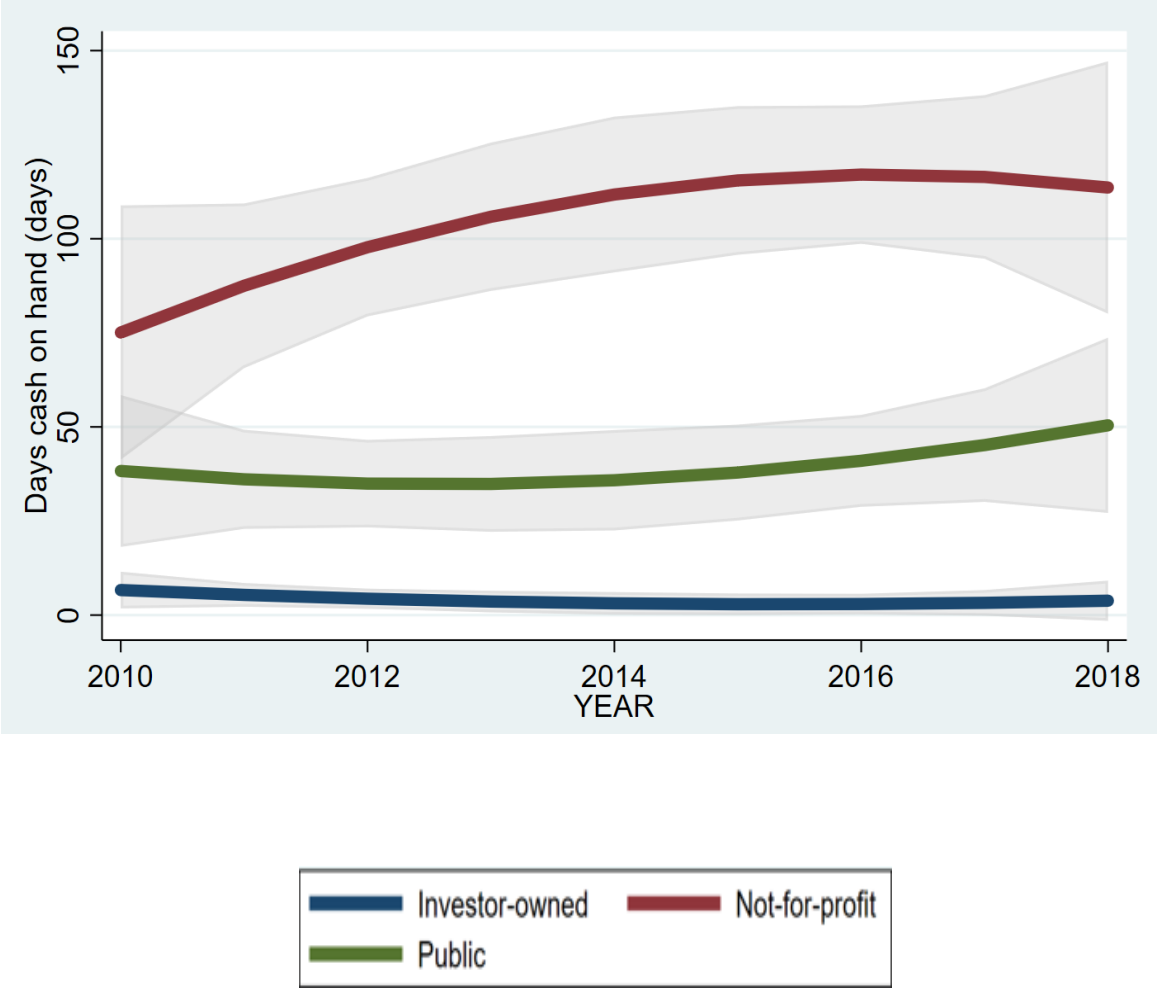
From 2010 to 2011, not-for-profit hospitals had negative operating margins which were significantly lower than investor-owned hospitals with non-overlapping 95% confidence intervals. But by about 2013, not-for-profit hospitals began making positive operating profits and their operating margin confidence intervals overlapped with investor-owned hospitals. Meanwhile, investor-owned hospitals maintained the highest operating margin of about 5% and public hospitals remained flat below -7% over the years. Then the operating margin of not-for-profit hospitals slowed down to a flat trend from 2014 to 2018. Notably, from 2016 to 2018 not-for-profit declined while investor-owned grew, which widened the gap between the two (though their intervals overlapped). The widening gap was a reversal of the converging trends that we saw from 2010 to 2014. Trends in total margins showed a similar story, with not-for-profit hospitals slowing down after 2014 (Figure 2).

Figure 2. Summary of total margin by ownership using a fractional polynomial fitted curve with a 95% confidence interval.



However, the trends in totals margins did not show a widening gap between the not-for-profit and investor-owned hospitals after 2016. Rather, both hospitals had declining total margins from 2016 to 2018. Public hospitals had total margins of about 2-5% over the years with accelerating growth after 2014. Not-for-profits tend to carry large cash reserves to meet their liquidity needs. From 2010 to 2014, days cash on hand of not-for-profit hospitals grew from about 70 days to 110 days, then the trend flattened after 2014 (Figure 3).

Figure 3. Summary of days cash on hand by ownership using a fractional polynomial fitted curve with a 95% confidence interval.



The spline regression estimates for trends in financial performance pre and post 2014 for all hospital types are in Table 3. Operating margin, total margin, and days cash on hand did not have statistically significant year trends pre and post 2014 for investor-owned hospitals, controlling for with-in hospital

changes in system affiliation. This means that the time trends were flat from 2010 to 2014, and continued to be flat from 2014 to 2018.

Table 3. Spline regression estimates for trends in financial performance pre and post 2014 for investor-owned, not-for-profit, public, and system change hospitals.

	(1) Operating Margin	(2) Total Margin	(3) Days Cash
Investor-owned			
Year 2010-2014	0.0838	0.707	-0.678
	(0.406)	(0.380)	(0.505)
Year 2014-2018	0.247	-0.520	0.217
	(0.349)	(0.468)	(0.980)
Constant	-161.9	-1415.8	1356.0
	(815.6)	(765.0)	(1015.6)
N	754	742	726
Not-for-profit			
Year 2010-2014	2.540*	2.682*	10.08**
	(1.072)	(1.210)	(3.100)
Year 2014-2018	-0.759	-0.655	-0.340
	(0.577)	(0.557)	(2.420)
Constant	-5113.4*	-5397.6*	-20164.1**
	(2157.5)	(2435.8)	(6239.0)
N	656	649	653
Public			
Year 2010-2014	-0.289	-0.489	0.844
	(0.618)	(0.426)	(2.141)
Year 2014-2018	0.485	0.695*	1.185
	(0.714)	(0.297)	(3.095)
Constant	615.6	1050.4	-1533.9
	(1248.8)	(840.9)	(4329.8)
N	190	188	184
System change			
Post-change	7.788**	8.731**	-3.540
(ref=Pre-change)	(2.729)	(3.159)	(3.542)
Year 2010-2014	-3.552*	-4.244*	0.788
	(1.441)	(1.653)	(1.697)
Year 2014-2018	-0.0953	-0.0631	1.360
	(1.610)	(1.637)	(1.132)
Constant	7152.3*	8545.2*	-1585.7
	(2899.5)	(3327.1)	(3416.0)
N	113	113	112

The next set of rows in Table 3 shows the spline regression estimates for trends in financial performance pre and post 2014 for not-for-profit hospitals. Operating margin increased 2.54 percentage points per year (P = .02) from 2010 to 2014. Then the slope slowed to a negative 0.759 percentage points per year (not statistically different from zero) from 2014 to 2018. Total margin increased 2.682 percentage points (P = .029) per year from 2010 to 2014 then slowed to a negative 0.655 percentage points per year (not statistically different from zero) from 2014 to 2018. Days cash on hand increased 10.08 days per year (P = .002) from 2010 to 2014, then slowed to a negative 0.34 days per year (not statistically different from zero) from 2014 to 2018. All of the estimates controlled for with-in hospital changes in system affiliation.

For public hospitals, total margin decreased 0.489 percentage points per year (not statistically different from zero) from 2010 to 2014, then increased 0.695 percentage points per year (P = .028) from 2014 to 2018 (Table 3). Operating margin and days cash on hand did not have statistically significant year trends pre and post 2014.

The final rows in Table 3 show the financial trends for hospitals that changed systems during the study period. The pre-change category included observations in two and one years before a system change, and one year after the change. System affiliation change was associated with a 7.888 percentage point increase in operating margin (P =.008), and an 8.731 percentage point increase in total margin (P = .01). All of the estimates controlled for the pre-2014 and post-2014 time trends and within-hospital changes in ownership.

Discussion

Trends in hospital finances in Florida before and after the implementation of the ACA and transition to Medicaid managed care differed by hospital ownership status. Operating margin and total margin of not-for-profit hospitals grew rapidly from 2010 to 2014, but were associated with significant slowdowns from 2014 to 2018. Financial performance of investor-owned hospitals remained unchanged pre- and post-2014, with no significant changes. Public hospitals showed modest improvements in total margins, which grew 0.716 percentage points per year after 2014. Hospitals that experienced a change in system affiliation had significant increases in operating margin and total margin.

The Florida hospital market is dominated by investor-owned health systems, and saw significant consolidation over the study period. In particular, there was a rapid expansion of the Community Health Systems (CHS) health system after 2014. CHS significantly increased its system from 3 hospitals in 2010 to 16 hospitals in 2018. The Hospital Corporation of America (HCA) system remained a large presence in the market, with a modest growth from 38 to 43 hospitals over the years. CHS acquired Florida-based Health Management Associates' hospitals in 2013 [32].

The slowdowns in the profitability of not-for-profit hospitals are concerning because profitability is important for the sustainability and growth of hospitals, especially for investing in the latest technology and facilities. Worsening profitability is a signal that some hospitals are uncertain about their expected revenues and expenses. Policymakers should aim to reduce financial uncertainty for hospitals to allow hospitals to make better forecasts of their operations and improve their profitability.

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