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TRIVARIATE RESEARCH

INVESTIGATING ROTATIONS, COLLINEARITY, AND THE REASON HEALTHCARE INVESTING HAS BEEN TOUGH

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BACKGROUND AND METHODOLOGY

Background: We have been recommending Healthcare stocks, and this has, in aggregate, been a bad call. We have noticed that sometimes a sub-industry, like Drug Distributors, works well for a few months while Managed Care acts poorly, and then, the Distributors sell off sharply and Managed Care rallies. Sometimes one sub-industry's fundamental strength comes from the relative demise of another, but there is not *prima facie* a reason why both Drug Distributors and Managed Care can't rally at the same time. It got us thinking that intra-sector rotations are often not fundamentally driven. In today's note, we evaluated in detail the sub-industry returns of Healthcare, and all sectors, to determine which pockets of the market are best for sub-industry pair-trading, and which sub-industries are best for stock pair-trading inside the sub-industry. Our goal is to determine whether poor sector-level performance is being driven by a broad sector issue, or by unusually sharp rotations among sub-industries inside the sector. To do this, we addressed four related questions: are sub-industries trading off against each other, are they still moving together in absolute terms, does leadership persist or reverse, and what is the main axis of rotation?

Rotation: We first calculate each sub-industry's monthly sector-relative return: the sub-industry return minus the return of the rest of the sector excluding that sub-industry. This avoids comparing a large sub-industry partly against itself and isolates whether it is truly leading or lagging its sector peers. Rotation intensity is the rolling 12-month average pairwise correlation of these returns. A low value means sub-industries are moving against each other.

Cohesion: We separately measure whether sub-industries are still moving together in absolute return terms. Cohesion is based on beta-adjusted, sector-inclusive sub-industry returns, so it captures whether the sector remains tied to a common market or sector force. A low cohesion value means sub-industries are decoupling in absolute terms.

Structure: We used principal components analysis to understand the shape of the rotation. PC1 measures whether one common driver dominates the sector, while PC2 helps identify the main rotation axis across sub-industries. This turns the framework from a simple "is rotation high?" into a map of which groups are on opposite sides of the trade.

Leadership: We test whether sub-industry leadership tends to persist or reverse. We rank sub-industries by trailing 6-month sector-relative return and measure the rolling 12-month rank correlation with subsequent returns. A positive value means recent winners tend to keep leading.

INVESTMENT CONCLUSIONS

Together, these measures distinguish a broad sector call from a within-sector leadership problem. That distinction matters for portfolio construction: in a highly rotational sector, being right on the sector may not be enough if the sub-industry exposure is wrong.

Healthcare sub-industry rotations are extreme: Our observation that two sub-industries within Healthcare can't seem to work at the same time is borne out by the analysis. Drug Distributors and Managed Care have recently struggled to work at the same time on a sector-relative basis. Their rolling 12-month correlation is quite negative today. While this has happened previously, usually a fundamental rationale was responsible, such as opioid-related fines for Distributors or medical cost ratios ballooning for Managed Care. This time there is no such rationale. The broader Healthcare sector shows the same issue beyond this single pair. We took the 10 sub-industries within Healthcare and looked at the average pairwise sub-industry correlation of sector-relative returns on a rolling 12-month basis. **Negative and near-low correlations suggest the problem is not simply “Healthcare is weak,” but rather that the sector has had high “Rotation Intensity” or unusually sharp sub-industry moves.**

On a standard cap-weighted basis, Healthcare today screens as the most rotational sectors versus its own history. After removing the largest 5% of stocks, the ranking changes in some sectors — notably Consumer Staples and Consumer Discretionary — showing that a few large names can dominate sector behavior. Healthcare, however, still screens as highly rotational after this adjustment. Healthcare, Financials, and Consumer Staples are rotational, but all still have normal to high cohesion vs. their own histories. This means their rotation is more of a relative reshuffle within the sector than an absolute decoupling of the sub-industries.

Structure: Healthcare does not look like a sector dominated by a single long-run common driver. Its first principal component (PC1) variance share is roughly 24%, below sectors such as Energy, Communication Services, Utilities, and Real Estate. This supports the idea that Healthcare contains multiple independent sub-industry stories rather than one clean sector trade, though that is also true for Tech, Consumer, and Industrials. The main Healthcare rotation axis has historically separated Managed Care, Services, Facilities, Distributors, and Pharma from Biotech, Life Sciences Tools, Technology, Supplies, and Equipment. Recently, the axis has shifted: Pharma has moved to the other side, while Equipment and Supplies have moved closer to the Managed Care / Facilities side. The key point is not the sign of the PCA loading itself, but which sub-industries are on opposite sides of the rotation factor.

INVESTMENT CONCLUSIONS

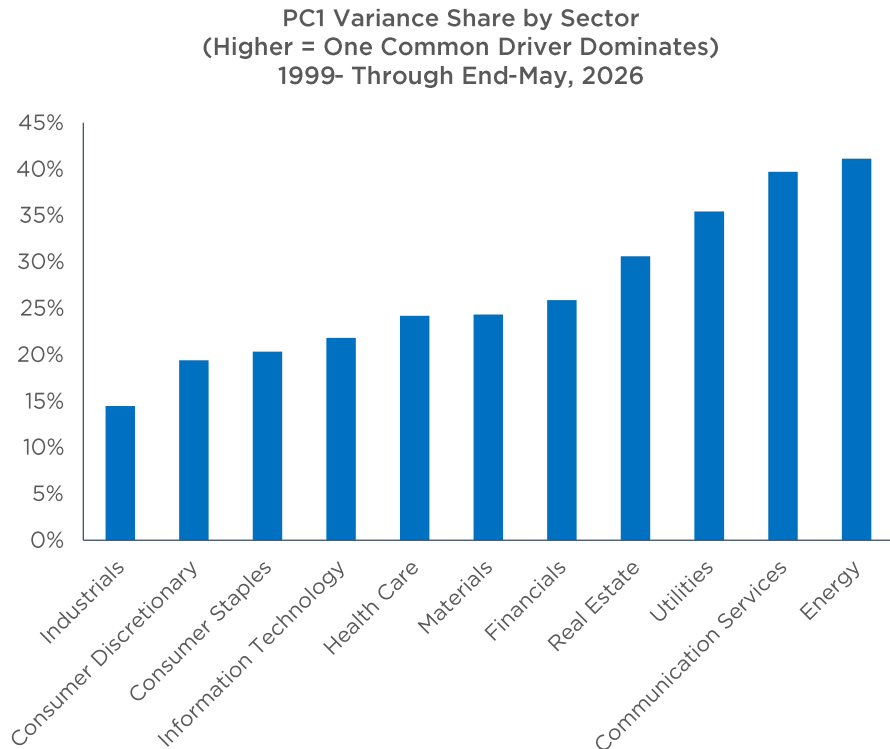
Leadership: Intra-sector leadership over a 6-month period in the Healthcare sector has near-zero predictive value for how that sub-industry will do over the next six months. Across sectors, Energy and Consumer Discretionary show clearer reversal behavior, while Materials, Staples, Communication Services, and Industrials show stronger persistence – the idea that once a sub-industry works (or fails) for six months this behavior is likely to continue. Healthcare sits closer to the middle. This means the recent price action where Drug Distributors sell-off and Managed Care appreciates is not a typical long-term rotational behavior. On the contrary, for other sectors like Energy, when a certain sub-industry does relatively well for six months, that tends to be negatively correlated with it doing well over the next six months.

Long-term correlations differ from more recent correlations: Healthcare has not historically traded as one unified sector on a sector-relative basis. Many sub-industry correlations are low or negative, which means relative outperformance in one Healthcare group has often coincided with relative underperformance elsewhere. **The most notable long-term relationship is that Pharmaceuticals and Biotechnology are negatively correlated with many other Healthcare sub-industries and are most negatively correlated with each other.** However, the last 12 months show a sharper and more polarized Healthcare rotation regime than the long-term average. Managed Care has been strongly negatively correlated with Biotechnology and Pharmaceuticals. Distributors have also been negatively correlated with Managed Care, matching the original client observation. Pharma and Biotech. have been positively correlated. The recent heatmap should be interpreted as a current-regime snapshot, not a permanent structural map, because it uses only 12 monthly observations. Still, it reinforces the conclusion that recent Healthcare performance has been driven by distinct sub-industry leadership camps that are different from history over the last 12 months.

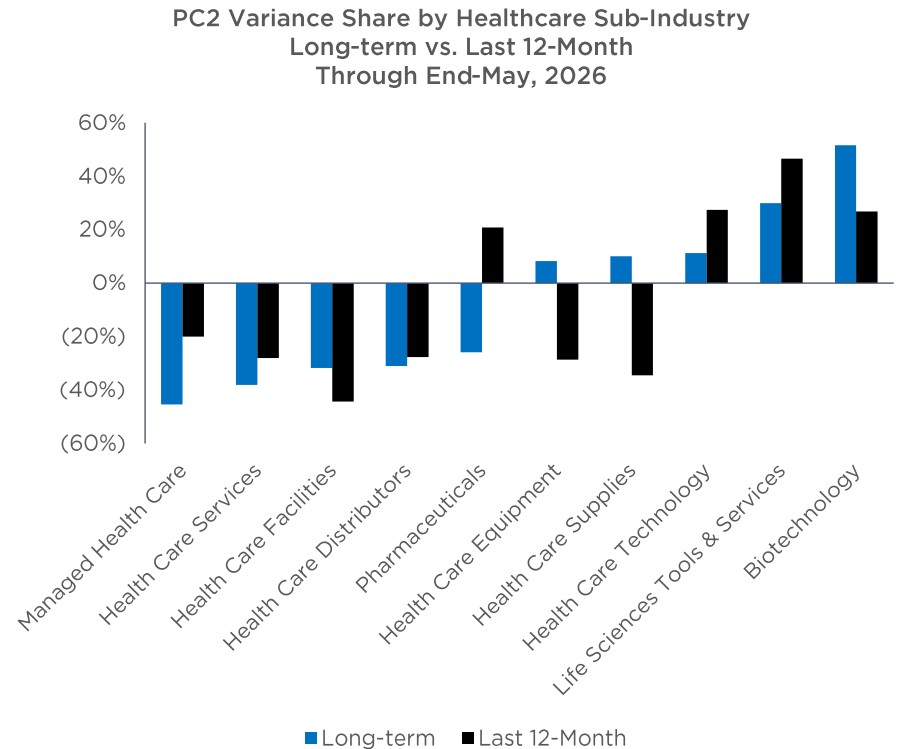
Conclusion: Recent trading behavior within sub-industries of Healthcare is quite unusual. For a factor investor, this would imply that historical covariance matrices based on the last 20–25 years may significantly underestimate diversification opportunities *within* Healthcare today. The correlations that portfolio managers assumed were structural may actually have been a product of a very different regulatory, interest-rate, and innovation regimes. While 12 months isn't a long time, our bias is to assume that these intra-sector rotations within Healthcare will persist, meaning investors should focus on making sub-industry calls.

MANAGED CARE AND BIOTECHNOLOGY ARE QUITE DIFFERENT

We studied the principal components (multicollinearity) of the sub-industry returns within each sector. Healthcare does not look like a sector dominated by a single long-run common driver. Its first principal component (PC1) variance share is roughly 24%, below sectors such as Energy, Communication Services, Utilities, and Real Estate. This supports the idea that Healthcare contains multiple independent sub-industry stories rather than one clean sector trade (left), though that is also true for Tech, Consumer, and Industrials. The main Healthcare rotation axis has historically separated Managed Care, Services, Facilities, Distributors, and Pharma from Biotech, Life Sciences Tools, Technology, Supplies, and Equipment. Recently, the axis has shifted: Pharma has moved to the other side, while Equipment and Supplies have moved closer to the Managed Care / Facilities side. The key point is not the sign of the PCA loading itself, but which sub-industries are on opposite sides of the rotation factor (right). Today, Managed Care and Biotechnology are quite different.



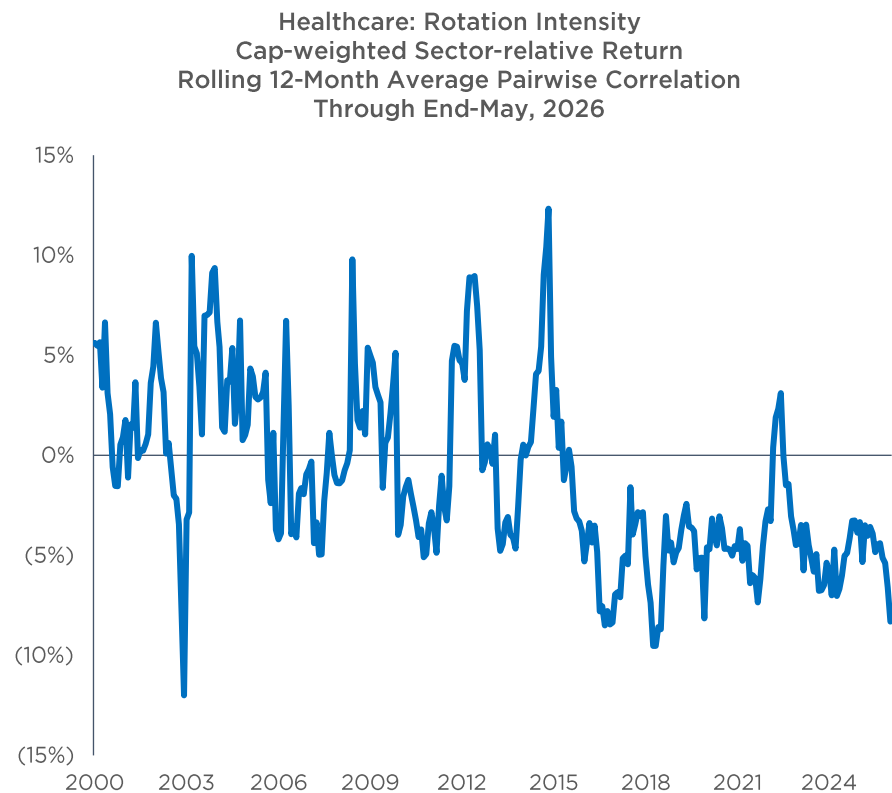
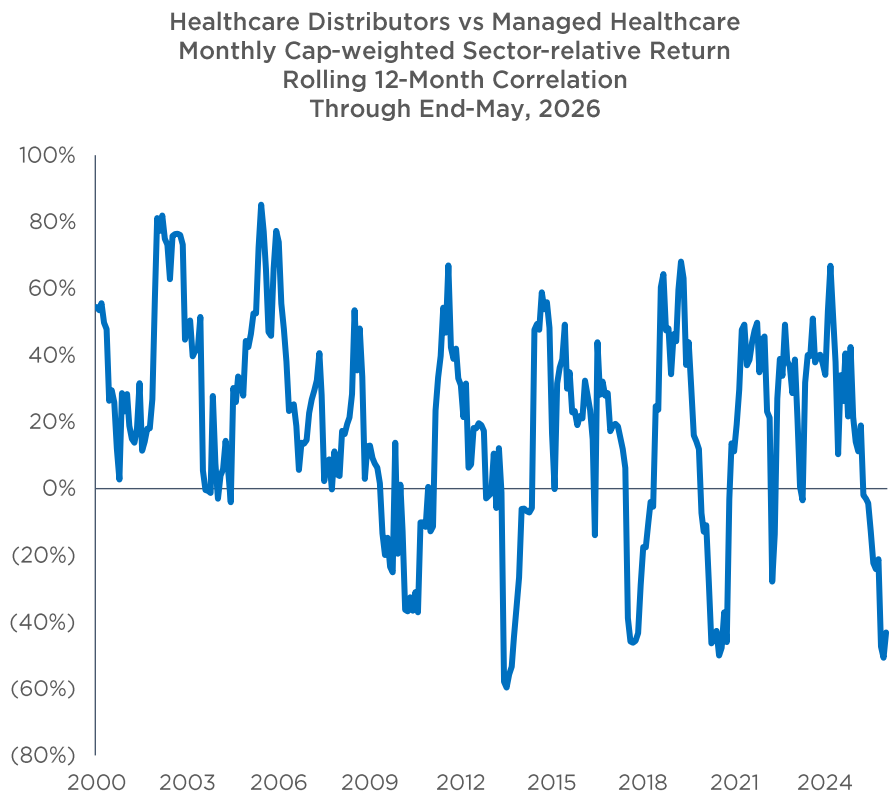
Source: Trivariate Research



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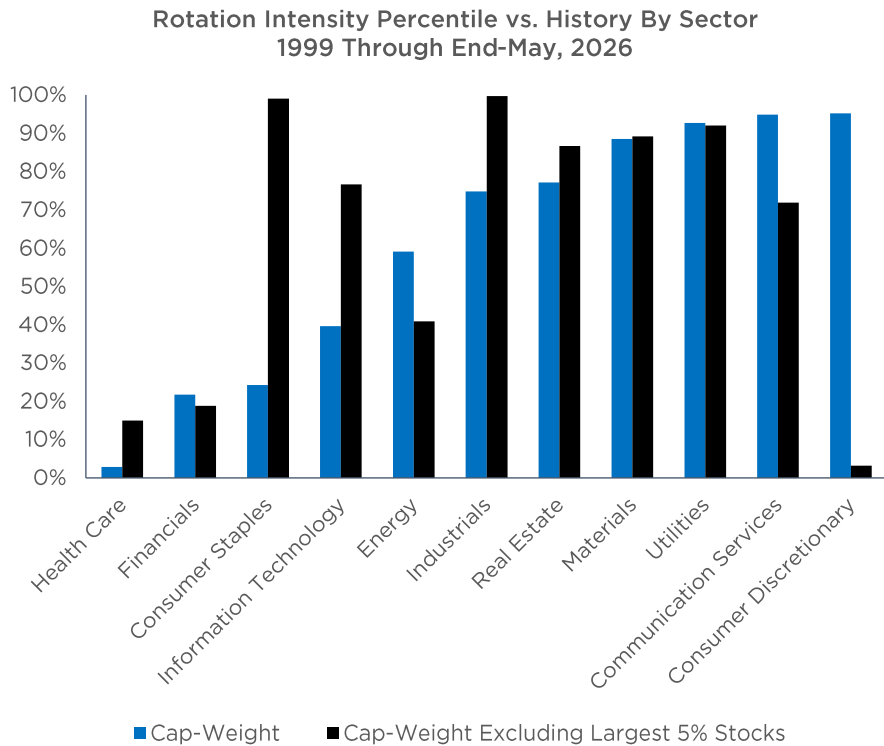
SUB-INDUSTRY LEVEL ROTATIONS IN HEALTHCARE ARE ACUTE

Our observation that two sub-industries within Healthcare can't seem to work at the same time is borne out by the analysis. Drug Distributors and Managed Care have recently struggled to work at the same time on a sector-relative basis. Their rolling 12-month correlation is quite negative today (left). While this has happened previously, usually a fundamental rationale was responsible, such as opioid-related fines for Distributors or medical cost ratios ballooning for Managed Care. This time there is no such rationale. The broader Healthcare sector shows the same issue beyond this single pair. We took the 10 sub-industries within Healthcare and looked at the average pairwise sub-industry correlation of sector-relative returns on a rolling 12-month basis. **Negative and near-low correlations suggest the problem is not simply "Healthcare is weak," but rather that the sector has had high "Rotation Intensity" or unusually sharp sub-industry moves** (right).

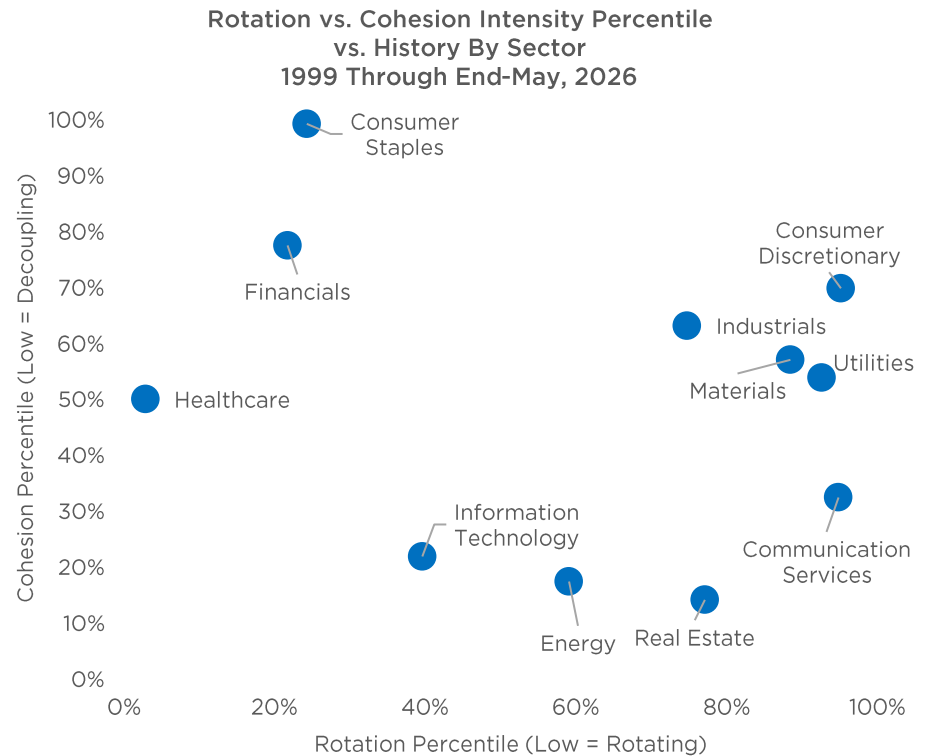


HEALTHCARE IS ROTATIONAL, BUT NOT PARTICULARLY COHESIVE

We compare each sector's current Rotation Intensity with its own history and then test whether the result is driven by the largest stocks. On a standard cap-weighted basis, Healthcare today screens as the most rotational sector versus its own history. After removing the largest 5% of stocks, the ranking changes in some sectors — notably Consumer Staples and Consumer Discretionary — showing that a few large names can dominate sector behavior. Healthcare, however, still screens as highly rotational after this adjustment (left). Cohesion is a measure of whether sub-industries are moving similarly in absolute terms. Healthcare, Financials, and Consumer Staples are rotational, but all still have normal-to-high cohesion vs. their own histories (right). This means their rotation is more of a relative reshuffle within the sector than an absolute decoupling of the sub-industries. Rotation and cohesion appear to be largely independent axes, and no sector currently screens as both extremely rotational and extremely decoupled vs. its own histories.



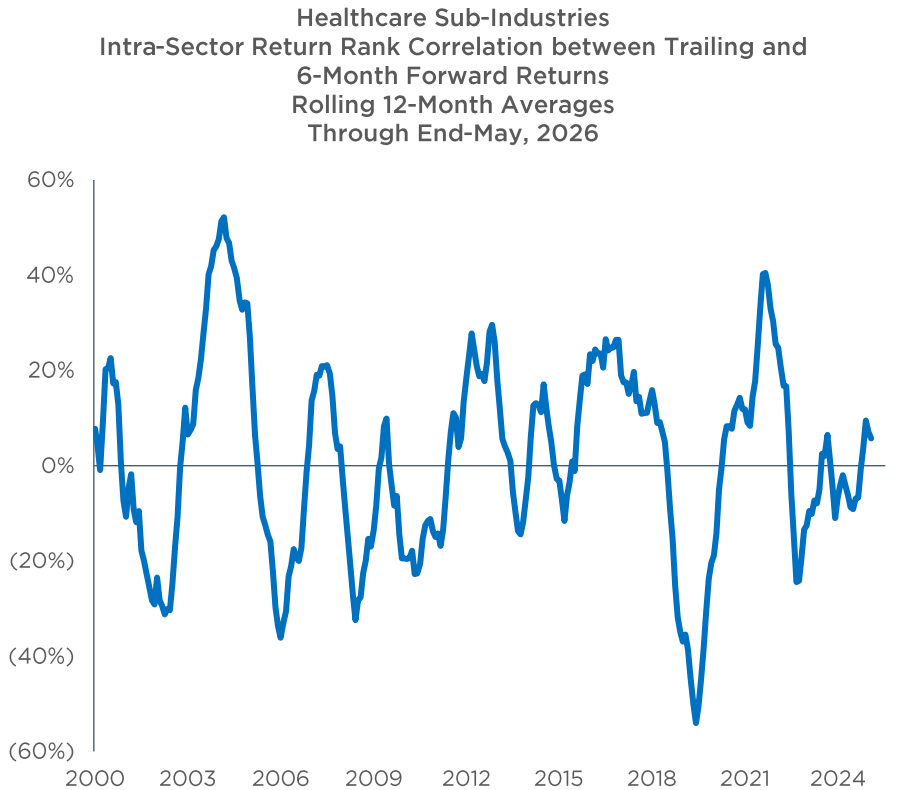
Source: Trivariate Research



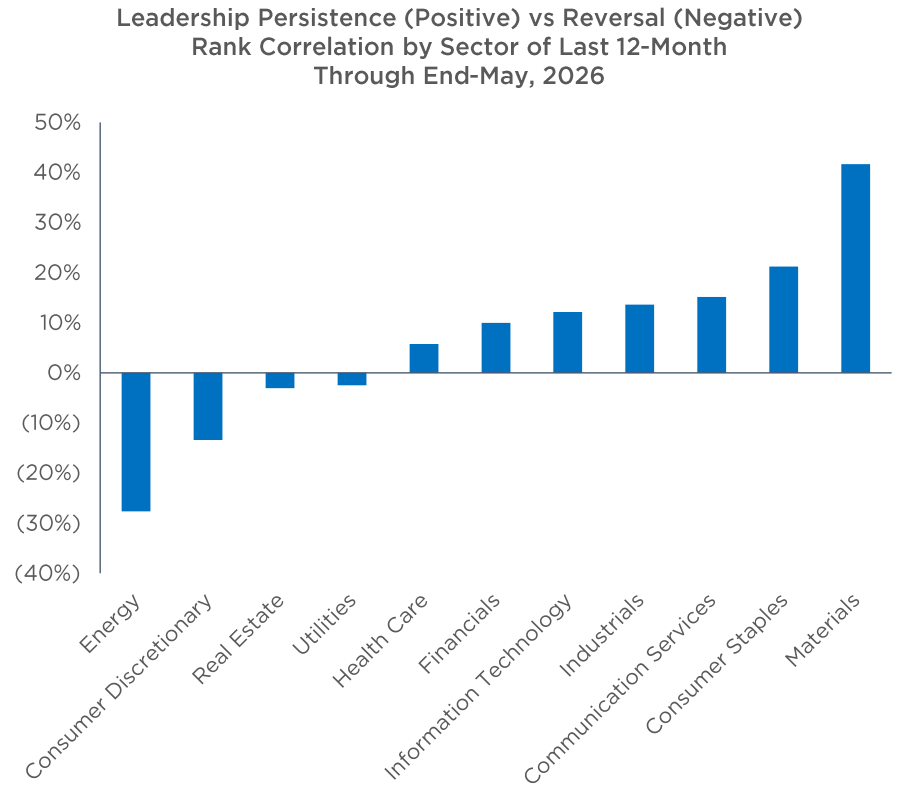
Source: Trivariate Research

KNOWING A SUB-INDUSTRY JUST WORKED HAS NO PREDICTIVE VALUE

Intra-sector leadership over a 6-month period in the Healthcare sector has near-zero predictive value for how that sub-industry will do over the next six months. We measure this by looking at the correlation of how a sub-industry within Healthcare ranked over the last 6 months compared with how it ranked over the next six months (left). Across sectors, Energy and Consumer Discretionary show clearer reversal behavior, while Materials, Staples, Communication Services, and Industrials show stronger persistence – the idea that once a sub-industry works (or fails) for six months this behavior is likely to continue. Healthcare sits closer to the middle. This means the recent price action where Drug Distributors sell-off and Managed Care appreciates is not a typical long-term rotational behavior (right). On the contrary, in Energy, when a certain sub-industry does relatively well for six months, that tends to be negatively correlated with it doing well over the next six months.



Source: Trivariate Research



Source: Trivariate Research

HISTORICALLY PHARMA AND BIOTECH WERE ANTICORRELATED

Healthcare has not historically traded as one unified sector on a sector-relative basis. Many sub-industry correlations are low or negative, which means relative outperformance in one Healthcare group has often coincided with relative underperformance elsewhere. The most notable long-term relationship is that Pharmaceuticals and Biotechnology are negatively correlated with many other Healthcare sub-industries and are most negatively correlated with each other. This should still be read through the rotation lens: the heatmap measures sector-relative returns, not absolute stock returns.

Pairwise Correlation of Monthly Sector Relative Return of Healthcare Sub-Industry
1999 Through End-May, 2026

Sub-Industry	Biotechnology	Healthcare Distributors	Healthcare Equipment	Healthcare Facilities	Healthcare Services	Healthcare Supplies	Healthcare Technology	Life Sciences Tools & Services	Managed Healthcare	Pharma.
Biotechnology	100%	(4%)	(7%)	(27%)	(15%)	(3%)	(13%)	(5%)	(23%)	(68%)
Healthcare Distributors	(4%)	100%	15%	26%	30%	(1%)	0%	(8%)	14%	(22%)
Healthcare Equipment	(7%)	15%	100%	31%	(1%)	23%	22%	23%	(7%)	(35%)
Healthcare Facilities	(27%)	26%	31%	100%	22%	20%	9%	20%	23%	(17%)
Healthcare Services	(15%)	30%	(1%)	22%	100%	10%	12%	(11%)	30%	(36%)
Healthcare Supplies	(3%)	(1%)	23%	20%	10%	100%	25%	29%	2%	(25%)
Healthcare Technology	(13%)	0%	22%	9%	12%	25%	100%	27%	(6%)	(27%)
Life Sciences Tools & Services	(5%)	(8%)	23%	20%	(11%)	29%	27%	100%	(14%)	(42%)
Managed Healthcare	(23%)	14%	(7%)	23%	30%	2%	(6%)	(14%)	100%	(22%)
Pharmaceuticals	(68%)	(22%)	(35%)	(17%)	(36%)	(25%)	(27%)	(42%)	(22%)	100%

Source: Trivariate Research

OVER THE LAST YR. PHARMA AND BIOTECH HAVE BEEN CORRELATED

The last 12 months show a sharper and more polarized Healthcare rotation regime than the long-term average. Managed Care has been strongly negatively correlated with Biotechnology and Pharmaceuticals. Distributors have also been negatively correlated with Managed Care, matching the original client observation. Pharma and Biotech. have been positively correlated. The recent heatmap should be interpreted as a current-regime snapshot, not a permanent structural map, because it uses only 12 monthly observations. Still, it reinforces the conclusion that recent Healthcare performance has been driven by distinct sub-industry leadership camps that are different from history over the last 12 months.

Pairwise Correlation of Monthly Sector Relative Return of Healthcare Sub-Industry (Last 12-Month)
Through End-May, 2026

Sub-Industry	Biotechnology	Healthcare Distributors	Healthcare Equipment	Healthcare Facilities	Healthcare Services	Healthcare Supplies	Healthcare Technology	Life Sciences Tools & Services	Managed Healthcare	Pharmaceuticals
Biotechnology	100%	32%	6%	(2%)	(72%)	(46%)	(15%)	2%	(78%)	54%
Healthcare Distributors	32%	100%	43%	66%	(37%)	23%	(39%)	(46%)	(43%)	12%
Healthcare Equipment	6%	43%	100%	43%	(16%)	33%	(38%)	(23%)	(35%)	(14%)
Healthcare Facilities	(2%)	66%	43%	100%	14%	2%	(39%)	(62%)	5%	(31%)
Healthcare Services	(72%)	(37%)	(16%)	14%	100%	18%	33%	(27%)	85%	(70%)
Healthcare Supplies	(46%)	23%	33%	2%	18%	100%	(45%)	(41%)	8%	13%
Healthcare Technology	(15%)	(39%)	(38%)	(39%)	33%	(45%)	100%	63%	37%	(58%)
Life Sciences Tools & Services	2%	(46%)	(23%)	(62%)	(27%)	(41%)	63%	100%	(11%)	(7%)
Managed Healthcare	(78%)	(43%)	(35%)	5%	85%	8%	37%	(11%)	100%	(70%)
Pharmaceuticals	54%	12%	(14%)	(31%)	(70%)	13%	(58%)	(7%)	(70%)	100%

Source: Trivariate Research

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