# NOT-FOR-PROFIT HEALTHCARE
ZIEGLER 2019 MEDIAN RATIOS

SUMMER 2020 • INDUSTRY WHITE PAPER

Ziegler

CAPITAL :: INVESTMENTS :: ADVICE

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# INTRODUCTION

Industry professionals typically benchmark financial performance against the median ratios reported by the three primary rating agencies (Moody's, Standard and Poor's ("S&P") and Fitch). However, this approach can create challenges. Each agency follows its own set of rating criteria, which includes both quantitative and subjective qualitative factors in determining an outcome. Furthermore, the reported medians do not necessarily represent an appropriate cohort of entities, making it difficult to benchmark or draw analytical conclusions. We believe providing median ratios stratified by revenue gives hospitals and health systems a more accurate means for benchmarking and comparative analysis.

In the second annual installment of the Ziegler Not-For-Profit Healthcare Medians, our goal continues to be the same: to provide an analytical tool that creates transparency and enhances benchmarking capabilities for hospitals and health systems. As a result, we increased the number of hospitals and health systems in our database and provided medians by revenue and geographic region in addition to median percentiles to provide greater transparency as seen in the Ziegler 2018 Not-For-Profit Healthcare Medians. In 2019 we also included medians by six defined hospital types: Children's, Critical Access, Community Based, Health System, Hospital District, and Specialty.

# EXECUTIVE SUMMARY

## Profitability:

Based on the data, we conclude that while a profitability benefit exists to higher total revenue hospitals and health systems, there are certain thresholds of revenue where an increase in size results in a decrease in outcomes. The Operating Margin and Excess Margin medians both display a positive trend with increasing revenue, suggesting that hospitals and health systems with higher revenue generate greater earnings from both operations and less frequent non-operating revenue streams. However, the data also provides insights that this benefit is much less when considering cash flow generation. The range across revenue ranges narrows in both the Operating EBIDA Margin and EBIDA Margin, and all ranges produced median ratio results close to the aggregate median. In many cases, hospitals with smaller revenue outperformed and operated more efficiently than those with higher relative revenue. From a geographic perspective, the regions producing the best profitability metrics are the Southwest and West followed closely by the Midwest.

## Leverage:

Leverage ratios produced mixed results. MADS Coverage displayed an apparent benefit to higher revenue, while the variability is less when considering Total Debt/EBIDA and Total Debt/Capitalization. Overall, larger health systems benefit from higher credit ratings and more diverse capital structures, while all hospital sizes hold similar relative levels of leverage. Based on the data, we cannot conclude that a hospital with more or less revenue would be more or less leveraged. From a geographic perspective, the Southwest, Midwest, and West regions outperformed while the Northeast and Southeast regions underperformed.

## Liquidity:

From a liquidity perspective, Days Cash On Hand and Cushion Ratio both show benefit to size, but also produced results where smaller-sized hospitals outperformed larger-sized hospitals. On the other hand, Cash-To-Total Debt displays almost no positive relationship with higher revenue beyond the $0.50 billion revenue threshold. On an absolute basis, larger hospitals and health systems hold higher levels of on-balance sheet cash, but at the same time, are more expensive to operate and have higher levels of expenses. When considering geographic regions, the Midwest, Southeast, and West performed better from a liquidity perspective as compared to the Northeast and Southwest.

## Capital Spending:

Based on the data, hospitals with higher total revenue invest greater levels in fixed assets as measured by both Average Age of Plant and Capital Expenditures/Depreciation & Amortization. Hospitals and health systems with lower revenue produced both a higher Average Age of Plant and spent less on capital expenditures, suggesting the deterioration of fixed assets. Interestingly, from a geographic perspective, the regions with the highest Average Age of Plant also showed the highest levels of capital spending.

# METHODOLOGY

The information presented herein is the result of a comprehensive analytical process completed by members of Ziegler's Healthcare Investment Banking Team. The 2019 audited fiscal year-end financial statements of nearly 640 hospitals determine the 2019 median ratios, and the 2018 median ratios reflect restated financials where applicable. Most importantly, Ziegler utilizes revenue stratifications instead of rating outcomes to create its median ratios. We believe this provides improved accuracy and benchmarking capabilities. Ziegler defines total revenue as operating revenue plus net non-operating gains and losses.

**TOTAL REVENUE (BILLIONS)**

| REVENUE | COUNT |
|---|---|
| $0.00 - $0.25 | 146 |
| $0.25 - $0.50 | 124 |
| $0.50 - $0.75 | 72 |
| $0.75 - $1.00 | 51 |
| $1.00 - $2.00 | 98 |
| $2.00 - $3.00 | 58 |
| $3.00 - $4.00 | 22 |
| $4.00 - $5.00 | 15 |
| $5.00 (+) | 52 |
| **TOTAL** | **638** |

The table to the upper right displays the number of hospitals and health systems in our database stratified by nine different revenue ranges. The most significant number of hospitals and health systems fall below $1 billion in revenue. Many of these institutions are either not rated or seek a rating from only one agency. As a result, the respective medians from each rating agency are calculated off an incomplete sample set.

When compared to the rating agencies, the Ziegler Medians encompass over 400 hospitals not rated by Moody's, over 250 hospitals not rated by S&P, and over 350 hospitals not rated by Fitch. The table below displays, of the hospitals in our database, what revenue category each Moody's, S&P, and Fitch rating falls into, and how many additional hospitals and health systems Ziegler analyzed. For example, in the $0.50 to $0.75 million revenue range, Ziegler analyzed 43 entities not rated by Moody's, 32 entities not rated by S&P, and 39 entities not rated by Fitch.

**TOTAL REVENUE (BILLIONS)**

| MOODY'S | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| Aa | 0 | 0 | 0 | 0 | 6 | 10 | 9 | 4 | 24 | 53 |
| A | 0 | 9 | 17 | 9 | 31 | 12 | 9 | 3 | 13 | 103 |
| Baa | 4 | 17 | 10 | 8 | 8 | 0 | 0 | 2 | 2 | 51 |
| SG | 6 | 5 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 17 |
| **Total** | **10** | **31** | **29** | **18** | **47** | **23** | **18** | **9** | **39** | **224** |
| **Additional** | **136** | **93** | **43** | **33** | **51** | **35** | **4** | **6** | **13** | **414** |

**TOTAL REVENUE (BILLIONS)**

| S&P | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| AA | 0 | 2 | 3 | 5 | 22 | 21 | 11 | 5 | 30 | 99 |
| A | 18 | 37 | 26 | 16 | 33 | 23 | 9 | 5 | 14 | 181 |
| BBB | 14 | 25 | 7 | 8 | 13 | 5 | 1 | 2 | 2 | 77 |
| SG | 10 | 7 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 24 |
| **Total** | **42** | **71** | **40** | **29** | **70** | **50** | **21** | **12** | **46** | **381** |
| **Additional** | **104** | **53** | **32** | **22** | **28** | **8** | **1** | **3** | **6** | **257** |

**TOTAL REVENUE (BILLIONS)**

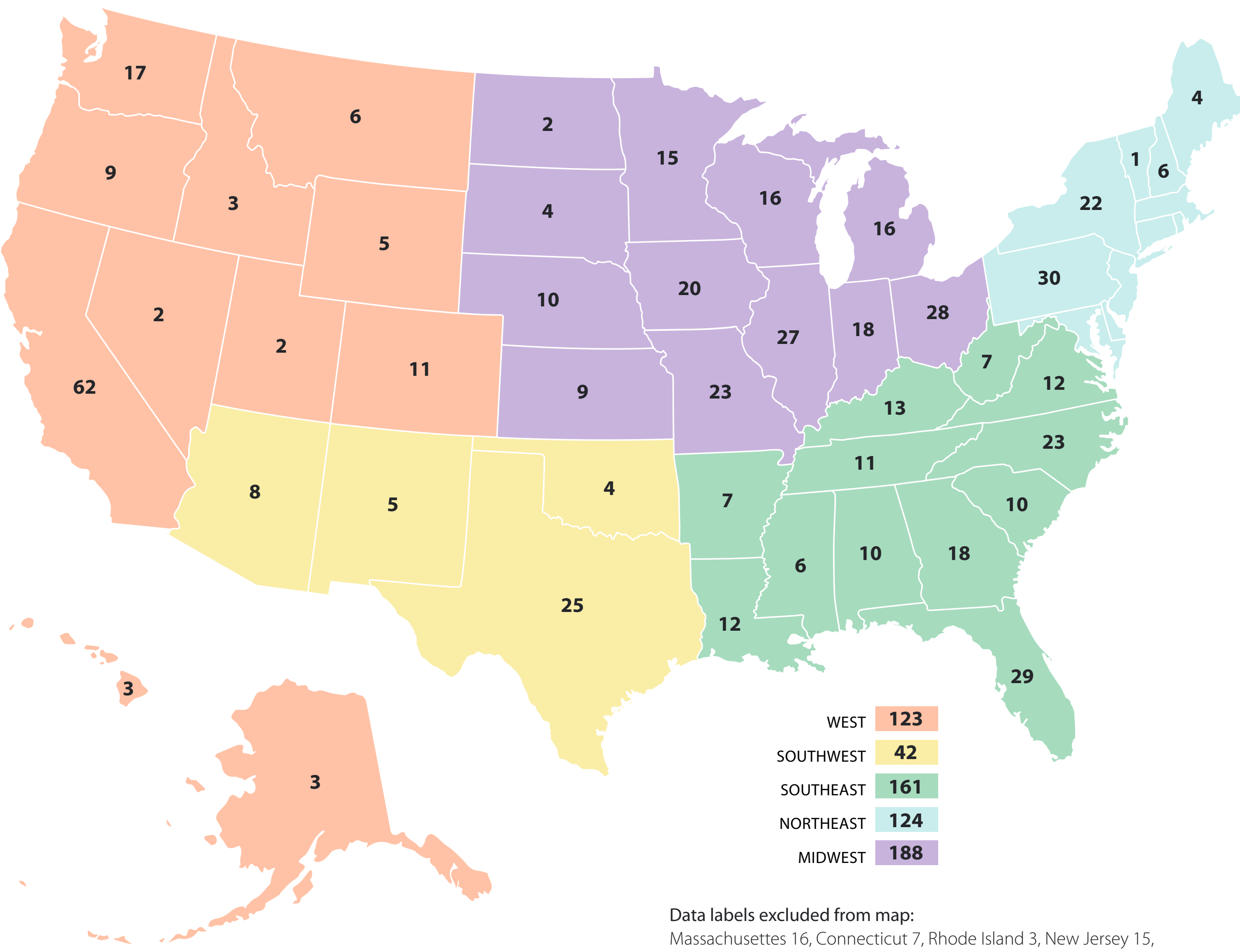
| FITCH | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| AA | 3 | 6 | 11 | 8 | 25 | 16 | 6 | 6 | 22 | 103 |
| A | 11 | 18 | 14 | 6 | 15 | 11 | 4 | 3 | 4 | 86 |
| BBB | 5 | 14 | 5 | 5 | 4 | 2 | 0 | 0 | 3 | 38 |
| SG | 5 | 3 | 3 | 1 | 2 | 2 | 0 | 0 | 0 | 16 |
| **Total** | **24** | **41** | **33** | **20** | **46** | **31** | **10** | **9** | **29** | **243** |
| **Additional** | **122** | **83** | **39** | **31** | **52** | **27** | **12** | **6** | **23** | **395** |

Additionally, to provide further clarity within the stratifications, Ziegler included percentile comparison data for each of its medians. Percentile comparison allows for transparency to where one falls when comparing outcomes to a particular ratio. This allows an organization to better understand how it fared positively or negatively to a specific median. This data was not previously shared.

Lastly, we segmented hospitals and health systems by geographic region and hospital type to illustrate how additional factors can impact financial performance. The table to the upper right displays the count of hospitals in six different hospital types, and the graphic below displays the count of hospitals by state and geographic region.

**HOSPITAL TYPE**

| TYPE | COUNT |
|---|---|
| Children's | 27 |
| Critical Access | 32 |
| Community Based | 198 |
| Health System | 322 |
| Hospital District | 51 |
| Specialty | 8 |
| **TOTAL** | **638** |




Data labels excluded from map:
Massachusettes 16, Connecticut 7, Rhode Island 3, New Jersey 15, Maryland 16, Delaware 4, Washington D.C. 1, Puerto Rico 2

# ZIEGLER MEDIANS STRATIFIED BY TOTAL REVENUE

*The table below provides the 2019 Ziegler Median ratio results stratified by total revenue:*

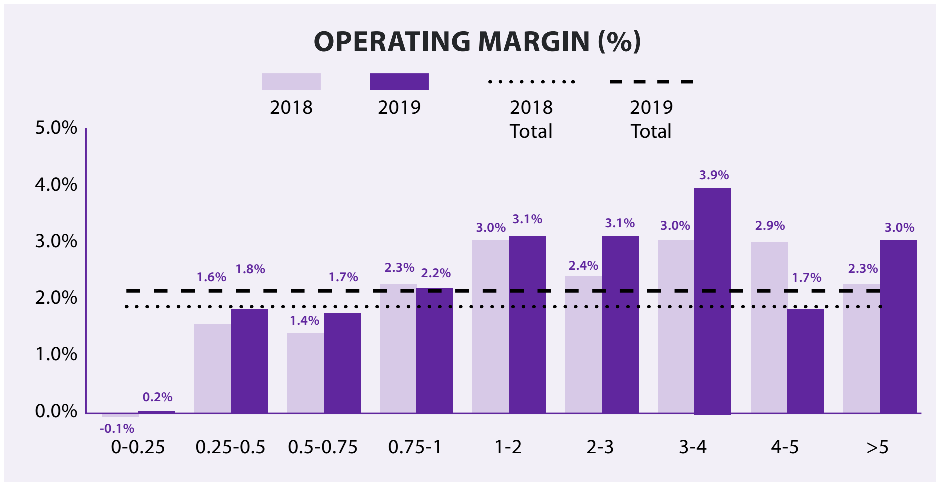
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **SAMPLE SIZE >** | **146** | **124** | **72** | **51** | **98** | **58** | **22** | **15** | **52** | **638** |
| | | **TOTAL REVENUE (BILLIONS)** | | | | | | | | | |
| | **LOWER BOUND >** | **$0.00** | **$0.25** | **$0.50** | **$0.75** | **$1.00** | **$2.00** | **$3.00** | **$4.00** | **$5.00** | **Total** |
| | **UPPER BOUND >** | **$0.25** | **$0.50** | **$0.75** | **$1.00** | **$2.00** | **$3.00** | **$4.00** | **$5.00** | **(+)** | |
| **PROFITABILITY** | Operating Margin (%) | 0.2% | 1.8% | 1.7% | 2.2% | 3.1% | 3.1% | 3.9% | 1.7% | 3.0% | 2.1% |
| | Operating EBIDA Margin (%) | 7.5% | 8.1% | 8.8% | 8.1% | 9.0% | 9.2% | 9.6% | 6.7% | 8.6% | 8.4% |
| | Excess Margin (%) | 1.7% | 3.9% | 3.0% | 3.7% | 4.9% | 5.5% | 6.0% | 2.8% | 5.5% | 3.8% |
| | EBIDA Margin (%) | 9.5% | 9.8% | 9.8% | 9.8% | 11.0% | 11.6% | 11.8% | 8.0% | 11.1% | 10.2% |
| **LEVERAGE** | MADS / Total Operating Revenue (%) | 3.7% | 2.8% | 2.9% | 2.6% | 2.2% | 2.2% | 2.1% | 2.1% | 2.0% | 2.6% |
| | MADS Coverage (X) | 2.6x | 3.3x | 3.4x | 3.7x | 4.9x | 4.9x | 5.9x | 4.0x | 5.5x | 3.7x |
| | Long-Term Debt / EBIDA (X) | 4.1x | 3.2x | 2.9x | 3.3x | 3.0x | 2.7x | 2.5x | 3.8x | 2.7x | 3.1x |
| | Long-Term Debt / Capitalization (%) | 42.7% | 34.5% | 30.9% | 33.2% | 30.9% | 31.7% | 33.2% | 33.8% | 30.7% | 33.8% |
| | Total Debt / EBIDA (X) | 4.3x | 3.3x | 3.0x | 3.4x | 3.1x | 2.8x | 2.7x | 3.9x | 3.0x | 3.2x |
| | Total Debt / Capitalization (%) | 44.2% | 35.7% | 31.2% | 33.7% | 31.2% | 32.5% | 35.4% | 34.0% | 31.5% | 34.9% |
| **LIQUIDITY** | Days Cash On Hand | 154.3 | 176.1 | 179.7 | 202.6 | 230.8 | 200.0 | 208.1 | 196.0 | 228.3 | 193.0 |
| | Cushion Ratio (X) | 10.5x | 17.9x | 16.9x | 19.5x | 26.9x | 24.1x | 25.2x | 23.1x | 28.6x | 19.2x |
| | Cash-To-Long-Term Debt (%) | 104.2% | 149.7% | 173.1% | 161.4% | 168.0% | 192.4% | 176.1% | 172.2% | 172.5% | 158.5% |
| | Cash-To-Total Debt (%) | 97.6% | 139.4% | 157.8% | 158.3% | 164.3% | 178.1% | 171.1% | 163.5% | 165.9% | 150.8% |
| **CAPITAL** | Average Age Of Plant (Years) | 12.4 | 13.1 | 12.4 | 12.2 | 11.5 | 10.6 | 10.7 | 11.7 | 9.7 | 11.7 |
| | Capital Expenditures / Depreciation & Amortization (%) | 73.9% | 97.7% | 114.2% | 115.3% | 118.6% | 130.0% | 138.2% | 134.5% | 143.4% | 111.1% |

*The table below provides the 2018 Ziegler Median ratio results stratified by total revenue:*

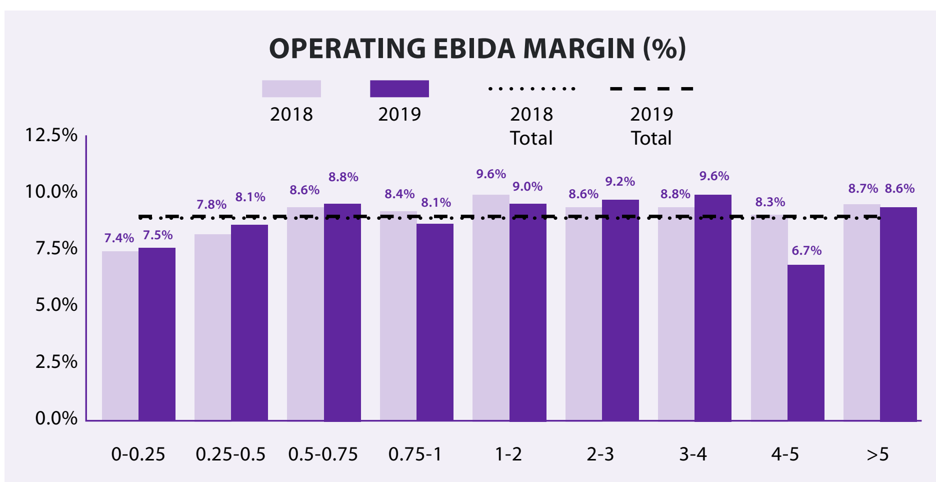
| | | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE SIZE > | 157 | 126 | 82 | 43 | 96 | 52 | 19 | 19 | 41 | 635 |
| | LOWER BOUND > | $0.00 | $0.25 | $0.50 | $0.75 | $1.00 | $2.00 | $3.00 | $4.00 | $5.00 | Total |
| | UPPER BOUND > | $0.25 | $0.50 | $0.75 | $1.00 | $2.00 | $3.00 | $4.00 | $5.00 | (+) | |
| PROFITABILITY | Operating Margin (%) | (0.1%) | 1.6% | 1.4% | 2.3% | 3.0% | 2.4% | 3.0% | 2.9% | 2.3% | 1.9% |
| PROFITABILITY | Operating EBIDA Margin (%) | 7.4% | 7.8% | 8.6% | 8.4% | 9.6% | 8.6% | 8.8% | 8.3% | 8.7% | 8.4% |
| PROFITABILITY | Excess Margin (%) | 1.6% | 3.9% | 3.2% | 5.6% | 4.6% | 4.8% | 6.0% | 3.9% | 4.2% | 3.9% |
| PROFITABILITY | EBIDA Margin (%) | 8.7% | 9.6% | 10.0% | 11.5% | 10.9% | 10.6% | 11.3% | 10.3% | 10.2% | 10.1% |
| LEVERAGE | MADS / Total Operating Revenue (%) | 3.8% | 3.0% | 2.8% | 2.6% | 2.4% | 2.3% | 2.0% | 2.1% | 2.1% | 2.7% |
| LEVERAGE | MADS Coverage (X) | 2.3x | 3.4x | 3.3x | 5.0x | 4.1x | 4.4x | 5.2x | 4.6x | 4.6x | 3.7x |
| LEVERAGE | Long-Term Debt / EBIDA (X) | 3.5x | 3.3x | 2.9x | 3.0x | 3.0x | 2.7x | 2.7x | 2.6x | 3.0x | 3.1x |
| LEVERAGE | Long-Term Debt / Capitalization (%) | 42.0% | 36.0% | 29.1% | 33.2% | 33.5% | 29.8% | 32.7% | 31.8% | 30.6% | 34.4% |
| LEVERAGE | Total Debt / EBIDA (X) | 3.8x | 3.4x | 3.2x | 3.0x | 3.1x | 2.9x | 2.8x | 2.6x | 3.1x | 3.3x |
| LEVERAGE | Total Debt / Capitalization (%) | 43.6% | 37.6% | 31.3% | 34.4% | 34.5% | 31.2% | 33.1% | 32.1% | 31.1% | 35.1% |
| LIQUIDITY | Days Cash On Hand | 154.3 | 178.6 | 176.5 | 233.4 | 208.4 | 212.4 | 233.6 | 213.3 | 213.9 | 192.3 |
| LIQUIDITY | Cushion Ratio (X) | 10.6x | 16.8x | 16.6x | 22.9x | 22.3x | 24.8x | 25.7x | 27.7x | 26.9x | 18.9x |
| LIQUIDITY | Cash-To-Long-Term Debt (%) | 100.2% | 136.6% | 164.4% | 175.0% | 155.6% | 184.4% | 176.1% | 189.7% | 196.1% | 150.8% |
| LIQUIDITY | Cash-To-Total Debt (%) | 88.6% | 129.9% | 160.6% | 169.1% | 150.3% | 171.6% | 165.7% | 185.5% | 190.1% | 142.9% |
| CAPITAL | Average Age Of Plant (Years) | 12.2 | 12.1 | 12.2 | 11.7 | 11.6 | 10.6 | 10.6 | 10.2 | 9.8 | 11.6 |
| CAPITAL | Capital Expenditures / Depreciation & Amortization (%) | 80.7% | 107.2% | 118.7% | 118.7% | 124.1% | 140.8% | 182.4% | 144.4% | 131.2% | 115.6% |

In each section below, we provide commentary on 2019 vs. 2018 median ratio results stratified by revenue for profitability, liquidity, leverage, and capital spending ratios for the hospitals and health systems in our sample set.

## Profitability:

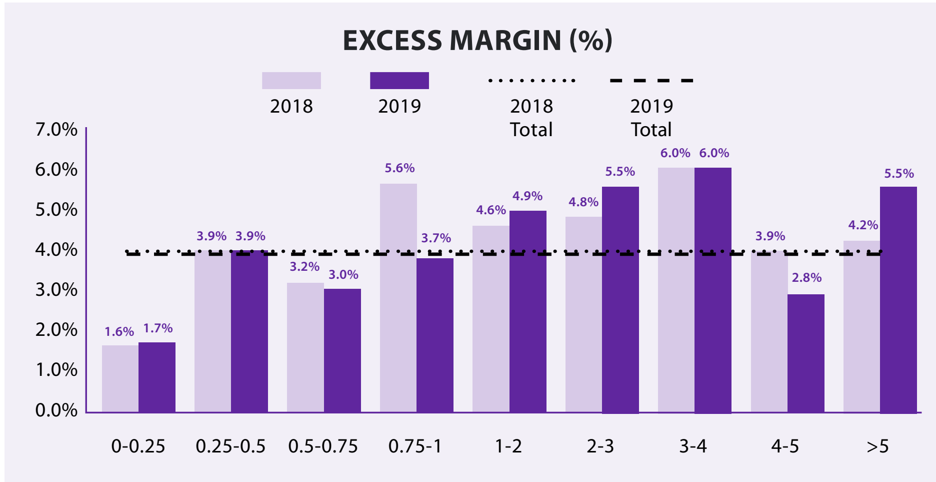



The 2019 median results for Operating Margin, a measure of an entity's ability to generate profit from operations, suggest a benefit to size and hospitals with higher revenue. The $3 to $4 billion revenue range produced both the strongest median in 2019 of 3.9% and the most significant year over year change, increasing by 0.9% from 3.0% in 2018. The next substantial year over year increase was in the greater than $5 billion and $2 to $3 billion ranges, whereas a majority of the other categories recognized relatively flat year over year performance. However, the $4 to $5 billion category produced the most sizeable year over year decrease, moving from 2.9% in 2018 to 1.7% in 2019. Revenue ranges from $0.25 to $4 billion also produced a median result equal to or greater than the $4 to $5 billion revenue range, suggesting revenue above $4 billion can negatively affect profitability. The $0 to $0.25 billion revenue range continues to produce the weakest Operating Margin median, primarily due to the impact of one-time events on operations. The aggregate median ratio in 2019 increased marginally, and all revenue categories, excluding the $0 to $0.75 billion and $4 to $5 billion ranges, outperformed the aggregate.

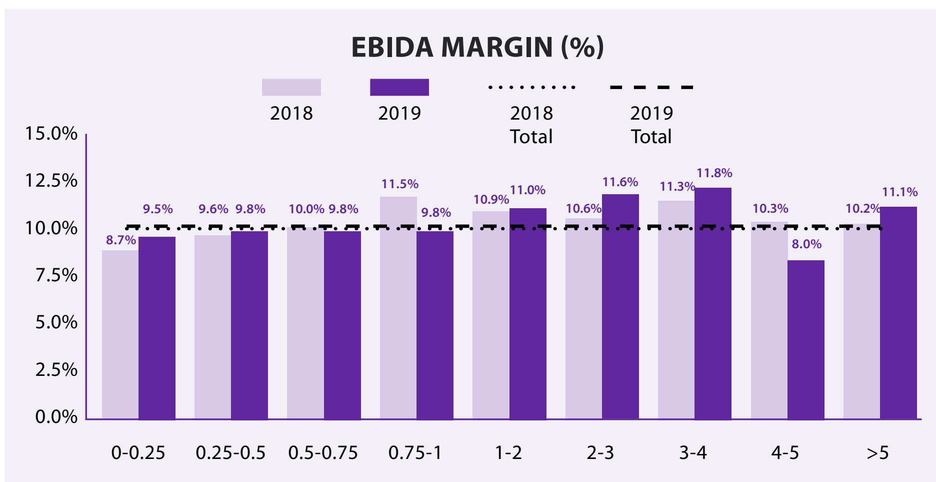



Operating EBIDA Margin, a ratio that further measures profitability through a hospital's ability to generate cash flow to support strategic initiatives, showed less variability of results when compared to the Operating Margin median results. The $3 to $4 billion revenue range produced the strongest 2019 median at 9.6%, whereas the $4 to $5 billion range produced the weakest 2019 result of 6.7%, a range of 2.9%. Both the strongest and weakest revenue categories produced the most meaningful year over year increase and decrease, respectively. The $3 to $4 billion revenue category increased by 0.8% from 2018, and the $4 to $5 billion revenue category decreased by 1.6% from 8.3% in 2018. Smaller hospitals performed equal to or greater than hospitals with higher revenue, continuing a trend from our 2018 white paper. The $0.50 to $0.75 billion revenue category produced a 2019 median result of 8.8%, which is stronger than the $0.75 to $1 billion, $4 to $5 billion, and greater than $5 billion revenue ranges. The aggregate performance was flat year over year at 8.4%, and a majority of revenue categories produced output similar to the aggregate median. Overall, the Operating EBIDA Median results display little positive trend associated with revenue.

The Excess Margin median, a ratio that captures non-operating gains and losses, such as unrealized investment income, displays a similar trend to the Operating Margin medians, in that a positive trend exists between performance and revenue. The strongest revenue category continues to be the $3 to $4 billion revenue range with a 2019 median of 6.0%, while the weakest revenue range is the $0 to $0.25 billion revenue range with a 2019 median of 1.7%. The $0.75 to $1 billion range recognized the most sizeable year over year decrease of 1.9% from 5.6% in 2018 to 3.7% in 2019. This is followed by the $4 to $5 billion range which decreased by 1.1% from 3.9% in 2018. The most meaningful increase in year over year results was in the greater than $5 billion range, suggesting that larger hospitals benefited from higher non-operating gains as compared to smaller hospitals in 2019 vs. 2018. Interestingly, hospitals with revenue between $0.25 and $0.50 billion produced 2019 results greater than hospitals two to three times larger. Additionally, all revenue ranges from $0.25 billion to $4 billion produced stronger medians than the $4 to $5 billion range, suggesting again that higher revenue limits profitability at certain revenue thresholds.

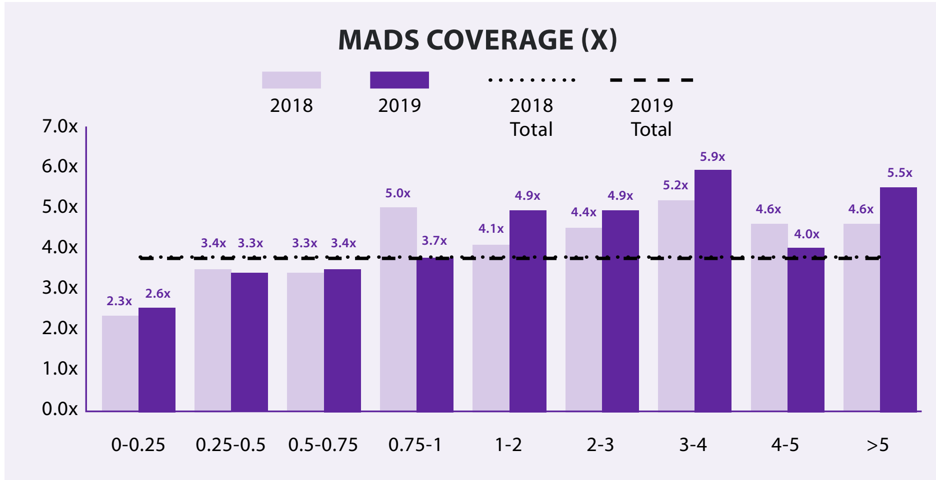



As seen in the Operating EBIDA Margin and Operating Margin median result comparison, EBIDA Margin displays less variability across revenue ranges as compared to Excess Margin. A majority of revenue ranges produced results close to the aggregate median. This suggests that when capturing the impact of interest, depreciation, and amortization, the measure of cash flow has a positive trend with revenue. The $3 to $4 billion range produced the best 2019 result of 11.8%, a trend across all of our 2019 profitability ratio medians. Additionally, the $4 to $5 billion revenue range produced the weakest median and the most meaningful year over year decline when compared to 2018, moving by 2.3% to a 2019 result of 8.0%. The $0 to $0.25 billion range produced a 9.5% 2019 EBIDA Margin, which is in line with the medians of revenue ranges of up to $1 billion. Notably, revenue ranges from $0.25 to $1 billion produced the exact same median result of 9.8%. In 2018, the $0.75 to $1 billion revenue range produced one of the strongest medians but realized a 1.7% decrease to 9.8% in 2019. The aggregate median result was relatively flat year over year, and in 2018, six of the nine revenue categories produced a median stronger than the aggregate. Whereas in 2019, only four of the nine revenue categories produced a median stronger than the aggregate.

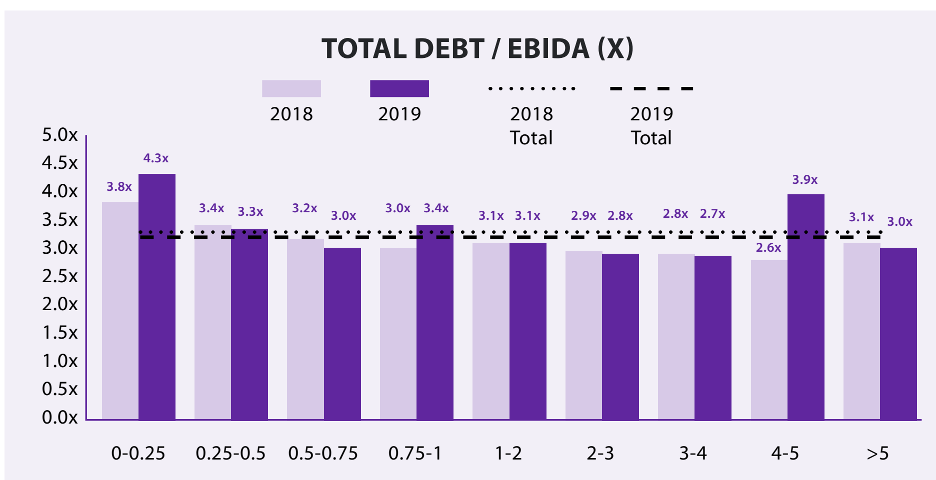


## Leverage:

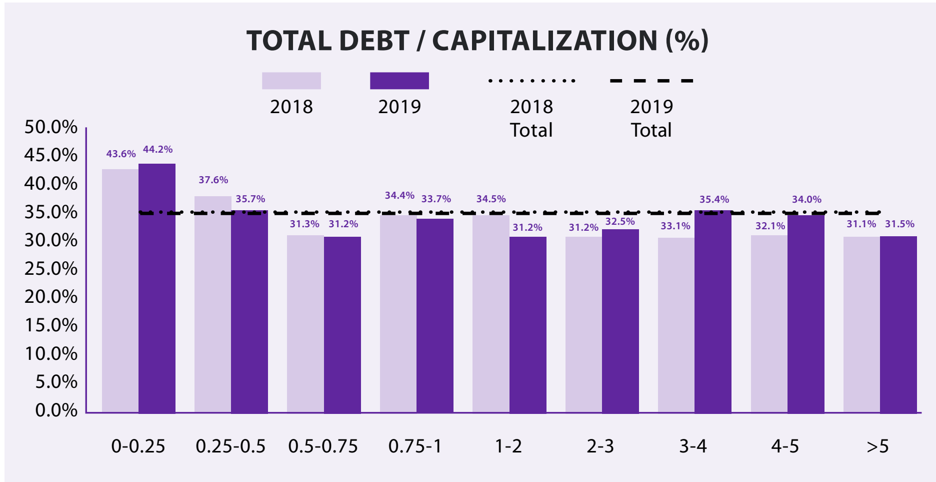
Maximum Annual Debt Service ("MADS") Coverage continues to be one of our median ratios that displays a benefit to larger hospitals and health systems. The two revenue ranges that produced the highest results are the $3 to $4 billion and the greater than $5 billion in revenue ranges with 2019 medians of 5.9x and 5.5x, respectively. The weakest revenue range continues to be the $0 to $0.25 billion range with a 2019 median of 2.6x. Although the $0 to $0.25 billion range did realize a meaningful increase of 0.3x year over year, the category, along with the $0.25 to $0.75 billion range, underperformed the aggregate ratio.  Revenue ranges of $0.75 billion and up all produced a median result above the collective median ratio result. MADS Coverage measures an entity's ability to pay down the maximum annual debt service requirement with cash flow from operations and non-operating gains and losses. It suggests that organizations with higher revenue generate greater cash flow, but this contradicts the conclusion derived from the EBIDA Margin medians. We believe a major driving force in MADS Coverage is associated with the cost of capital and the overall capital structure of an organization. Rating agencies typically provide stronger ratings to hospitals with higher revenue. This leads to lower credit spreads and a resulting lower cost of capital. Additionally, higher rated entities have a more diverse capital structure with variable rate and intermediate-term debt, along with long-term debt. The capital structure of hospitals with lower revenue typically only consists of long-term fixed-rate debt.




The benefit to large health systems is less significant when considering Total Debt/EBIDA, a ratio that measures the number of years it would take to pay down outstanding principal with cash flow. Smaller hospitals with revenue between $0 and $0.25 billion produced the weakest output of 4.3x in 2019, but the median of hospitals with revenue between $0.25 and $4 billion was relatively flat. The $0.50 to $0.75 billion revenue range outperformed the median of hospitals with $0.75 to $1 billion, $1 to $2 billion, and even $4 to $5 billion. The aggregate median result was relatively flat year over year, and in 2018, seven out of the nine revenue ranges outperformed the aggregate median ratio. Whereas, in 2019, only five out of the nine ranges outperformed the combined median ratio. The $4 to $5 billion category performed the weakest year over year with an increase of 1.3x from 2.6x in 2018. The weak performance from the $4 to $5 billion revenue range is a trend that has continued throughout our 2019 median analysis. Overall, Total Debt/EBIDA exhibits little to no positive relationship with the size of an intuition, providing insights that hospitals

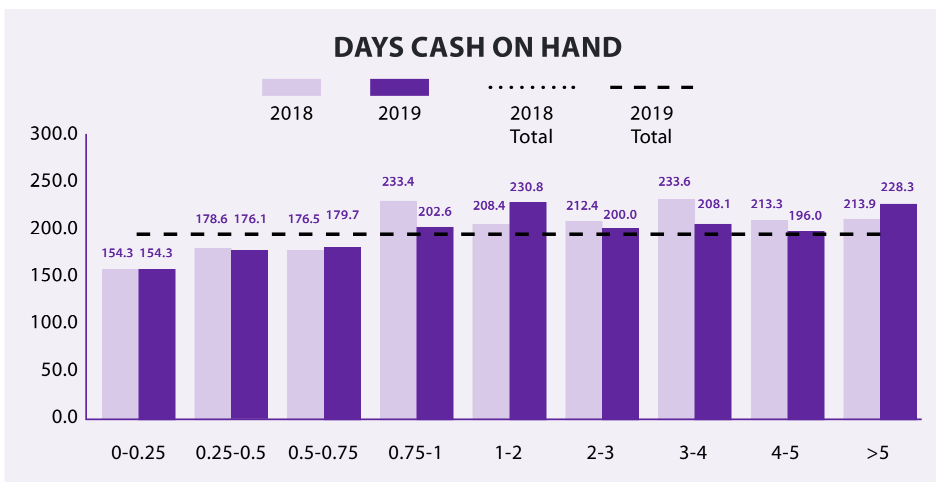


across revenue ranges hold similar relative levels of debt as compared to cash flow.



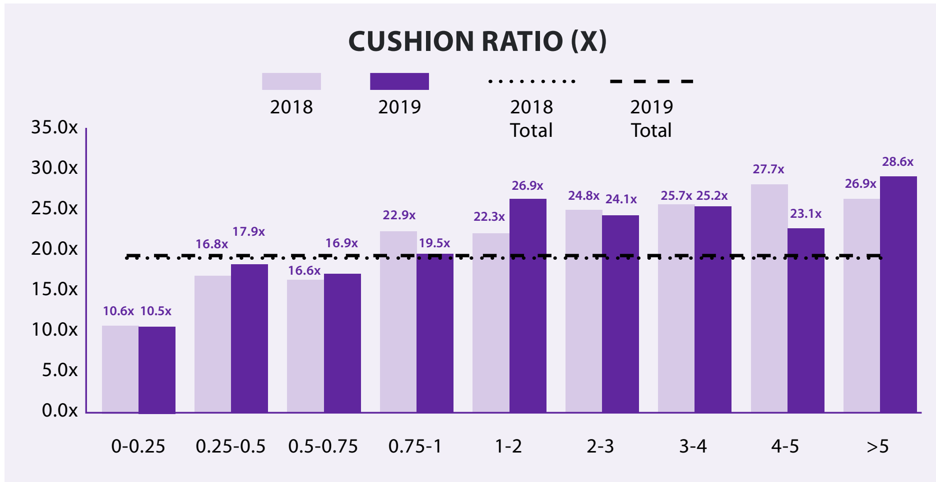

As seen in Total Debt/EBIDA, the Total Debt/Capitalization ratio also exhibits no apparent trend associated with the size of an institution. The ratio, which measures how leveraged or how much debt an institution has to finance growth, suggests hospitals hold the correspondingly same percentage of leverage. The median ratio does decrease significantly after the $0.25 to $0.50 billion revenue range but is relatively flat thereafter. Hospitals and health systems with revenue between $0.50 and $0.75 billion produced a 2019 median of 31.2% and outperformed, or were equal to, all other revenue categories. Entities with revenue between $3 and $5 billion produced two of the weakest medians at 35.4% and 34.0%, respectively, and realized a meaningful year over year increase. The 2019 aggregate median was relatively flat year over year, and all but three revenue categories produced a median below the aggregate of 34.9%.

## Liquidity:

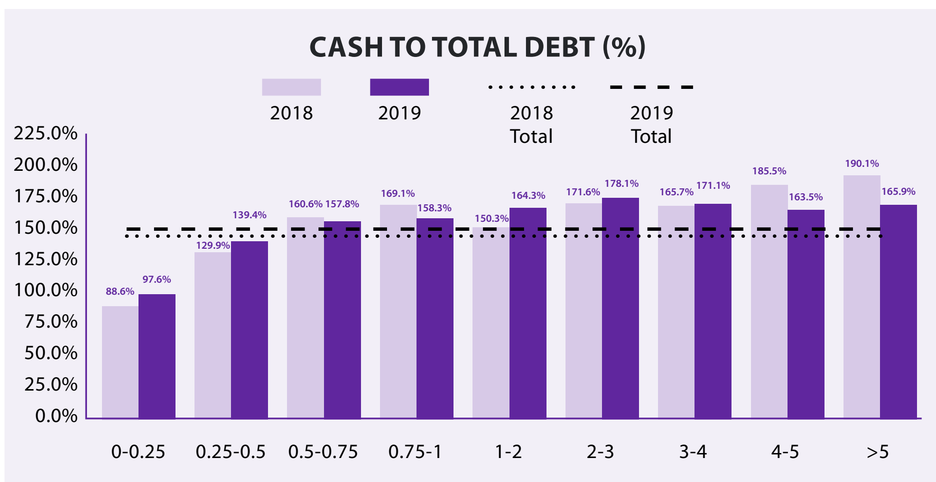



Days Cash On Hand, potentially the most important measure of liquidity for hospitals and health systems, measures the number of days a hospital can continue to pay operating expenses with on balance sheet cash. Year over year, the aggregate median ratio was relatively flat and revenue categories greater than $0.75 billion continued to outperform the combined median result. The $0.75 to $1 billion category realized a meaningful year over year decrease, moving from 233.4 days in 2018 to 202.6 days in 2019. Still, the $0.75 to $1 billion revenue range continues to outperform both the $2 to $3 billion and $4 to $5 billion ranges. The $0 to $0.25 billion range was unchanged year over year and continues to produce the weakest result. The most significant positive change was in the $1 to $2 billion revenue range, increasing by 22.4 days from 208.4 in 2018, and outperformed all other 2019 revenue ranges. The output displays a positive trend with the strength of result and higher revenue up to the $0.75 billion revenue threshold, but is relatively flat thereafter, which suggests the ability to fund operations with on-balance sheet cash is limited at certain revenue thresholds.

Cushion Ratio, a metric that captures both debt service and on-balance sheet cash, is an essential metric in evaluating the financial position and risk of a healthcare organization. Similar to the trend seen with MADS Coverage, the Cushion Ratio median results also display a benefit to larger hospitals and health systems. The strongest category was the greater than $5 billion range at 28.6x and the weakest performance was in the $0 to $0.25 billion range at 10.5x. The most meaningful decrease, when compared to 2018 results, was in the $4 to $5 billion range, with a 2019 result lower by 4.6x. Interestingly, the $1 to $2 billion range realized a sizeable year over year increase and outperformed revenue ranges from $2 to $5 billion. In addition, in 2018 and 2019, six out of the nine revenue ranges outperformed the aggregate median result. The results do display a positive trend but suggest less benefit to a hospital with $1 billion in revenue increasing to between $2 and $5 billion in revenue.

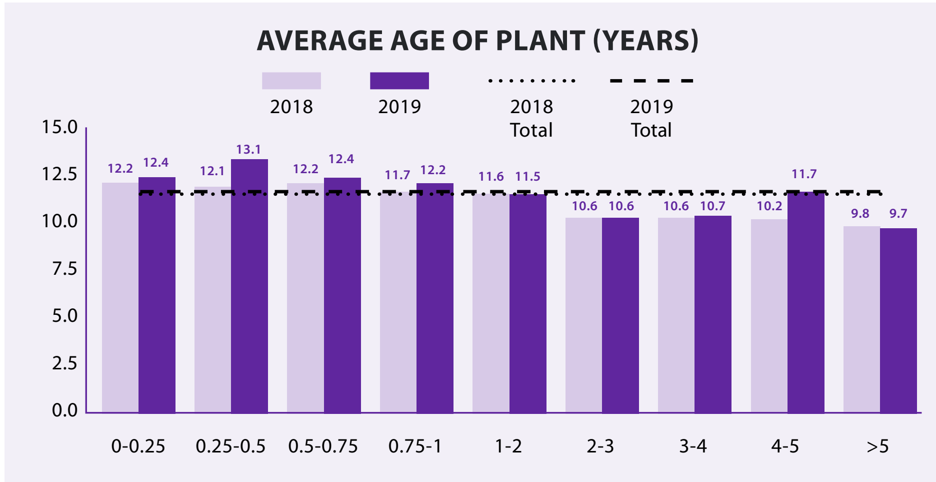



The Cash-To-Total Debt ratio, which measures the financial strength of an organization, displays the least variability and trend among liquidity metrics. Performance increases from $0 to $0.50 billion, but is relatively flat thereafter. The strongest range was the $2 to $3 billion range at 178.1%, followed by the $3 to $4 billion range at 171.1%, then the greater than $5 billion range at 165.9%, but the variability of results beyond $0.50 is minimal. The gap between the best and worst median is only 19.8%. Additionally, the $1 to $2 billion range outperformed the $4 to $5 billion range, again suggesting limited performance benefits from higher revenue. The $4 to $5 billion range also produced the most sizeable decline of 22.0% when compared to the 2018 median results.

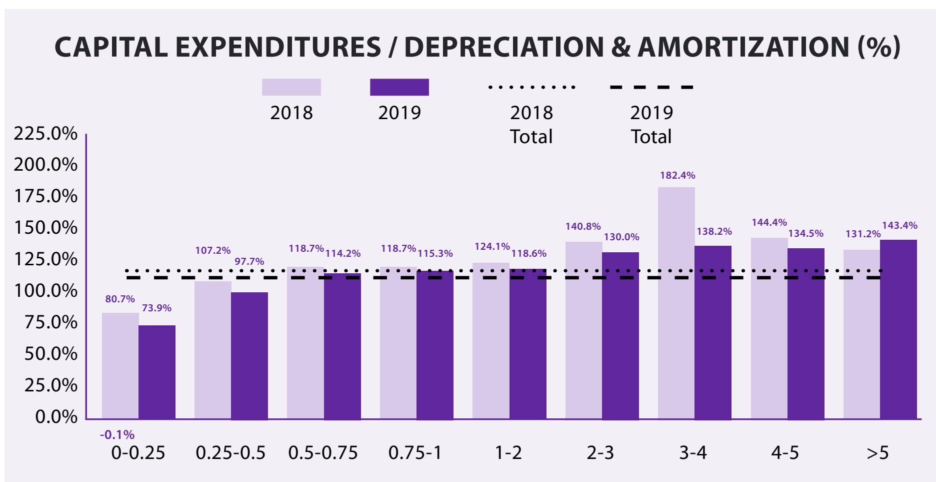


## Capital Spending:

Average Age of Plant indicates the age in years of a hospital's fixed assets, where a higher ratio suggest assets require capital investment. In the 2019 median results, five revenue ranges produced a median below the aggregate median result, whereas in the 2018 median results only four categories outperformed the combined median result. The results suggest a slight improvement across healthcare organizations. The outcomes display a positive relationship with higher revenue, as the greater than $5 billion range produced the best median at 9.7 years, and the $0.25 to $0.50 billion range produced the worst result at 13.1 years. Still, the $0.50 to $0.75 range and the $0.75 to $1 billion range produced output similar to the $4 to $5 billion range, and the $1 to $2 billion range outperformed the $4 to $5 billion range. Overall, the data suggests organizations with lower levels of revenue have fixed assets with higher relative deterioration in greater need of reinvestment.




Aligning with the Average Age of Plant medians, Capital Expenditure/Depreciation and Amortization, a ratio that helps predict an organization's level of capital spending, displays a positive relationship with revenue. Excluding the $3 to $4 billion median range in 2018 and 2019, each median result is higher than the preceding revenue range. The data suggests hospitals with higher total revenue invest greater amounts in fixed assets across operations. The variability of results is also the widest in our analysis at 60.5%. The strongest revenue category is the greater than $5 billion range at 143.4%, and the weakest revenue category is the $0 to $0.25 billion range at 73.9%. The $3 to $4 billion range recognized the most meaningful year over year decline but is now more in line with the trend associated with each revenue category.



# ZIEGLER MEDIAN PERCENTILES

The goal of this white paper is simple: to provide an accurate and transparent source for hospitals and health systems to benchmark financial performance. As mentioned earlier, the median is just the mid-point, and there are entities who fall above and below that outcome. The ability to see where one falls within the rating agency medians is, at this point, non-existent from the rating agencies. With the tables provided below, hospitals, health systems, investors, and credit analysts have access to one of the more useful tools available to the healthcare industry today. Health systems and hospitals measure their performance almost daily but lack an accurate comparison point. Now, a healthcare credit can, for example, calculate their Operating EBIDA Margin, and see what percentile they fall in for their respective revenue category.

The following tables display percentiles by revenue for profitability, leverage, liquidity, and capital spending ratios for the health systems and hospitals in our sample set. The 90th percentile means one is within the top 10%, the 75th percentile means one is within the top 25%. The 50th percentile also represents the mid-point or median ratio result. The range between the 90th and 10th percentile and the 75th and the 25th percentile is also provided, and a narrower range can be interpreted as less variation among results.

## OPERATING MARGIN (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 5.6% | 6.8% | 6.5% | 6.4% | 8.4% | 7.4% | 6.7% | 5.7% | 7.2% | 7.0% |
| 75% | 2.9% | 3.6% | 4.2% | 4.3% | 5.3% | 4.6% | 5.2% | 4.1% | 5.0% | 4.4% |
| 50% | 0.2% | 1.8% | 1.7% | 2.2% | 3.1% | 3.1% | 3.9% | 1.7% | 3.0% | 2.1% |
| 25% | (4.1%) | (1.3%) | (0.2%) | 0.1% | 1.1% | 0.7% | 2.1% | (0.1%) | 1.2% | (0.4%) |
| 10% | (8.7%) | (4.7%) | (2.9%) | (2.6%) | (1.1%) | (0.3%) | (0.8%) | (0.6%) | (1.0%) | (4.7%) |
| **Range (75%-25%)** | **2.7%** | **1.8%** | **2.4%** | **2.1%** | **2.2%** | **1.5%** | **1.3%** | **2.4%** | **2.0%** | **2.3%** |
| **Range (90%-10%)** | **14.4%** | **11.5%** | **9.4%** | **9.0%** | **9.4%** | **7.6%** | **7.5%** | **6.3%** | **8.2%** | **11.7%** |

## OPERATING EBIDA MARGIN (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 14.5% | 13.4% | 12.4% | 13.5% | 14.6% | 13.0% | 13.6% | 12.8% | 13.5% | 13.8% |
| 75% | 11.3% | 10.2% | 10.6% | 11.0% | 11.9% | 10.6% | 11.0% | 10.0% | 10.9% | 11.0% |
| 50% | 7.5% | 8.1% | 8.8% | 8.1% | 9.0% | 9.2% | 9.6% | 6.7% | 8.6% | 8.4% |
| 25% | 3.4% | 5.0% | 6.5% | 5.4% | 6.8% | 6.5% | 7.9% | 4.8% | 6.0% | 5.4% |
| 10% | 0.5% | 1.4% | 3.9% | 3.9% | 3.9% | 4.9% | 4.8% | 3.6% | 4.7% | 2.4% |
| **Range (75%-25%)** | **3.8%** | **2.1%** | **1.8%** | **2.9%** | **2.9%** | **1.4%** | **1.4%** | **3.3%** | **2.3%** | **2.5%** |
| **Range (90%-10%)** | **14.0%** | **12.1%** | **8.6%** | **9.6%** | **10.6%** | **8.2%** | **8.8%** | **9.2%** | **8.7%** | **11.3%** |

## EXCESS MARGIN (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 8.9% | 10.4% | 9.1% | 9.7% | 10.8% | 13.7% | 10.4% | 11.9% | 12.2% | 10.5% |
| 75% | 5.2% | 7.1% | 5.9% | 6.7% | 7.9% | 8.8% | 8.1% | 5.2% | 9.1% | 7.2% |
| 50% | 1.7% | 3.9% | 3.0% | 3.7% | 4.9% | 5.5% | 6.0% | 2.8% | 5.5% | 3.8% |
| 25% | (2.0%) | 0.5% | 1.1% | 1.7% | 2.5% | 3.7% | 4.1% | 1.4% | 2.7% | 1.1% |
| 10% | (6.5%) | (2.4%) | (1.6%) | (0.0%) | 0.4% | 1.2% | 1.6% | 0.8% | 0.4% | (2.3%) |
| **Range (75%-25%)** | **3.5%** | **3.2%** | **2.8%** | **3.0%** | **3.0%** | **3.4%** | **2.1%** | **2.4%** | **3.6%** | **3.4%** |
| **Range (90%-10%)** | **15.4%** | **12.8%** | **10.6%** | **9.7%** | **10.4%** | **12.5%** | **8.8%** | **11.1%** | **11.8%** | **12.8%** |

## EBIDA MARGIN (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 17.1% | 17.6% | 15.4% | 16.4% | 16.8% | 19.4% | 16.3% | 17.5% | 18.5% | 17.1% |
| 75% | 13.8% | 13.2% | 12.0% | 13.5% | 13.9% | 14.6% | 14.1% | 11.0% | 14.3% | 13.9% |
| 50% | 9.5% | 9.8% | 9.8% | 9.8% | 11.0% | 11.6% | 11.8% | 8.0% | 11.1% | 10.2% |
| 25% | 4.7% | 7.2% | 7.6% | 7.2% | 8.6% | 9.0% | 9.2% | 6.5% | 7.4% | 7.1% |
| 10% | 2.3% | 3.0% | 5.0% | 4.8% | 5.6% | 6.0% | 5.8% | 5.0% | 5.3% | 4.1% |
| **Range (75%-25%)** | **4.3%** | **3.4%** | **2.2%** | **3.7%** | **2.9%** | **3.0%** | **2.2%** | **3.0%** | **3.2%** | **3.7%** |
| **Range (90%-10%)** | **14.8%** | **14.6%** | **10.3%** | **11.6%** | **11.2%** | **13.4%** | **10.5%** | **12.4%** | **13.2%** | **13.0%** |

## MADS / TOTAL OPERATING REVENUE (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 9.8% | 4.7% | 5.0% | 4.2% | 3.6% | 3.7% | 3.5% | 2.7% | 2.9% | 5.2% |
| 75% | 5.6% | 3.9% | 3.7% | 3.4% | 2.7% | 3.0% | 2.6% | 2.6% | 2.5% | 3.7% |
| 50% | 3.7% | 2.8% | 2.9% | 2.6% | 2.2% | 2.2% | 2.1% | 2.1% | 2.0% | 2.6% |
| 25% | 2.8% | 2.2% | 2.0% | 2.2% | 1.9% | 1.8% | 1.9% | 1.9% | 1.7% | 2.0% |
| 10% | 1.9% | 1.6% | 1.7% | 1.7% | 1.4% | 1.5% | 1.2% | 1.3% | 1.3% | 1.5% |
| **Range (75%-25%)** | **2.0%** | **1.1%** | **0.8%** | **0.8%** | **0.4%** | **0.7%** | **0.5%** | **0.4%** | **0.5%** | **1.0%** |
| **Range (90%-10%)** | **7.9%** | **3.1%** | **3.3%** | **2.5%** | **2.2%** | **2.2%** | **2.3%** | **1.3%** | **1.6%** | **3.7%** |

## MADS COVERAGE (X)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 5.6x | 7.5x | 7.3x | 8.4x | 9.0x | 9.9x | 7.7x | 8.7x | 9.9x | 8.4x |
| 75% | 3.9x | 5.2x | 5.1x | 5.3x | 7.4x | 7.0x | 7.2x | 6.3x | 8.0x | 5.8x |
| 50% | 2.6x | 3.3x | 3.4x | 3.7x | 4.9x | 4.9x | 5.9x | 4.0x | 5.5x | 3.7x |
| 25% | 1.2x | 2.0x | 2.3x | 2.6x | 3.5x | 3.7x | 4.6x | 3.2x | 3.7x | 2.3x |
| 10% | 0.3x | 1.2x | 1.4x | 1.8x | 2.0x | 2.6x | 2.8x | 2.9x | 2.7x | 1.2x |
| **Range (75%-25%)** | **1.3x** | **1.9x** | **1.7x** | **1.6x** | **2.5x** | **2.1x** | **1.3x** | **2.3x** | **2.5x** | **2.1x** |
| **Range (90%-10%)** | **5.3x** | **6.3x** | **5.8x** | **6.6x** | **7.0x** | **7.3x** | **4.9x** | **5.8x** | **7.2x** | **7.2x** |

## LONG-TERM DEBT / EBIDA (X)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 16.2x | 8.2x | 6.8x | 6.4x | 4.9x | 4.2x | 5.1x | 5.6x | 4.7x | 7.0x |
| 75% | 6.0x | 4.8x | 4.8x | 4.9x | 3.8x | 3.5x | 3.0x | 4.9x | 3.6x | 4.7x |
| 50% | 4.1x | 3.2x | 2.9x | 3.3x | 3.0x | 2.7x | 2.5x | 3.8x | 2.7x | 3.1x |
| 25% | 2.4x | 1.8x | 1.8x | 2.0x | 1.8x | 1.9x | 2.3x | 2.3x | 1.8x | 1.9x |
| 10% | 1.4x | 0.9x | 1.3x | 1.5x | 1.4x | 1.4x | 2.0x | 1.5x | 1.3x | 1.3x |
| **Range (75%-25%)** | **1.9x** | **1.6x** | **1.9x** | **1.6x** | **0.8x** | **0.8x** | **0.5x** | **1.1x** | **0.9x** | **1.6x** |
| **Range (90%-10%)** | **14.9x** | **7.3x** | **5.5x** | **4.9x** | **3.5x** | **2.8x** | **3.2x** | **4.1x** | **3.5x** | **5.7x** |

## LONG-TERM DEBT / CAPITALIZATION (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 102.3% | 62.6% | 66.9% | 62.0% | 55.4% | 51.8% | 48.4% | 54.7% | 44.9% | 69.4% |
| 75% | 69.9% | 49.9% | 49.0% | 44.7% | 40.9% | 40.3% | 39.7% | 43.5% | 37.2% | 47.6% |
| 50% | 42.7% | 34.5% | 30.9% | 33.2% | 30.9% | 31.7% | 33.2% | 33.8% | 30.7% | 33.8% |
| 25% | 25.8% | 23.3% | 19.3% | 25.6% | 23.7% | 25.1% | 27.0% | 21.5% | 22.3% | 23.5% |
| 10% | 18.0% | 17.5% | 13.8% | 17.1% | 18.9% | 17.3% | 17.4% | 18.5% | 18.6% | 17.2% |
| **Range (75%-25%)** | **27.2%** | **15.4%** | **18.1%** | **11.5%** | **10.0%** | **8.7%** | **6.5%** | **9.7%** | **6.5%** | **13.8%** |
| **Range (90%-10%)** | **84.3%** | **45.2%** | **53.2%** | **44.9%** | **36.5%** | **34.5%** | **31.0%** | **36.2%** | **26.3%** | **52.2%** |

## LONG-TERM DEBT / CAPITALIZATION (PENSION ADJUSTED) (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 118.3% | 75.1% | 70.7% | 56.1% | 61.4% | 52.0% | 57.5% | 50.0% | 51.1% | 70.1% |
| 75% | 95.0% | 56.6% | 59.7% | 43.3% | 42.9% | 42.8% | 52.2% | 48.3% | 41.1% | 49.1% |
| 50% | 57.3% | 40.6% | 44.1% | 36.8% | 36.6% | 32.5% | 38.4% | 34.5% | 34.5% | 37.6% |
| 25% | 38.8% | 29.2% | 33.9% | 30.9% | 27.6% | 28.3% | 30.5% | 21.6% | 29.0% | 29.0% |
| 10% | 25.6% | 21.4% | 23.1% | 26.8% | 21.1% | 21.0% | 20.7% | 19.5% | 22.5% | 21.1% |
| **Range (75%-25%)** | **37.7%** | **16.0%** | **15.6%** | **6.5%** | **6.2%** | **10.3%** | **13.8%** | **13.8%** | **6.6%** | **11.5%** |
| **Range (90%-10%)** | **92.7%** | **53.7%** | **47.6%** | **29.3%** | **40.3%** | **31.0%** | **36.9%** | **30.5%** | **28.6%** | **49.0%** |

## TOTAL DEBT / EBIDA (X)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 17.7x | 9.1x | 7.3x | 6.5x | 4.9x | 4.5x | 5.4x | 5.6x | 4.8x | 7.5x |
| 75% | 6.5x | 5.0x | 5.1x | 5.0x | 4.0x | 3.7x | 3.1x | 5.0x | 3.8x | 4.8x |
| 50% | 4.3x | 3.3x | 3.0x | 3.4x | 3.1x | 2.8x | 2.7x | 3.9x | 3.0x | 3.2x |
| 25% | 2.6x | 2.0x | 1.9x | 2.1x | 1.9x | 2.0x | 2.4x | 2.4x | 1.9x | 2.1x |
| 10% | 1.6x | 1.1x | 1.4x | 1.5x | 1.4x | 1.6x | 2.1x | 1.6x | 1.3x | 1.4x |
| **Range (75%-25%)** | **2.2x** | **1.7x** | **2.0x** | **1.6x** | **0.9x** | **0.9x** | **0.4x** | **1.1x** | **0.8x** | **1.6x** |
| **Range (90%-10%)** | **16.1x** | **8.0X** | **5.9X** | **5.0X** | **3.5X** | **2.9X** | **3.3X** | **4.0X** | **3.5X** | **6.1X** |

## TOTAL DEBT / CAPITALIZATION (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 102.1% | 64.5% | 67.6% | 63.7% | 56.6% | 52.6% | 49.0% | 55.0% | 45.4% | 70.4% |
| 75% | 71.0% | 50.5% | 50.1% | 45.3% | 41.4% | 41.8% | 40.8% | 43.9% | 38.4% | 49.0% |
| 50% | 44.2% | 35.7% | 31.2% | 33.7% | 31.2% | 32.5% | 35.4% | 34.0% | 31.5% | 34.9% |
| 25% | 28.2% | 24.2% | 20.4% | 26.1% | 24.5% | 26.6% | 27.3% | 23.0% | 22.6% | 24.6% |
| 10% | 19.7% | 18.5% | 14.2% | 18.0% | 19.3% | 18.9% | 19.3% | 18.8% | 18.9% | 18.1% |
| **Range (75%-25%)** | **26.8%** | **14.8%** | **18.8%** | **11.6%** | **10.2%** | **9.2%** | **5.4%** | **9.9%** | **7.0%** | **14.1%** |
| **Range (90%-10%)** | **82.4%** | **46.0%** | **53.4%** | **45.7%** | **37.4%** | **33.8%** | **29.7%** | **36.2%** | **26.5%** | **52.3%** |

## TOTAL DEBT / CAPITALIZATION (PENSION ADJUSTED) (%)

TOTAL REVENUE (BILLIONS)

| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 90% | 117.9% | 77.9% | 71.0% | 56.7% | 61.9% | 52.7% | 58.6% | 50.6% | 52.0% | 71.4% |
| 75% | 95.2% | 57.8% | 60.2% | 44.3% | 43.1% | 43.8% | 53.3% | 48.8% | 41.5% | 50.7% |
| 50% | 58.0% | 42.8% | 48.5% | 37.6% | 37.5% | 33.3% | 39.4% | 34.8% | 35.4% | 38.6% |
| 25% | 39.8% | 31.0% | 34.8% | 32.0% | 27.9% | 29.0% | 30.7% | 22.1% | 30.2% | 30.0% |
| 10% | 26.7% | 22.2% | 24.1% | 27.3% | 22.0% | 21.4% | 21.0% | 19.7% | 23.2% | 22.0% |
| **Range (75%-25%)** | **37.2%** | **15.0%** | **11.7%** | **6.8%** | **5.7%** | **10.5%** | **14.0%** | **14.1%** | **6.2%** | **12.1%** |
| **Range (90%-10%)** | **91.2%** | **55.7%** | **46.9%** | **29.4%** | **39.9%** | **31.3%** | **37.6%** | **30.9%** | **28.8%** | **49.4%** |

## DAYS CASH ON HAND

TOTAL REVENUE (BILLIONS)

| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 90% | 402.3 | 406.6 | 379.9 | 364.0 | 370.8 | 373.4 | 338.6 | 509.7 | 387.8 | 397.4 |
| 75% | 243.6 | 296.9 | 275.8 | 292.8 | 294.2 | 316.6 | 323.6 | 247.8 | 285.6 | 284.1 |
| 50% | 154.3 | 176.1 | 179.7 | 202.6 | 230.8 | 200.0 | 208.1 | 196.0 | 228.3 | 193.0 |
| 25% | 83.0 | 106.8 | 117.1 | 141.2 | 144.4 | 154.7 | 156.2 | 151.2 | 150.4 | 125.4 |
| 10% | 36.2 | 59.2 | 89.4 | 90.8 | 104.5 | 118.5 | 126.0 | 113.2 | 104.7 | 67.8 |
| **Range (75%-25%)** | **89.2** | **120.8** | **96.2** | **90.1** | **63.4** | **116.6** | **115.5** | **51.9** | **57.3** | **91.1** |
| **Range (90%-10%)** | **366.2** | **347.4** | **290.5** | **273.2** | **266.3** | **254.9** | **212.5** | **396.5** | **283.1** | **329.6** |

## CUSHION RATIO (X)

TOTAL REVENUE (BILLIONS)

| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 90% | 28.9x | 41.0x | 43.0x | 41.0x | 55.3x | 46.0x | 49.1x | 48.9x | 52.2x | 43.6x |
| 75% | 20.4x | 29.1x | 26.1x | 32.7x | 32.9x | 34.8x | 39.8x | 40.0x | 39.0x | 30.4x |
| 50% | 10.5x | 17.9x | 16.9x | 19.5x | 26.9x | 24.1x | 25.2x | 23.1x | 28.6x | 19.2x |
| 25% | 4.7x | 8.9x | 8.8x | 13.0x | 15.9x | 17.0x | 16.7x | 18.9x | 19.2x | 10.4x |
| 10% | 1.2x | 5.6x | 4.7x | 4.5x | 11.9x | 11.0x | 13.8x | 13.8x | 12.0x | 4.6x |
| **Range (75%-25%)** | **9.8x** | **11.2x** | **9.1x** | **13.2x** | **6.0x** | **10.7x** | **14.7x** | **16.8x** | **10.4x** | **11.2x** |
| **Range (90%-10%)** | **27.6x** | **35.3X** | **38.4X** | **36.5X** | **43.4X** | **35.0X** | **35.3X** | **35.1X** | **40.2X** | **39.0X** |

## CASH-TO-LONG-TERM DEBT (%)

TOTAL REVENUE (BILLIONS)

| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 90% | 302.9% | 378.4% | 385.9% | 340.6% | 337.2% | 387.4% | 334.9% | 368.9% | 363.3% | 374.9% |
| 75% | 200.9% | 254.0% | 266.2% | 239.1% | 232.7% | 235.3% | 236.4% | 293.0% | 262.5% | 241.8% |
| 50% | 104.2% | 149.7% | 173.1% | 161.4% | 168.0% | 192.4% | 176.1% | 172.2% | 172.5% | 158.5% |
| 25% | 48.0% | 85.3% | 77.5% | 91.9% | 125.1% | 128.2% | 127.0% | 112.3% | 142.8% | 93.2% |
| 10% | 16.0% | 48.8% | 43.5% | 53.5% | 91.9% | 93.2% | 94.5% | 86.0% | 107.7% | 43.9% |
| **Range (75%-25%)** | **96.6%** | **104.3%** | **93.1%** | **77.7%** | **64.8%** | **42.9%** | **60.3%** | **120.8%** | **89.9%** | **83.3%** |
| **Range (90%-10%)** | **286.9%** | **329.6%** | **342.4%** | **287.1%** | **245.3%** | **294.2%** | **240.4%** | **282.9%** | **255.6%** | **331.0%** |

## CASH-TO-TOTAL DEBT (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 274.3% | 346.0% | 363.0% | 319.7% | 324.8% | 365.7% | 314.2% | 359.5% | 343.5% | 336.2% |
| 75% | 192.3% | 228.8% | 246.3% | 229.9% | 225.4% | 221.3% | 232.9% | 271.0% | 256.7% | 228.4% |
| 50% | 97.6% | 139.4% | 157.8% | 158.3% | 164.3% | 178.1% | 171.1% | 163.5% | 165.9% | 150.8% |
| 25% | 45.5% | 78.5% | 74.9% | 88.7% | 123.0% | 125.6% | 121.0% | 110.4% | 135.7% | 85.8% |
| 10% | 15.2% | 44.1% | 42.6% | 49.7% | 90.3% | 88.9% | 87.7% | 85.1% | 96.3% | 41.8% |
| **Range (75%-25%)** | **94.7%** | **89.4%** | **88.5%** | **71.6%** | **61.1%** | **43.2%** | **61.8%** | **107.5%** | **90.9%** | **77.6%** |
| **Range (90%-10%)** | **259.1%** | **302.0%** | **320.4%** | **270.0%** | **234.6%** | **276.8%** | **226.5%** | **274.4%** | **247.2%** | **294.4%** |

## AVERAGE AGE OF PLANT (YEARS)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 19.9 | 18.6 | 16.5 | 16.2 | 15.5 | 15.1 | 13.1 | 14.8 | 14.0 | 17.0 |
| 75% | 16.3 | 15.6 | 14.4 | 14.2 | 13.2 | 13.1 | 11.9 | 13.2 | 12.0 | 14.4 |
| 50% | 12.4 | 13.1 | 12.4 | 12.2 | 11.5 | 10.6 | 10.7 | 11.7 | 9.7 | 11.7 |
| 25% | 10.2 | 10.8 | 10.0 | 10.2 | 10.1 | 9.4 | 9.6 | 11.0 | 8.7 | 9.9 |
| 10% | 8.2 | 8.6 | 8.4 | 8.8 | 8.8 | 8.1 | 9.0 | 8.3 | 7.4 | 8.3 |
| **Range (75%-25%)** | **4.0** | **2.5** | **2.1** | **2.0** | **1.7** | **2.5** | **1.2** | **1.4** | **2.3** | **2.7** |
| **Range (90%-10%)** | **11.7** | **10.0** | **8.1** | **7.4** | **6.8** | **7.0** | **4.1** | **6.5** | **6.6** | **8.7** |

## CAPITAL EXPENDITURES / DEPRECIATION & AMORTIZATION (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 243.1% | 281.3% | 247.6% | 292.0% | 253.9% | 226.9% | 205.7% | 176.3% | 190.3% | 253.5% |
| 75% | 136.1% | 177.3% | 147.0% | 164.4% | 193.4% | 163.9% | 182.8% | 156.6% | 157.9% | 162.3% |
| 50% | 73.9% | 97.7% | 114.2% | 115.3% | 118.6% | 130.0% | 138.2% | 134.5% | 143.4% | 111.1% |
| 25% | 44.8% | 62.3% | 78.7% | 78.5% | 96.2% | 99.5% | 110.6% | 109.9% | 117.2% | 74.2% |
| 10% | 20.6% | 48.4% | 57.5% | 60.6% | 70.6% | 75.2% | 102.1% | 95.6% | 103.6% | 48.9% |
| **Range (75%-25%)** | **62.2%** | **79.7%** | **32.8%** | **49.1%** | **74.8%** | **33.9%** | **44.5%** | **22.0%** | **14.5%** | **51.2%** |
| **Range (90%-10%)** | **222.5%** | **232.9%** | **190.1%** | **231.3%** | **183.3%** | **151.7%** | **103.7%** | **80.7%** | **86.7%** | **204.5%** |

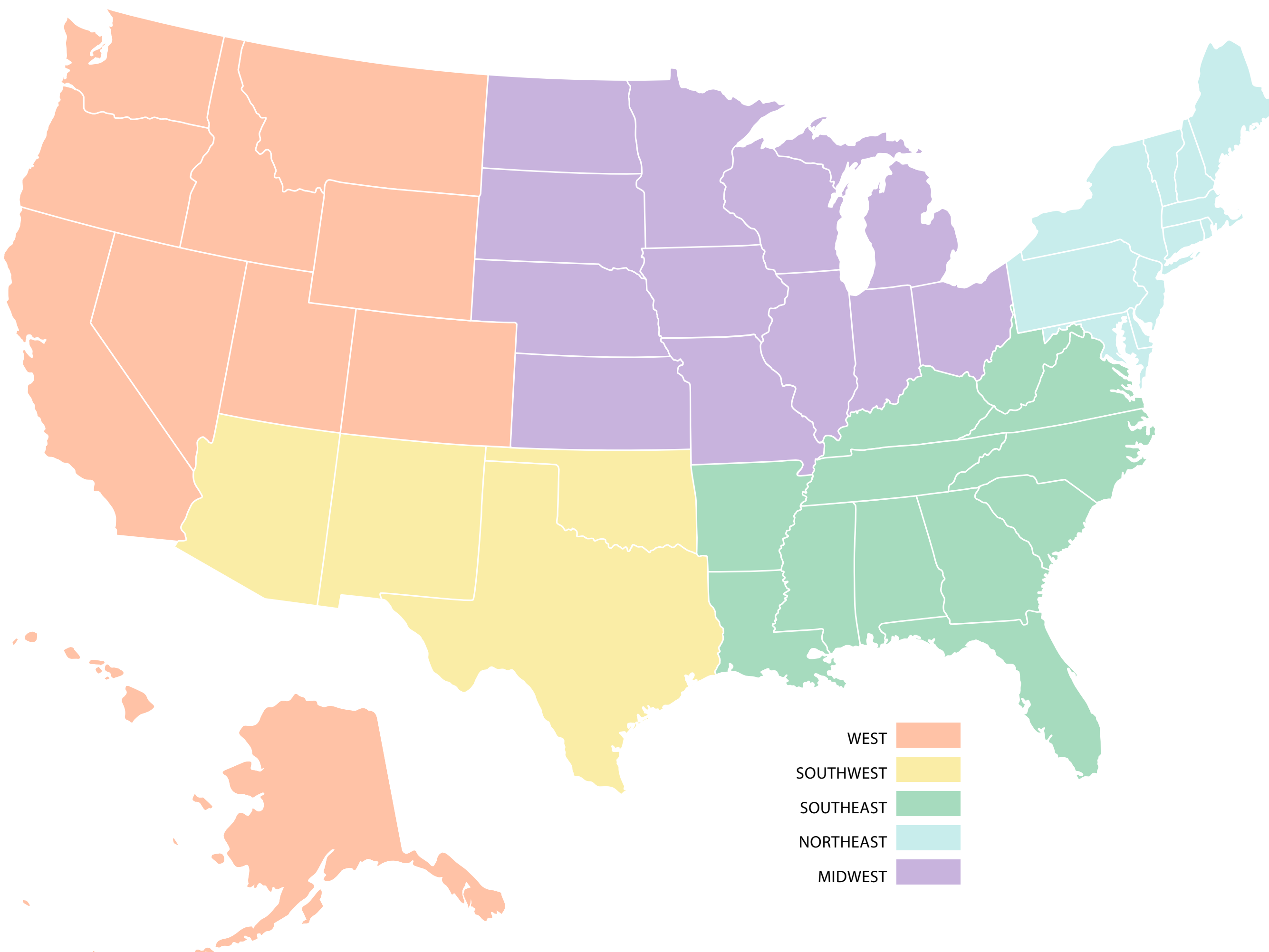
## DEFINED BENEFIT PENSION FUNDED STATUS (%)

| | TOTAL REVENUE (BILLIONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | 1-2 | 2-3 | 3-4 | 4-5 | >5 | TOTAL |
| 90% | 104.0% | 100.1% | 97.5% | 104.8% | 102.8% | 99.1% | 92.2% | 90.8% | 96.9% | 101.6% |
| 75% | 94.3% | 87.8% | 84.8% | 101.3% | 92.2% | 95.6% | 87.9% | 87.6% | 88.1% | 91.3% |
| 50% | 78.7% | 76.9% | 77.0% | 83.5% | 82.1% | 83.2% | 79.6% | 81.2% | 84.8% | 81.2% |
| 25% | 67.8% | 71.5% | 70.6% | 72.0% | 70.9% | 76.9% | 74.9% | 69.3% | 76.6% | 70.8% |
| 10% | 62.6% | 63.0% | 63.0% | 67.6% | 62.9% | 66.8% | 66.9% | 62.6% | 66.9% | 64.1% |
| **Range (75%-25%)** | **15.5%** | **10.9%** | **7.8%** | **17.8%** | **10.1%** | **12.3%** | **8.2%** | **6.3%** | **3.2%** | **10.2%** |
| **Range (90%-10%)** | **41.3%** | **37.1%** | **34.5%** | **37.2%** | **39.9%** | **32.3%** | **25.3%** | **28.2%** | **30.1%** | **37.4%** |

# ZIEGLER MEDIANS STRATIFIED BY GEOGRAPHIC REGION

The geographic region of a hospital or health system plays a significant role in benchmarking as financial outcomes can vary greatly by location. States such as Maryland limit Medicare reimbursements, while states such as Alabama have limited commercial competitors. Hospitals in other states can benefit from bed tax programs to offset lower Medicaid payer mix, but also tend to rely on such programs. Demographics within each region can also be beneficial but depends on population growth both in aggregate and within various age brackets.  Certificate of Need in respective states can also limit the ability of an entity to expand services and produce increased revenue. All of these factors can affect financial outcomes.

For our analysis, we utilized five common regions; Northeast, Southeast, Midwest, Southwest, and West. The accompanying map below reflects the respective states in each geographic region.



The table below provides the 2019 Ziegler Median ratio results stratified by geographic region:

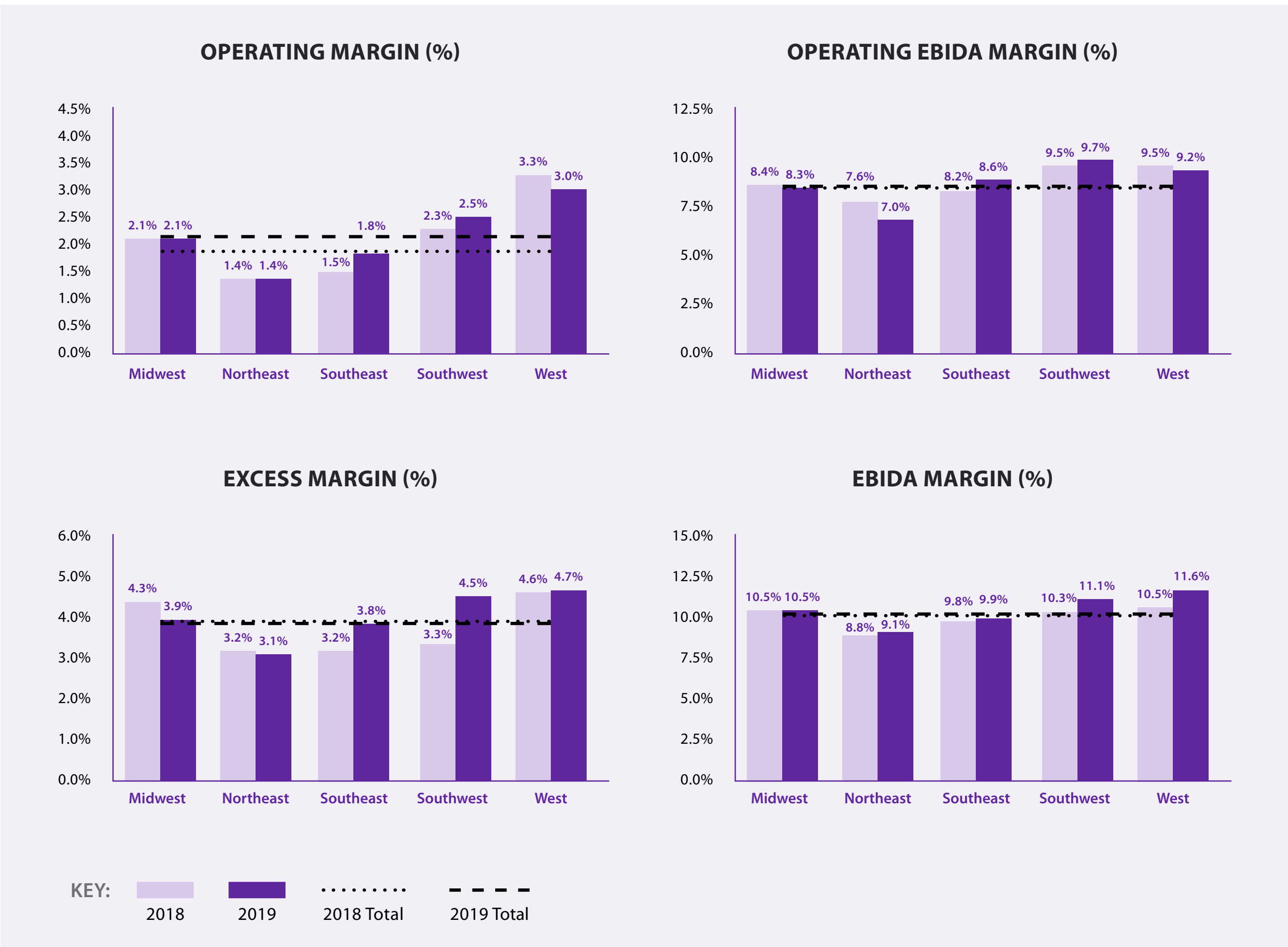
| | | Midwest | Northeast | Southeast | Southwest | West | Total |
|---|---|---|---|---|---|---|---|
| | SAMPLE SIZE > | 188 | 124 | 161 | 42 | 123 | 638 |
| | | GEOGRAPHIC REGION | | | | | |
| PROFITABILITY | Operating Margin (%) | 2.1% | 1.4% | 1.8% | 2.5% | 3.0% | 2.1% |
| | Operating EBIDA Margin (%) | 8.3% | 7.0% | 8.6% | 9.7% | 9.2% | 8.4% |
| | Excess Margin (%) | 3.9% | 3.1% | 3.8% | 4.5% | 4.7% | 3.8% |
| | EBIDA Margin (%) | 10.5% | 9.1% | 9.9% | 11.1% | 11.6% | 10.2% |
| LEVERAGE | MADS / Total Operating Revenue (%) | 2.6% | 2.5% | 2.5% | 2.9% | 2.7% | 2.6% |
| | MADS Coverage (X) | 3.9x | 3.4x | 3.7x | 3.8x | 4.1x | 3.7x |
| | Long-Term Debt / EBIDA (X) | 2.9x | 3.4x | 3.2x | 2.7x | 3.0x | 3.1x |
| | Long-Term Debt / Capitalization (%) | 31.5% | 35.8% | 34.4% | 37.0% | 32.7% | 33.8% |
| | Total Debt / EBIDA (X) | 3.1x | 3.5x | 3.3x | 2.8x | 3.2x | 3.2x |
| | Total Debt / Capitalization (%) | 32.3% | 38.3% | 35.5% | 38.4% | 34.1% | 34.9% |
| LIQUIDITY | Days Cash On Hand | 217.5 | 151.9 | 194.6 | 166.5 | 190.5 | 193.0 |
| | Cushion Ratio (X) | 21.3x | 16.7x | 18.6x | 15.2x | 19.7x | 19.2x |
| | Cash-To-Long-Term Debt (%) | 176.0% | 142.1% | 160.7% | 128.3% | 141.5% | 158.5% |
| | Cash-To-Total Debt (%) | 168.0% | 131.2% | 155.0% | 125.3% | 136.4% | 150.8% |
| CAPITAL | Average Age Of Plant (Years) | 11.4 | 12.4 | 12.4 | 10.7 | 11.6 | 11.7 |
| | Capital Expenditures / Depreciation & Amortization (%) | 104.2% | 121.6% | 114.7% | 101.3% | 113.3% | 111.1% |

The table below provides the 2019 Ziegler Median ratio results stratified by geographic region:

| | | Midwest | Northeast | Southeast | Southwest | West | Total |
|---|---|---|---|---|---|---|---|
| | SAMPLE SIZE > | 188 | 122 | 160 | 42 | 123 | 635 |
| | | GEOGRAPHIC REGION | | | | | |
| PROFITABILITY | Operating Margin (%) | 2.1% | 1.4% | 1.5% | 2.3% | 3.3% | 1.9% |
| | Operating EBIDA Margin (%) | 8.4% | 7.6% | 8.2% | 9.5% | 9.5% | 8.4% |
| | Excess Margin (%) | 4.3% | 3.2% | 3.2% | 3.3% | 4.6% | 3.9% |
| | EBIDA Margin (%) | 10.5% | 8.8% | 9.8% | 10.3% | 10.5% | 10.1% |
| LEVERAGE | MADS / Total Operating Revenue (%) | 2.6% | 2.5% | 2.6% | 2.9% | 2.9% | 2.7% |
| | MADS Coverage (X) | 4.1x | 3.6x | 3.6x | 3.5x | 3.6x | 3.7x |
| | Long-Term Debt / EBIDA (X) | 3.0x | 3.4x | 3.4x | 2.6x | 2.9x | 3.1x |
| | Long-Term Debt / Capitalization (%) | 30.9% | 38.0% | 34.8% | 37.4% | 34.9% | 34.4% |
| | Total Debt / EBIDA (X) | 3.1x | 3.6x | 3.5x | 2.8x | 3.0x | 3.3x |
| | Total Debt / Capitalization (%) | 32.0% | 38.8% | 36.3% | 39.2% | 35.1% | 35.1% |
| LIQUIDITY | Days Cash On Hand | 210.1 | 152.9 | 197.8 | 206.5 | 194.1 | 192.3 |
| | Cushion Ratio (X) | 20.9x | 16.1x | 18.9x | 17.2x | 19.5x | 18.9x |
| | Cash-To-Long-Term Debt (%) | 165.3% | 134.0% | 143.3% | 139.6% | 135.9% | 150.8% |
| | Cash-To-Total Debt (%) | 161.2% | 124.4% | 139.9% | 128.6% | 130.3% | 142.9% |
| CAPITAL | Average Age Of Plant (Years) | 11.2 | 12.1 | 12.2 | 10.3 | 10.9 | 11.6 |
| | Capital Expenditures / Depreciation & Amortization (%) | 109.3% | 121.6% | 120.0% | 106.5% | 111.2% | 115.6% |

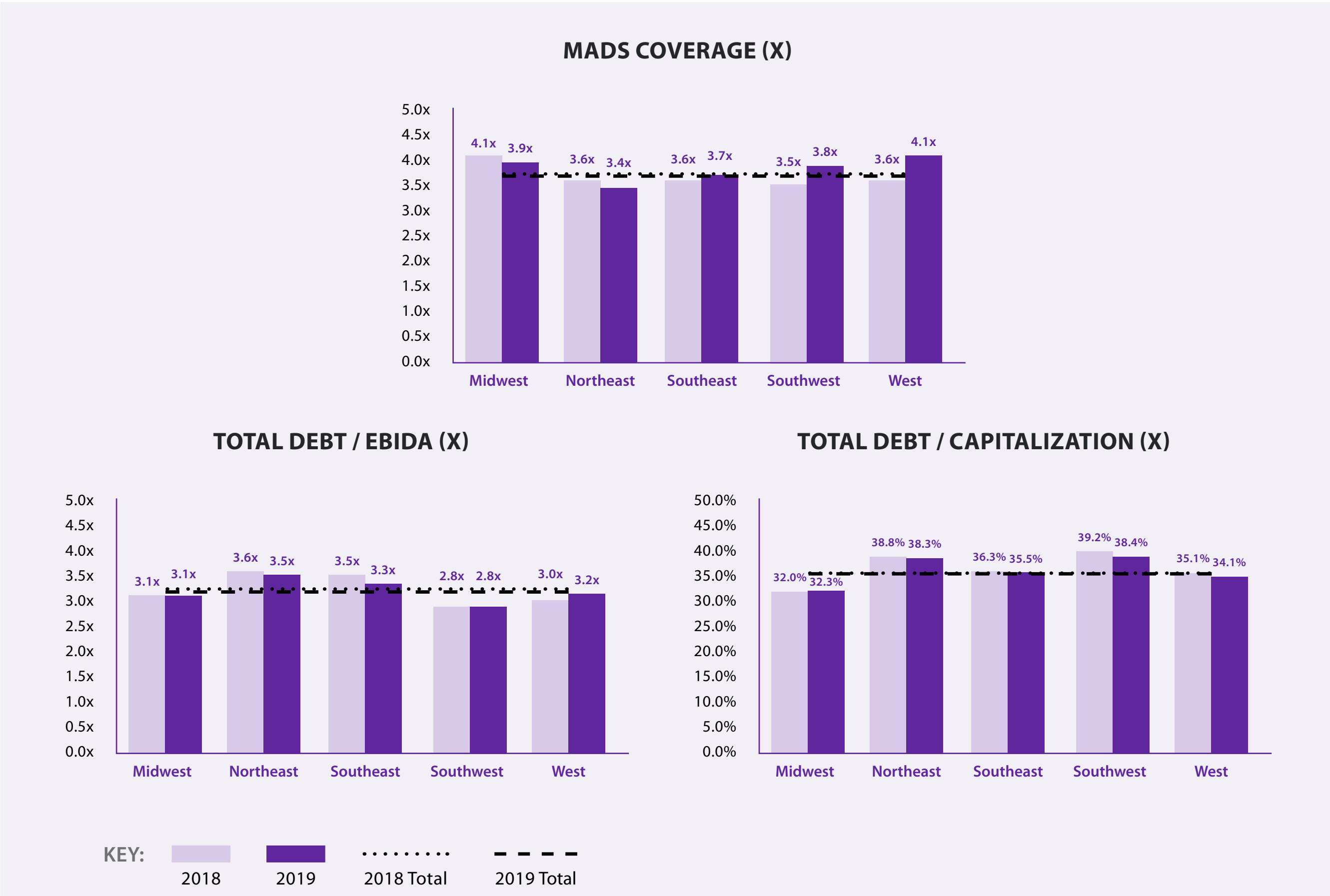
In each section below, we provide commentary on 2019 vs. 2018 median ratio results stratified by geographic region for profitability, liquidity, leverage, and capital spending ratios for the hospitals and health systems in our sample set.

## Profitability:



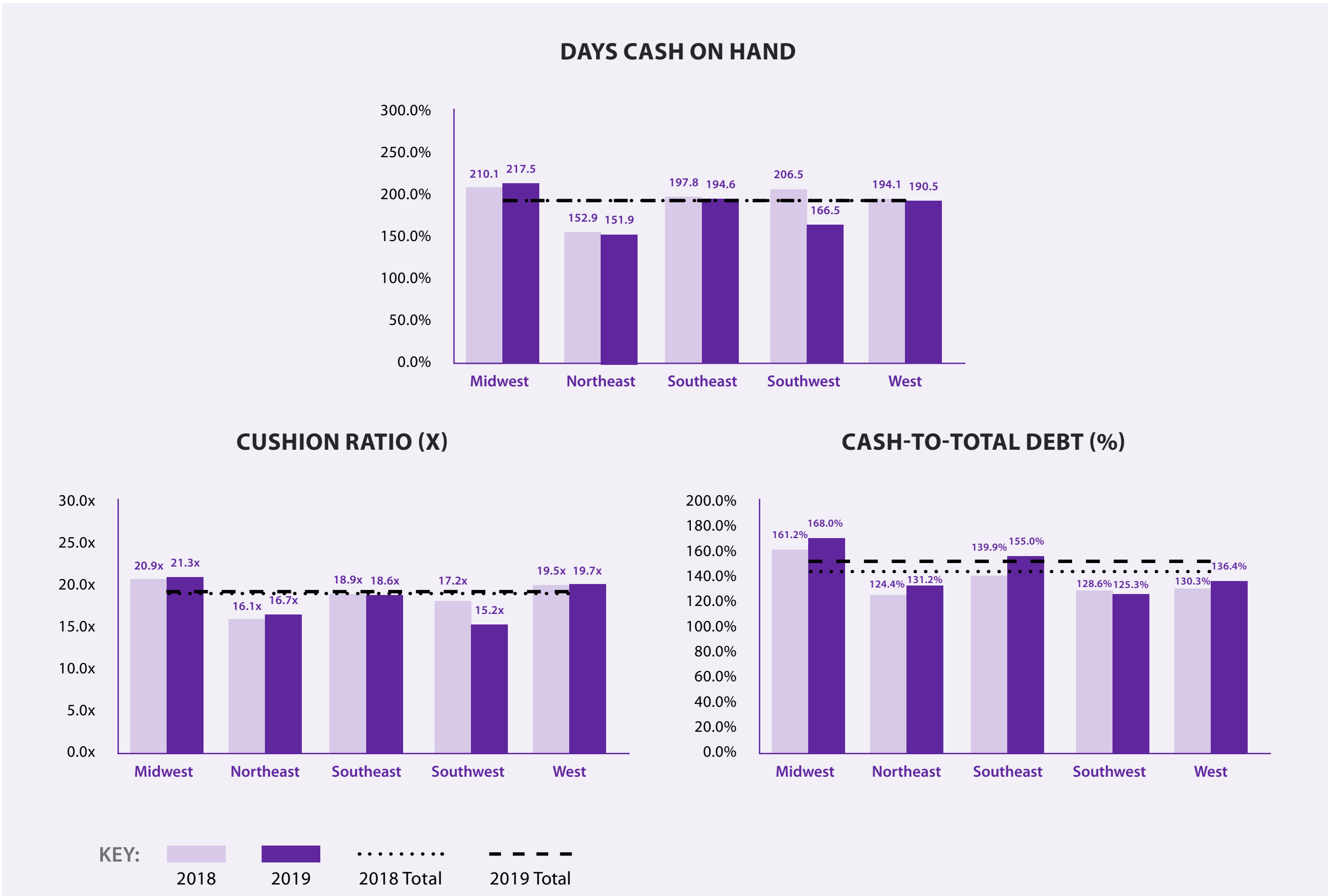

The strongest regions from a 2019 profitability perspective continue to be the West, Southwest, and Midwest, while the weakest regions continue to be the Northeast and Southeast. The West region significantly outperformed and the Northeast region significantly underperformed all other regions as well as the aggregate result from an Operating Margin and Excess Margin perspective. At the same time, the West also recognized the most meaningful year over year decrease in Operating Margin, moving by 0.3% from 3.3% in 2018. The Southwest region realized the most sizeable year over year increase in Excess Margin, moving from 3.3% in 2018 to 4.5% in 2019. As seen with the revenue stratification commentary above, variability across results decreases when considering cash flow or the impact of interest, depreciation, and amortization, as measured in the Operating EBIDA Margin and EBIDA Margin. The range between the best and worst regions in Operating EBIDA Margin and EBIDA Margin is 2.7% and 2.5%, respectively.

## Leverage:



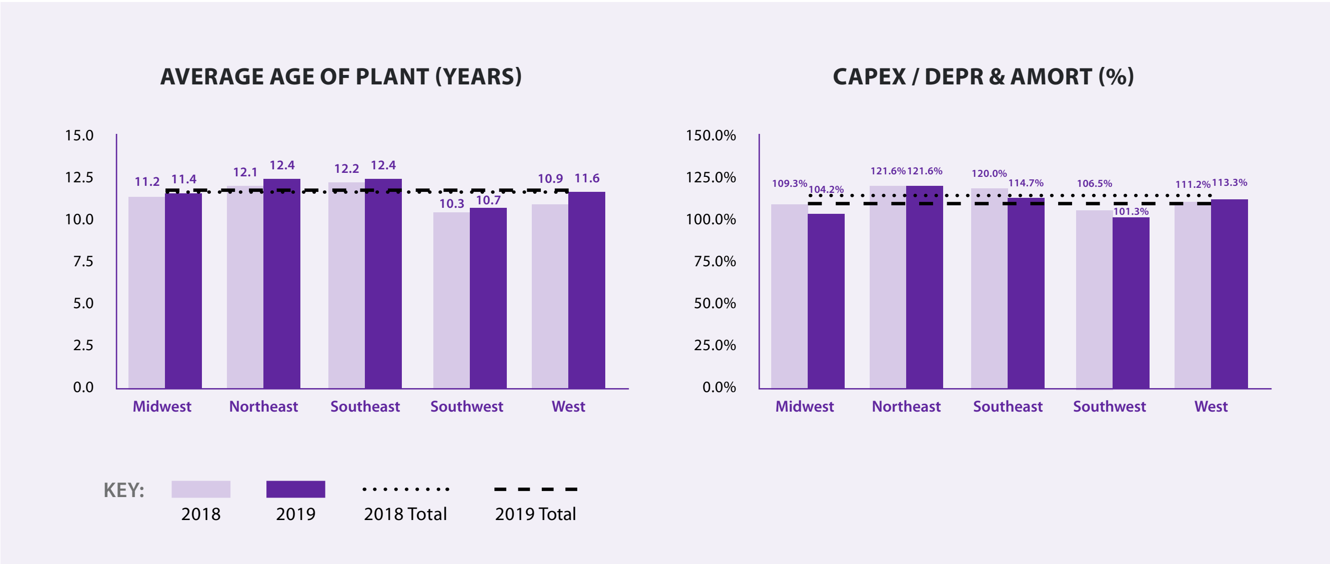

The median results from a leverage perspective display benefits by region, but much less variability when compared to profitability ratios. From a MADS Coverage perspective, the West region produced the best 2019 result and also the most significant year over year increase, moving from 3.6x in 2018 to 4.1x in 2019. The Northeast region produced the worst result of 3.4x in 2019 and one of the worst results in 2018 of 3.6x, but was not far off from the strongest outcome in either case. The variability of results in 2018 was only 0.6x and in 2019 was only 0.7x. This trend continued in the Total Debt/EBIDA and Total Debt/Capitalization median ratio results. Within both ratios, the West and Midwest regions also outperformed the Northeast and Southeast regions.

## Liquidity:




Liquidity medians from a geographic perspective provided mixed results. When considering Days Cash on Hand, the Midwest region outperformed and the Northeast region underperformed by a meaningful margin. The Southwest region recognized a significant year over year decline, decreasing from 206.5 days in 2018 to 166.5 days in 2019, while other region performances were relatively flat. In 2018, four regions outperformed the aggregate. While in 2019 only two regions outperformed the aggregate median ratio result. For the Cushion Ratio, the Midwest also performed the best 2019 result and produced a year over year increase. The Southwest region produced the worst 2019 result at 15.2x and the most meaningful year over year decrease of 2.0x. In both years, the Midwest and West outperformed the aggregate while the Northeast, Southeast, and Southwest underperformed. The Cash-To-Total Debt median produced a similar trend, except the West region, which produced results more in line with the Northeast and Southwest, and where the Southeast outperformed. Overall, the Midwest and Southeast regions produced the strongest 2019 liquidity metrics.

## Capital Spending:




The capital spending median results produced one of the more curious outcomes in our analysis. The Northeast and Southeast regions produced the highest Average Age of Plant results, suggesting fixed assets in need of capital reinvestment. The Southwest region produced the lowest result, suggesting fixed assets received more frequent levels of capital reinvestment. Interestingly, the Northeast region also produced the highest Capital Expenditures/Depreciation and Amortization median ratio, followed by the Southeast region. The Southwest region also had the lowest median result for capital spending.

# APPENDIX

The table below provides the 2019 Ziegler Median ratio results stratified by hospital type:

| | | Children's | Critical Access | Community Based | Health System | Hospital District | Specialty | Total |
|---|---|---|---|---|---|---|---|---|
| | SAMPLE SIZE > | 27 | 32 | 198 | 322 | 51 | 8 | 638 |
| PROFITABILITY | Operating Margin (%) | 6.7% | (0.1%) | 1.1% | 2.3% | (0.1%) | 5.5% | 2.1% |
| | Operating EBIDA Margin (%) | 12.9% | 7.1% | 8.1% | 8.5% | 7.5% | 11.8% | 8.4% |
| | Excess Margin (%) | 9.5% | 1.6% | 3.2% | 4.3% | 2.6% | 8.8% | 3.8% |
| | EBIDA Margin (%) | 15.8% | 10.1% | 9.6% | 10.2% | 10.4% | 15.2% | 10.2% |
| LEVERAGE | MADS / Total Operating Revenue (%) | 2.1% | 4.5% | 2.9% | 2.3% | 4.4% | 3.0% | 2.6% |
| | MADS Coverage (X) | 7.5x | 1.7x | 3.3x | 4.3x | 1.9x | 5.5x | 3.7x |
| | Long-Term Debt / EBIDA (X) | 1.9x | 4.9x | 3.3x | 2.9x | 4.0x | 2.7x | 3.1x |
| | Long-Term Debt / Capitalization (%) | 19.0% | 55.6% | 32.5% | 32.5% | 57.4% | 29.4% | 33.8% |
| | Total Debt / EBIDA (X) | 1.9x | 5.2x | 3.4x | 3.1x | 4.2x | 2.9x | 3.2x |
| | Total Debt / Capitalization (%) | 19.2% | 57.9% | 34.0% | 33.3% | 58.5% | 30.8% | 34.9% |
| LIQUIDITY | Days Cash On Hand | 376.2 | 154.2 | 192.3 | 195.4 | 127.6 | 457.1 | 193.0 |
| | Cushion Ratio (X) | 44.1x | 8.4x | 18.1x | 21.5x | 7.5x | 40.7x | 19.2x |
| | Cash-To-Long-Term Debt (%) | 310.3% | 98.8% | 166.4% | 165.9% | 70.3% | 237.0% | 158.5% |
| | Cash-To-Total Debt (%) | 301.4% | 88.8% | 156.3% | 158.7% | 68.1% | 232.2% | 150.8% |
| CAPITAL | Average Age Of Plant (Years) | 9.9 | 11.0 | 12.6 | 11.6 | 11.9 | 8.2 | 11.7 |
| | Capital Expenditures / Depreciation & Amortization (%) | 128.2% | 60.0% | 104.8% | 119.4% | 74.1% | 108.6% | 111.1% |

HOSPITAL TYPE

The table below provides the 2018 Ziegler Median ratio results stratified by hospital type:

| | | Children's | Critical Access | Community Based | Health System | Hospital District | Specialty | Total |
|---|---|---|---|---|---|---|---|---|
| | SAMPLE SIZE > | 27 | 32 | 198 | 319 | 51 | 8 | 635 |
| PROFITABILITY | Operating Margin (%) | 6.5% | (0.6%) | 1.2% | 2.2% | (0.3%) | 5.3% | 1.9% |
| | Operating EBIDA Margin (%) | 13.5% | 6.5% | 7.9% | 8.4% | 8.8% | 12.8% | 8.4% |
| | Excess Margin (%) | 10.0% | (0.2%) | 3.1% | 4.0% | 0.1% | 10.6% | 3.9% |
| | EBIDA Margin (%) | 17.4% | 8.1% | 9.6% | 10.1% | 9.9% | 16.5% | 10.1% |
| LEVERAGE | MADS / Total Operating Revenue (%) | 2.2% | 4.9% | 2.9% | 2.4% | 4.5% | 3.3% | 2.7% |
| | MADS Coverage (X) | 7.3x | 1.7x | 3.5x | 4.0x | 2.0x | 6.8x | 3.7x |
| | Long-Term Debt / EBIDA (X) | 2.0x | 5.4x | 3.2x | 3.1x | 4.3x | 2.1x | 3.1x |
| | Long-Term Debt / Capitalization (%) | 20.5% | 51.3% | 34.2% | 32.7% | 60.3% | 27.1% | 34.4% |
| | Total Debt / EBIDA (X) | 2.0x | 6.1x | 3.4x | 3.2x | 4.4x | 2.1x | 3.3x |
| | Total Debt / Capitalization (%) | 20.8% | 56.1% | 35.1% | 34.0% | 62.1% | 27.7% | 35.1% |
| LIQUIDITY | Days Cash On Hand | 357.4 | 146.2 | 185.9 | 194.4 | 127.1 | 457.1 | 192.3 |
| | Cushion Ratio (X) | 42.5x | 7.3x | 18.6x | 21.3x | 7.3x | 37.4x | 18.9x |
| | Cash-To-Long-Term Debt (%) | 286.8% | 92.0% | 151.2% | 159.6% | 63.0% | 246.3% | 150.8% |
| | Cash-To-Total Debt (%) | 281.0% | 82.6% | 147.5% | 152.8% | 60.9% | 239.5% | 142.9% |
| CAPITAL | Average Age Of Plant (Years) | 9.7 | 10.8 | 12.4 | 11.6 | 11.6 | 8.2 | 11.6 |
| | Capital Expenditures / Depreciation & Amortization (%) | 164.4% | 70.6% | 115.3% | 122.4% | 75.2% | 104.4% | 115.6% |

HOSPITAL TYPE

The table below provides a glossary for the ratios tracked on our analysis:

## PROFITABILITY

| RATIO | DEFINITION | FORMULA |
| --- | --- | --- |
| **Operating Margin (%)** | Measure of profitability indicating the percent of operating income generated from operating revenues after capturing operating expenses | = Operating Income / Total Operating Revenue |
| **Operating EBIDA Margin (%)** | Measures operational profitability or operating cash flow as a percentage of operating revenue after excluding non-cash expenses | = Operating EBIDA / Total Operating Revenue |
| **Excess Margin (%)** | Profitability metrics that includes revenue from non-patient related care in addition to operating income as a percentage of total revenue | = Excess of Revenue over Expenses (Net Income) / Total Revenue |
| **EBIDA Margin (%)** | Measures cash flow after capturing non-operating gains and losses and is calculated as a percentage of total revenue | = Net Revenue Available for Debt Service (EBIDA) / Total Revenue |

## LEVERAGE

| RATIO | DEFINITION | FORMULA |
| --- | --- | --- |
| **MADS / Total Operating Revenue (%)** | Leverage metric reflecting the burden debt service places on operating revenue | = Max Annual Debt Service (MADS) / Total Operating Revenue |
| **MADS Coverage (X)** | Measures the number of times cash flow can pay down the largest annual debt service requirement | = Net Revenue Available for Debt Service (EBIDA) / Max Annual Debt Service (MADS) |
| **Long-Term Debt / EBIDA (X)** | Compares long-term debt to the amount of cash flow generated and reflects the ability to repay debt obligations | = Long-Term Debt / (Excess of Revenue over Expenses (Net Income) + Depreciation & Amortization + Interest Expense) |
| **Long-Term Debt / Capitalization (%)** | Leverage measure reflecting the level of long-term debt to capitalization and provides insights for debt capacity analysis | = Long-Term Debt / (Long-Term Debt + Unrestricted Net Assets (Incl. Noncontrolling Interest)) |
| **Total Debt / EBIDA (X)** | Compares total debt to the amount of cash flow generated and reflects the ability to repay debt obligations | = Total Debt / (Excess of Revenue over Expenses (Net Income) + Depreciation & Amortization + Interest Expense) |
| **Total Debt / Capitalization (%)** | Measure of financial leverage reflecting the level of total debt obligations as a percentage of total capitalization | = Total Debt / (Total Debt + Unrestricted Net Assets (Incl. Noncontrolling Interest)) |

## LIQUIDITY

| RATIO | DEFINITION | FORMULA |
| --- | --- | --- |
| **Days Cash On Hand** | Liquidity metric reflecting the number of days on-balance sheet cash can continue to pay operating expenses | = Unrestricted Cash & Investments / [(Total Operating Expenses - Depreciation & Amortization) / 365] |
| **Cushion Ratio (X)** | Measures how many times on-balance sheet cash can be used to pay the largest annual debt service requirement | = Unrestricted Cash & Investments / Max Annual Debt Service (MADS) |
| **Cash-To-Long-Term Debt (%)** | Measures the ability to pay long-term debt with on-balance sheet cash | = Unrestricted Cash & Investments / Long-Term Debt |
| **Cash-To-Total Debt (%)** | Liquidity measure reflecting the amount of times on-balance sheet cash can pay down all debt principal obligations | = Unrestricted Cash & Investments / Total Debt |

## CAPITAL SPENDING

| RATIO | DEFINITION | FORMULA |
| --- | --- | --- |
| **Average Age Of Plant (Years)** | Measures the financial age in years of fixed assets, where an older age suggests greater need of capital reinvestment | = Accumulated Depreciation / Depreciation |
| **Capital Expenditures / Depreciation & Amortization (%)** | Measures the amount of investment in fixed assets and indicates the level of future spending needs | = Capital Expenditures / Depreciation & Amortization |

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