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TRIVARIATE RESEARCH

IS A NEW CEO GOOD?

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RESEARCH SUMMARY AND CONCLUSIONS

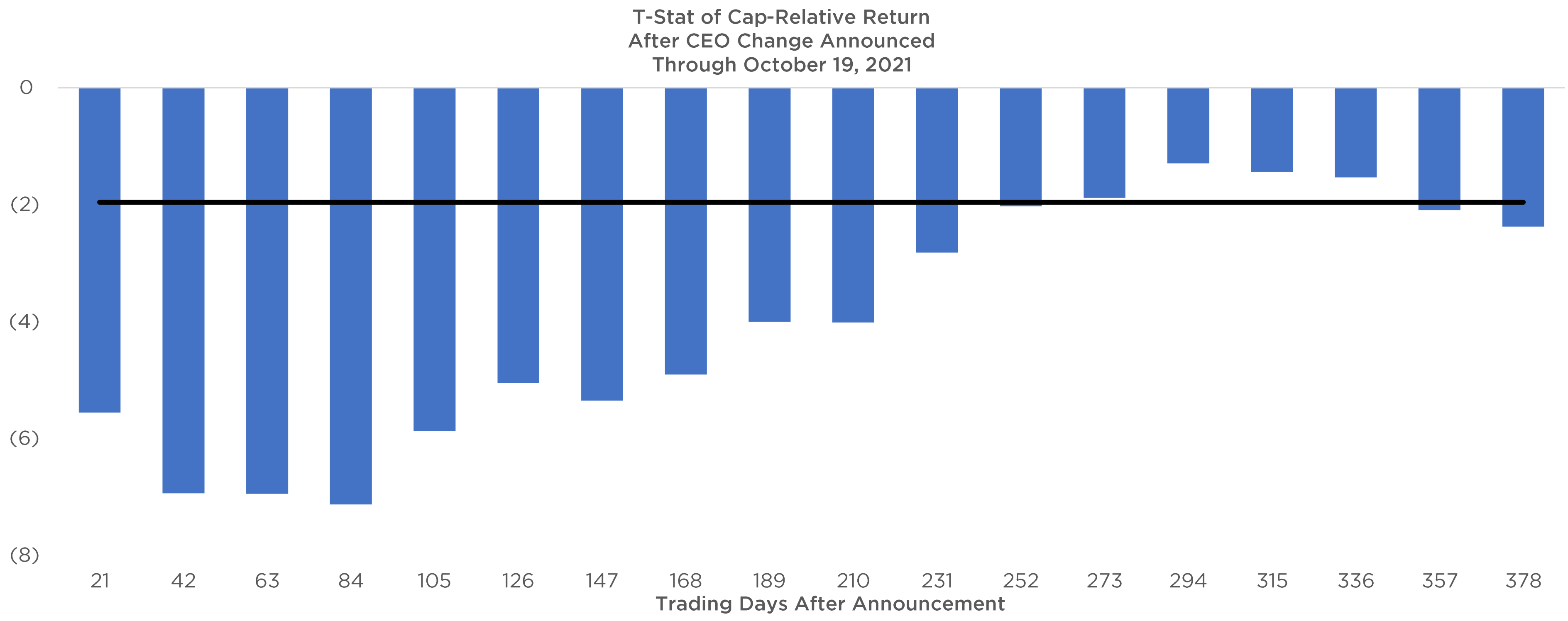
We analyzed stock behavior following the announcements of new CEOs. Stocks making new CEO announcements underperform on a volatility-adjusted basis, meaning short of some deep understanding of the new CEO's strategy, exiting / shorting stocks with a new CEO is on average prudent. The cumulative performance takes nearly 18 months to catch up to the average stock.

Size, style, and valuation matter: The average underperformance is longest for mega / large cap stocks, eight months on average, where management changes likely take longer to be effective. Micro/small and mid-cap underperformance is three-to-four months on average. Underperformance is most pronounced for growth stocks, in particular technology and healthcare, where the consensus perception of growth and management's confidence in its achievability is paramount and the need for a new CEO questions that outlook. Expensive stocks making CEO changes underperform, likely a correlated concept to growth stock underperformance.

Conclusion: We evaluated expensive growth stocks that made an announcement of a CEO change, 64% of which underperform their market-cap group over the subsequent eight months. We view selling long positions or initiating new shorts in expensive growth stocks making CEO changes as prudent. Value stocks, stocks with a meaningful dividend, or higher quality stocks do not statistically significantly lag following CEO announcements. For shorter-term strategies, the underperformance lasts sustainably even after the announcement date, so it is not too late to short the day after the announcement. Stocks with new CEOs are shown on page 10. 23 of the last 30 expensive growth stocks have lagged their peer group YTD, with 15 of them down double digits in absolute terms since the news.

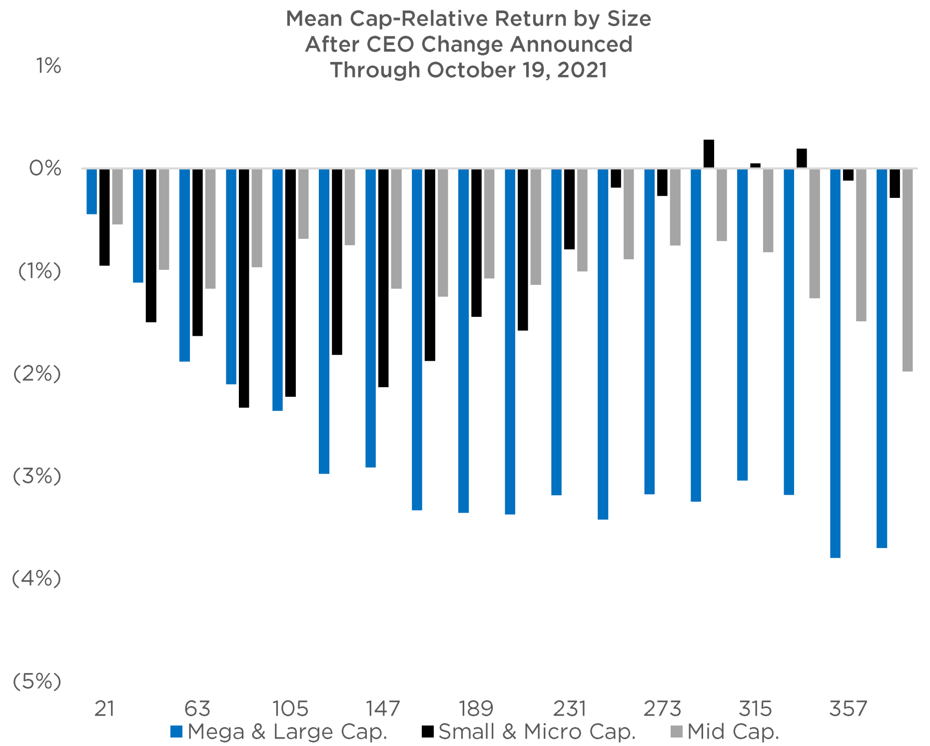
COMPANIES WITH NEW CEOS ARE AN INFERIOR ASSET CLASS

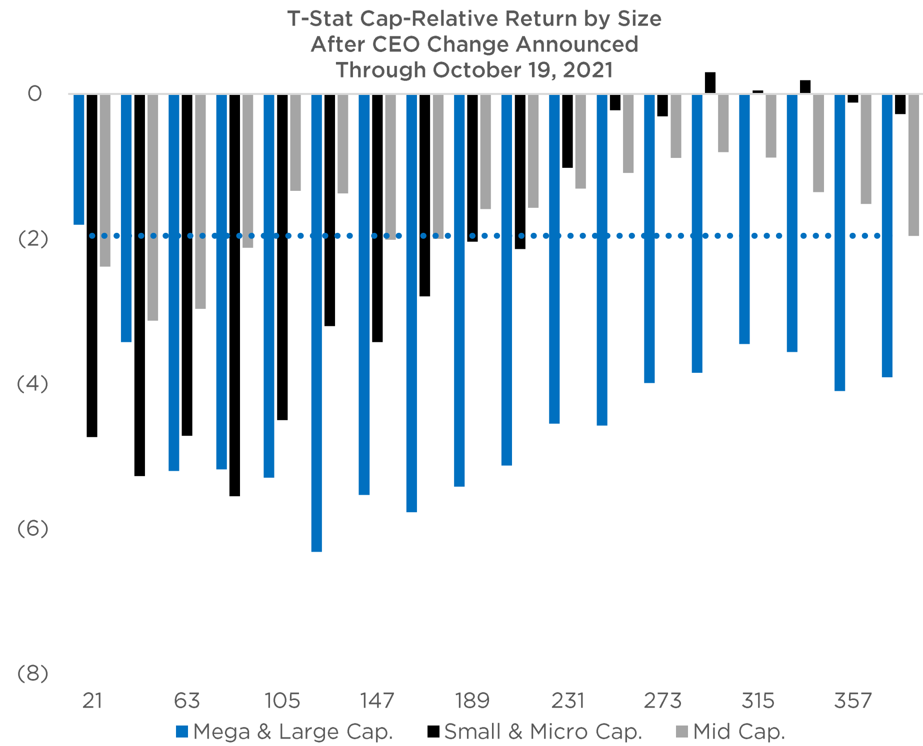
We analyzed the returns of companies following the announcement of a new CEO.   The volatility-adjusted returns are on average inferior for the four months, and the cumulative performance takes nearly 18 months to catch up to the average stock. This is a strongly statistically significant level of underperformance through four months post the announcement



FOR A NEW CEO, THE COMPANY SIZE MATTERS

We analyzed the subsequent stock performance for companies following new CEO announcements for mega / large, mid, and small / micro-cap stocks separately, believing that larger organizations may be harder to change (or ruin) for a new CEO.   Mega-large underperformance averages nearly 3% and bottoms after about 8 months (left chart). This is strongly statistically significant (right chart). Small / micro underperformance is 4 months, mid-cap underperformance is less pronounced

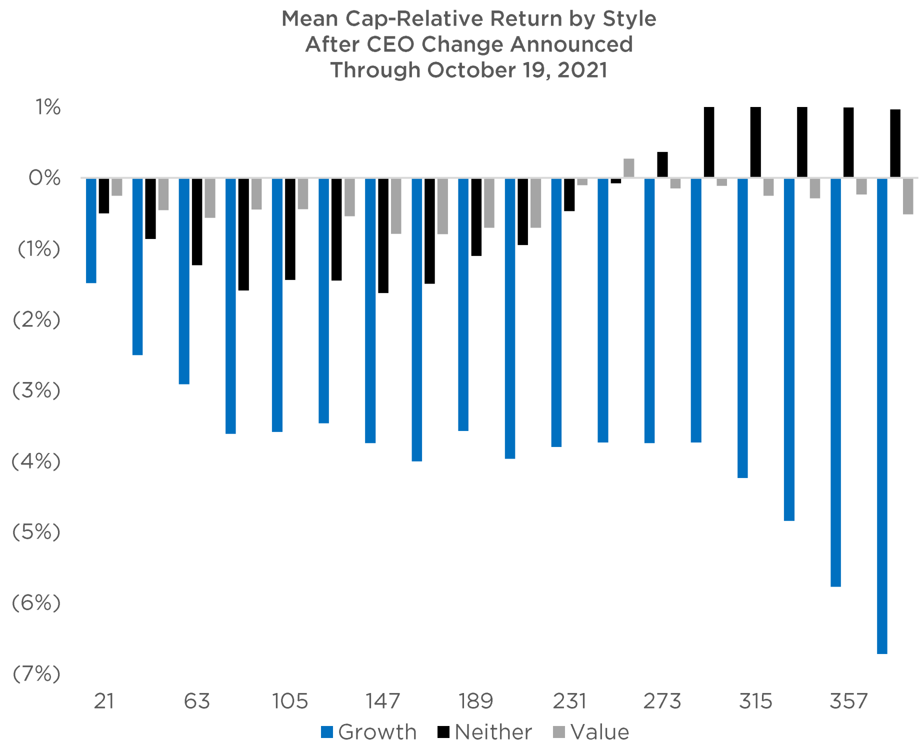


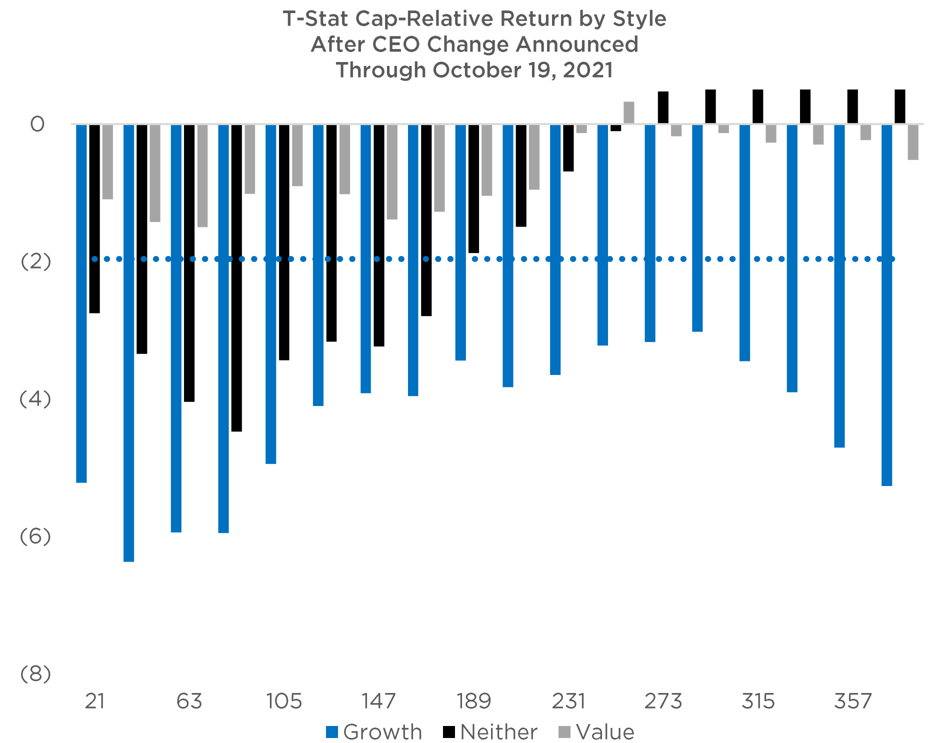


Note: Performance is relative to relevant size cohort, meaning the performance of a small-cap stock is compared to the average small-cap stock's performance

IT IS TYPICALLY BAD FOR A GROWTH STOCK TO GET A NEW CEO

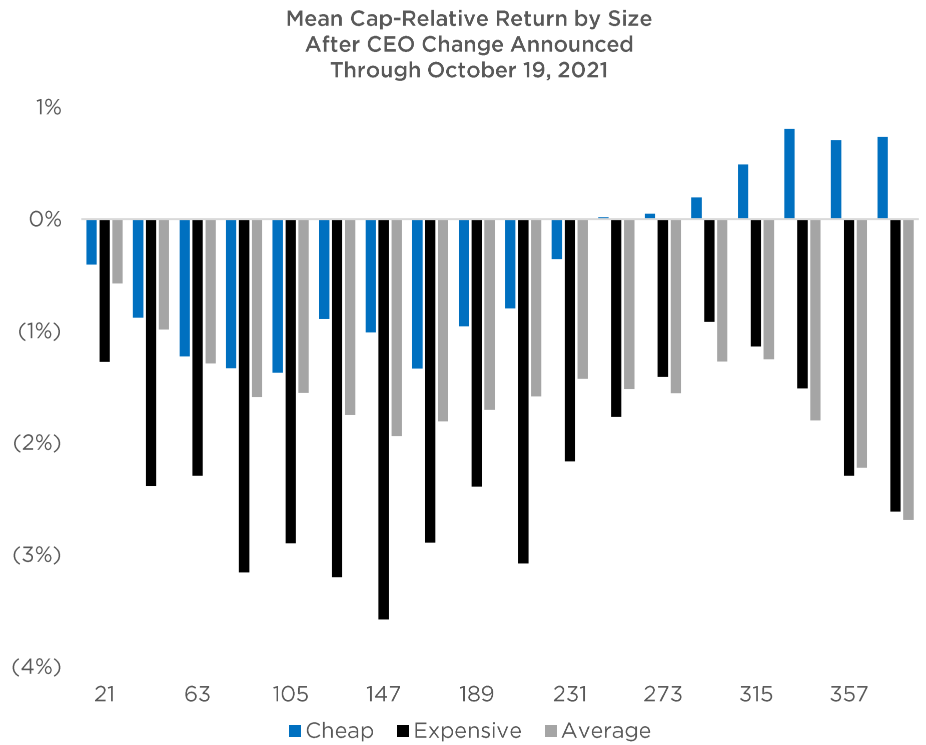
New CEOs for growth stocks are typically strongly punished, with an average of 7% underperformance over the next 18 months (left chart). This remains statistically significant, peaking around five months post-announcement (right chart). New CEO announcements for value stocks do not cause statistically significant underperformance

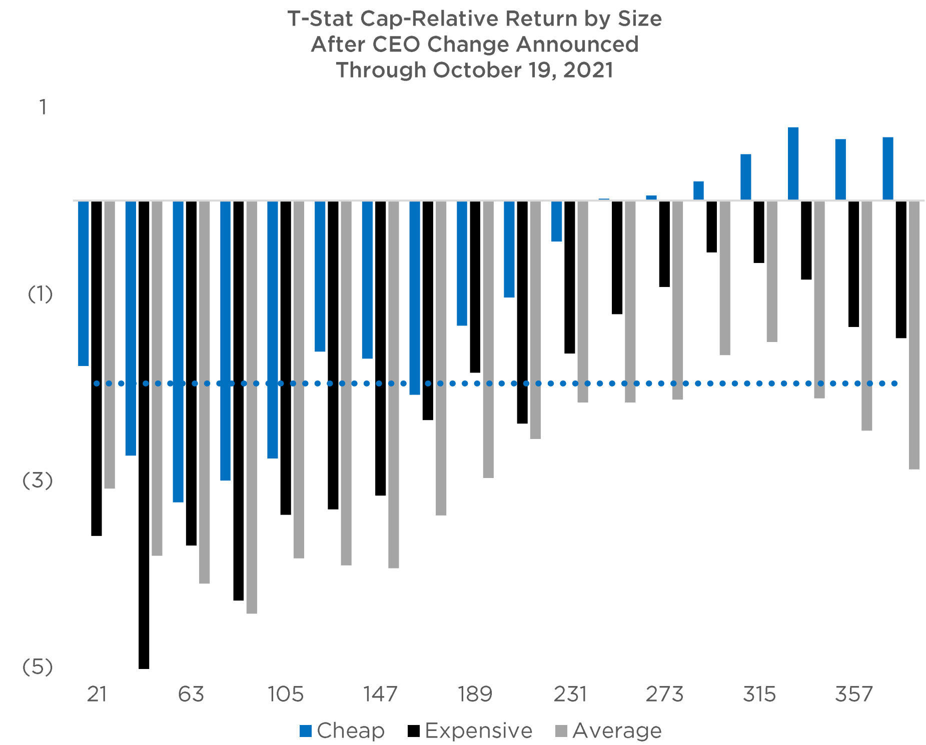




EXPENSIVE STOCKS THAT MAKE CEO CHANGES SHOULD BE AVOIDED

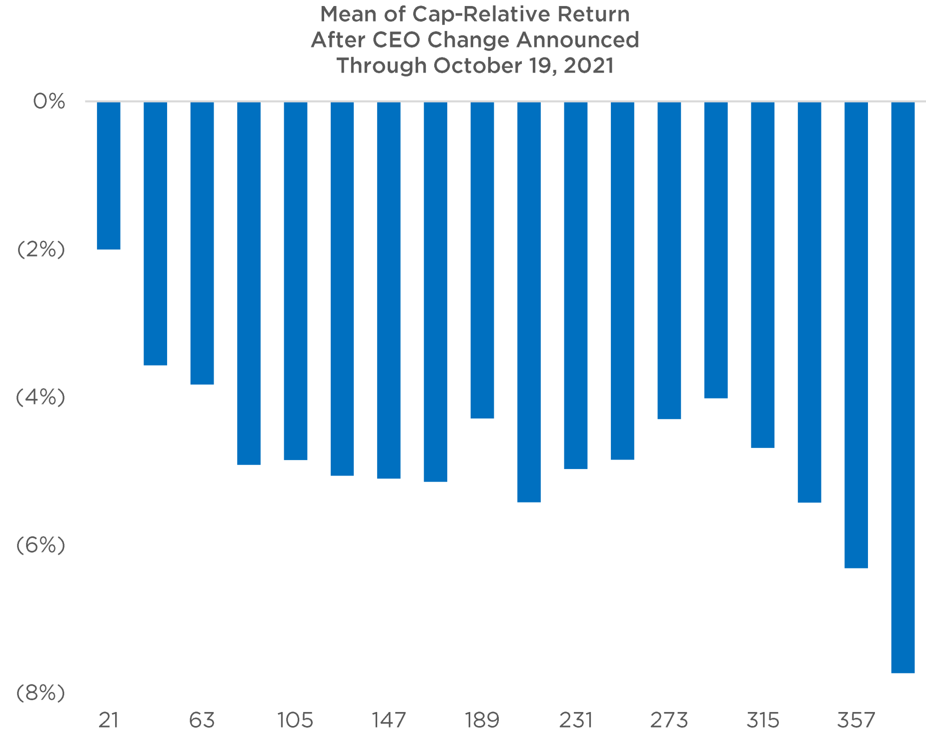
We broke the universe into three groups based on price-to-forward earnings (expensive, middle, cheap) and found that stocks that are expensive underperform by 4% on average through the first seven months (left chart). Average valuation stocks also statistically significantly underperform (right chart), with cheap stocks seeing the least negative reaction and some evidence of average outperformance after a year

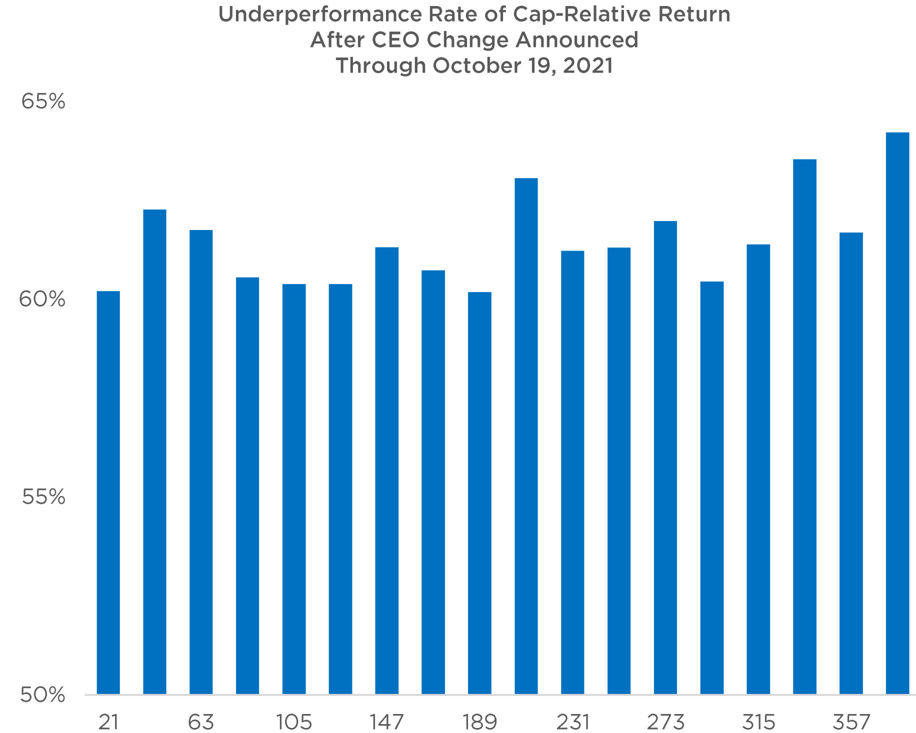




EXPENSIVE GROWTH STOCKS LAG WHEN THE CEO CHANGES

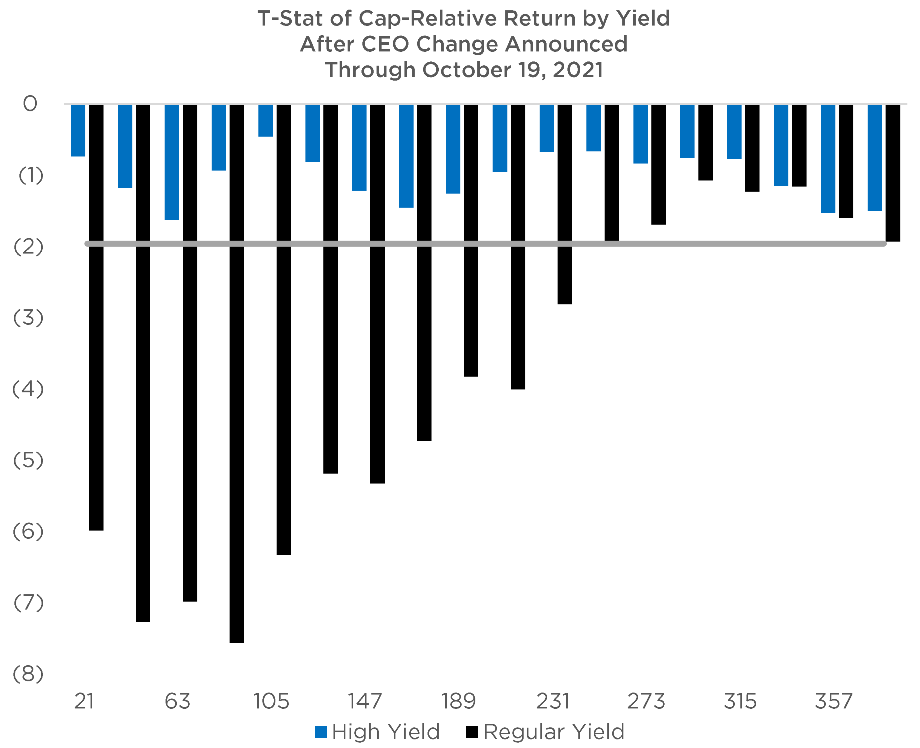
Because growth stocks and stocks that were expensive on price-to-forward earnings are most vulnerable to CEO changes, we analyzed the performance of the expensive growth universe. Expensive growth stocks underperform the most dramatically of any sub-group and should on average be sold / shorted following the announcement for three-to for months (left chart). This strategy has a hit rate well over 60% for the first year (right chart)

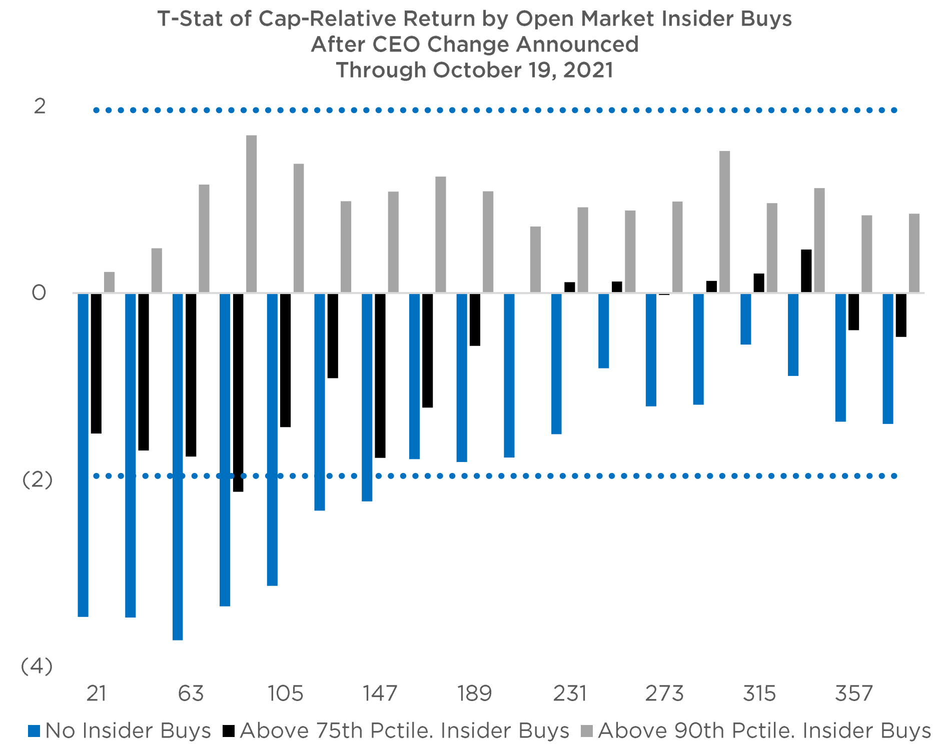




HIGH YIELD, HIGH QUALITY, INSIDER BUYING CAN OFFER PROTECTION

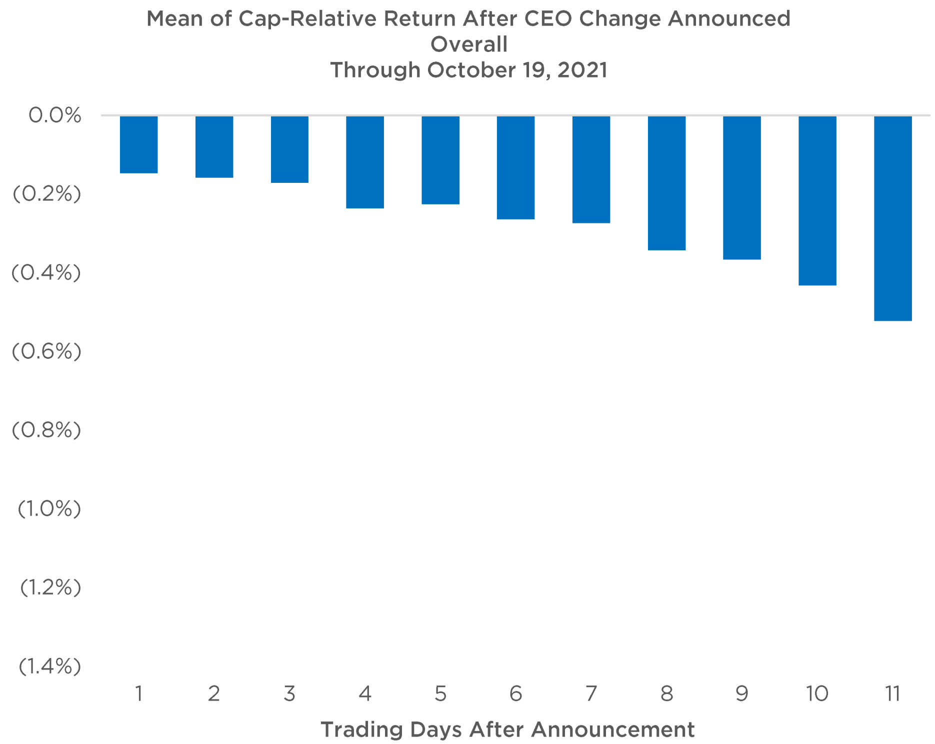
There are some companies that do not perform as poorly after a CEO change is announced. Stocks with a higher dividend yield do not lag (left chart), likely because investors view the stability of the business model and shareholder return "intact" despite the management transition. Companies with several open market insider buys of the stock also perform well and appear to be a strong way for management to signal confidence in the CEO change (right chart). We also found that higher quality companies also lag less, which seems logical and consistent in our judgment

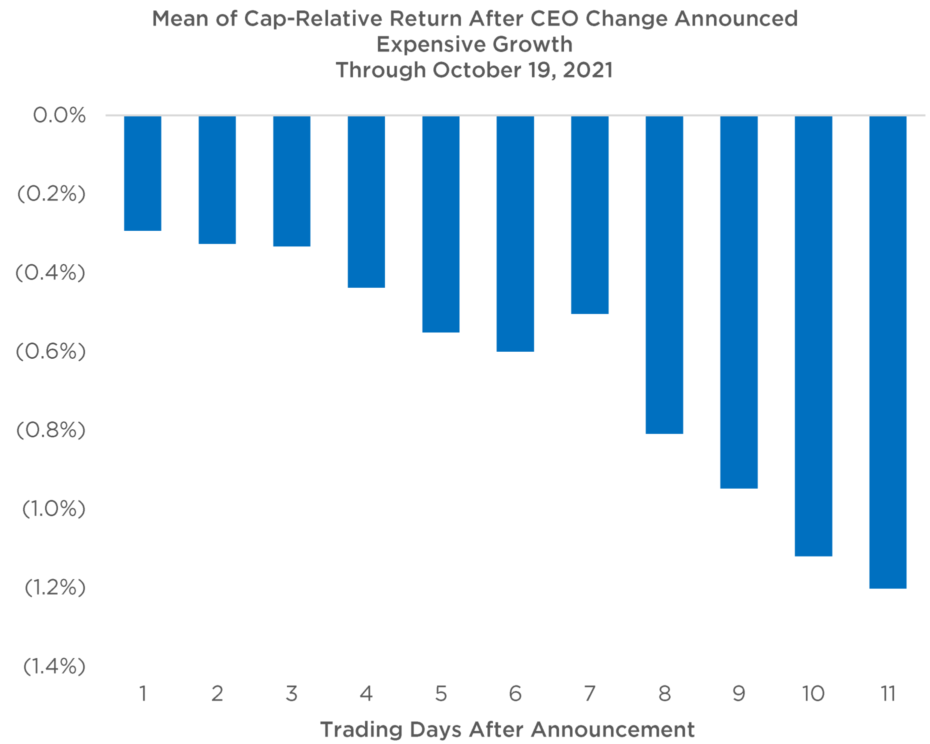




RETURNS ARE ACCRUED IN SHORT-TERM AS WELL

For short-term or systematic investors, a fair question would be – does the performance last after the initial announcement? We show the first 11 trading days after the announcement and find waiting a day or two is fine. The underperformance tends to increase for two full-trading weeks following the announcement (left chart), with expensive growth stocks (right chart) materially lagging





EXPENSIVE GROWTH STOCKS WITH NEW CEOS THIS YEAR

Below we show expensive growth stocks with CEO changes. Since the announcement, absolute performance, and performance of each stock relative to the average stock in their market cap cohort, shows this trend has continued this year. HUBS, PUMP, and CNK are notable exceptions, but 23 of 30 have lagged their peer group since the announcement, with 15 stocks down double-digits

Performance After CEO Change Announced
Expensive Growth Stocks
Through October 18, 2021

Ticker	Company Name	Industry	Date Announced	Return	Cap-Relative Return	Market Cap ($ US. Bil)
AMZN	Amazon.com, Inc.	Internet & Direct Marketing Retail	2/3/2021	4.1%	(13.2%)	1608.71
SNPS	Synopsys, Inc.	Software	9/14/2021	(7.6%)	(9.5%)	50.67
MAR	Marriott International, Inc.	Hotels, Restaurants & Leisure	2/23/2021	6.5%	(6.2%)	37.72
LUV	Southwest Airlines Co.	Airlines	6/25/2021	(8.8%)	(11.9%)	36.35
HUBS	HubSpot, Inc.	Software	3/1/2021	52.5%	43.4%	23.86
GH	Guardant Health, Inc.	Health Care Providers & Services	8/6/2021	(12.8%)	(15.5%)	11.10
ANGI	Angi Inc.	Interactive Media & Services	2/25/2021	(17.4%)	(28.3%)	6.99
LMND	Lemonade, Inc.	Insurance	7/26/2021	(23.8%)	(27.0%)	6.72
NEO	NeoGenomics, Inc.	Life Sciences Tools & Services	3/2/2021	(15.4%)	(25.6%)	5.96
SFIX	Stitch Fix, Inc.	Internet & Direct Marketing Retail	4/14/2021	(29.0%)	(31.9%)	5.27
SEAS	SeaWorld Entertainment, Inc.	Hotels, Restaurants & Leisure	5/6/2021	12.4%	9.6%	4.33
NEWR	New Relic, Inc.	Software	5/14/2021	23.5%	19.9%	4.06
JJSF	J & J Snack Foods Corp.	Food Products	5/14/2021	(13.1%)	(16.7%)	3.13
CNK	Cinemark Holdings, Inc.	Entertainment	7/29/2021	30.9%	29.3%	2.57
IRTC	iRhythm Technologies, Inc.	Health Care Equipment & Supplies	6/2/2021	11.8%	11.8%	2.21
WKHS	Workhorse Group Inc.	Automobiles	7/29/2021	(45.7%)	(47.3%)	2.04
VLDR	Velodyne Lidar, Inc.	Electronic Equipment, Instruments & Components	7/19/2021	(29.3%)	(36.4%)	2.02
KIDS	OrthoPediatrics Corp.	Health Care Equipment & Supplies	5/6/2021	(0.6%)	(1.4%)	1.15
BJRI	BJ's Restaurants, Inc.	Hotels, Restaurants & Leisure	7/7/2021	(19.8%)	(19.3%)	1.14
RIDE	Lordstown Motors Corp.	Automobiles	8/26/2021	(24.3%)	(26.7%)	1.10
LIND	Lindblad Expeditions Holdings, Inc.	Hotels, Restaurants & Leisure	3/30/2021	(22.6%)	(25.4%)	1.04
OTRK	Ontrak, Inc.	Health Care Providers & Services	3/16/2021	(75.4%)	(71.7%)	1.03
INGN	Inogen, Inc.	Health Care Equipment & Supplies	1/27/2021	(15.9%)	(30.3%)	0.99
SIBN	SI-BONE, Inc.	Health Care Equipment & Supplies	1/7/2021	(25.2%)	(39.7%)	0.97
PUMP	ProPetro Holding Corp.	Energy Equipment & Services	7/29/2021	30.8%	30.0%	0.94
OSPN	OneSpan Inc.	Software	9/2/2021	7.4%	9.3%	0.77
LLNW	Limelight Networks, Inc.	IT Services	1/21/2021	(40.3%)	(58.2%)	0.49

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