Fortuna Advisors LLC

MARCH 2022

2022 Fortuna Advisors Buyback ROI Report

A Peak to Peak Analysis of Buybacks from 2017 - 2021

TABLE OF CONTENTS

ABOUT FORTUNA ADVISORS

Fortuna Advisors collaborates with leaders to transform decision-making throughout their business to achieve exceptional results. Our management playbook delivers measurable outcomes through:

1. **Better Insights**: See the truth about where value is created or destroyed.

2. **Better Decisions**: Drive faster, better and enduring results.

3. **Better Behaviors**: Align incentives and processes to drive execution.

We serve as a catalyst to create a culture of ownership, where everyone from the board to management and employees embraces a long-term investor perspective to unlock the organization's full value creation potential.

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Letter from the CEO

Dear Reader,

Our mission at Fortuna Advisors is to help companies create more value and achieve higher total shareholder return (TSR) by developing new ways to measure and motivate success. In 2011, we developed “Buyback ROI” to compare share repurchases to other capital uses, such as capital expenditures and acquisitions.

Gregory V. Milano, CEO

It is a straightforward concept: when a company repurchases shares and its subsequent TSR is positive, it produces positive Buyback ROI. In other words, the company has earned a return on its investment in its own shares by retiring them before the market cap increase, which is concentrated in fewer shares.

In 2021, the US economy saw a massive recovery, as COVID-related restrictions were somewhat eased and optimism grew that the worst was behind us. Companies conserved capital during the pandemic, so cash balances surged; and in late 2020 and 2021, as many parts of the economy roared back, buybacks returned with a vengeance. Indeed, buybacks in 2021 for the S&P 500’s 350 largest share repurchasers reached a record annual volume exceeding $864 billion.

Unlike in last year’s 2021 Buyback ROI Report, most companies achieved a Buyback ROI that exceeded their TSR over the five years through 2021. We refer to this difference between Buyback ROI and TSR as “Buyback Effectiveness.” Achieving positive Buyback Effectiveness requires buying back more when the price is below the long-term share price trendline, which results in repurchasing more shares per dollar of buybacks. In 2021, aggregate Buyback Effectiveness was +0.7%—the highest ever since Fortuna began tracking the metric.

Buyback ROI and Buyback Effectiveness are measures of a buyback program’s success, and improving them should be the goal of every CEO, CFO, or Treasurer who oversees a repurchase program. Management teams that achieve strong results in these metrics can be said to have demonstrated good stewardship of investor capital, and are not just providing an artificial boost to EPS performance by reducing the share count.

Fortuna developed our VIBE® (Value-Inspired Buyback Execution) service to help clients achieve better buyback timing and improve Buyback ROI and Buyback Effectiveness. The VIBE service provides four objective signals designed to mitigate the human biases that lead many executives to always believe their shares are undervalued—biases that get in the way of better buyback timing. VIBE helps companies reap more value from their buyback programs by enabling them to repurchase significantly more shares for the same amount, or to retire the same number of shares while spending less. And this objective, fact-based approach means managers don’t have to justify their rationale for repurchasing shares to investors.

VIBE® is a registered service mark of Fortuna Advisors LLC

Buybacks in 2021: The Return of the Buyback

For over a decade, Fortuna Advisors has advocated for a proactive, value-based approach to share buybacks, starting with the introduction of "Buyback ROI" in our 2011 study. Since then, we have published our Buyback ROI ranking for the S&P 500's largest share repurchasers. The purpose of our Buyback ROI Reports has been twofold: (1) to show the staggering amounts of capital that have been deployed in repurchases; and (2) to demonstrate how value is created—or in far too many cases destroyed—through share repurchase programs.

After record-breaking buybacks in 2018 and 2019, levels fell off a cliff in 2020 due to the uncertainty brought on by the COVID-19 pandemic. In the second quarter (Q2) of 2020, corporate buybacks totaled $88 billion, a 55% drop from Q1 levels, as shown in Figure 1. Buyback spend began to recover toward the end of 2020, setting up 2021 for a significant rebound.

As with the economic recovery, buybacks in 2021 were not impeded by the emergence of covid variants. With the US economy experiencing nearly 6% GDP growth, many companies added to their large cash balances that had already been mounting due to conservative spending in 2020. The result was a buyback frenzy in Q3 and Q4—with both quarters exceeding the previous quarterly record!

To put this into perspective, Q4 2021 buybacks nearly doubled versus the same quarter in 2020, and nearly tripled since the nadir in Q2 2020. This trend appears poised to continue, as many companies have recently announced large authorizations for their share repurchase programs.

FIGURE 1 | Quarterly Buybacks 2017-2021

Q4 2021 Buybacks Reached an All-Time High

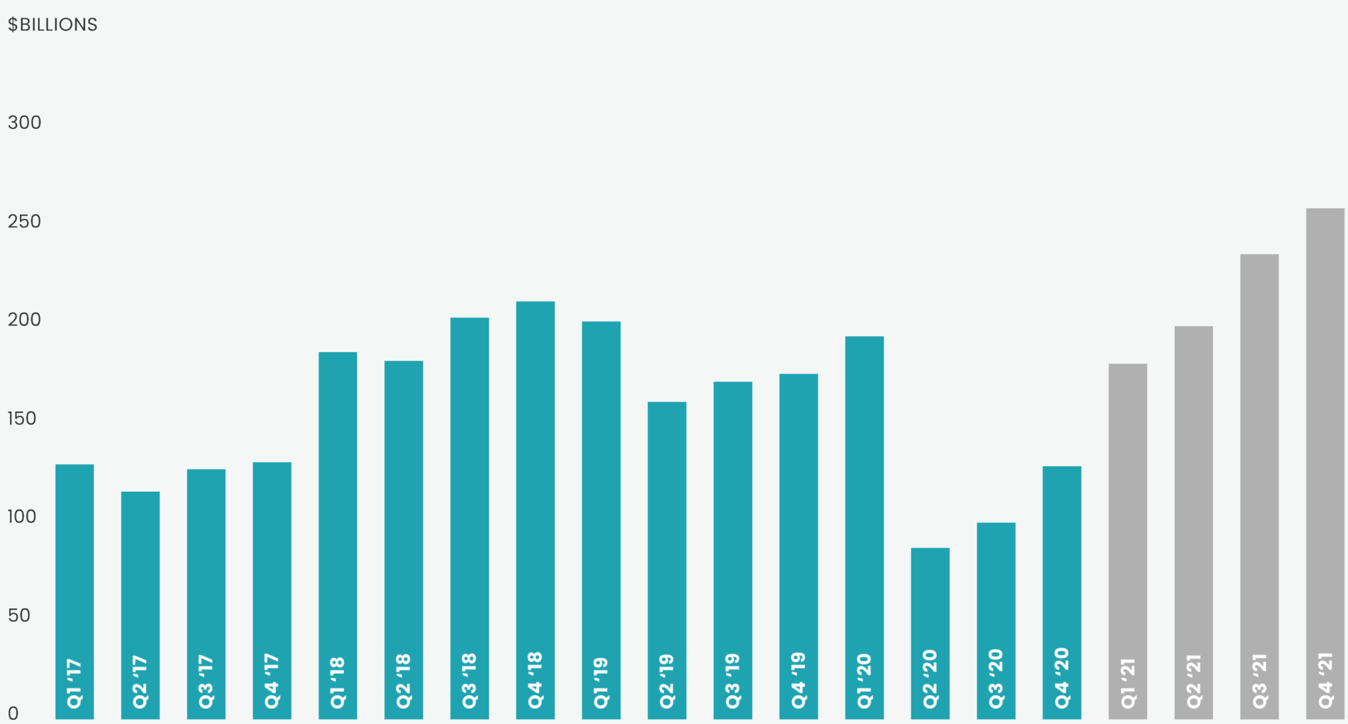


FIGURE 2 | Corporate Cash Holdings: 2017-2021

Cash Balances Remained High in 2021

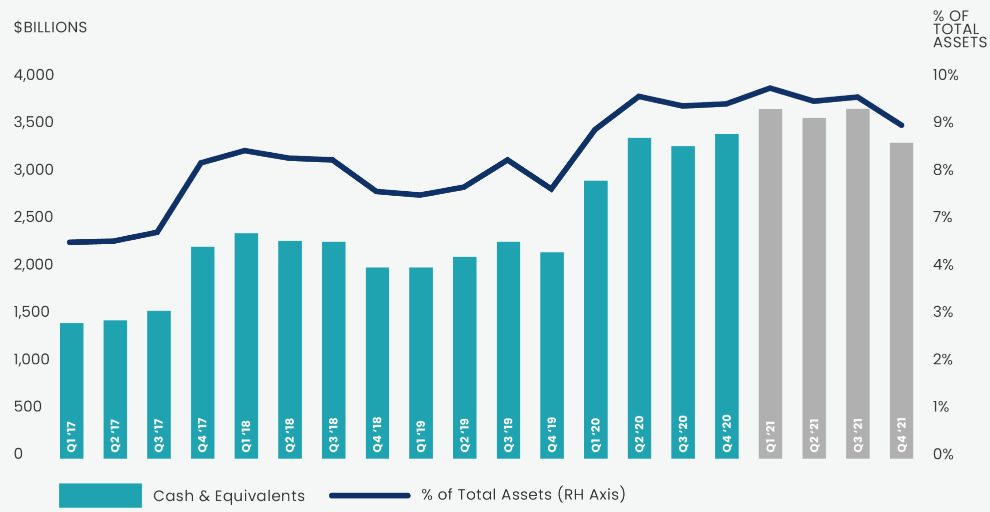
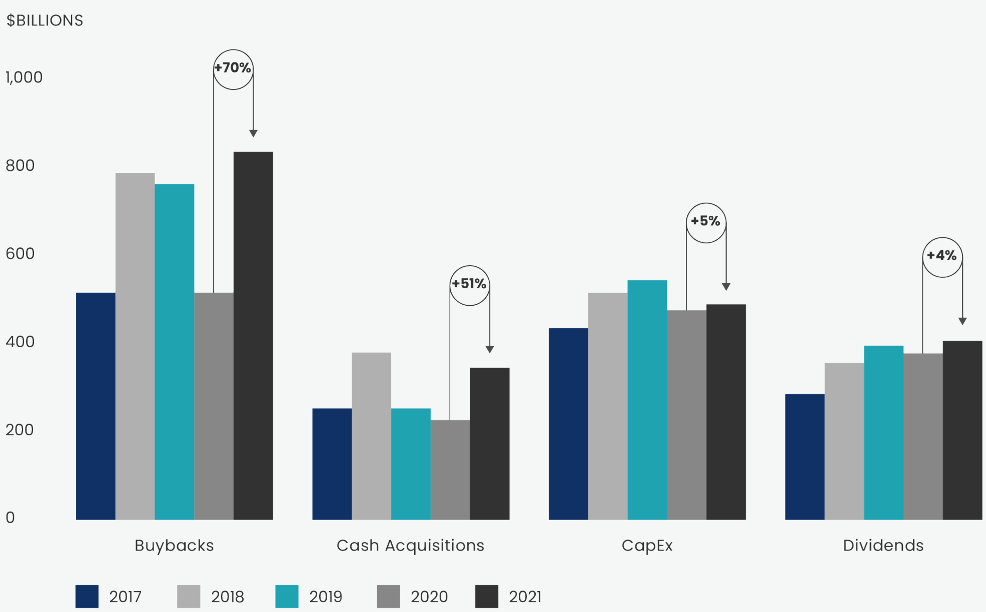


FIGURE 3 | Capital Deployment: 2017-2021

Capital Deployment Rebounded Across the Board in 2021



From the onset of the COVID-19 pandemic, companies preserved cash and that trend continued through Q3 2021. Cash balances dropped notably in Q4 2021, but still remain historically high, in part due to record corporate profits during the economic recovery. As of the end of 2021, aggregate cash balances were $3.2 trillion, a full $1.1 trillion higher than in Q4 2019, as shown in Figure 2. Cash as a percentage of total assets also remains high, a full 2% higher than in Q4 2019.

As with buybacks, all major forms of capital deployment rebounded in 2021, as shown in Figure 3. Capital expenditures were still low in Q1 and Q2 relative to 2018 and 2019, but increased substantially in Q3 and Q4, which had the third-highest quarterly value in the last five years. Cash acquisitions increased to $309 billion, the second highest aggregate yearly total over the past five-years. Aggregate dividends reached a five-year high, which is not too surprising, given that many companies didn't cut or reduce their dividend in 2020.

Later in this report, we will discuss the potential implications of inflation on buybacks and other forms of capital deployment.

Fortuna Buyback Metrics Explained

Fortuna Advisors developed Buyback ROI and Buyback Effectiveness to enable comparison of a company's share repurchase activity to its other uses of capital. In general terms, when the value of an acquired asset increases, we say it has earned a positive return on investment. Our thinking behind buybacks is similar–when the implied value of a company's repurchased shares increases over a period, it has earned a positive Buyback ROI.

Buyback ROI is calculated as an annualized internal rate of return (IRR) that accounts for: (1) the cash outflows associated with share repurchases; (2) the estimated cash "inflows" of dividends "avoided"; and (3) an estimated final "inflow" related to the final value of the accumulated shares repurchased.

If a company's share price starts the year at $100, pays a dividend of $1 at the end of each quarter and has a year-end share price of $110, it would have an outflow of $100, $4 of quarterly "inflows," and a final "inflow" of $110 at the end of the year—resulting in a Buyback ROI of 14.2%, as shown in Figure 4.

FIGURE 4
Calculation of Buyback ROI

	Time 0	Q1	Q2	Q3	Q4
Buyback	$100.00				
Dividends		$1.00	$1.00	$1.00	$1.00
Ending Price					$110.00
Cash Flows		$1.00	$1.00	$1.00	$111.00
Annualized IRR = Buyback ROI					14.2%

While it is easier to achieve a positive Buyback ROI when a company's TSR is generally increasing, it can also be achieved through effective timing of repurchases.

Buyback Effectiveness measures the value attributable to optimizing the timing of repurchases. It is calculated as the compound difference between Buyback ROI and the company's TSR, as shown in Figure 5. When Buyback ROI exceeds TSR, a company has executed buybacks when its stock was priced below the long-term trend, on average. When Buyback ROI trails TSR, a company has executed buybacks above this long-term price trend.

If the company had 16% TSR while generating the 14.2% Buyback ROI described above, it would mean it had negative Buyback Effectiveness due to poor timing. Alternatively, if it had 12% TSR with 14.2% Buyback ROI, it would have benefitted from good timing on its buybacks and positive Buyback Effectiveness.

To improve Buyback Effectiveness, companies should push towards having a real-time perspective on their intrinsic value per share and how that compares to market price per share—they are rarely the same. With the right toolkit and metrics, company Treasurers can build confidence on the best times to execute buybacks.

FIGURE 5
Calculation of Buyback Effectiveness

$$\textbf{Buyback Effectiveness} = \frac{(1 + \textbf{Buyback ROI})}{(1 + \textbf{TSR})} - 1$$

The Important Role of Buybacks

Companies generally repurchase shares for three reasons. Most repurchases are designed to efficiently return capital to shareholders willing to reduce their ownership in a company in part or in whole and redeploy the capital elsewhere. Such repurchases have the effect of reducing the number of shares outstanding, which concentrates future value creation (or destruction) for remaining shareholders.

Alternatively, companies also repurchase shares in the public market to offset newly issued shares awarded to employees as equity-based compensation. This form of repurchase is intended to reduce the net new shares issued and avoid dilution to existing shareholders that wish to retain their existing level of ownership in a company. In both cases, such repurchases are recorded in companies' cash flow statements as a purchase of common stock under financing activities.

A third form of repurchase occurs when an employee's equity-based compensation vests and is therefore treated as taxable income. To meet the company's obligation to withhold tax on taxable income, companies may net share settle the equity-based compensation awarded to the employee—in effect, they are "repurchasing" shares that had been awarded to the employee, which results in reducing the company's diluted number of shares outstanding. This payment of the tax obligations related to equity-based compensation is also recorded as a financing activity on the cashflow statement. For the purposes of our study, we do not distinguish between these three forms of repurchase activity.

Regardless of form, we continue to believe repurchases have a rightful place in the capital markets. The role of the capital markets is to move capital from where there is excess supply of capital to where there is an unmet need for capital. Investors and companies are thought of as the two sides of that market, but the investors themselves must first gather the capital that they will then allocate to companies.

This capital can come from places like insurance companies, pension funds, endowments, or family offices that have capital today, but no use for it until some future event. Capital can also come from investors' prior investments. When an investment has succeeded and produced a return in excess of what can be profitably redeployed within a company, buybacks serve as an efficient method to distribute such excess return through the capital markets to other companies with better growth prospects. Further, we believe restrictions on buybacks would, at best, result in higher dividends, and at worst, slow innovation and breed corporate complacency, as companies have less pressure to be efficient with their capital.

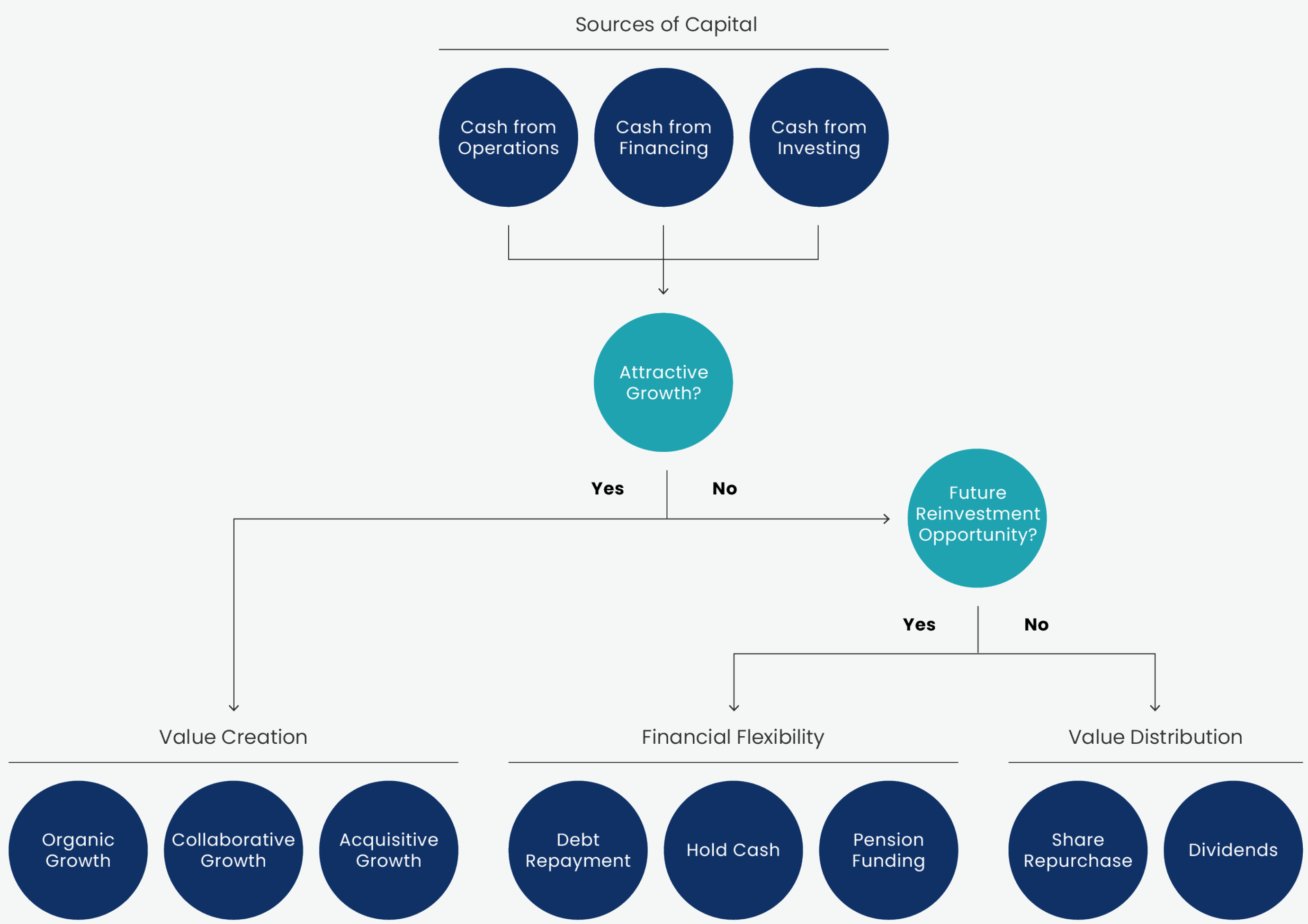
Once companies have invested in growth and financial flexibility, buybacks can play an important economic role in releasing capital to more productive uses.

The importance of developing a thoughtful buyback policy took the forefront in 2020. Many companies that bought back billions in stock from 2016 to 2019 had to raise capital to maintain solvency. Opponents of buybacks pointed out that had these companies been more temperate with buybacks in prior years, not only could they have had the financial flexibility to weather the pandemic better in 2020, they would have also been poised to pursue more opportunistic investment. While some headlines in 2020 may have cast a shadow over the practice, we believe this should not diminish the important role buybacks play in recycling, and better allocating, capital across markets.

Companies have three primary options when considering how to deploy capital: value creation, financial flexibility, or value distribution. Companies should first consider value-creating growth opportunities that exceed their cost of capital. These can include organic growth, acquisition, or collaborative growth. If no attractive opportunities for growth exist, companies should consider the optimal level of financial flexibility–let 2020 be a reminder of that. Once value creation and financial flexibility are fully evaluated and funded, the last option should be distribution of capital back to shareholders either through dividends or buybacks.

When a company decides to distribute capital to investors through buybacks, they should do so systematically, rather than arbitrarily. If companies are allocating capital to repurchase their shares instead of investing in growth, they should apply the same discipline as with any other investment to ensure they are optimizing the "return" they earn. The best way to do this is to compare a company's intrinsic value per share to the market value per share and repurchase shares when management believes, based on objective analysis, that their shares are undervalued. Such valuation signals can be used to indicate when shares are likely undervalued—a good time to execute a repurchase; or when shares are likely overvalued—an excellent time to use those shares as acquisition currency. With these signals in mind, Fortuna has developed a value-inspired buyback execution methodology, or "*VIBE*," which helps companies understand their buyback prospects at any point in time.

FIGURE 6
Hierarchy of Capital Allocation Choices



The Philosophical Debate Over Buybacks

The debate about whether or a not a company should use its capital to buy back stock can be intense. Broad statements in favor or against buybacks lack nuance and the simple recognition that both sides have a similar goal in mind–that the earnings and cashflow of a business be put to good use. The difference comes in how the two sides believe that goal is most likely to be achieved.

Many in the anti-buyback camp believe the optimal allocation of capital, for the good of the company and all its stakeholders, is achieved by companies committing to strengthening their own balance sheets, increasing their employees' wages, and continually striving for growth. These are all choices a company has for allocating its capital internally, so an anti-buyback philosophy is implicitly an argument that company managers are good allocators of capital–that their reinvestments within the company will lead to incremental value creation for the firm's employees, stakeholders, and shareholders.

If investors were confident companies could do this effectively, the debate would favor leaving capital at the original company to compound in value through effective reinvestment. For example, a long-term Amazon investor has done much better from the company reinvesting in its business than they would have if Amazon had repurchased that stock along the way, forcing the investor to find a new use for the capital.

But buyback proponents believe examples like Amazon are all too rare, and that professional investors tend to be better capital allocators than company managers—thanks both to their dedicated skill sets and to the sharper edge of their results-oriented environment. Professional investors can also more efficiently re-allocate capital within a sector, or from one sector to another, to support overall economic growth through secular shifts in the way value is created.

The question, then, is not really whether buybacks are "good" or "bad," but whether corporate managers are good or bad at allocating the capital entrusted to them by their investors, and whether and when they should return that capital. The answer to this question varies by industry and by management team. Indeed, a large part of Fortuna's practice is helping our corporate clients capture the upside of becoming better investors of their own capital.

The real question is not whether buybacks are "good" or "bad," but whether corporate managers are good or bad at allocating capital.

For those with a strong view either way on this debate, we would like to understand your perspectives. Please feel free to email us at *info@fortuna-advisors.com* to share your views or suggest a call for a discussion.

Buyback ROI on the Rise, Highest since 2014

There are two determinants of Buyback ROI. One is share price appreciation and the other is timing, which we capture in Buyback Effectiveness. Figure 7 lists the top ten Buyback ROI companies over the last five years. Like last year's report, each company generated their top ten Buyback ROI performance through exceptional TSR performance combined, for most, with solid buyback timing. Advanced Micro Devices (AMD) took the top spot, with exceptional Buyback ROI of 136% due to strong TSR along with outstanding Buyback Effectiveness. AMD's buyback timing knocked Etsy down to number two on the list despite a 13% annualized TSR advantage over AMD. Interestingly, Old Dominion Freight Line was the only non-tech-based company to crack the top ten.

FIGURE 7 | Buyback ROI: 2017-2021

Top 10 Buyback ROI Companies

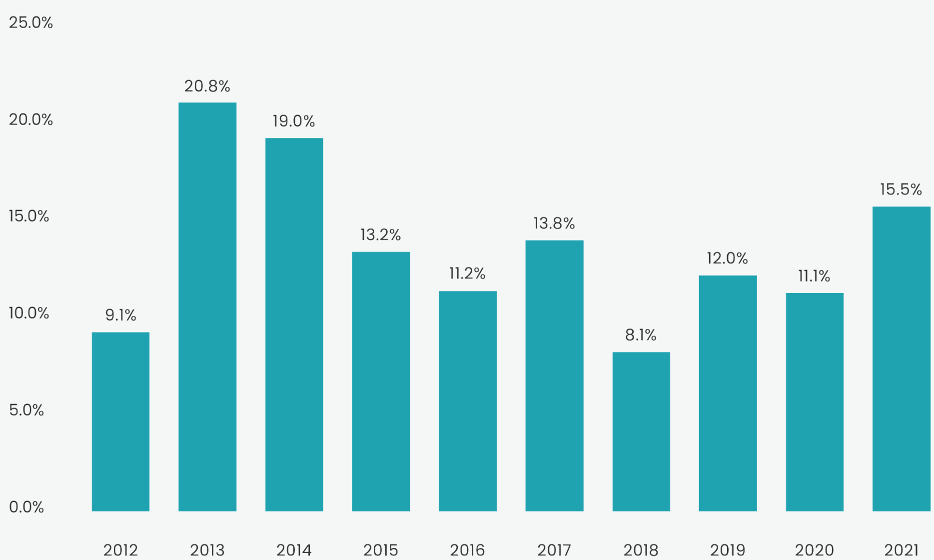
Rank	Company	Buybacks ($ millions)	Buyback ROI	TSR	Buyback Effectiveness
1	Advanced Micro Devices, Inc.	2,083	136.0%	66.2%	35.5%
2	Etsy, Inc.	2,083	84.5%	79.4%	2.8%
3	Fortinet, Inc.	3,110	71.3%	64.2%	7.0%
4	NVIDIA Corporation	7,529	64.9%	62.0%	-1.8%
5	Old Dominion Freight Line, Inc.	1,313	60.8%	44.9%	10.9%
6	MSCI Inc.	2,369	56.6%	52.3%	2.8%
7	KLA Corporation	4,144	55.4%	43.4%	10.0%
8	Cadence Design Systems, Inc.	2,094	50.8%	49.2%	2.8%
9	Arista Networks, Inc.	1,120	50.0%	42.8%	7.3%
10	ServiceNow, Inc.	2,049	49.7%	54.2%	-1.6%
Median Top 10		2,089	58.7%	53.3%	4.9%
Median of All Ranked Companies		3,732	15.5%	15.1%	0.7%

Figure 8 shows the trailing five-year median Buyback ROI for the companies in our study over the last ten years. Buyback ROI over the last five years ending in 2021 was driven by stronger TSR and better timing. Indeed, in this year's report, only 11% of companies achieved a negative Buyback ROI, while the average over the last five reports was 19%. We look forward to seeing if this trend continues, as stronger Buyback ROI means better capital productivity. As investors increasingly pay attention to results from these large capital outlays, we expect companies will take more studied approaches to buybacks, and this will be the case.

Indeed, in this year's report, only 11% of companies achieved a negative Buyback ROI, while the average over the last five reports was 19%. We look forward to seeing if this trend continues, as stronger Buyback ROI means better capital productivity.

FIGURE 8 | Trailing 5-Year Median Buyback Performance

Buyback ROI is at a Seven-Year High



Buyback Effectiveness in 2021: A New Record

Historically, most companies overlook the importance of timing and relative valuation when determining their buyback plans. Many make buyback decisions based on excess cash levels rather than determining whether it's a good time for buybacks. As a result, in nearly every year since our creation of Buyback ROI, median Buyback Effectiveness has been negative. Since we started our Buyback ROI analyses, the five years ending in 2019 marked the first period when more companies had positive Buyback Effectiveness than negative, as the median reached +0.6%. Unfortunately, many companies reverted to negative Buyback Effectiveness in 2020; and as seen in Figure 9, the median Buyback Effectiveness dropped to -0.3%. The good news is that in 2021 the trend resurged and even reached a new high, as median Buyback Effectiveness hit +0.7%.

FIGURE 9 | Buyback Effectiveness: 2017-2021

Buyback Effectiveness Highest on Record

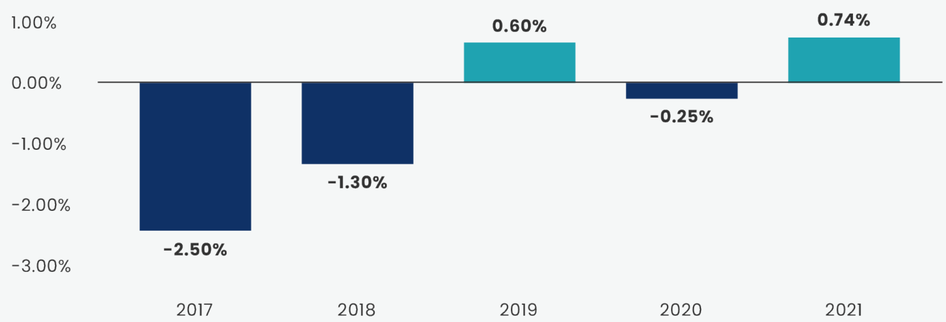


Figure 10 lists the ten companies with the highest Buyback Effectiveness over the last five years. In 2021's report there were no industrial companies that made it into the top 10, however this year we had Johnson Controls International and Quanta Services. Industrial companies were able to use buybacks as an effective tool to create value within.

And, like last year, the TSR outlier that managed to time its way to a neutral Buyback ROI has once again appeared in the top 10. Newell Brands Inc. faced meaningful TSR performance challenges, yet still delivered a positive 6.1% Buyback ROI through an impressive Buyback Effectiveness of 18.6%. Congrats to the treasury department at Newell Brands on this great achievement!

FIGURE 10 | Buyback Effectiveness: 2017-2021

Top 10 Buyback Effectiveness Companies

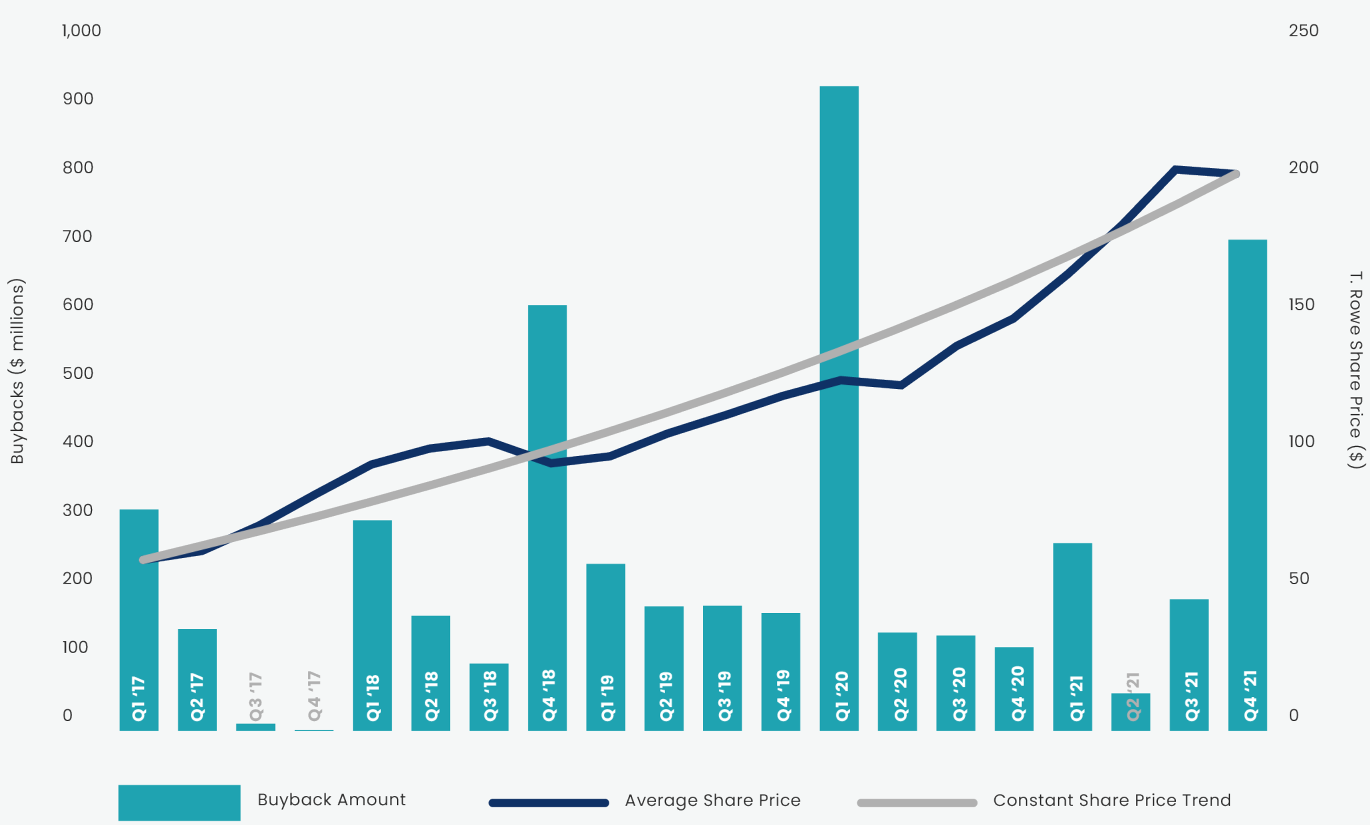
Rank	Company	Buybacks ($ millions)	Buyback ROI	TSR	Buyback Effectiveness
1	Advanced Micro Devices, Inc.	2083	136.0%	66.2%	35.5%
2	LKQ Corporation	1297	36.1%	14.5%	21.9%
3	Signature Bank	1807	43.8%	18.0%	20.4%
4	Newell Brands Inc.	1763	6.1%	-9.7%	18.6%
5	Gartner, Inc.	2333	47.7%	27.0%	16.1%
6	Johnson Controls International plc	11060	33.5%	17.5%	15.9%
7	Bath & Body Works, Inc.	900	25.0%	9.8%	14.9%
8	Invesco Ltd.	693	14.2%	-0.8%	14.2%
9	Lumen Technologies, Inc.	1017	9.4%	-3.2%	14.1%
10	Quanta Services, Inc.	967	48.2%	27.2%	13.9%

Case Study: T. Rowe Price's Buyback Effectiveness

Figure 11 shows T. Rowe Price's buybacks by quarter as well as their average share price for that quarter and their constant share price appreciation trend. We can see most of the shares were bought when their price dropped in Q1 2020 due to the covid pandemic. A well-executed response due to a drop in the share price and higher trading volumes in Q1 led to a repurchase of 8.3 million shares. This was 3.5% of their outstanding common stock at an average price of $106.43 per share. The company's repurchasing pattern shows how good timing can boost buyback success by retiring more shares per dollar deployed.

FIGURE 11

T. Rowe Price Group, Inc. Achieved Strong Buyback Effectiveness



Buyback ROI by Sector

When we look at sector median values, we see again the important role that TSR plays in generating strong Buyback ROI. Indeed, the most important question a company should consider in buying back shares is whether they expect their share price to rise going forward, as buybacks amplify performance by concentrating any future gains or losses across a smaller number of shareholders. Evaluating this question, of course, requires judgment, but no more so than assessing whether an acquisition target will be worth more in the future than what we have to pay for it now.

Figures 12 and 13 rank the sectors by Buyback ROI and the top 3 companies within each sector.

Once again, the Tech sector proved to be on top in Buyback ROI, as shown in Figure 11. The sector's median Buyback ROI of 26.1% was about 1.8% above median TSR, indicating strong Buyback Effectiveness (timing) enhanced Buyback ROI.

Taking second place was the Industrials sector, which deployed the fourth most capital into buybacks. Its impressive Buyback ROI was again achieved due to exceptional TSR performance along with improved buyback timing. In last year's report Industrials were second in Buyback ROI despite having negative Buyback Effectiveness.

Consumer Discretionary rounds out our top three Buyback ROI sectors, with an 18.0% median

The most important question a company should consider in buying back shares is whether they expect their share price to rise going forward, as buybacks amplify performance. Evaluating this question requires judgment, but no more so than assessing whether an acquisition target will be worth more in the future than what we have to pay for it now.

FIGURE 12

Median Buyback ROI by Sector

Rank	Sector	Aggregate Buybacks ($ millions)	Median		
			Buyback ROI	TSR	Buyback Effectiveness
1	Information Technology	1,063,383	26.1%	24.3%	1.3%
2	Industrials	280,411	18.9%	17.3%	0.8%
3	Consumer Discretionary	311,024	18.0%	15.8%	1.0%
4	Financials	705,279	14.8%	11.9%	1.1%
5	Health Care	368,817	14.4%	17.0%	-0.5%
6	Materials	61,905	13.9%	15.7%	1.0%
7	Real Estate	6,305	12.9%	14.0%	-1.6%
8	Communication Services	326,117	10.1%	10.4%	-1.2%
9	Consumer Staples	173,183	9.3%	10.6%	0.9%
10	Utilities	9,724	5.7%	6.1%	-1.7%
11	Energy	67,287	1.3%	1.1%	1.1%

NOTE: Medians affect the relationship of Buyback ROI, TSR, and Buyback Effectiveness.

Buyback ROI and Buyback Effectiveness of 1%. As in last year's report, the Energy sector rounds out the bottom of the list this year, despite Buyback Effectiveness being positive for the first time in four years. With the recent surge in oil prices, all those past energy buybacks may look better in our next report, if the oil price rise is sustained.

Figure 13 lists the top three Buyback ROI companies in each sector, along with their Buyback ROI results. The top three companies in all sectors produced a positive ROI. Even companies in Energy, that last year were all negative, managed to deliver a positive Buyback ROI.

Interestingly, a new company rose to number one not only in the Tech sector, but across all sectors. Advanced Micro Devices reached an ROI of 136%—the highest ROI seen in any of the previous reports. This is especially impressive for a newcomer to the game, as they approved their first buyback program in April of 2021, executing roughly half of an authorized $4 billion in repurchases in that year.

FIGURE 13

Top Buyback ROI Companies by Sector

#1 in Sector

Sector	Company	Buyback ROI
Information Technology	Advanced Micro Devices, Inc.	136.0%
Industrials	Old Dominion Freight Line, Inc.	60.8%
Consumer Discretionary	Etsy, Inc.	84.5%
Financials	MSCI Inc.	56.6%
Health Care	IDEXX Laboratories, Inc.	40.5%
Materials	The Sherwin-Williams Company	35.8%
Real Estate	SBA Communications Corporation	24.3%
Communication Services	Alphabet Inc.	42.4%
Consumer Staples	Costco Wholesale Corporation	34.3%
Utilities	Evergy, Inc.	7.6%
Energy	Diamondback Energy, Inc.	14.6%

#2 in Sector

Sector	Company	Buyback ROI
Information Technology	Fortinet, Inc.	71.3%
Industrials	Quanta Services, Inc.	48.2%
Consumer Discretionary	Chipotle Mexican Grill, Inc.	47.7%
Financials	Signature Bank	43.8%
Health Care	Thermo Fisher Scientific Inc.	39.0%
Materials	Linde plc	30.5%
Real Estate	American Tower Corporation	21.3%
Communication Services	Meta Platforms, Inc.	21.5%
Consumer Staples	The Estée Lauder Companies Inc.	32.7%
Utilities	PPL Corporation	5.9%
Energy	Pioneer Natural Resources Company	14.5%

#3 in Sector

Sector	Company	Buyback ROI
Information Technology	NVIDIA Corporation	64.9%
Industrials	United Rentals, Inc.	39.9%
Consumer Discretionary	Target Corporation	44.4%
Health Care	Moody's Corporation	33.4%
Communication Services	Align Technology, Inc.	38.2%
Materials	Nucor Corporation	29.1%
Consumer Staples	Simon Property Group, Inc.	4.4%
Real Estate	Charter Communications, Inc.	19.0%
Financials	The Hershey Company	17.5%
Utilities	NRG Energy, Inc.	5.4%
Energy	Hess Corporation	13.5%

Capital Deployment in an Inflationary Environment

Despite strong GDP growth, an economy adding 537,000 new jobs a month on average[1] in 2021, and an unemployment rate of 3.8%, the main headline dominating the economy for the last six months has been inflation. Inflation last year grew at a rate not seen in 40 years, as we experienced a monthly increase in annualized inflation from 1.4% in January 2021 to 7.5% by January 2022. It is difficult to say to what extent inflation will be transitory or persist. But if it does remain high, we offer the following thoughts on how companies should adapt their thinking around capital deployment.

As stated earlier in this report, when there are attractive opportunities for growth, managers should consider these their highest priorities as they allocate capital. Companies lacking such opportunities should evaluate their need for financial flexibility, and only then return capital to shareholders through dividends and opportunistic buybacks. If inflation persists and interest rates remain low, financing profitable investments with debt makes sense, particularly for investments that many expect to increase in value in an inflationary environment, like corporate real estate and acquisitions. The logic behind this is that, if inflation persists and interest rates start to rise over time, then the real value of the incremental debt falls, while many expect the purchased assets to preserve their value.

Long-term inflation could put serious pressure on management teams to repurchase shares. Many expect interest rates to rise, since investors may demand higher rates to offset the inflation. This would cause the cost of capital, which is commonly used to set hurdle rates for investment, to increase. A higher hurdle rate would likely lead to less investment, and, in turn, increase cash sitting idly on balance sheets. As a result, investors may pressure managements to return their capital, so it doesn't lose value sitting on their books. If this scenario plays out, management should not succumb to the pressure to distribute capital at any cost, but instead only buy back shares if they believe their share price is below its intrinsic value. Otherwise, Buyback ROI will be below their company's hurdle rate to deploy capital, signaling capital was put to poor use.

Naturally, inflation's effects will vary by company. Those with substantial product and service differentiation will be more likely to be able to pass along increased input costs through higher prices on their own products and services, and may not require any significant changes to their capital deployment policies. But those unable to pass on cost increases, whether due to regulation, crowded markets, or limited product differentiation, should be careful to maintain financial flexibility and consider limiting distributions. This applies especially to buybacks, which would only serve to amplify any performance downturns.

Long-term inflation could put serious pressure on management teams to repurchase shares. If this scenario plays out, management should not succumb to the pressure to distribute capital at any cost, but instead only buy back shares if they believe their share price is below its intrinsic value.

[1] https://www.nytimes.com/2022/01/07/business/economy/jobs-report-december-2021.html

[2] https://www.statista.com/statistics/273418/unadjusted-monthly-inflation-rate-in-the-us/

FIGURE 14 | EBITDA Margin Growth vs. Revenue Growth

Pricing Power as a Guide for Capital Deployment Policy

Consider Figure 14, which plots EBITDA margin growth vs revenue growth for the three years between 2019 and 2021. Firms in the top right, which we call "Price Makers," have grown revenue and profitability over this period. Firms in this position are best suited to repurchase shares, assuming they have enough capacity to grow profitable revenue without significant new investment. Firms in the top left, which we call "Margin Managers," have grown EBITDA margins while losing revenue, likely through a mix of focusing on more profitable customers and products, and successfully controlling costs. These firms would likely benefit more from investment that can grow revenue at their new profitability baseline, and should only repurchase shares if they are confident their TSR will outperform their required return. Companies in the bottom right quadrant, referred to as "Price Takers," are in a similar position, where they may benefit more from investments that enhance their differentiation. Companies in the bottom left quadrant, "Loss Managers," are losing revenue and profitability. Share repurchases should be the lowest priority for these firms, since they need to improve both profitability and growth, which may require investment.

Concluding Remarks

Thank you for your time and interest in our analysis and commentary on this important subject. This report aims to help companies evaluate and make the most of their own buyback prospects and performance. We hope that, as attitudes about buybacks evolve, companies will continue to embrace careful and comprehensive planning for buybacks, as they would with any substantial capital outlay. Better-informed buyback programs can lead the way to more value creation for all stakeholders, and to a better overall allocation of resources across the economy. The following pages provide the full 2022 Buyback ROI Ranking by company.

Full List: 2022 Fortuna Advisors Buyback ROI Ranking

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
1	Advanced Micro Devices, Inc.	2,083	136.0%	35.5%
2	Etsy, Inc.	1,122	84.5%	2.8%
3	Fortinet, Inc.	3,110	71.3%	7.0%
4	NVIDIA Corporation	7,529	64.9%	-1.8%
5	Old Dominion Freight Line, Inc.	1,313	60.8%	10.9%
6	MSCI Inc.	2,369	56.6%	2.8%
7	KLA Corporation	4,144	55.4%	10.0%
8	Cadence Design Systems, Inc.	2,094	50.8%	2.8%
9	Arista Networks, Inc.	1,120	50.0%	7.3%
10	ServiceNow, Inc.	2,049	49.7%	-1.6%
11	Quanta Services, Inc.	967	48.2%	13.9%
12	Chipotle Mexican Grill, Inc.	1,303	47.7%	9.5%
13	Teradyne, Inc.	2,315	47.7%	2.8%
14	Gartner, Inc.	2,333	47.7%	16.1%
15	Apple Inc.	360,158	47.2%	3.1%
16	Lam Research Corporation	12,895	46.9%	0.4%
17	Microsoft Corporation	99,561	45.4%	2.2%
18	Intuit Inc.	5,020	45.4%	2.5%
19	Synopsys, Inc.	2,685	44.8%	2.4%
20	Keysight Technologies, Inc.	1,792	44.8%	3.2%
21	Target Corporation	10,580	44.4%	10.2%
22	Signature Bank	1,807	43.8%	20.4%
23	Alphabet Inc.	113,740	42.4%	10.2%
24	IDEXX Laboratories, Inc.	1,945	40.5%	-0.1%
25	Applied Materials, Inc.	15,788	40.2%	1.3%
26	United Rentals, Inc.	2,063	39.9%	6.5%
27	Thermo Fisher Scientific Inc.	6,257	39.0%	3.8%
28	Tractor Supply Company	2,423	38.9%	9.4%
29	Seagate Technology Holdings plc	5,504	38.9%	9.0%
30	Align Technology, Inc.	1,529	38.2%	-6.1%
31	Adobe Inc.	15,373	37.9%	-3.4%
32	Eli Lilly and Company	12,260	36.3%	4.4%
33	LKQ Corporation	1,297	36.1%	21.9%
34	Lowe's Companies, Inc.	28,525	35.8%	4.7%
35	The Sherwin-Williams Company	6,591	35.8%	3.9%
36	QUALCOMM Incorporated	34,491	35.7%	10.5%
37	Intuitive Surgical, Inc.	3,400	35.5%	-0.5%
38	Lennar Corporation	2,602	35.3%	11.7%
39	Broadcom Inc.	15,785	35.0%	3.3%
40	Zoetis Inc.	2,858	34.5%	-0.2%
41	Deere & Company	6,122	34.4%	1.7%
42	Costco Wholesale Corporation	3,138	34.3%	3.1%
43	D.R. Horton, Inc.	2,360	34.1%	3.9%
44	Cintas Corporation	2,728	33.7%	1.0%
45	Johnson Controls International plc	11,060	33.5%	15.9%
46	Moody's Corporation	3,022	33.4%	1.0%
47	Agilent Technologies, Inc.	3,156	33.0%	3.1%
48	PayPal Holdings, Inc.	13,591	32.9%	-5.1%
49	The Estée Lauder Companies Inc.	5,418	32.7%	-1.3%
50	Accenture plc	14,856	32.6%	4.3%
51	Mettler-Toledo International Inc.	3,425	32.4%	2.3%
52	AutoZone, Inc.	9,515	32.3%	10.9%
53	S&P Global Inc.	5,363	32.3%	0.1%
54	Nasdaq, Inc.	2,223	32.2%	3.7%
55	Trane Technologies plc	4,018	32.0%	1.7%
56	Edwards Lifesciences Corporation	2,960	31.9%	2.1%
57	Motorola Solutions, Inc.	2,070	31.2%	2.1%
58	Eaton Corporation plc	5,056	31.1%	5.6%
59	NXP Semiconductors N.V.	11,647	31.0%	11.6%
60	Ameriprise Financial, Inc.	8,529	30.7%	3.8%
61	T. Rowe Price Group, Inc.	4,775	30.6%	2.6%
62	CDW Corporation	3,480	30.5%	-1.7%
63	Howmet Aerospace Inc.	1,453	30.5%	12.4%
64	Linde plc	9,741	30.5%	4.7%
65	IHS Markit Ltd.	3,952	30.3%	0.8%
66	HCA Healthcare, Inc.	13,268	30.2%	2.1%
67	NIKE, Inc.	15,283	30.1%	1.9%
68	Morgan Stanley	29,777	29.8%	4.4%
69	ANSYS, Inc.	1,211	29.6%	-2.6%
70	eBay Inc.	23,415	29.6%	7.8%
71	The Charles Schwab Corporation	3,220	29.5%	8.7%
72	Nucor Corporation	4,719	29.1%	9.8%
73	IQVIA Holdings Inc.	5,834	28.9%	1.0%
74	Avery Dennison Corporation	1,157	28.6%	1.7%
75	Raymond James Financial, Inc.	1,316	28.4%	7.7%
76	The Home Depot, Inc.	40,528	28.3%	0.9%
77	BlackRock, Inc.	8,713	28.2%	4.2%
78	Oracle Corporation	106,979	27.9%	5.6%
79	Domino's Pizza, Inc.	3,800	27.9%	0.9%
80	Micron Technology, Inc.	4,763	27.9%	-3.9%
81	Dover Corporation	1,441	27.6%	0.8%
82	Jacobs Engineering Group Inc.	1,628	27.6%	5.2%
83	FactSet Research Systems Inc.	1,183	27.5%	2.6%
84	O'Reilly Automotive, Inc.	9,883	27.4%	7.2%
85	Robert Half International Inc.	1,310	27.0%	2.9%
86	Autodesk, Inc.	3,814	26.6%	-3.9%
87	Aptiv PLC	1,539	26.5%	1.0%
88	Trimble Inc.	891	26.4%	1.5%
89	Qorvo, Inc.	2,927	26.1%	1.8%
90	Analog Devices, Inc.	4,308	26.1%	2.0%
91	UnitedHealth Group Incorporated	20,750	26.0%	-0.6%
92	Texas Instruments Incorporated	13,696	25.4%	0.2%
93	Bath & Body Works, Inc.	900	25.0%	14.9%
94	Abbott Laboratories	3,775	24.9%	-2.9%
95	Rockwell Automation, Inc.	3,366	24.3%	0.8%
96	SBA Communications Corporation	3,316	24.3%	-2.6%
97	Marsh & McLennan Companies, Inc.	3,357	24.3%	1.8%
98	HP Inc.	15,344	24.2%	3.3%
99	Aon plc	10,783	24.1%	0.8%
100	CarMax, Inc.	2,858	23.9%	3.2%
101	Verisk Analytics, Inc.	1,867	23.8%	1.4%
102	Ball Corporation	2,667	23.5%	2.9%
103	J.B. Hunt Transport Services, Inc.	961	23.2%	4.7%
104	Advance Auto Parts, Inc.	2,169	23.2%	13.7%
105	TE Connectivity Ltd.	4,149	23.2%	2.0%
106	Dollar General Corporation	7,314	23.1%	-2.3%
107	Parker-Hannifin Corporation	2,138	23.0%	2.2%
108	Berkshire Hathaway Inc.	57,963	23.0%	8.5%
109	W.W. Grainger, Inc.	3,125	22.9%	3.8%
110	Expeditors International of Washington	2,398	22.9%	1.9%
111	Anthem, Inc.	10,425	22.7%	-3.7%
112	Amphenol Corporation	3,458	22.6%	1.7%
113	Waste Management, Inc.	3,925	22.5%	0.8%
114	Republic Services, Inc.	2,098	22.4%	0.1%
115	Starbucks Corporation	24,701	22.3%	4.1%
116	Automatic Data Processing, Inc.	5,790	22.2%	0.2%
117	United Parcel Service, Inc.	4,559	21.9%	5.1%
118	Norfolk Southern Corporation	10,721	21.6%	-2.7%
119	Meta Platforms, Inc.	87,736	21.5%	-0.4%
120	American Tower Corporation	1,075	21.3%	-1.1%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
121	Intercontinental Exchange, Inc.	5,481	21.2%	0.5%
122	The Goldman Sachs Group, Inc.	28,430	21.0%	4.0%
123	NortonLifeLock Inc.	2,475	20.9%	5.9%
124	Masco Corporation	3,531	20.9%	3.8%
125	Broadridge Financial Solutions, Inc.	1,009	20.6%	-2.8%
126	Best Buy Co., Inc.	6,552	20.4%	-3.6%
127	Hilton Worldwide Holdings Inc.	4,678	20.3%	-3.0%
128	NVR, Inc.	3,876	20.3%	-5.3%
129	Laboratory Corporation of America Holdings	3,475	20.2%	2.4%
130	Skyworks Solutions, Inc.	3,099	20.1%	2.3%
131	Celanese Corporation	3,576	20.1%	0.8%
132	Waters Corporation	4,962	20.0%	0.3%
133	Union Pacific Corporation	29,038	19.9%	-1.5%
134	Bank of America Corporation	93,203	19.8%	-1.1%
135	Mastercard Incorporated	26,140	19.7%	-6.5%
136	Pentair plc	1,153	19.6%	3.9%
137	PulteGroup, Inc.	2,598	19.5%	-3.4%
138	American Express Company	19,451	19.4%	-1.8%
139	Fifth Third Bancorp	5,898	19.2%	2.3%
140	Charter Communications, Inc.	49,635	19.0%	-1.1%
141	CSX Corporation	13,767	19.0%	-6.7%
142	DaVita Inc.	7,413	18.9%	6.6%
143	Caterpillar Inc.	11,644	18.8%	-1.4%
144	Fortune Brands Home & Security, Inc.	1,689	18.7%	3.8%
145	Hologic, Inc.	2,023	18.7%	4.3%
146	Quest Diagnostics Incorporated	3,761	18.7%	3.8%
147	Capital One Financial Corporation	11,056	18.6%	2.4%
148	Discover Financial Services	7,749	18.5%	2.4%
149	Tapestry, Inc.	1,265	18.0%	12.1%
150	The PNC Financial Services Group	11,605	18.0%	0.2%
151	Illinois Tool Works Inc.	6,206	17.9%	1.1%
152	JPMorgan Chase & Co.	84,319	17.9%	-1.6%
153	NetApp, Inc.	5,287	17.8%	-5.1%
154	The Hershey Company	1,745	17.5%	1.7%
155	McKesson Corporation	8,033	17.4%	7.3%
156	CF Industries Holdings, Inc.	1,505	17.3%	-3.9%
157	Newmont Corporation	1,672	17.3%	3.7%
158	VeriSign, Inc.	3,542	17.2%	-5.5%
159	A. O. Smith Corporation	1,056	17.2%	5.2%
160	Synchrony Financial	10,844	17.0%	5.2%
161	Take-Two Interactive Software, Inc.	1,165	17.0%	-9.9%
162	The Procter & Gamble Company	40,626	16.9%	1.7%
163	Darden Restaurants, Inc.	1,286	16.7%	-2.0%
164	Humana Inc.	7,428	16.7%	-2.1%
165	Stryker Corporation	1,412	16.5%	-2.4%
166	MGM Resorts International	4,750	16.2%	4.4%
167	People's United Financial, Inc.	319	16.2%	11.0%
168	Walmart Inc.	33,835	16.1%	-1.4%
169	Visa Inc.	42,329	15.9%	-5.4%
170	Regions Financial Corporation	3,797	15.9%	-0.8%
171	Monster Beverage Corporation	3,020	15.7%	1.3%
172	Cummins Inc.	4,905	15.7%	1.2%
173	Church & Dwight Co., Inc.	1,650	15.7%	-0.6%
174	Assurant, Inc.	1,962	15.7%	0.5%
175	AmerisourceBergen Corporation	1,998	15.6%	3.7%
176	The Kroger Co.	6,481	15.4%	7.5%
177	Yum! Brands, Inc.	6,995	15.4%	-1.6%
178	McDonald's Corporation	16,623	15.3%	-3.5%
179	Emerson Electric Co.	4,345	15.2%	0.1%
180	Dollar Tree, Inc.	1,683	15.0%	5.9%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
181	T-Mobile US, Inc.	22,257	14.9%	-2.3%
182	Willis Towers Watson Public Limited Company	3,179	14.9%	-0.4%
183	Ecolab Inc.	1,524	14.9%	-0.3%
184	The TJX Companies, Inc.	8,069	14.8%	0.3%
185	Zions Bancorporation, National Association	2,982	14.7%	0.3%
186	Archer-Daniels-Midland Company	1,110	14.6%	3.1%
187	Diamondback Energy, Inc.	2,681	14.6%	11.3%
188	Pioneer Natural Resources Company	1,314	14.5%	12.9%
189	Expedia Group, Inc.	2,568	14.4%	6.3%
190	Akamai Technologies, Inc.	2,548	14.4%	2.5%
191	PepsiCo, Inc.	9,656	14.2%	1.5%
192	Honeywell International Inc.	18,383	14.2%	-2.4%
193	Invesco Ltd.	693	14.2%	14.2%
194	Chubb Limited	8,759	14.2%	3.5%
195	General Motors Company	4,682	14.1%	-0.7%
196	Ulta Beauty, Inc.	2,581	14.0%	4.3%
197	Principal Financial Group, Inc.	2,417	13.9%	4.8%
198	Citizens Financial Group, Inc.	3,723	13.8%	0.2%
199	MetLife, Inc.	14,658	13.8%	3.1%
200	Allegion plc	975	13.8%	-1.7%
201	Hess Corporation	1,500	13.5%	2.9%
202	Whirlpool Corporation	3,213	13.4%	4.0%
203	Devon Energy Corporation	5,619	13.2%	11.5%
204	Pfizer Inc.	26,063	13.2%	-1.1%
205	ConocoPhillips	14,016	13.0%	0.5%
206	AbbVie Inc.	15,965	13.0%	-5.4%
207	PPG Industries, Inc.	2,701	13.0%	0.2%
208	Leidos Holdings, Inc.	1,302	13.0%	-3.4%
209	Northrop Grumman Corporation	6,937	12.9%	1.1%
210	Cboe Global Markets, Inc.	807	12.9%	-1.8%
211	F5, Inc.	2,006	12.8%	2.2%
212	Illumina, Inc.	2,338	12.8%	-8.3%
213	KeyCorp	4,114	12.7%	0.7%
214	Cisco Systems, Inc.	54,125	12.4%	-3.9%
215	Aflac Incorporated	8,119	12.4%	0.0%
216	Snap-on Incorporated	1,416	12.1%	3.7%
217	The Hartford Financial Services Group, Inc.	3,154	11.9%	0.4%
218	Mondelez International, Inc.	9,174	11.9%	2.0%
219	Regeneron Pharmaceuticals, Inc.	10,163	11.6%	1.4%
220	L3Harris Technologies, Inc.	9,682	11.5%	-6.8%
221	The Walt Disney Company	11,480	11.4%	-0.3%
222	State Street Corporation	5,180	11.4%	3.8%
223	Sealed Air Corporation	2,258	11.3%	3.2%
224	Eastman Chemical Company	2,175	11.3%	-0.9%
225	FMC Corporation	1,092	11.2%	-6.5%
226	Mohawk Industries, Inc.	1,496	11.1%	13.2%
227	Centene Corporation	1,126	11.0%	-7.4%
228	Northern Trust Corporation	3,113	10.9%	-0.3%
229	Comcast Corporation	16,465	10.8%	-0.6%
230	Amcor plc	1,477	10.8%	4.1%
231	Textron Inc.	3,046	10.5%	-0.8%
232	Truist Financial Corporation	4,520	10.3%	-0.8%
233	Prudential Financial, Inc.	8,250	9.9%	2.5%
234	Ross Stores, Inc.	4,037	9.9%	-2.1%
235	Medtronic plc	8,299	9.7%	-0.7%
236	Juniper Networks, Inc.	2,862	9.5%	2.8%
237	The Bank of New York Mellon Corporation	14,838	9.4%	1.7%
238	Sysco Corporation	3,954	9.4%	-1.4%
239	Lumen Technologies, Inc.	1,017	9.4%	14.1%
240	Marriott International, Inc.	8,876	9.4%	-6.5%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
241	Corning Incorporated	6,086	9.3%	-2.7%
242	Johnson & Johnson	25,649	9.3%	-0.7%
243	Comerica Incorporated	4,223	9.3%	-2.2%
244	The Coca-Cola Company	6,332	9.2%	-0.3%
245	PTC Inc.	1,649	9.2%	-9.6%
246	Merck & Co., Inc.	19,423	8.9%	-0.7%
247	Raytheon Technologies Corporation	4,267	8.8%	-0.7%
248	Booking Holdings Inc.	17,452	8.6%	-1.0%
249	The Allstate Corporation	9,474	8.6%	-4.1%
250	The Travelers Companies, Inc.	7,181	8.3%	-0.7%
251	Huntington Bancshares Inc.	2,478	8.2%	-2.0%
252	Loews Corporation	4,352	8.2%	2.2%
253	Electronic Arts Inc.	5,525	8.1%	-2.6%
254	Everest Re Group, Ltd.	651	8.0%	-0.1%
255	Cognizant Technology Solutions Corporation	7,789	8.0%	-1.5%
256	Lincoln National Corporation	3,555	8.0%	1.2%
257	Jack Henry & Associates, Inc.	862	7.9%	-6.1%
258	C.H. Robinson Worldwide, Inc.	1,658	7.8%	-0.7%
259	U.S. Bancorp	13,205	7.8%	0.1%
260	Evergy, Inc.	2,672	7.6%	1.4%
261	Tyson Foods, Inc.	1,585	7.5%	0.7%
262	Fiserv, Inc.	7,448	7.5%	-6.6%
263	LyondellBasell Industries N.V.	6,939	7.3%	0.6%
264	V.F. Corporation	2,906	7.1%	-2.5%
265	International Paper Company	2,194	6.8%	1.1%
266	General Mills, Inc.	1,584	6.7%	2.4%
267	CVS Health Corporation	4,884	6.7%	1.0%
268	General Dynamics Corporation	5,973	6.3%	-0.3%
269	Henry Schein, Inc.	1,745	6.3%	1.4%
270	Amgen Inc.	37,434	6.3%	-3.5%
271	Newell Brands Inc.	1,763	6.1%	18.6%
272	PPL Corporation	1,005	5.9%	3.6%
273	Constellation Brands, Inc.	3,809	5.9%	-2.8%
274	Ralph Lauren Corporation	1,693	5.9%	0.5%
275	Chevron Corporation	6,738	5.9%	0.4%
276	Cerner Corporation	4,508	5.8%	-2.1%
277	Kimberly-Clark Corporation	3,611	5.8%	-0.6%
278	NRG Energy, Inc.	2,967	5.4%	-18.8%
279	Cigna Corporation	16,838	5.4%	-4.6%
280	Marathon Petroleum Corporation	11,263	5.4%	-5.3%
281	Colgate-Palmolive Company	6,635	5.3%	0.2%
282	BorgWarner Inc.	566	5.1%	-1.1%
283	Baxter International Inc.	3,962	4.9%	-7.2%
284	Lockheed Martin Corporation	9,325	4.7%	-4.4%
285	Simon Property Group, Inc.	1,285	4.4%	3.2%
286	The J. M. Smucker Company	1,121	4.2%	1.6%
287	The Clorox Company	2,110	3.7%	-5.6%
288	American International Group, Inc.	8,691	3.7%	2.9%
289	Hasbro, Inc.	634	3.7%	-2.1%
290	Intel Corporation	45,032	3.7%	-5.9%
291	Franklin Resources, Inc.	3,137	3.6%	1.1%
292	Globe Life Inc.	1,920	3.5%	-3.3%
293	Hewlett Packard Enterprise Company	7,680	3.3%	-2.1%
294	Bristol-Myers Squibb Company	17,922	3.2%	-1.2%
295	Gilead Sciences, Inc.	7,732	3.2%	1.1%
296	FedEx Corporation	3,423	2.7%	-3.8%
297	Kellogg Company	1,296	2.7%	2.5%
298	Wells Fargo & Company	75,029	2.3%	-0.3%
299	Citigroup Inc.	49,240	2.2%	-4.5%
300	International Business Machines Corporation	11,401	2.0%	1.3%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
301	FLEETCOR Technologies, Inc.	4,262	1.8%	-6.4%
302	Valero Energy Corporation	4,368	1.3%	-6.8%
303	Exxon Mobil Corporation	2,527	1.3%	2.9%
304	Omnicom Group Inc.	2,509	1.2%	1.0%
305	Host Hotels & Resorts, Inc.	629	1.1%	-2.2%
306	Marathon Oil Corporation	1,912	1.1%	-0.1%
307	DENTSPLY SIRONA Inc.	1,252	0.8%	1.5%
308	PVH Corp.	1,208	0.7%	-0.1%
309	M&T Bank Corporation	5,124	0.5%	-4.5%
310	Coterra Energy Inc.	1,667	0.2%	-0.3%
311	IPG Photonics Corporation	433	0.2%	-10.6%
312	WestRock Company	557	0.1%	-2.2%
313	Dominion Energy, Inc.	3,080	-0.3%	-4.7%
314	Conagra Brands, Inc.	2,178	-0.4%	-0.5%
315	3M Company	10,912	-0.5%	-4.1%
316	Cardinal Health, Inc.	2,566	-0.6%	3.7%
317	Universal Health Services, Inc.	2,960	-0.7%	-2.6%
318	DuPont de Nemours, Inc.	9,360	-1.1%	-2.8%
319	Becton, Dickinson and Company	1,750	-1.3%	-9.5%
320	Citrix Systems, Inc.	4,806	-1.3%	-7.4%
321	Altria Group, Inc.	7,110	-1.7%	-1.0%
322	Fidelity National Information Services	4,088	-1.8%	-10.3%
323	Huntington Ingalls Industries, Inc.	1,599	-2.1%	-6.2%
324	Phillips 66	8,328	-2.5%	-4.4%
325	Discovery, Inc.	2,205	-2.9%	-1.3%
326	Baker Hughes Company	995	-3.0%	4.5%
327	Biogen Inc.	20,065	-3.7%	-2.5%
328	Southwest Airlines Co.	6,051	-4.0%	-5.6%
329	Vertex Pharmaceuticals Incorporated	2,843	-4.1%	-19.5%
330	Western Digital Corporation	1,732	-4.5%	-5.6%
331	The Boeing Company	21,763	-4.8%	-13.0%
332	Twitter, Inc.	1,273	-5.4%	-23.2%
333	Alaska Air Group, Inc.	908	-5.8%	0.3%
334	Delta Air Lines, Inc.	5,623	-6.3%	-5.4%
335	Walgreens Boots Alliance, Inc.	16,004	-6.4%	1.1%
336	APA Corporation	1,152	-8.6%	6.5%
337	Royal Caribbean Cruises Ltd.	901	-9.2%	-11.2%
338	Paramount Global	1,921	-9.6%	-1.2%
339	AT&T Inc.	9,189	-10.9%	-8.2%
340	Las Vegas Sands Corp.	2,034	-11.4%	-7.0%
341	Schlumberger Limited	1,674	-13.0%	1.8%
342	United Airlines Holdings, Inc.	5,077	-13.3%	-7.6%
343	General Electric Company	2,751	-14.7%	-0.7%
344	Global Payments Inc.	4,002	-16.1%	-26.5%
345	American Airlines Group Inc.	3,740	-18.4%	-4.5%
346	DXC Technology Company	1,886	-18.5%	-12.2%
347	Occidental Petroleum Corporation	1,533	-20.9%	-10.4%
348	Norwegian Cruise Line Holdings Ltd.	1,088	-22.2%	-13.8%
349	Viatris Inc.	983	-24.2%	-7.4%
350	Carnival Corporation & plc	2,836	-25.2%	-13.3%

Fortuna Advisors LLC

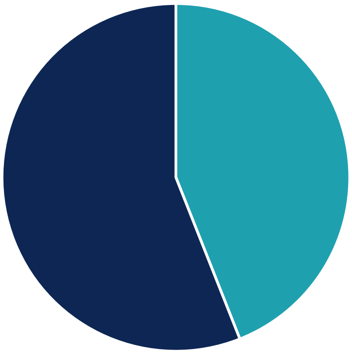
VIBE®

Value Inspired Buyback Execution

Managements know the key to creating value from buybacks is to concentrate repurchases when share prices are low. Unfortunately for all stakeholders, nearly half of S&P 500 repurchasers bought back more shares when their prices were above the trend, from 2017-2021.

VIBE is a fact-based platform that provides managements with real-time signals to help override natural biases, limited information, and human error to better inform the timing of share repurchases.

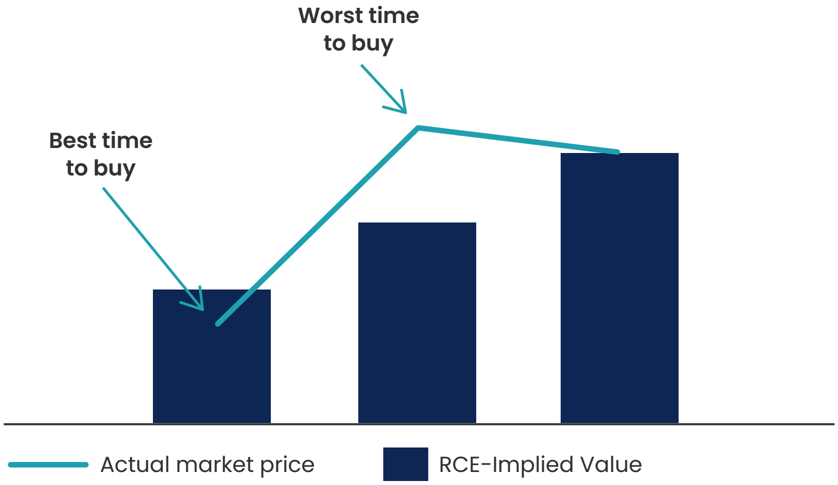
Buyback programs can and should be sources of immense value for many companies. VIBE can help them harness it.



FROM 2017-2021

44%

of S&P 500 repurchasers failed to create value from stock buybacks



VIBE signals include:

1

PERFORMANCE & VALUATION
Based on the company and its peers, indicates the likelihood of a desirable Buyback ROI.

2

CONSENSUS VS. PRICE
Based on the dividend yield and an expected share price CAGR, derived from consensus EPS growth.

3

RCE-IMPLIED PREMIUM
Based on Fortuna Advisors' Residual Cash Earnings (RCE) measure of intrinsic share value.

4

VIBE SIMULATIONS
Based on 1000+ simulations that incorporate growth, margins, and asset intensity.