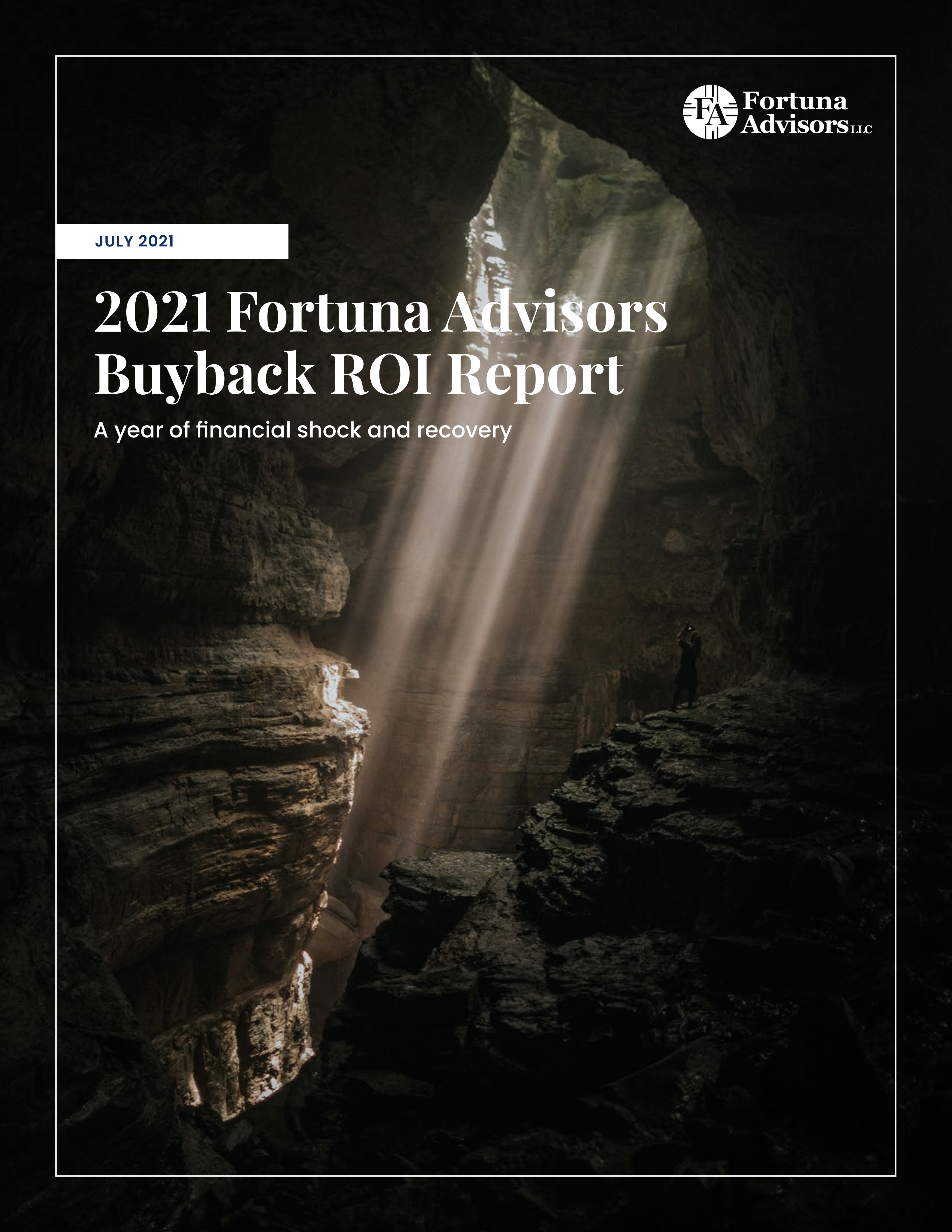
Fortuna Advisors LLC

JULY 2021

2021 Fortuna Advisors Buyback ROI Report

A year of financial shock and recovery



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Thank you to Chris Moore, Riley Whately, Jason Gould, and Michael Chew of Fortuna Advisors for their contributions to this report.

ABOUT FORTUNA ADVISORS

Fortuna Advisors LLC is a strategy consulting firm that collaborates with corporate leaders to design and implement value-based analytics that improve strategic decisions and align organizational behaviors to deliver superior Total Shareholder Returns.

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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 and innovative analytics. In 2011, we developed "Buyback ROI" to compare share repurchases to other capital uses, such as capital expenditures and acquisitions.

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 value increase, which is concentrated in fewer shares.

In 2020, the global COVID-19 pandemic was devastating for many businesses that experienced disrupted supply chains, operating shutdowns, government-imposed restrictions and regulations, as well as a general state of fear across the range of stakeholders. And though things were opening up by mid-2021, many businesses are still experiencing the ill-effects of the virus and its residual effects.

Rightly, in the face of such a crisis, companies conserved cash, which meant less buybacks. Indeed, the total dollar amount committed to share repurchases in 2020 dropped to levels not seen since 2016, before the Tax Cuts and Jobs Act of 2017 reduced the tax burden on repatriating foreign earnings. As the economic recovery began to take shape towards the end of 2020, buybacks ticked up, but were still down 27% year over year.

Unlike the prior year, most companies did not achieve a Buyback ROI that exceeded their TSR, meaning their buybacks were poorly timed relative to share price development during the year. Repurchase timing is an overlooked factor in most analyses. We measure "Buyback Effectiveness" as the relative success of a company's timing in repurchasing shares when the price is below the long-term share price trendline, which results in repurchasing more shares per dollar spent.

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. They are a sign that management teams are taking active steps to be good stewards of investor capital, rather than 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 ROI and Buyback Effectiveness. The VIBE platform provides four objective signals designed to limit 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.

This year we also take note of the increasing role intangible assets play in value creation, and the new considerations they introduce into the buyback discussion. Intangible investments, which tend to be accounted for on the income statement rather than balance sheet, produce different earnings, cash flow, and tax profiles than tangible intensive businesses, which affects how companies should approach their capital allocation decisions and communicate their narrative to investors.

Last, and most important, we at Fortuna wish the very best and a speedy recovery to all whose health and well-being have been directly impacted by the COVID-19 virus. And as for the economy, we likewise hope for a continued strong recovery.

Buybacks in 2020: A Flight to Liquidity

For ten years, 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 periodically 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 a record buyback year in 2018, 2019 buyback levels fell off only slightly. Q1 2020 was off to another strong start, as companies bought back $194 billion of their own shares, suggesting it would have been another strong year for buybacks, potentially exceeding 2019 levels. Of course, when the Covid-19 pandemic occurred, governments

FIGURE 1 | Quarterly Buybacks: 2016–2020

2nd Quarter 2020 Buybacks Plummeted

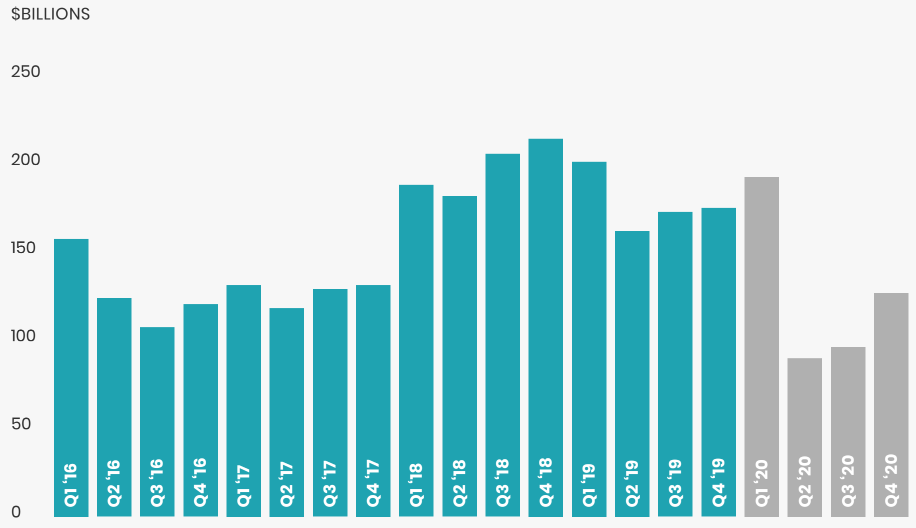
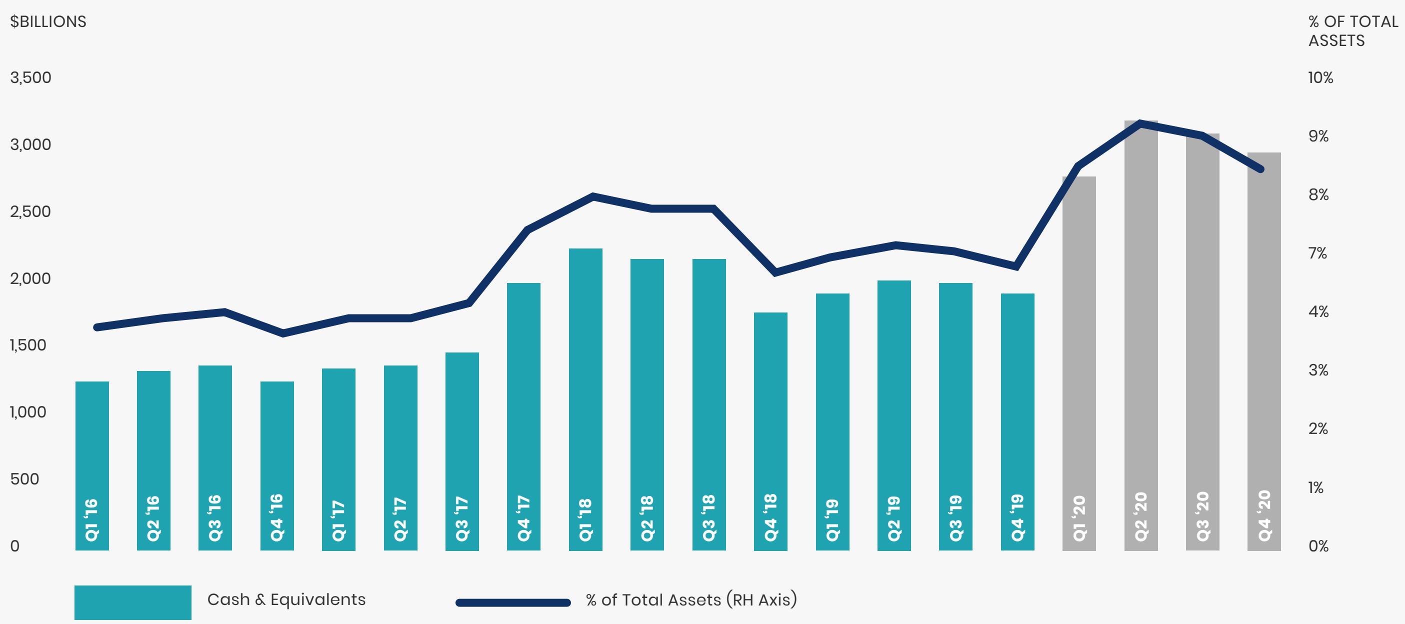


FIGURE 2 | Corporate Cash Holdings: 2016–2020

Cash Balances Surged in 2020



and corporations across the globe responded in unison to control the spread, resulting in a global recession from which many parts of the world and the economy are still working to emerge.

The corporate response was the largest flight to liquidity since the Great Recession of 2008. In Q2 2020, corporate buybacks totaled $88 billion, a 55% drop from Q1 levels, as shown in Figure 1. This was the largest quarterly drop in buyback volume over the last five years.

Companies hoarded cash, with many tapping their revolving credit facilities, as they shifted focus to solvency while assessing and preparing for the impact of the pandemic. In the first two quarters of 2020, cash stockpiles rose by two thirds, from $2.0 trillion to $3.3 trillion, in aggregate, as shown in Figure 2. Cash as a percentage of total assets skyrocketed from 5.9% at the end of 2019 to 9.2% at the end of Q2—an increase of almost three standard deviations when compared to the last 20 quarters.

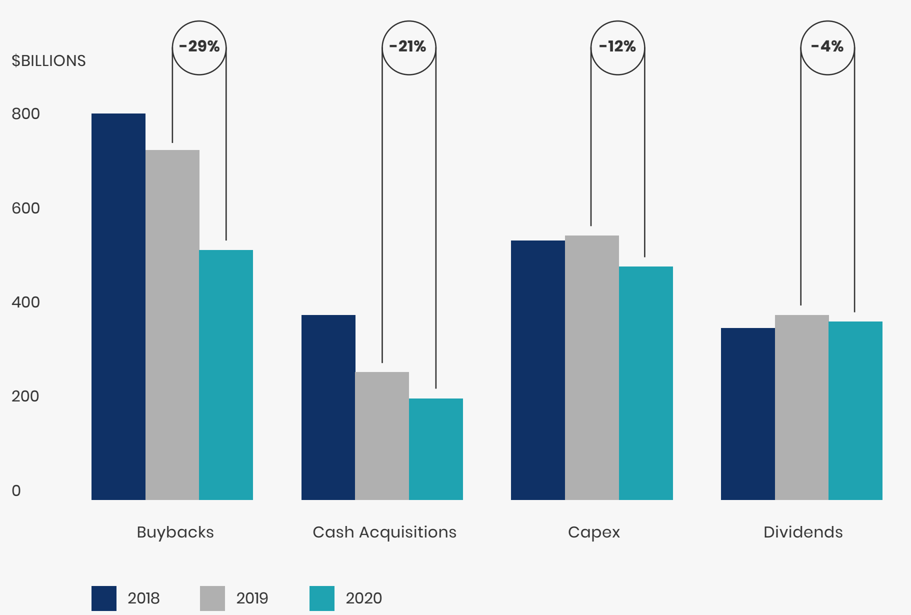
Many other forms of capital deployment also plunged, as shown in Figure 3. Capital expenditures fell to $106 billion in Q2, the third lowest quarterly value in the last five years, and cash acquisitions fell to a five-year low of $205 billion for the entire year. Dividends fell only a modest 4% from their 2019 levels. Though discretionary, dividends play an important role in attracting a more stable, income-oriented investor base; and thus are an important signal of a management team's ability to weather crises.

We did note a muted recovery towards the end of the year, as Q4 2020 buybacks crept up to $127 billion; but this was still well below pre-pandemic levels.

Buybacks declined much more steeply than other forms of capital deployment during 2020.

FIGURE 3 | Capital Deployment: 2018–2020

All Forms of Capital Deployment Fell in 2020 vs. 2019



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.

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.

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

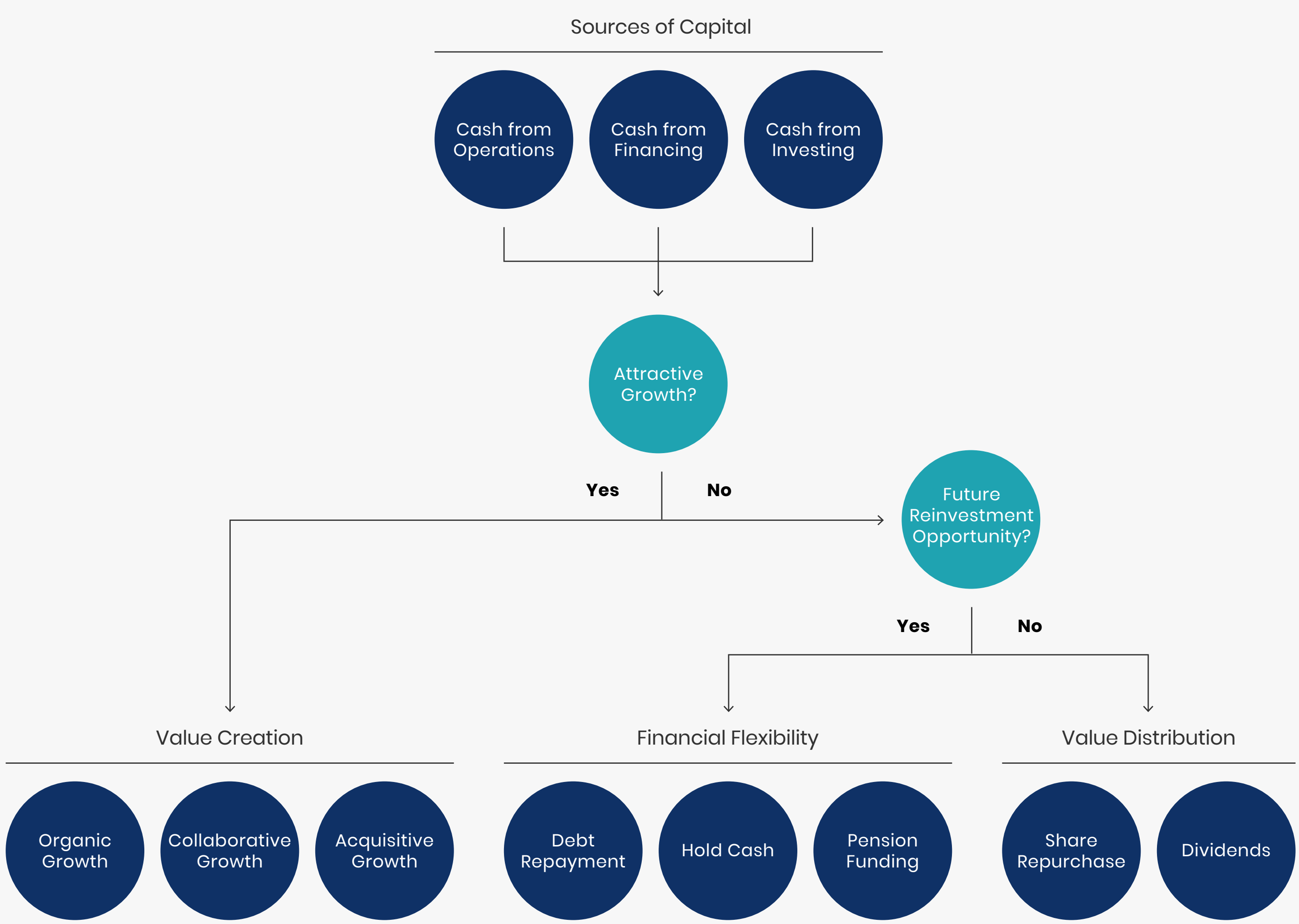
Companies have three primary options when considering how to deploy capital: value creation, financial flexibility, or value distribution. Companies should first consider value-creating growth opportunities that exceed their cost of capital. These can include organic growth, acquisition, or collaborative 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 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 investor's 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 secular shifts in the way value is created.

For example, the emergence of Tesla, backed by significant investor capital, has changed the auto industry over the last ten years. For decades, car companies tested electric vehicle concepts, but never committed enough capital internally for electric vehicles to be anything more than a niche product. As recently as 2013-2017, GM spent more on buybacks ($16B) than Tesla spent on its entire capex and R&D budget ($12B). Tesla's success in reshaping consumer preferences and delivering electric vehicles to meet that demand has made it the most valuable car company in the world. In the last year, most major car companies have committed to transitioning to electric vehicle production in the next 15 years—and have cut their level of buybacks to have the capital to do it. This wouldn't have happened if professional investors had lacked the resources to shift capital investment within the auto industry. So while the benefits may not materialize at the original company, recycling capital through buybacks can result in better overall economic outcomes.

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.

2020 Buyback Effectiveness is Correlated with Better Organic & Inorganic Capital Deployment

There are two determinants of Buyback ROI. One is share price appreciation (or Total Shareholder Return), and the other is timing (or Buyback Effectiveness). For example, in *last year's report*, NVIDIA had the highest Buyback ROI, despite negative Buyback Effectiveness. In that report, we showed that if NVIDIA had delivered positive Buyback Effectiveness by better timing as little as one-fifth of their buybacks, they could have bought back an additional 25 million shares (an increase of 34%!) for the same dollar amount. And their TSR would have been expected to rise an additional 1.4% per year due to the additional reduction to share count.

NVIDIA was second in Buyback ROI this year. But, like last year, they were the only member of the top ten (shown in Figure 7) with negative Buyback Effectiveness.

As another example, consider the performance of ServiceNow, which achieved the third highest Buyback ROI this year. While they delivered Total Shareholder Returns of 44.8%, they created incremental ROI with advantageous timing of repurchase activity, resulting in a Buyback Effectiveness of 11.1% and Buyback ROI of 60.5%.

In addition to effective management of their repurchase activity, ServiceNow also reinvested significantly in their operations. We measure internal reinvestment with a metric called "Reinvestment Rate", which is the percentage of reinvestable cash flow available to management (essentially, EBITDA minus tax) that is allocated to internal reinvestment. ServiceNow's Reinvestment Rate was nearly 100%,

FIGURE 7
Top 10 Buyback ROI Companies

Rank	Company	Buybacks ($ millions)	Buyback ROI	TSR	Buyback Effectiveness
1	Etsy, Inc.	703	100.1%	84.8%	16.7%
2	NVIDIA Corporation	6,540	64.5%	74.5%	-7.9%
3	ServiceNow, Inc.	1,556	60.5%	44.8%	11.1%
4	Generac Holdings Inc.	253	54.7%	50.2%	4.3%
5	Apple Inc.	307,213	50.6%	40.3%	11.2%
6	Teradyne, Inc.	1,839	50.2%	43.3%	7.4%
7	MSCI Inc.	2,946	49.3%	45.7%	3.6%
8	PayPal Holdings, Inc.	10,295	48.6%	45.3%	4.3%
9	KLA Corporation	2,688	48.3%	33.4%	11.6%
10	Copart, Inc.	786	46.9%	46.3%	1.6%
Median Top 10		2,263	50.4%	45.4%	5.8%
Median of All Ranked Companies		3,255	11.1%	13.1%	-0.3%

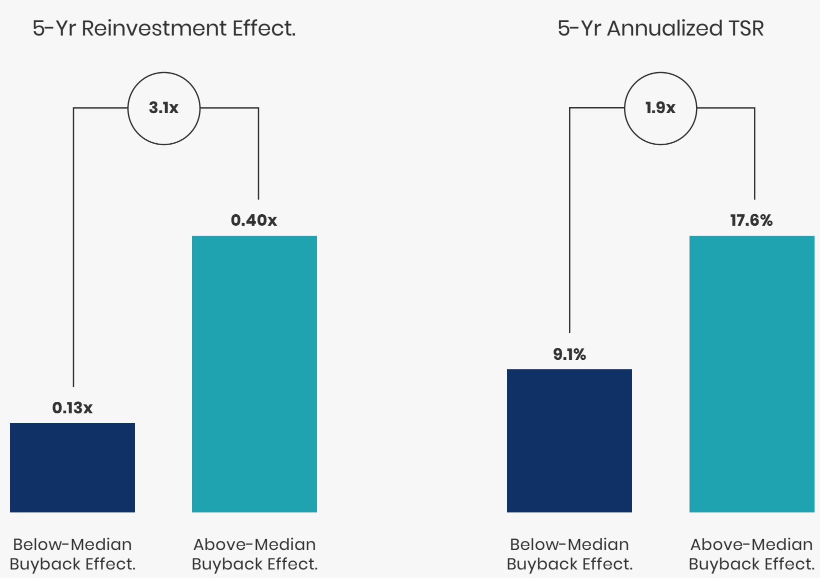
which is 40% higher than the median company in our report.

Not only did the company invest aggressively in its business, it also invested effectively. We can quantify this aspect using a measure we call Reinvestment Effectiveness, which tracks the incremental revenue generated per dollar of incremental capital invested over the same period. ServiceNow's Reinvestment Effectiveness was 0.86x, nearly four times higher than the median company in the report.

There is a strong relationship in fact between companies that create value through internal reinvestment and that create value through their repurchase programs. Companies that achieved above-median Buyback Effectiveness also had median Reinvestment Effectiveness that was nearly four times higher than companies that delivered below-median Buyback Effectiveness, as shown in Figure 8. The combined success of capital allocation to internal reinvestment and to share purchases relates to stronger value creation, with the above-median Buyback Effectiveness group achieving 8.5% higher annualized TSR.

Companies with above-median Buyback Effectiveness generated 3x more revenue per dollar invested and nearly 2x better Total Shareholder Returns.

FIGURE 8
Buyback Effectiveness Relationship to Reinvestment Effectiveness and TSR



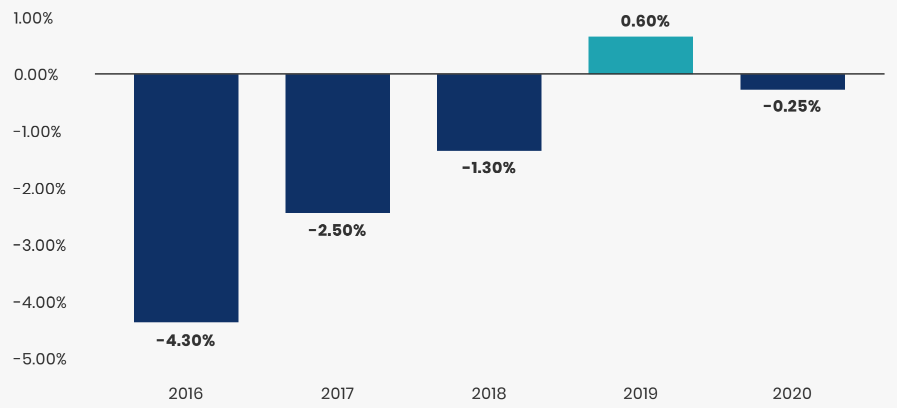
NOTE Reinvestment Effectiveness is calculated as the change in revenue over a period divided by the incremental capital invested during a period.

Buyback Timing: No Winning Streak for 2020

As we stated, most companies overlook the importance of timing and relative valuation when determining their buyback plans. As a result, in nearly every year since our creation of Buyback ROI, median Buyback Effectiveness has been negative. The trend had been improving over the last four years, and for the first time in 2019, more companies had positive Buyback Effectiveness than negative. Unfortunately, many companies reverted to negative Buyback Effectiveness in 2020; and as seen in Figure 9, the median Buyback Effectiveness dropped to -0.25%. There are still many examples of companies that did time their repurchases to correspond to relative undervaluation of their shares – in this study, 169 of 359 companies had positive Buyback Effectiveness.

FIGURE 9 | Buyback Effectiveness: 2016-2020

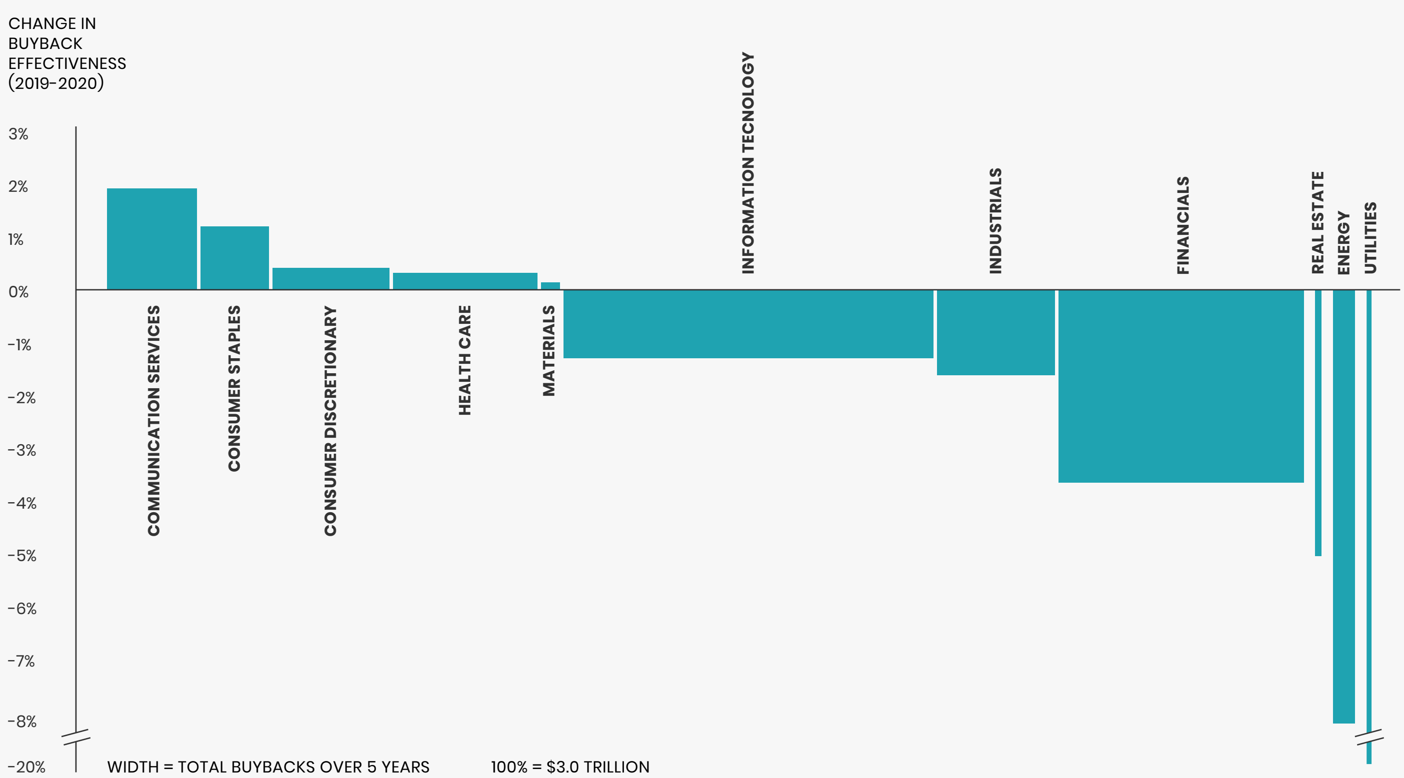
Buyback Effectiveness Dropped for the First Time in Four Years



The financial and tech sectors, which together accounted for almost 50% of total buybacks, were key contributors to the decline in Buyback Effectiveness in the past year (see Figure 10). Median Buyback Effectiveness for financials dropped by 3.6 percentage points, from 0.6% to -3.0%; while tech saw a decline of 1.3 percentage points. Fully 70 companies in these two sectors

FIGURE 10 | Change in Buyback Effectiveness by Sector (2019-2020)

IT, Financials, and Energy drove the decline in Buyback Effectiveness since 2019



had negative Buyback Effectiveness. In total, five sectors saw declines in median Buyback Effectiveness while six sectors saw improvements.

The Top 10 Buyback Effectiveness Companies in Figure 11 suggests that companies in any sector can achieve success in executing repurchases while their shares are relatively undervalued. Lennar Corporation and D.R. Horton are homebuilders. Etsy and Newell Brands make consumer goods. Qualcomm and KLA operate in the semiconductor and wireless sectors. By luck or by skill, management in any industry should be able to develop a view on the intrinsic value of their shares and recognize capital market signals that suggest better or worse times to execute buybacks.

Even companies that deliver negative TSR can find ways to execute repurchases while their shares are relatively undervalued. In last year's report, we highlighted Hess Corporation, who ranked in the Top 10 for Buyback Effectiveness despite negative TSR; this year Newell Brands overcame its poor TSR performance to rank 6th through impressive Buyback Effectiveness of 13.3%. Congrats to the treasury department and management team at Newell Brands!

FIGURE 11

Top 10 Buyback Effectiveness Companies — Last 5 Years

Rank	Company	Buybacks ($ millions)	Buyback ROI	TSR	Buyback Effectiveness
1	Lennar Corporation	1,192	32.9%	10.2%	20.8%
2	Etsy, Inc.	703	100.1%	84.8%	16.7%
3	DaVita Inc.	6,435	23.1%	11.0%	15.2%
4	T-Mobile US, Inc.	22,062	43.9%	28.1%	14.0%
5	Chipotle Mexican Grill, Inc.	1,594	32.8%	23.6%	14.0%
6	Newell Brands Inc.	1,745	-0.0%	-10.3%	13.3%
7	D.R. Horton, Inc.	1,182	35.7%	18.0%	13.1%
8	Tractor Supply Company	1,942	25.3%	12.0%	12.8%
9	QUALCOMM Incorporated	32,091	41.0%	29.4%	12.3%
10	KLA Corporation	2,688	48.3%	33.4%	11.6%

Half of the top Buyback Effectiveness companies generated top-quartile TSR, suggesting a relationship between TSR quartile and Buyback Effectiveness, which we see in Figure 12. When a company's share price is generally rising, it is easier to execute a repurchase below trend, thus creating incremental Buyback ROI from the repurchase. In our study, 70% of top quartile TSR companies that repurchased shares, achieved positive Buyback Effectiveness with those repurchases.

By contrast, only 27% of 4th quartile TSR companies were able to achieve positive Buyback Effectiveness. An underperforming share price can seem like an attractive time to repurchase shares, but for most this is a subpar value creation strategy. For an underperforming company, the repurchase only serves to leverage that underperformance onto a more concentrated shareholder base.

For companies delivering below median TSR, it is even more critical that they develop a value-inspired buyback policy in order to optimize their repurchase timing. Figure 13 displays the median number of quarters over the last five years during which a company in each TSR quartile could have executed share repurchases and achieved positive Buyback Effectiveness. Companies in the 4th TSR quartile had only 4 quarters (or a 1 in 5 chance) of an attractive buyback opportunity. Companies in the Top TSR quartile had double the number of opportunities.

FIGURE 12 | Split of Buyback Effectiveness by TSR Quartile

Buyback Effectiveness by TSR Quartile

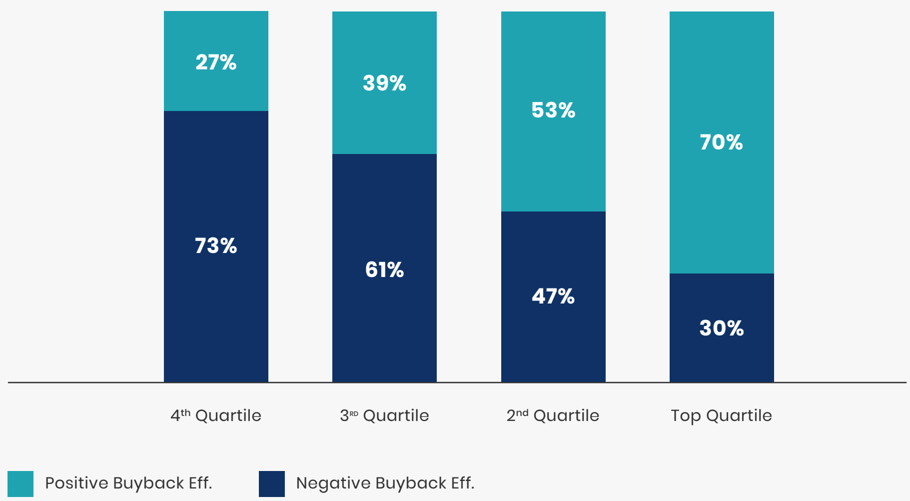
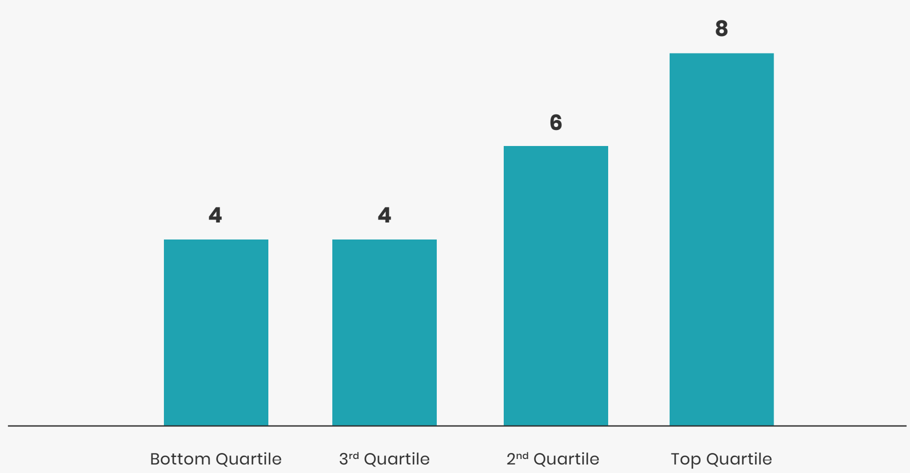


FIGURE 13 | Median Number of Buyback Opportunity Quarters



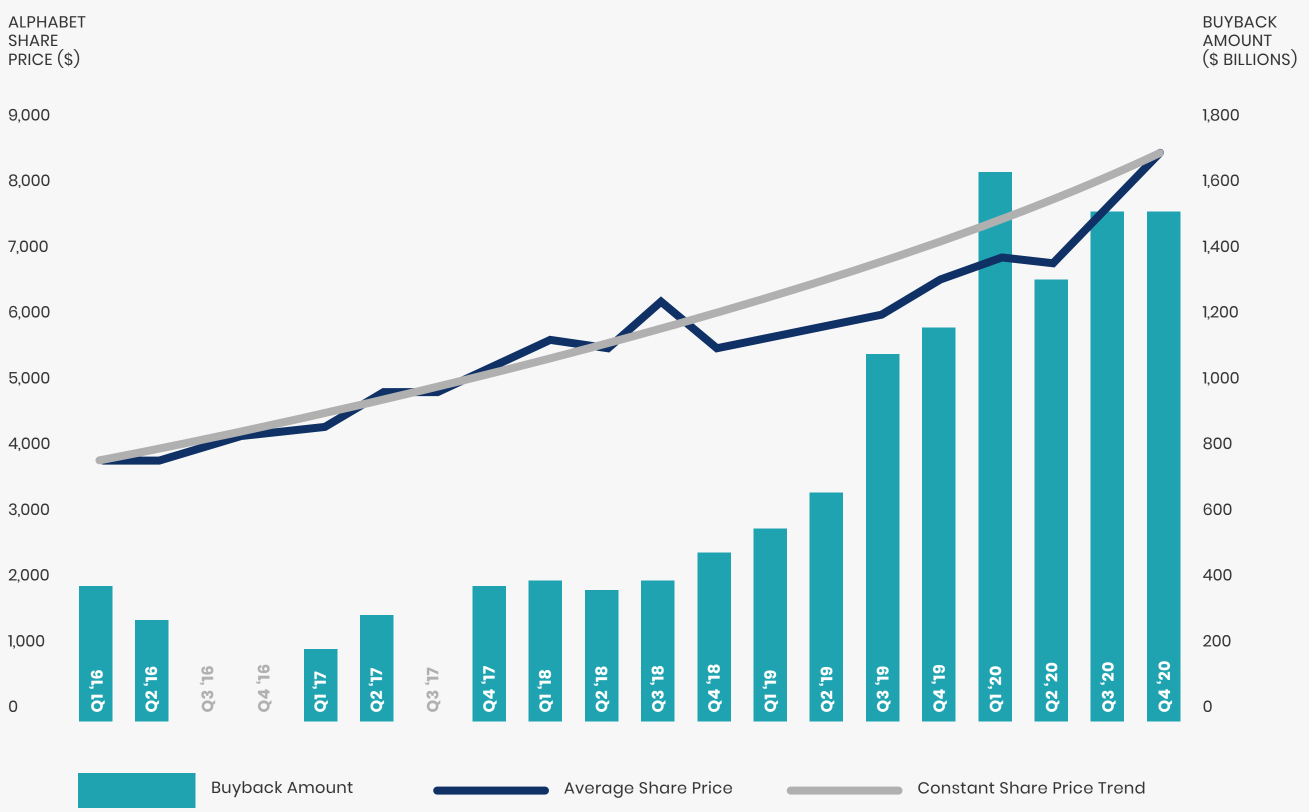
NOTE A buyback opportunity quarter exists when a company reported repurchases during a quarter and when the average share price for that quarter was below the long-term price trend line.

Case Study: Alphabet's Buyback Effectiveness

Google's parent, Alphabet Inc., shows how a company can achieve positive Buyback Effectiveness with an upward trending share price. Figure 14 shows Alphabet's buybacks by quarter as well as their average share price for that quarter and their constant share price trend. We can see Alphabet's share repurchases increasing during the period when the average share price line drops below the constant share price trend. During those quarters, Alphabet achieved positive Buyback Effectiveness of 4.5%, which contributed to their Buyback ROI of 23.1%.

FIGURE 14 | Alphabet Inc. Buyback Effectiveness

How Alphabet Inc. Achieved Strong Buyback Effectiveness



Buyback ROI by Sector

When we aggregate our data at the sector level, 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 how does their current share price compare to an objective measure of the intrinsic value per share since over time the actual share price should converge to intrinsic value.

Figures 15 and 16 rank the top industries by Buyback ROI and the top 3 companies within each industry. As with prior years, tech's strong TSR helped the sector deliver the best Buyback ROI, led by NVIDIA, ServiceNow and Apple. Median Buyback ROI of 21.8% was about 0.5% above median TSR, indicating good buyback timing enhanced Buyback ROI. The industrials sector deployed the third most capital into buybacks over the five-year period and delivered the 2nd highest Buyback ROI, though its strong TSR was slightly offset by poor timing and negative Buyback Effectiveness.

Consumer discretionary ranked third despite having the 5th highest median TSR performance. The sector benefitted from good buyback timing and the highest median Buyback Effectiveness among all sectors.

The energy sector struggled. Not a single energy company in our study was able to deliver a positive Buyback ROI. In study after study, we see poor relationships between buybacks and TSR in the energy sector. Interestingly, in another recent study, dividends

The most important question a company should consider in buying back shares is how the current share price compares to an objective measure of the intrinsic value per share.

FIGURE 15
Median Buyback ROI by Sector

Rank	Sector	Buybacks ($ millions)	Buyback ROI	TSR	Buyback Effectiveness
1	Information Technology	929,182	21.8%	22.2%	0.5%
2	Industrials	296,576	16.4%	16.5%	-0.2%
3	Consumer Discretionary	295,250	11.8%	11.8%	1.1%
4	Health Care	365,099	11.6%	13.0%	0.7%
5	Communication Services	225,482	11.4%	14.1%	-0.1%
6	Materials	49,917	9.2%	10.9%	0.0%
7	Consumer Staples	174,677	8.6%	9.3%	0.6%
8	Real Estate	9,461	4.4%	6.2%	0.4%
9	Financials	615,825	2.7%	9.8%	-3.0%
10	Utilities	5,591	-1.8%	18.4%	-15.1%
11	Energy	58,340	-18.6%	-4.8%	-11.6%

NOTE Medians affect the relationship of Buyback ROI, TSR, and Buyback Effectiveness showed a positive relationship to TSR in Oil & Gas Equipment & Services, despite the negative relationship between TSR and buybacks. Both dividends and buybacks involve the distribution of capital out of an industry facing stiff headwinds, but dividends avoid the timing risk that buybacks face, suggesting companies in this industry tend to buy back more shares when the price is high than when it's low.

FIGURE 16

Top Buyback ROI Companies by Sector

#1 in Sector

Sector	Company	Buyback ROI
Information Technology	NVIDIA Corporation	64.5%
Industrials	Generac Holdings Inc.	54.7%
Consumer Discretionary	Etsy, Inc.	100.1%
Health Care	IDEXX Laboratories, Inc.	42.0%
Communication Services	T-Mobile US, Inc.	43.9%
Materials	Ball Corporation	35.0%
Consumer Staples	Costco Wholesale Corporation	28.4%
Real Estate	SBA Communications Corporation	26.8%
Financials	MSCI Inc.	49.3%
Utilities	Evergy, Inc.	-0.2%
Energy	Hess Corporation	-6.1%

#2 in Sector

Sector	Company	Buyback ROI
Information Technology	ServiceNow, Inc.	60.5%
Industrials	Copart, Inc.	46.9%
Consumer Discretionary	Pool Corporation	42.2%
Health Care	Align Technology, Inc.	41.1%
Communication Services	Take-Two Interactive Software, Inc.	27.6%
Materials	The Sherwin-Williams Company	32.6%
Consumer Staples	The Estée Lauder Companies Inc.	28.0%
Real Estate	American Tower Corporation (REIT)	21.8%
Financials	S&P Global Inc.	30.4%
Utilities	NRG Energy, Inc.	-3.3%
Energy	Cabot Oil & Gas Corporation	-10.0%

#3 in Sector

Sector	Company	Buyback ROI
Information Technology	Apple Inc.	50.6%
Industrials	Old Dominion Freight Line, Inc.	45.2%
Consumer Discretionary	D.R. Horton, Inc.	35.7%
Health Care	Thermo Fisher Scientific Inc.	35.3%
Communication Services	Charter Communications, Inc.	26.0%
Materials	FMC Corporation	27.6%
Consumer Staples	Walmart Inc.	22.7%
Real Estate	Weyerhaeuser Company	4.4%
Financials	Moody's Corporation	28.9%
Utilities	-	-
Energy	Valero Energy Corporation	-10.4%

The Role of Buybacks amid Growth in Intangible Investments

As we've stated in this report, buybacks are one of several capital allocation choices available to managers. When there are attractive opportunities for growth, managers should allocate capital to them. Companies lacking such opportunities should evaluate their need for financial flexibility, and only then return capital to shareholders who can reinvest it in other companies with better prospects.

While this prioritization is simple in concept, it can be challenging in practice. What constitutes an "attractive opportunity for growth" can be hard to judge. In the face of uncertainty, it can be easier to return capital to shareholders, thereby reducing share count and boosting EPS, than to risk it on uncertain investments in growth.

This difficulty is compounded by the fact that how companies invest in growth is changing. Growth investment once meant capital expenditure and perhaps working capital—balance sheet items that reflected the belief that growth meant increasing a company's asset base to serve new customers. But today, growth comes primarily through intangible, rather than tangible, investments. In 1979, tangible investments were 1.7x the size of intangible investments, but since then the share of US non-farm investment comprised of intangibles has steadily increased, while tangibles have decreased. Today, intangible investment is around 1.5x tangible investment.[1]

This has profound implications for companies considering a value-inspired buyback program. From an accounting perspective, intangible investment is typically recorded as an expense on the income statement, so an increase in intangible investment may be recorded as a 100% deduction to current earnings. When investment is recorded as an asset on the balance sheet, only the scheduled depreciation of the balance sheet asset is deducted. This means that, all else equal, building an intangible asset tends to initially depress earnings relative to tangible assets—see, for example, the long history of Amazon showing little to no accounting earnings.

The accounting treatment of intangibles increases the burden on companies to develop a compelling value-creation narrative for investors. They must convince investors first that the investment in intangibles will lead to stronger future earnings and cash flow, and then that this will produce a better ROI than returning capital to shareholders. When done effectively, equity investors will look through the accounting treatment and value intangible-intensive businesses at a higher multiple of earnings than tangible-intensive ones. The success of developing this narrative and improving valuation impacts TSR and thus Buyback ROI.

The growing role of intangible investments has a profound impact on how companies manage buybacks.

1 Mauboussin, M., & Callahan, D. (2020, September 15). One Job: Expectations and the Role of Intangible Investments. Morgan Stanley. https://www.morganstanley.com/im/publication/insights/articles/articles_onejob.pdf

Companies that deliver on their intangible investments can turn into cash-generating machines. The initial cash expense to develop a new pharmaceutical drug, software application, or customer relationship can be significant. But when companies succeed in building these assets, the cost and capital intensity to commercialize them can be much lower. In the case of software specifically, marginal costs of production are often modelled as approaching zero, even if this is not strictly true in reality.

A tangible-asset-intensive business looks to build assets and reduce expenses to monetize those assets: build a factory and minimize the cost of labor to produce goods in that factory, for example. With an intangible-asset-intensive business, the approach is reversed: build a team of computer engineers to develop a software application and minimize the cost of assets needed to produce and commercialize it. This lower capital intensity of commercialization is why we see technology, pharma, and financial services companies among the most significant users of buybacks.

Credit investors and lenders also evaluate intangible-intensive businesses differently. While a strong narrative may support higher equity valuations, credit investors will emphasize downside protection, should the narrative never materialize. To address this, intangible-intensive businesses with a lower ratio of tangible asset value to market value will need to hold a greater level of cash on their balance sheets than tangible-intensive businesses.

As investment has shifted from tangible to intangible investment since the 1970s, there has been a strongly correlated increase (R^2 of 0.77) in the level of cash on balance sheets relative to assets.[2] Increased cash on the balance sheet can attract the attention of activists, so intangible-intensive businesses need to work hard to calibrate the level of cash needed to maintain credit capacity and defend it from those that would like it allocated to more immediate uses.

Intangible intensive companies thus have a different set of considerations as they evaluate and optimize their buyback programs, which include:

1. How will intangible investments convert to future value creation, and how does this compare to the ROI of repurchases?

2. What is the narrative on which equity investors can build a valuation case for intangible investment? Is this better than investors' next-best use of that capital?

3. What is the appropriate level of cash to hold on the balance sheet to serve as collateral for borrowing? And how should a company defend the level of cash to activists that may want that cash allocated to reinvestment or returned to shareholders?

The accounting treatment of intangibles increases the burden on companies to develop a compelling value-creation narrative for investors.

2 Falato, Antonio and Kadyrzhanova, Dalida and Sim, Jae W. and Steri, Roberto, Rising Intangible Capital, Shrinking Debt Capacity, and the US Corporate Savings Glut (December 11, 2020). Journal of Finance, Forthcoming, Available at SSRN: https://ssrn.com/abstract=3198030 or http://dx.doi.org/10.2139/ssrn.3198030

Concluding Remarks

Our study suggests that with the right tools and analytical approach, companies in any sector can achieve strong Buyback ROI. The allocation of capital to share repurchases should be treated with the same duty of care as all major capital allocation decisions. Buyback ROI presents a framework for companies to measure share repurchase performance relative to other capital allocation choices. Value-inspired buyback execution (VIBE) provides companies with a tool to improve Buyback ROI through objective signals on when shares are undervalued in the market compared to intrinsic value.

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.

Full List: 2021 Fortuna Advisors Buyback ROI Ranking

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
1	Etsy	703	100.1%	16.7%
2	NVIDIA	6,540	64.5%	-7.9%
3	ServiceNow	1,556	60.5%	11.1%
4	Generac Holdings	253	54.7%	4.3%
5	Apple	307,213	50.6%	11.2%
6	Teradyne	1,839	50.2%	7.4%
7	MSCI	2,946	49.3%	3.6%
8	PayPal Holdings	10,295	48.6%	4.3%
9	KLA	2,688	48.3%	11.6%
10	Copart	786	46.9%	1.6%
11	Lam Research	9,834	46.2%	1.8%
12	Cadence Design Systems	2,362	45.3%	3.7%
13	Old Dominion Freight Line	907	45.2%	5.8%
14	T-Mobile US	22,062	43.9%	14.0%
15	Adobe	12,016	43.2%	2.3%
16	Synopsys	2,087	42.2%	4.1%
17	Pool	611	42.2%	4.7%
18	IDEXX Laboratories	1,491	42.0%	-1.7%
19	Align Technology	1,171	41.1%	-4.4%
20	QUALCOMM	32,091	41.0%	12.3%
21	Microsoft	85,832	39.9%	3.6%
22	Fortinet	2,349	38.9%	8.0%
23	Autodesk	3,240	37.4%	1.5%
24	Cintas	1,978	36.4%	3.2%
25	Quanta Services	844	36.2%	8.7%
26	ANSYS	1,321	35.7%	4.9%
27	D.R. Horton	1,182	35.7%	13.1%
28	Thermo Fisher Scientific	5,510	35.3%	4.9%
29	Ball	2,002	35.0%	9.7%
30	Intuitive Surgical	3,255	34.5%	-0.1%
31	Deere & Company	3,417	33.5%	3.5%
32	Zoetis	2,380	33.4%	2.6%
33	Qorvo	2,547	33.0%	7.6%
34	Lennar	1,192	32.9%	20.8%
35	Chipotle Mexican Grill	1,594	32.8%	14.0%
36	The Sherwin-Williams Company	3,838	32.6%	7.3%
37	Intuit	3,315	32.5%	1.4%
38	Dollar General	6,244	32.5%	4.2%
39	Mastercard	23,665	31.1%	2.0%
40	Target	9,244	31.0%	8.1%
41	S&P Global	6,485	30.4%	0.1%
42	Trane Technologies	3,167	30.2%	1.4%
43	Best Buy	5,522	30.0%	-1.2%
44	Broadcom	14,711	28.9%	0.5%
45	Moody's	2,972	28.9%	3.8%
46	Mettler-Toledo International	2,925	28.8%	0.7%
47	STERIS	311	28.7%	5.2%
48	United Rentals	2,557	28.4%	3.6%
49	Costco Wholesale	2,997	28.4%	5.9%
50	The Estée Lauder Companies	3,984	28.0%	2.8%
51	NIKE	16,912	27.6%	9.3%
52	Take-Two Interactive Software	940	27.6%	-8.2%
53	FMC	697	27.6%	-0.7%
54	Xilinx	2,881	27.4%	2.1%
55	Micron Technology	2,905	27.2%	-2.5%
56	Abbott Laboratories	1,998	27.1%	4.1%
57	Edwards Lifesciences	3,110	27.1%	0.8%
58	Domino's Pizza	2,994	27.0%	-3.0%
59	Agilent Technologies	2,556	26.9%	1.9%
60	SBA Communications	3,568	26.8%	3.7%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
61	CDW	2,566	26.7%	0.5%
62	Applied Materials	11,463	26.4%	-6.8%
63	Verisk Analytics	1,710	26.3%	4.4%
64	Charter Communications	35,766	26.0%	0.4%
65	Linde	5,357	25.7%	4.6%
66	Texas Instruments	15,301	25.6%	-0.3%
67	Kansas City Southern	2,486	25.4%	5.7%
68	Lowe's Companies	19,108	25.3%	5.2%
69	Tractor Supply Company	1,942	25.3%	12.8%
70	IHS Markit	4,435	24.0%	2.4%
71	Visa	38,328	23.8%	1.3%
72	Cummins	4,281	23.7%	2.0%
73	Facebook	37,690	23.6%	1.6%
74	AMETEK	728	23.4%	6.2%
75	Leidos Holdings	1,056	23.4%	0.8%
76	Hologic	1,792	23.3%	9.5%
77	Alphabet	67,159	23.1%	4.5%
78	DaVita	6,435	23.1%	15.2%
79	Maxim Integrated Products	1,823	22.9%	3.1%
80	Skyworks Solutions	3,420	22.9%	7.2%
81	Global Payments	1,718	22.9%	0.1%
82	Motorola Solutions	2,384	22.7%	1.0%
83	Walmart	32,346	22.7%	0.4%
84	Norfolk Southern	8,134	22.4%	-1.5%
85	Accenture	13,611	22.2%	1.9%
86	Analog Devices	1,525	22.2%	1.5%
87	PulteGroup	2,293	22.1%	1.2%
88	T. Rowe Price Group	4,280	22.1%	3.8%
89	The Home Depot	32,599	22.0%	2.2%
90	American Tower	1,075	21.8%	0.4%
91	Parker-Hannifin	2,033	21.6%	-0.2%
92	BlackRock	8,627	21.6%	3.6%
93	UnitedHealth Group	17,030	21.4%	-3.2%
94	NXP Semiconductors	8,912	21.3%	8.2%
95	Eaton	5,635	21.3%	1.2%
96	Broadridge Financial Solutions	1,204	21.3%	-1.5%
97	Starbucks	23,289	21.2%	8.7%
98	IQVIA Holdings	6,525	21.1%	1.1%
99	Eli Lilly and Company	11,610	21.1%	5.2%
100	Jacobs Engineering Group	1,495	21.1%	0.3%
101	VeriSign	3,482	21.1%	1.2%
102	IDEX	473	21.1%	-0.4%
103	eBay	18,619	21.0%	6.4%
104	Humana	7,451	21.0%	1.1%
105	Union Pacific	24,852	20.6%	-0.4%
106	Dover	1,393	20.6%	-0.6%
107	Varian Medical Systems	937	20.4%	0.4%
108	CSX	11,937	20.4%	-6.0%
109	Avery Dennison	1,213	20.0%	-0.4%
110	Church & Dwight	1,550	20.0%	2.3%
111	NVR	2,793	19.9%	-0.5%
112	The Procter & Gamble Company	29,124	19.7%	3.0%
113	W.W. Grainger	3,211	19.7%	3.0%
114	The Clorox Company	1,700	19.7%	5.4%
115	Rockwell Automation	3,562	19.6%	-1.2%
116	Nasdaq	1,384	19.5%	-0.1%
117	Masco	2,989	19.3%	3.3%
118	Brown-Forman	1,187	19.3%	3.8%
119	Illinois Tool Works	7,206	18.7%	-1.4%
120	Trimble	806	18.6%	-3.2%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
121	Amphenol	3,122	18.2%	-0.9%
122	NortonLifeLock	3,347	18.2%	-0.1%
123	Seagate Technology	3,886	18.2%	3.0%
124	Caterpillar	8,975	18.1%	-4.1%
125	Akamai Technologies	2,346	18.0%	6.1%
126	United Parcel Service	6,737	17.7%	3.1%
127	O'Reilly Automotive	8,912	17.7%	5.3%
128	Intercontinental Exchange	5,265	17.6%	0.4%
129	Aptiv	2,168	17.6%	6.0%
130	Fiserv	5,907	17.4%	-0.6%
131	HCA Healthcare	7,804	16.9%	0.3%
132	Stryker	1,378	16.9%	-2.8%
133	Ameriprise Financial	8,206	16.7%	3.4%
134	Waste Management	3,302	16.6%	-2.5%
135	Fidelity National Information Services	2,014	16.5%	-1.3%
136	Expeditors International of Washington	2,206	16.5%	1.3%
137	Ecolab	2,176	16.4%	2.7%
138	Republic Services	2,250	16.4%	-2.5%
139	TE Connectivity	4,764	16.2%	2.2%
140	Fortune Brands Home & Security	1,676	16.0%	4.0%
141	Honeywell International	17,082	16.0%	-1.0%
142	Illumina	2,176	15.9%	1.2%
143	McDonald's	26,948	15.9%	-1.1%
144	Monster Beverage	5,259	15.8%	3.6%
145	Aon	7,997	15.6%	-2.2%
146	Marsh & McLennan Companies	2,936	15.6%	-1.9%
147	Morgan Stanley	21,635	15.4%	1.0%
148	Automatic Data Processing	5,051	15.4%	-0.9%
149	Anthem	8,489	14.8%	-3.5%
150	AutoZone	7,330	14.7%	5.5%
151	Celanese	2,876	14.6%	-0.6%
152	Jack Henry & Associates	473	14.6%	-2.1%
153	Citrix Systems	4,786	14.4%	-1.6%
154	Stanley Black & Decker	984	14.3%	1.1%
155	CarMax	2,943	14.1%	3.3%
156	Willis Towers Watson Public Company	1,947	14.0%	0.6%
157	The TJX Companies	7,618	14.0%	1.1%
158	FedEx	4,630	14.0%	0.3%
159	Berkshire Hathaway	30,902	13.7%	2.9%
160	The Hershey Company	1,880	13.6%	0.4%
161	Yum! Brands	10,807	13.6%	-2.4%
162	J.B. Hunt Transport Services	1,049	13.4%	0.3%
163	Corning	9,983	13.3%	-3.5%
164	Electronic Arts	5,153	12.9%	-0.1%
165	Assurant	1,971	12.8%	0.8%
166	Amgen	35,684	12.8%	1.6%
167	Ross Stores	4,306	12.8%	-3.2%
168	Quest Diagnostics	2,140	12.3%	-2.3%
169	Martin Marietta Materials	684	12.2%	-0.6%
170	Darden Restaurants	1,194	11.9%	-3.5%
171	Comcast	17,145	11.9%	-0.0%
172	Johnson Controls International	10,006	11.7%	5.7%
173	V.F.	3,486	11.7%	3.6%
174	AbbVie	21,064	11.6%	-3.6%
175	Oracle	85,921	11.5%	0.4%
176	PepsiCo	12,588	11.5%	0.8%
177	Laboratory of America Holdings	1,803	11.4%	0.5%
178	Lockheed Martin	7,334	11.4%	-2.3%
179	Mondelez International	9,665	11.1%	3.7%
180	PPG Industries	3,759	11.1%	2.5%
181	American Express Company	16,297	10.9%	0.3%
182	The Walt Disney Company	18,092	10.8%	4.1%
183	Allegion	647	10.8%	-1.2%
184	Hilton Worldwide Holdings	4,610	10.5%	-4.9%
185	Whirlpool	2,697	10.4%	2.8%
186	Medtronic	10,655	10.4%	0.1%
187	FLEETCOR Technologies	3,094	10.1%	-1.5%
188	Merck &	22,600	9.9%	-1.8%
189	Pentair	1,005	9.8%	0.9%
190	C.H. Robinson Worldwide	1,259	9.6%	-0.2%
191	Emerson Electric	3,699	9.5%	-3.0%
192	Albemarle	794	9.5%	-8.8%
193	Raymond James Financial	1,314	9.1%	-1.4%
194	Sysco	5,160	8.9%	-4.3%
195	Amcor	866	8.8%	1.3%
196	Colgate-Palmolive Company	6,650	8.8%	1.7%
197	HP	11,223	8.7%	-4.7%
198	Archer-Daniels-Midland Company	2,110	8.5%	0.7%
199	Johnson & Johnson	31,172	8.3%	-2.3%
200	JPMorgan Chase &	74,993	8.3%	-5.5%
201	Cognizant Technology Solutions	7,530	8.2%	3.8%
202	Cerner	3,674	8.0%	3.7%
203	The Coca-Cola Company	9,902	8.0%	0.5%
204	Eastman Chemical Company	1,283	8.0%	-0.9%
205	Kimberly-Clark	3,950	7.9%	1.4%
206	Baxter International	3,654	7.9%	-8.5%
207	Northrop Grumman	4,898	7.9%	-4.1%
208	Bristol-Myers Squibb Company	11,866	7.6%	6.2%
209	A. O. Smith	824	7.2%	-2.1%
210	AmerisourceBergen	4,328	7.1%	4.8%
211	The Western Union Company	2,209	6.9%	0.2%
212	Regeneron Pharmaceuticals	7,628	6.7%	6.8%
213	Globe Life	1,689	6.7%	-2.7%
214	McKesson	8,541	6.7%	8.4%
215	Discover Financial Services	8,170	6.6%	-1.8%
216	Robert Half International	1,198	6.6%	0.9%
217	The Allstate	8,607	6.4%	-4.8%
218	General Motors Company	7,182	6.4%	0.1%
219	Waters	4,639	6.2%	-5.2%
220	International Paper Company	1,487	5.6%	-1.8%
221	Cigna	9,235	5.5%	-1.8%
222	Pfizer	31,063	5.5%	-1.5%
223	Regions Financial	4,161	5.3%	-6.0%
224	The Kroger	7,198	5.1%	7.0%
225	NetApp	5,669	5.0%	-8.0%
226	The Goldman Sachs Group	29,451	4.9%	-0.5%
227	Gartner	736	4.8%	-4.9%
228	The Charles Schwab	3,220	4.8%	-3.6%
229	The PNC Financial Services Group	12,588	4.6%	-4.6%
230	Snap-on	1,105	4.6%	2.3%
231	F5 Networks	2,008	4.6%	-2.3%
232	Genuine Parts Company	633	4.5%	-0.9%
233	Weyerhaeuser Company	2,429	4.4%	0.6%
234	Everest Re Group,	806	4.2%	-2.1%
235	Capital One Financial	7,112	4.0%	-0.1%
236	Intel	45,204	3.9%	-6.0%
237	General Mills	2,315	3.6%	-1.0%
238	The Travelers Companies	7,453	3.6%	-1.7%
239	LyondellBasell Industries N.V.	9,414	3.4%	1.4%
240	Constellation Brands	2,882	3.3%	-5.0%
241	Alexion Pharmaceuticals	1,906	3.1%	9.6%
242	Aflac	7,240	3.0%	-4.8%
243	Booking Holdings	18,301	2.7%	-4.8%
244	Raytheon Technologies	4,194	2.7%	-2.7%
245	Cisco Systems	51,115	2.7%	-8.2%
246	Fifth Third Bancorp	5,482	2.5%	-5.4%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
247	Truist Financial	3,424	2.4%	-4.5%
248	Hasbro	792	2.4%	-4.1%
249	Bank of America	73,189	2.2%	-8.5%
250	The Interpublic Group of Companies	856	2.1%	-0.3%
251	Chubb	3,898	2.1%	-4.3%
252	WestRock Company	610	2.1%	0.5%
253	Conagra Brands	1,983	1.9%	-3.1%
254	Marriott International	9,454	1.5%	-8.4%
255	Leggett & Platt	495	1.5%	-1.2%
256	Northern Trust	3,259	1.5%	-4.8%
257	BorgWarner	854	1.4%	1.8%
258	Kellogg Company	1,482	1.3%	-0.3%
259	MetLife	10,727	1.1%	-2.2%
260	State Street	5,728	1.0%	-1.1%
261	Sealed Air	2,119	0.8%	0.6%
262	Advance Auto Parts	1,300	0.8%	2.9%
263	Henry Schein	1,914	0.7%	-0.9%
264	Universal Health Services	2,092	0.7%	0.0%
265	Ulta Beauty	2,150	0.1%	-7.2%
266	The J. M. Smucker Company	1,392	0.1%	-2.1%
267	Newell Brands	1,745	-0.0%	13.3%
268	Evergy	2,672	-0.2%	-8.9%
269	Tyson Foods	3,320	-0.3%	-6.9%
270	3M Company	12,466	-0.4%	-5.1%
271	The Hartford Financial Services Group	2,502	-0.4%	-1.3%
272	Westinghouse Air Brake Technologies	451	-0.5%	2.1%
273	Expedia Group	2,860	-0.5%	0.9%
274	Citizens Financial Group	3,836	-0.6%	-7.8%
275	Synchrony Financial	8,444	-0.7%	-2.0%
276	The Boeing Company	28,791	-0.7%	-8.4%
277	Principal Financial Group	1,757	-0.9%	-3.3%
278	Campbell Soup Company	659	-0.9%	-2.7%
279	International Business Machines	14,710	-1.6%	-2.9%
280	Las Vegas Sands	2,034	-2.2%	-9.5%
281	General Dynamics	6,141	-2.3%	-4.8%
282	Nucor	1,388	-2.6%	-9.7%
283	Cardinal Health	2,788	-2.6%	4.1%
284	Discovery	3,636	-3.3%	-0.1%
285	NRG Energy	2,919	-3.3%	-21.3%
286	DENTSPLY SIRONA	1,866	-3.6%	-0.6%
287	The Mosaic Company	228	-3.6%	3.7%
288	Juniper Networks	2,743	-3.7%	-0.1%
289	The Gap	1,003	-4.1%	-2.7%
290	CVS Health	9,262	-4.1%	1.3%
291	U.S. Bancorp	14,206	-4.1%	-6.6%
292	Prudential Financial	7,869	-4.1%	-5.4%
293	Gilead Sciences	18,187	-4.6%	3.1%
294	Biogen	19,265	-4.7%	-4.2%
295	Tapestry	506	-4.8%	-4.1%
296	Citigroup	51,070	-4.9%	-6.2%
297	Southwest Airlines	7,801	-5.0%	-5.5%
298	The Bank of New York Mellon	12,669	-5.2%	-5.6%
299	KeyCorp	3,057	-5.4%	-10.4%
300	Hanesbrands	1,029	-5.6%	4.9%
301	Mohawk Industries	612	-5.9%	3.3%
302	Hess	1,500	-6.1%	-3.7%
303	MGM Resorts International	2,996	-6.2%	-10.1%
304	Cboe Global Markets	784	-6.3%	-12.1%
305	L Brands	1,208	-6.4%	8.3%
306	Huntington Bancshares	1,837	-6.5%	-10.1%
307	Hewlett Packard Enterprise Company	9,573	-6.7%	-12.6%
308	Lincoln National	3,329	-7.0%	-5.4%
309	FLIR Systems	657	-7.0%	-13.8%
310	Omnicom Group	2,584	-7.2%	-5.5%
311	Delta Air Lines	8,224	-7.6%	-3.6%

Rank	Company Name	Total Buybacks ($ millions)	Buyback ROI	Buyback Effectiveness
312	Zions Ban, National Association	2,279	-7.8%	-14.1%
313	Textron	2,562	-7.8%	-8.3%
314	Huntington Ingalls Industries	1,736	-8.1%	-14.1%
315	Loews	3,350	-8.5%	-10.4%
316	Altria Group	6,465	-8.5%	-6.7%
317	Host Hotels & Resorts	847	-8.6%	-8.0%
318	Ralph Lauren	1,567	-8.6%	-4.1%
319	Invesco	1,210	-8.8%	0.9%
320	DuPont de Nemours	8,172	-9.0%	-9.0%
321	American International Group	17,559	-9.1%	-1.2%
322	Franklin Resources	4,105	-9.8%	-3.7%
323	Cabot Oil & Gas	1,558	-10.0%	-8.6%
324	M&T Bank	5,765	-10.0%	-11.0%
325	Valero Energy	5,677	-10.4%	-8.4%
326	Royal Caribbean Group	1,201	-10.9%	-7.0%
327	PVH	1,369	-11.7%	-9.2%
328	ViacomCBS	4,861	-11.7%	-6.5%
329	AT&T	9,499	-12.7%	-14.8%
330	Lumen Technologies	39	-12.7%	-3.1%
331	Comerica	3,809	-12.9%	-17.4%
332	Phillips 66	9,370	-13.0%	-9.3%
333	CF Industries Holdings	955	-14.4%	-11.2%
334	United Airlines Holdings	7,691	-14.5%	-8.2%
335	Marathon Petroleum	6,806	-15.0%	-11.6%
336	Western Digital	1,685	-15.6%	-10.9%
337	ConocoPhillips	10,519	-15.9%	-12.1%
338	Perrigo Company	756	-16.0%	5.6%
339	Unum Group	1,564	-16.1%	-10.0%
340	Alaska Air Group	1,101	-16.6%	-8.1%
341	Exxon Mobil	3,350	-18.1%	-9.0%
342	Walgreens Boots Alliance	16,930	-18.5%	-7.1%
343	Chevron	6,120	-18.6%	-20.3%
344	Nielsen Holdings	629	-20.0%	-4.5%
345	General Electric Company	24,180	-22.1%	-3.9%
346	Simon Property Group	1,543	-22.1%	-10.4%
347	Wells Fargo & Company	68,465	-24.5%	-15.3%
348	American Airlines Group	8,222	-25.1%	-6.8%
349	Viatris	984	-26.6%	-8.9%
350	Carnival	4,975	-27.6%	-12.8%
351	NOV	20	-28.6%	-10.4%
352	Schlumberger	2,452	-29.3%	-10.1%
353	HollyFrontier	1,058	-30.1%	-21.9%
354	Norwegian Cruise Line Holdings	1,121	-34.8%	-19.8%
355	Devon Energy	5,020	-37.1%	-21.7%
356	DXC Technology Company	1,594	-38.9%	-37.7%
357	Marathon Oil	1,184	-46.4%	-33.5%
358	Diamondback Energy	2,162	-51.3%	-44.5%
359	Occidental Petroleum	1,544	-52.3%	-36.6%

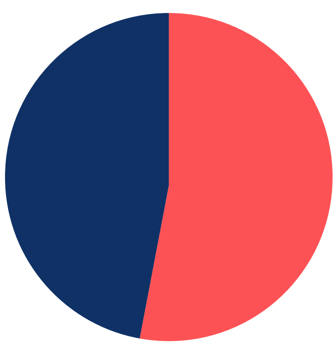
VIBE

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, 53% of companies repurchased more shares when their prices were above the trend, from 2016–2020.

Fortuna Advisors developed VIBE as a fact-based platform to provide managements with real-time signals to help override natural biases, limited information, and human error to better inform the timing of share repurchases.

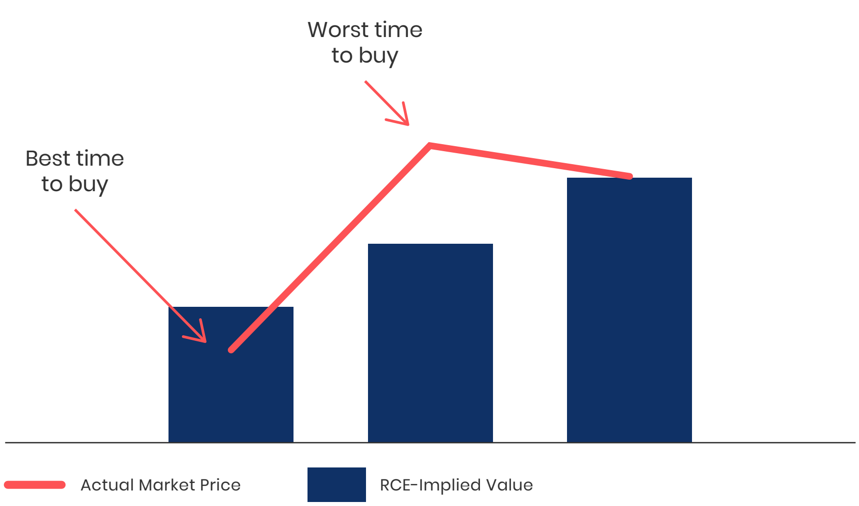
Buyback programs can and should be sources of immense value for many companies. VIBE can help them harness it.



FROM 2016–2020

53%

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.