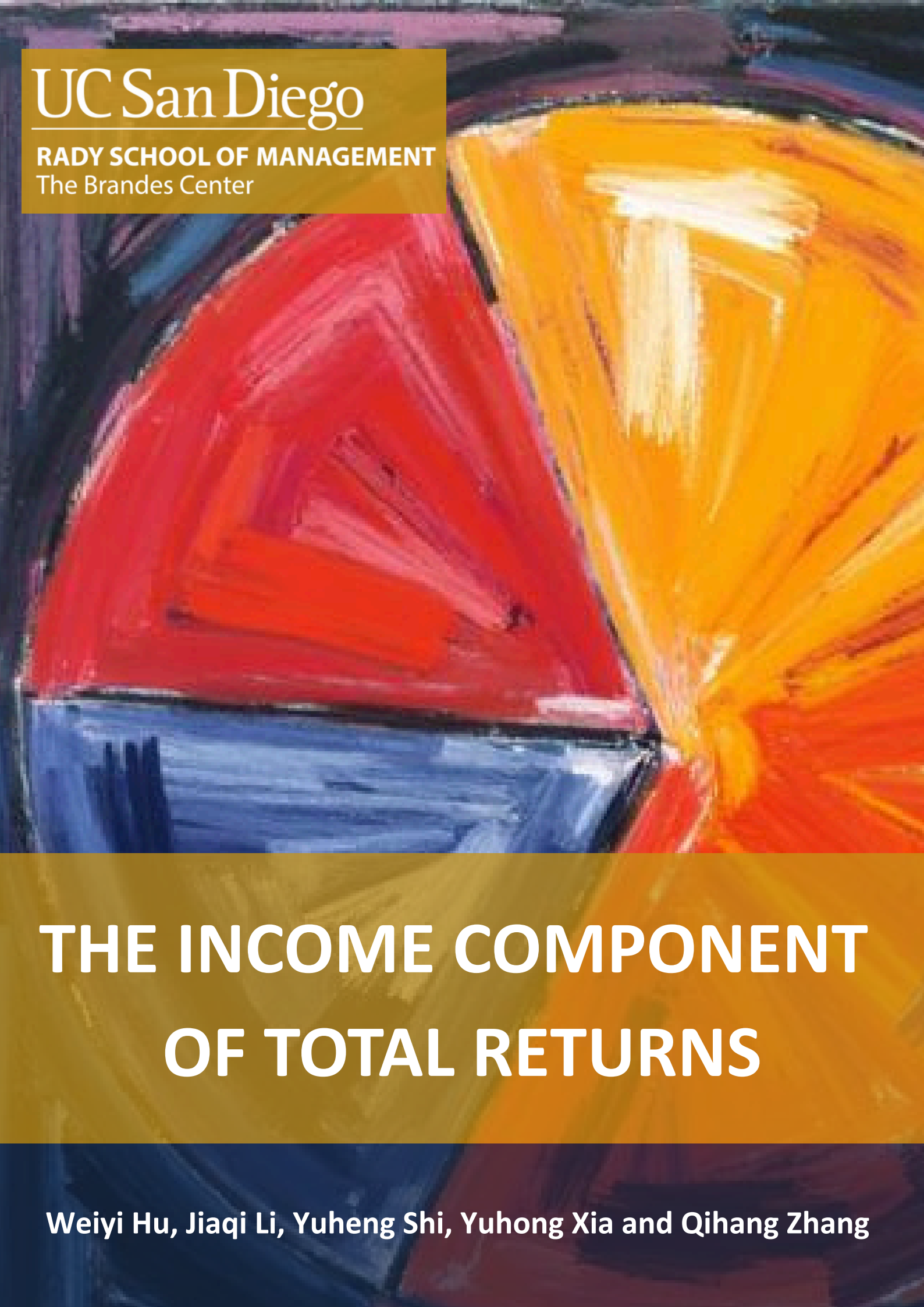


UC San Diego
RADY SCHOOL OF MANAGEMENT
The Brandes Center

# THE INCOME COMPONENT OF TOTAL RETURNS

Weiyi Hu, Jiaqi Li, Yuheng Shi, Yuhong Xia and Qihang Zhang

**The Income Component of Total Returns**

This project updates and extends the Brandes Institute's analysis of the income component of total returns by incorporating the more recent rise of share repurchases. Using S&P 500 firm-level data from 2015 to mid–2025 and cross-country comparisons across the G7, we compare the returns of high-buyback firms with those emphasizing dividends or conducting no repurchases.

Our updated findings reveal several notable shifts vs. the prior Brandes Institute (BI) study which concluded in 2014:

1. **Buybacks have overtaken dividends** as the dominant form of shareholder payout in the U.S., with buyback yields consistently exceeding dividend yields over the past decade.

2. **High-buyback firms significantly outperformed** during our study period: in the S&P 500, the top 30% buyback firms delivered nearly double the average return of high-dividend firms, and showed greater resilience during volatile periods.

3. **The reverse yield gap has re-emerged**: since 2022, Treasury yields have surged above dividend yields, shifting the income advantage from equities to bonds.

4. **Cross-country comparison shows structural differences**: the U.S. leads a buyback-centric model; Japan, Canada, and the U.K. follow hybrid models; Europe remains dividend-focused.

**Investment takeaway**: our work suggests investors prioritize cash-funded, recurring buybacks paired with steady dividends (net payout yield strategy) in pursuit of balanced long-term growth, income stability, and improved risk-adjusted returns.


**The Authors**

**Weiyi Hu**, **Jiaqi Li**, **Yuheng Shi**, **Yuhong Xia** and **Qihang Zhang** graduated with Master of Quantitative Finance degrees from UC San Diego's Rady School in December 2025.

During the Fall Quarter prior to graduation, they revisited a study published by the Brandes Institute in 2014.

Their research, analysis and conclusions are reflected in this report.

The Brandes Center thanks them for their work.

## 1. Introduction

Total returns from financial assets consist of two primary components: income (dividends for equities, interest for bonds) and capital appreciation. While modern investors often emphasize short-term price movements and capital gains, a large body of research shows that income has historically been a dominant driver of long-term returns. For example, the Brandes Institute (2015) demonstrated that dividend income accounted for more than 60% of U.S. equity returns over rolling 20-year periods between 1926 and 2014. Similarly, bond returns have historically been almost entirely driven by their income component.

In recent decades, structural changes in capital markets—such as persistently low bond yields, variations in dividend payout policies, and the rise of stock buybacks—have reshaped the income component of returns. The goal of this project, conducted in partnership with UC San Diego's Brandes Center, is to update and expand upon prior research by analyzing how the income component of total returns has evolved in the past decade, both in the U.S. and internationally. By examining equity and bond markets in different regions and under varying economic conditions, this study seeks to understand the continuing role of income in long-term investment performance.

## 2. Literature Review

The theoretical foundation for dividend policy research was established by Merton Miller and Franco Modigliani (1961), who argued that a firm's dividend payout policy should not affect either its share price or the total return to shareholders. This "dividend irrelevance" proposition implies that in a perfect capital market without taxes, transaction costs, or irrational behavior, the source of shareholder income is immaterial: investors are indifferent between dividends and capital gains. However, Miller and Modigliani (M&M) also acknowledged that frictions such as taxation, transaction costs, investor preferences, and market imperfections could cause dividend policy to influence firm value in practice.

Subsequent studies introduced these frictions explicitly. Bhattacharya (1988) extended the M&M framework by modeling information asymmetry, showing that dividends may serve as credible signals of firm quality when insiders possess private information about earnings prospects. This line of research evolved into the dividend signaling theory, supported by research papers such as Miller and Rock (1985) and John and Williams (1985), which collectively argued that dividend changes convey management's expectations about future performance. More recent work, such as Yang Bai (2022), has provided a global, long-horizon perspective by testing the predictability of asset returns using payout-price ratios (e.g., dividend yields, coupon yields, rent-to-price ratios) across 16 developed countries from 1870 onward.

Bai finds little consistent evidence that dividends or payout ratios predict excess returns once adjusted for out-of-sample biases, suggesting that while payout policy may reflect firm-level information, its macro-level predictive power has weakened over time.

While much of the early debate focused on the relationship between dividends and firm value, another stream of research explored the income component of total returns—how much of long-term wealth creation comes from dividends and related cash distributions. A major contribution in this domain came from Dimson, Marsh, and Staunton (2002) in Triumph of the Optimists. The research trio compiled a century-long global dataset demonstrating that reinvested dividends accounted for the majority of long-term equity wealth accumulation. Their subsequent work, Dimson, Chambers, Ilmanen, and Rintamäki (2024), reaffirmed this conclusion over two centuries of data: "The real return on a portfolio held over the long haul is driven by the income it generates."

They emphasize that ignoring the income component understates total returns and distorts cross-country comparisons, particularly in early historical periods when dividend income dominated price appreciation.

The BI extended this empirical tradition by quantifying income's contribution to total returns across rolling horizons. Analyzing data since 1926, the BI reported that dividends accounted for over 60% of total U.S. equity returns over rolling 20-year periods and roughly 45% in non-U.S., developed markets. These findings reinforced the long-term centrality of income, not only as a driver of return magnitude but also as a stabilizer of performance through cycles.

More recent macro-historical research places these findings in a broader context.

Kuvshinov and Zimmermann (2022), in "The Big Bang: Stock Market Capitalization in the Long Run," traced equity market expansion from 1870 to 2016 across 17 advanced economies. They documented that from the 1980s onward, rising dividends and earnings —not valuation multiple expansion— accounted for the structural surge in global market capitalization. In their words, "The 'big bang' of equity capitalization was not mainly a valuation bubble, but a reflection of higher realized and distributed earnings that elevated the income component of total return."

Their work bridges traditional dividend-based return decomposition with the modern era's payout evolution.

More recently, dividends have declined in relative importance and share repurchases have emerged as a dominant form of corporate payout. Theoretical and empirical analyses of buybacks have expanded rapidly in recent years. Bayar, Chemmanur, and Liu (2020) developed a heterogeneous-beliefs model to explain firms' choice between dividends and repurchases. They show that when insiders are more optimistic than outside investors, repurchases are preferred, and that buyback-heavy firms tend to outperform dividend payers over the long run, consistent with positive abnormal returns following repurchase announcements.

Complementing this theoretical view, Kim (2025) provides new causal evidence that aggregate share repurchase flows increase the value of non-repurchasing firms by channeling liquidity back into equity markets. Using granular instrumental variables to isolate exogenous buybacks, Kim demon-

strates that most repurchase cash "flows back into the stock market" and that repurchase-driven inflows predict higher subsequent market returns—an important insight for understanding the system-wide effects of modern payout structures.

Overall, the literature converges on several themes. First, income has remained the most stable and persistent component of long-term returns, even as its form has shifted in some regions from dividends to buybacks. Second, while the theoretical irrelevance of payout policy holds under ideal conditions, empirical evidence consistently finds that payout mechanisms influence investor behavior, valuation, and market dynamics. Third, as global capital markets evolve—from the dividend-dominated 20th century to the buyback-heavy 21st—the income component of total return continues to offer a vital lens for interpreting equity performance and understanding the changing nature of shareholder rewards.

## 3. Research Questions

This project investigates the role of the income component in total returns through the following themes and guiding questions:

> ***... most repurchase cash "flows back into the stock market" and ... repurchase-driven inflows predict higher subsequent market returns.***
>
> **--Dr. Byungwook Kim**

**U.S. Equity Market**

1. How has the contribution of dividend income to U.S. equity returns changed over the past decade (2015–2025), and does it differ between the low-rate period (2015–2021) and the high-rate, post-2022 environment?

**International Comparisons**

2. How does the contribution of dividend income differ between U.S. equities and non-U.S. developed markets (e.g., MSCI EAFE)?

3. How has the relationship between dividend yields on U.S. and non-U.S. equities and U.S. Treasury bond yields changed over the past decade (2015–2025)?

4. How has the relationship between the S&P 500 dividend yield and the 10-year U.S. Treasury yield evolved from 2015 to 2025?

5. Which countries exhibit the largest gaps between dividend yields and government bond yields, and how do these yield gaps in 2025 compare with 2015?

**Income vs. Buybacks**

6. What are the return implications for firms prioritizing share repurchases vs. those emphasizing dividends, and how have buyback levels evolved?

**Risk and Stability**

7. How do high- versus low-dividend-paying stocks compare in risk/return trade-offs?
8. How stable have dividend streams been across different countries and firms?

## 4. Data

This project uses a wide range of datasets to analyze the income component of total returns across equity and bond markets in the U.S. and internationally. Data sources span Yahoo Finance, Bloomberg, WRDS, Compustat, and CRSP. The full list of datasets, time periods, and sources is summarized in the table below.

| | Description | Period | Source(s) |
|---|---|---|---|
| Q1 | S&P 500 Index Prices & Total Return | 1/1926-6/2025 | Yahoo Finance, WRDS |
| **Q2** | MSCI EAFE and S&P 500 daily closing prices used to construct Price and Total Return Index | 6/2015-6/2025 | Bloomberg |
| Q3 | S&P 500 Dividend Yield<br>MSCI World Dividend Yield<br>MSCI EAFE Dividend Yield<br>US 10-Year Bond Yield | 6/2015-6/2025 | Bloomberg<br>Bloomberg<br>Bloomberg<br>FRED |
| Q4 | S&P 500 Dividend Yield<br>10-Year UST Constant Maturity Yield6/2015-6/2025 | 6/2015-6/2025 | Bloomberg<br>FRED |
| Q5 | Dividend Yield for G&, 10-Year Gvt. Bond Yield for G7 | as of October 2025 | MSCI, Trading Economics, FRED |
| Q6. Q7 | S&P 500 Constituents' Dividend Amounts<br>S&P 500 Constituents' Buyback Amounts<br>S&P 500 Constituents' Market Value<br>S&P 500 Constituents' Returns | 2013-2025 | WRDS |
| Q6, Q7 | Repurchases, Stock Issuance, Dividends | 1986-2023 | Dr. Kim Data and Compustat |
| Q6, Q7 | Repurchases, Dividends, Market Value | 1998-2024 | Compustat N. America |
| Q6, Q7 | Quarterly Mutual Fund Flows/Holdings | 1986-2023 | CRSP |
| Q6, Q7 | Monthly & Daily Returns, Market Cap | 1986-2023 | CRSP |

**Data Limitations and Adjustments**

Q2: The analysis uses monthly index-level data from June 2015 to June 2025, obtained from Yahoo Finance and MSCI. Two indices were selected to represent the respective markets: the S&P 500 Index for the United States and the MSCI EAFE Index for non-U.S. developed markets. For each index, both the Price Index (reflecting capital appreciation) and Total Return Index (TRI) (including reinvested dividends) were collected. All series were aligned to a consistent 10-year period with monthly frequency.

While both TRI series reflect total returns, the two index providers apply slightly different calculation conventions. The S&P 500 follows a gross dividend reinvestment approach, whereas MSCI's methodology may differ in its reinvestment and withholding tax assumptions. We believe these variations do not materially affect the overall trend comparison between the two markets.

Q3: The MSCI EAFE Dividend Yield series was adjusted to correct a data classification error that caused abnormal yield spikes in 2018–2019. The original data treated annual dividends as if they were distributed quarterly, leading to inflated short-term yields. To address this, annual dividend-per-share (DPS) and year-end price data were obtained from MSCI's index-level records (MSCI EAFE Dividend file). The annual yield was recomputed using either the reported last-twelve-month (LTM) dividend yield or, when unavailable, the DPS-to-price ratio. These annual yields were then forward-filled to monthly frequency to align with the time series of other indices.

All yield values were expressed in percentages (%), and formatting symbols were removed for numeric precision. Because the dividend yield data were monthly and the Treasury yield data were daily, the daily bond yields were downsampled to monthly frequency by taking the last available observation of each month, aligning both series to month-end reporting. Finally, all dates were standardized to month-end using the to_period('M').to_timestamp('M') method, ensuring exact temporal alignment between the two datasets.

Q6: For this section, we use annual firm-level data for S&P 500 constituents from 1998 to 2024. For each firm-year, we obtain cash dividends (DV), net share repurchases (repurchases minus issuances), and market value (MKVALT). We keep only firms with multiple non-missing observations and treat obvious errors or #DIV/0! values as missing.

Finally, we note that part of the visual comparison (e.g., Exhibit 5.2.1) includes historical results published by the BI (2015). These figures were not independently calculated by our team, but are directly cited from the BI original analysis.

**5. Methodology**

Q1 & Q2: Total equity returns were decomposed into two components: Total Return = Capital Appreciation + Income Return

The Income Return represents the portion of total return attributable to dividends and reinvested income. (See the "Endnotes" for details on the BI methodology.)

It is calculated as the difference between the logarithmic returns of the Total Return Index (TRI) and the Price Index (PI):

$$Income\ Return_t = \ln\left(\frac{TRI_t}{TRI_{t-1}}\right) - \ln\left(\frac{PI_t}{PI_{t-1}}\right)$$

Cumulative income and total returns were then computed for 5-year (2020–2025) and 10-year (2015–2025) rolling periods. The income share—the proportion of total returns attributable to income—was determined as:

$$Income\ Share = \frac{Cumulative\ Income\ Return}{Cumulative\ Total\ Return}$$

This method allows for a consistent comparison between U.S. and non-U.S. developed markets. By contrasting the S&P 500 and MSCI EAFE results, we can evaluate how the contribution of dividends to total returns has evolved since the original BI findings in 2015, and identify structural differences in payout policies and market composition.

Q3: Following the approach of the BI, we compare equity dividend yields and government bond yields to evaluate the relative income attractiveness across markets. The analysis covers the period from June 30, 2015 to December 31, 2025, using daily data for the U.S. 10-Year Treasury Yield and monthly data for the S&P 500 Index and MSCI World Index dividend yield.

We then summarized yield behavior through two figures. Exhibit 6.3.2 displays the historic range, long-term average, and current yield for each index. The chart allows a direct visual comparison of present conditions against their historical context.

These approaches enable a consistent comparison between U.S. and non-U.S. developed markets, highlighting how the relationship between bond yields and dividend yields has evolved since the BI study in 2015.

Q5: For each G7 market, we collect the latest available dividend yield and 10-year government bond yield using MSCI, Trading Economics, and FRED data. We compute the yield gap as:

$$\text{Yield Gap} = \text{Dividend Yield} - \text{10-Year Government Bond Yield}$$

A positive gap indicates that equities offer higher income than government bonds; a negative gap indicates that bonds provide higher income. We summarize current yields, long-term averages, and historical ranges to evaluate the relative income attractiveness of equities versus government bonds across G7 countries.

Q6: We calculate annual buyback yield for each S&P 500 firm as:

$$\text{Buyback Yield} = \frac{\text{Net Repurchases (PRSTKC} - \text{SSTK)}}{\text{Market Value (MKVALT)}}$$

Firms are ranked each year by their buyback yield. We construct two value-weighted portfolios:

High-Buyback Portfolio (Top 30%), Low/No-Buyback Portfolio (Bottom 30%)

Using CRSP monthly return data, we compute annual total returns for each portfolio over 2014–2024.

This comparison allows us to evaluate:

- performance differences between high- and low-buyback firms;
- whether buyback-intensive firms outperformed high-dividend firms;
- how buyback intensity affected performance across different market cycles

Q7: Using CRSP return data, we compute: annual excess return (over the risk-free rate) and annual return volatility. The Sharpe ratio is calculated as:

$$\text{Sharpe Ratio} = \frac{\mathbb{E}(R_p - R_f)}{\sigma_p}$$

This method allows us to compare the risk-adjusted performance of high-dividend vs. low-dividend firms and high-buyback vs. low-buyback firms.

Q8: We compute dividend yield as DV divided by market value, and buyback yield as net share repurchases divided by market value, for each firm and year.

Using these annual yields, we construct a time series for each firm and calculate the time-series standard deviation of dividend yield and of buyback yield as firm-level measures of payout volatility. We then summarize the distribution of these standard deviations across firms to compare the stability of dividends versus share buybacks.

**6. Results**

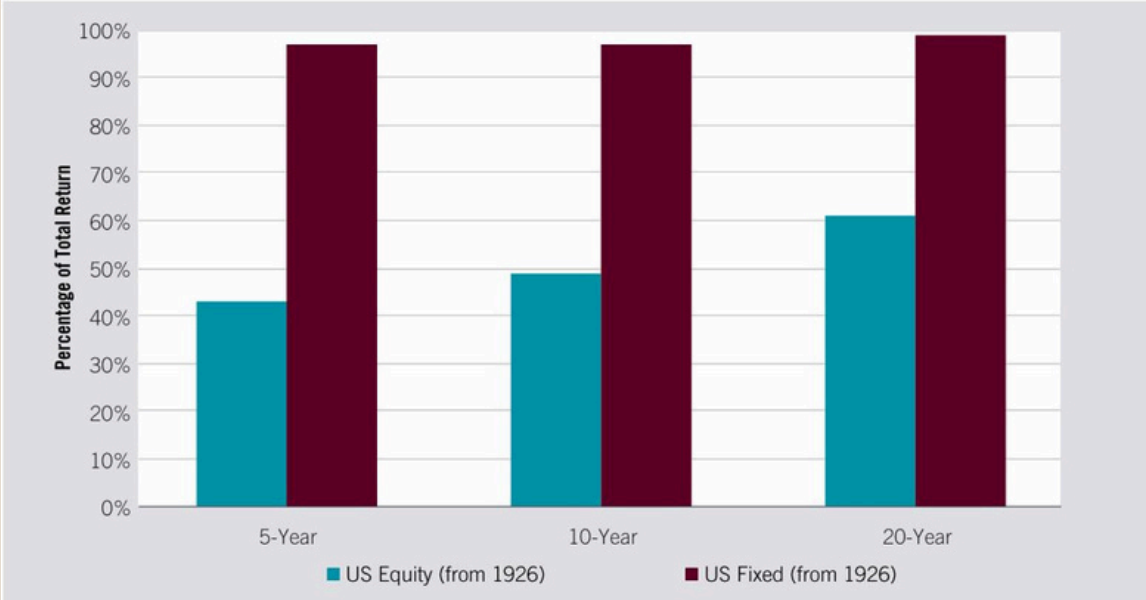
We start by comparing the BI study results with our updated findings for US stocks.

*6.1 Contribution percentage of Dividend Income to Total U.S. Equity Returns*

In this section, we study the average contribution of dividend income to U.S. equity returns over 5-year, 10-year and 20-year rolling periods since 2005. We followed the Brandes Institute (BI) approach from its 2015 paper. (The BI results are presented on the next page as Exhibit 6.1.1.)

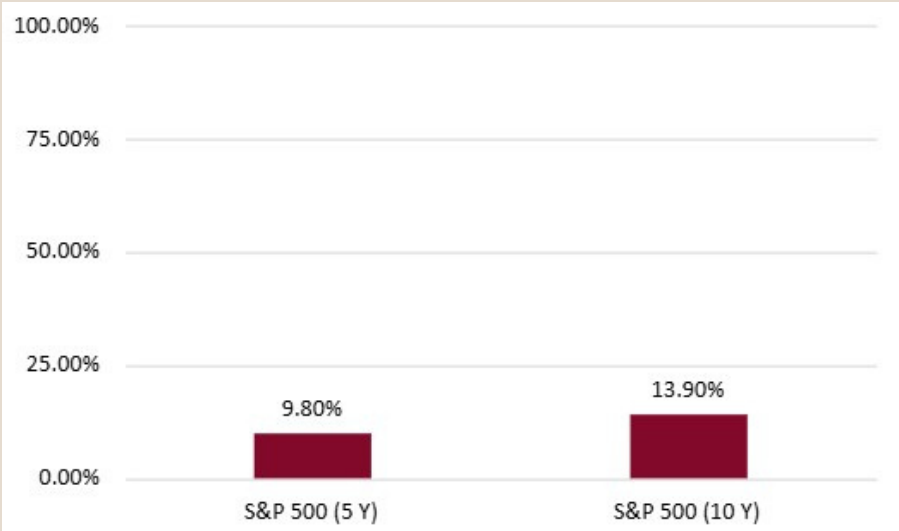
While the BI studied the income component of equity *and* fixed income returns, we narrowed the scope of our study, as noted above, to equity returns. We share our findings for the S&P 500 Index for the 10-year period between June 1, 2015 and May 1, 2025 in Exhibit 6.1.2 on the next page. The 5-year figures in Exhibit 6.1.2 reflect the most recent 5-year period (6/1/20 to 5/1/25).

## Exhibit 6.1.1| Income Component of Total Returns: Equity vs. Fixed Income (1926-2014)




Source: Brandes Institute, based on data from Ibbotson Associates, Global Financial Data, Inc. and FactSet, as of 12/31/14

## Exhibit 6.1.2| Income Component of Total Returns: S&P 500 (2015-2025)




Source: WRDS, 6/1/15 to 5/1/25

Exhibit 6.1.2 highlights how income contributed to total returns for U.S. equities over the last 5- and 10-year periods ending May 1, 2025. For U.S. equities, income has played a relatively modest role, accounting for roughly 10% of total return over the most recent 5-year period and rising to about 14% over the 10-year period.

This pattern reflects the growth-dominated behavior of equities, where price appreciation —rather than dividends—was the principal driver of long-term performance in the most recent twenty years. When returns for equities and bonds are placed side by side, the exhibit clearly shows the structural asymmetry between asset classes: equity returns relied more heavily on capital appreciation, while fixed-income returns, as expected, were driven almost entirely by income, especially over extended holding periods.

Next, we turned our focus to the last decade and used daily S&P 500 Price Index (PI) and Total Return Index (TRI) data from WRDS, covering June 1, 2015 to May 1, 2025.

We decomposed total equity returns into price appreciation and income (dividends + reinvested income). We used the log-return methodology. S&P 500 daily data specifically contains value-weighted returns, including dividends, which represents total return (%), and value-weighted returns excluding dividends, which represents price return (%). Income return equals total return minus price return. Even though we focused only on the prior 10 years, the analysis reveals meaningful variations in the role of income across different macro environments, especially between the low-rate pre-COVID years, the Covid shock and recovery period, and the subsequent higher-rate regime beginning in 2021. See Exhibit 6.1.3.

**Exhibit 6.1.3| Variations in Income's Role Across Different Environments (2015-2024)**

| Period | Total Return | Price Return | Income Return | Income Share of Total |
|---|---|---|---|---|
| Lower-rate Years (2015-2020) | 106.6% | 82.7% | 13.1% | 16.9% |
| Covid Years (2020-2022) | 24.8% | 18.9% | 5.0% | 22.1% |
| Higher-rate Years (2021-2024) | 66.5% | 56.7% | 6.3% | 11.9% |

Source: WRDS, 6/1/2015 to 5/1/2025

During 2015–2020, a period characterized by persistently low interest rates, stable growth, and strong equity performance, the S&P 500 generated a cumulative total return of approximately 106%, of which about 17% came from income.

Even though yields were compressed throughout this era, the dividend and reinvestment component remained a steady contributor, acting as a baseline return driver underlying the broader bull market.

Price gains dominated, but income still provided meaningful long-term compounding.

In 2020–2022, which encompasses the pandemic drawdown and subsequent rebound, total cumulative returns were more modest at 25%, yet the income share rose to roughly 22%.

This reflects how dividends and reinvested income continued accruing through volatile price swings—providing stability when price returns were temporarily impaired and contributing more meaningfully to cumulative performance over the short, but entire, 3-year period. The higher income share here is a sign of income's stabilizing role during turbulent market environments.

Finally, in the 2021–2024 higher-rate period, total cumulative returns rallied strongly to 66%, driven overwhelmingly by a powerful price recovery.

The resulting income share of the total return dropped to 12%, the lowest among the three periods. Rising interest rates and a shift in investor preference toward growth and earnings momentum reduced the relative contribution of dividends.

Strong capital appreciation in mega-cap technology and other growth sectors further diluted income's role in total performance.

Taken together, the results illustrate the importance of income in total equity returns has not been constant, but varies substantially with macroeconomic conditions and market dynamics.

Taken together, the results illustrate the importance of income in total equity returns has not been constant, but varies substantially with macroeconomic conditions and market dynamics.

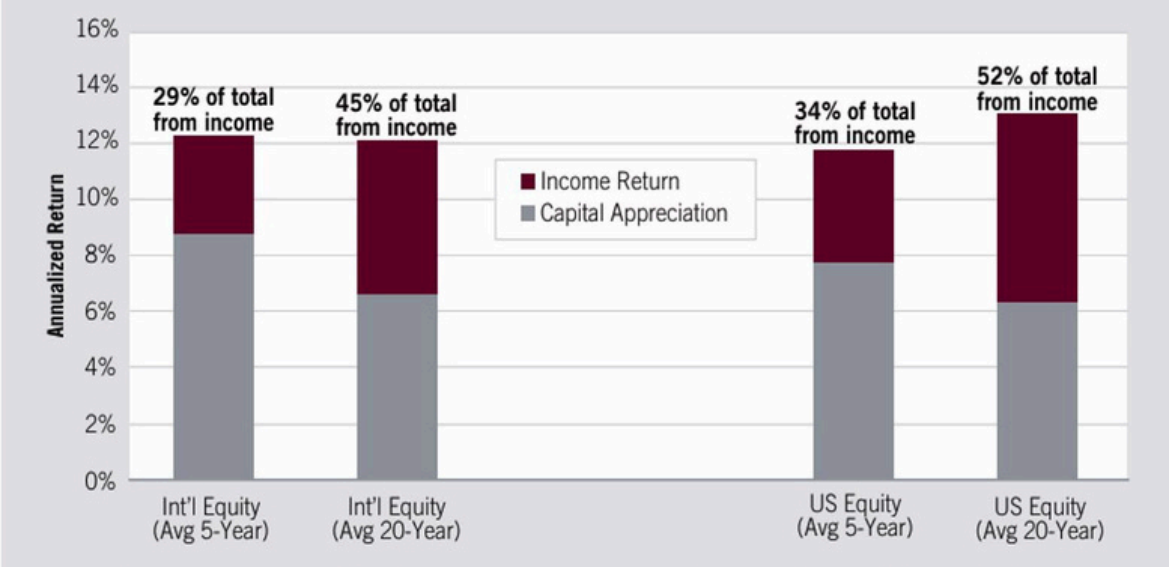
Income has tended to play a larger stabilizing role during volatile or low-return environments (e.g., the Covid period) and a smaller relative role during strong, price-driven bull markets (e.g., 2021–2024). The decomposition underscores why long-horizon investors have benefited from income compounding—even when price appreciation dominated headline performance.

*6.2 U.S. versus Non-U.S. stocks*

This section of our report compares the updated findings (2015–2025) with the original results from the BI study, focusing on the contribution of income returns to total equity returns for both U.S. and non-U.S. developed markets.

The analysis uses the S&P 500 Index to represent the U.S. market and the MSCI EAFE Index for non-U.S. developed markets (Europe, Australasia, and the Far East). Exhibit 6.2.1 is from the 2015 BI study and compares the income component for annualized returns over 5- and 20-year rolling periods for U.S. and non-U.S. stocks between 1970 and 2014. Exhibit 6.2.1 shows income accounted for roughly half of total equity returns across both U.S. and international markets for the average 20-year periods.

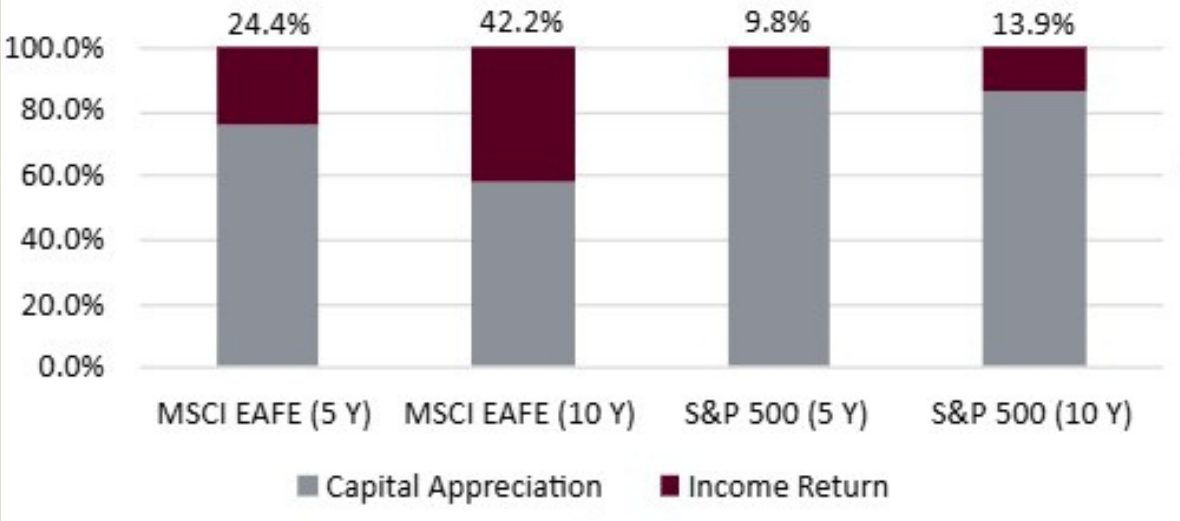
**Exhibit 6.2.1| Income and Capital Appreciation Components of Annualized Returns Over 5- and 20-Year Rolling Periods for U.S. and Non-U.S. Equity (1970-2014)**




Source: Brandes Institute, based on data from Ibbotson Associates, Global Financial Data, Inc. and FactSet, as of 12/31/14

As we did in Section 6.1, here, we share our findings for the 10-year period between June 1, 2015 and May 1, 2025. Here, we focus on the S&P 500 Index and MSCI EAFE Index. The 5-year figures in Exhibit 6.2.2 reflect the most recent 5-year period (6/1/20 to 5/1/25). While generally contributing less to total returns vs. prior decades, our analysis confirms that dividends remained an enduring component of long-term total returns—especially *outside* the United States.

**Exhibit 6.2.2| Income and Capital Appreciation Components of Annualized Returns Over 5- and 10-Year Periods for U.S. and Non-U.S. Equity (2015-2025)**




Source: Bloomberg, MSCI, 6/1/2015 to 5/1/25

*Updated Results (2015-2025)*

The updated results show a clear distinction between the two markets. For the MSCI EAFE Index, income returns contributed 24.4% of total returns over the 5-year period and 42.2% over 10 years, confirming that dividends remained a major driver of long-term returns in developed markets outside the U.S. In contrast, for the S&P 500 Index, income accounted for only 9.8% (5 years) and 13.9% (10 years).

*Interpretation and Comparison*

We believe the divergence between the U.S. and non-U.S. results highlights structural differences in corporate payout policies and market composition. Returns for U.S. equities were largely driven by capital appreciation during this period, reflecting the dominance of growth-oriented sectors such as technology and communication services, as well as the growing use of share buybacks that substitute for traditional dividends. (We explore this phenomenon in greater detail later in this report.)

Non-U.S. developed markets, on the other hand, remained income-oriented, characterized by a larger share of dividend-paying firms, more conservative reinvestment behavior, and a stronger corporate culture favoring stable payouts.

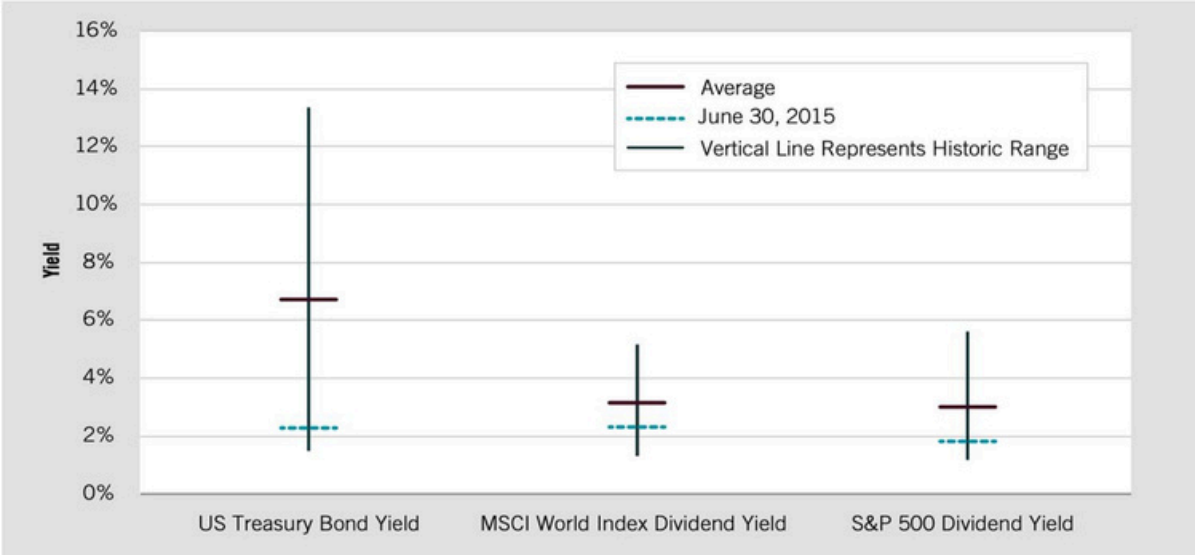
While the MSCI EAFE's income contribution (42.2%) was slightly below the BI's earlier estimate (45%) for the 20-year period ending in 2014, the results remained broadly consistent. This confirms that dividends continued to play a vital role in total equity returns outside the United States, particularly over longer investment horizons.

Overall, the findings reaffirm that non-U.S. markets maintained a more balanced return structure, with dividends serving as a steady and substantial source of equity returns. In contrast, the U.S. market has transitioned toward price-based returns, driven by sectoral concentration and corporate repurchase activity. These updated results underscore the fundamental importance of income, even as the mechanisms of shareholder return have evolved over time.

### 6.3 Dividend Yields vs. U.S. Treasury Yields

We take Exhibit 6.3.1 below from the BI study. At the time (June 30, 2015), yields for U.S. Treasury Bonds, global stocks and U.S. stocks were all below their historical averages going back to 1970.

**Exhibit 6.3.1| Bond and Dividend Yields vs. Historic Avgs. and Ranges (12/31/70 to 6/30/15)**



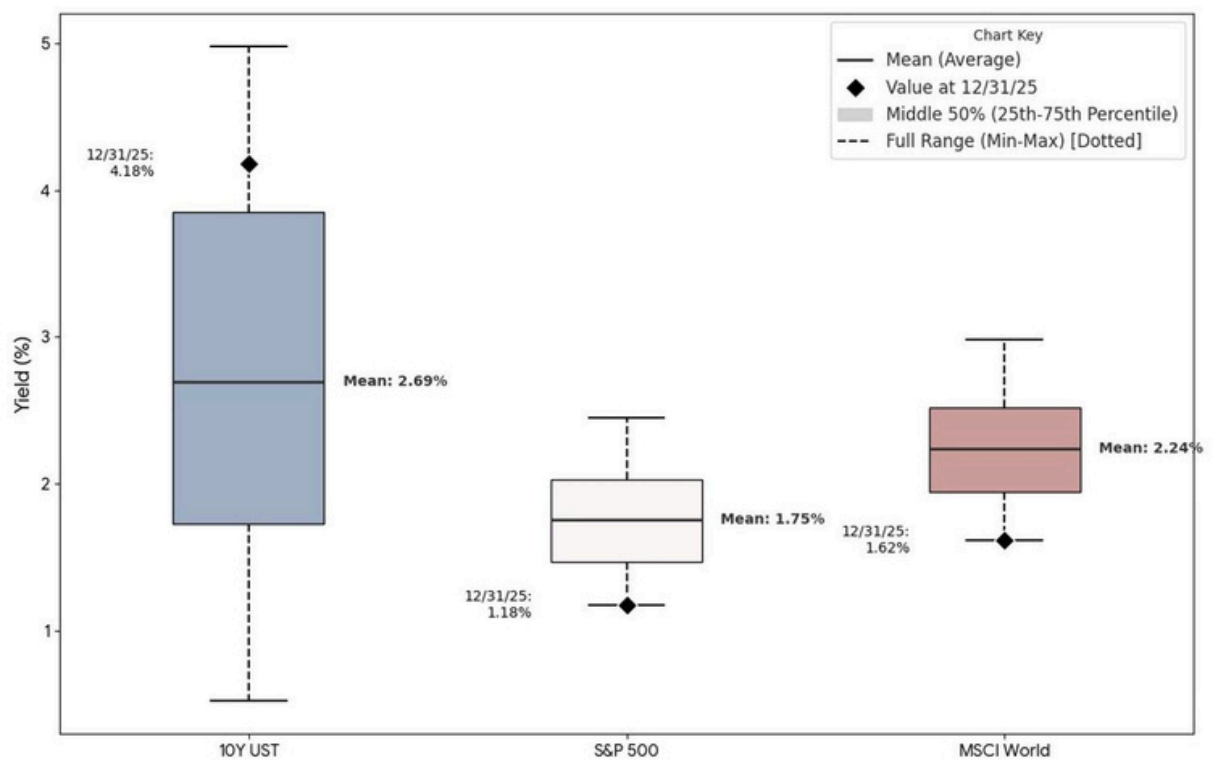

Source: Brandes Institute, based on data from Ibbotson Associates, Global Financial Data, Inc., FactSet, and the Financial Times, as of 6/30/15

Exhibit 6.3.2 on the next page replicates the BI study framework using updated data through December 2025, illustrating the historical yield range, long-term average, and current yield for the U.S. 10-Year Treasury, MSCI World and S&P 500. The historical ranges shown in Exhibit 6.3.2 correspond to the period June 2015 to December 2025.

Compared with the 2015 results—when bond yields were at historic lows and equity dividend yields remained relatively stable—the 2025 findings indicate a marked shift from the historically low-yield regime that characterized much of the prior decade. The U.S. 10-Year Treasury yield has risen sharply from roughly 2% in 2015 to above 4% in 2025, while global equity dividend yields were below their 10-year average and at their 10-year low at year-end 2025. Consequently, the yield gap (dividend yield minus bond yield) has shifted from positive to negative in most developed markets. Specifically, the U.S. Treasury yield now exceeds equity dividend yields by 300 basis points in the United States and about 150 basis points in non-US developed markets (as measured by the MSCI EAFE Index), reversing the "equity income dominance" observed a decade earlier. The MSCI World and S&P 500 dividend yields finished 2025 at their 10-year lows.

While not included in Exhibit 6.3.2, the MSCI EAFE Index yield was 2.82% vs. its 10-year average of 3.24%—reflecting subdued dividend growth and higher non-U.S. discount rates. This contrast underscores how post-pandemic inflation and monetary tightening have reshaped the income landscape: bond yields have normalized toward pre-2008 levels, regaining their role as the primary source of nominal income, while equity yields have remained structurally stable, constrained by valuation and slower payout growth. Overall, the 2025 environment represents a clear departure from the income dynamics of the 2010s. In 2015, bonds offered little income relative to equities; by 2025, higher policy rates and inflation have restored bonds' comparative

**Exhibit 6.3.2| Bond and Dividend Yields vs. Historic Avgs. and Ranges (6/30/15 to 12/31/25)**

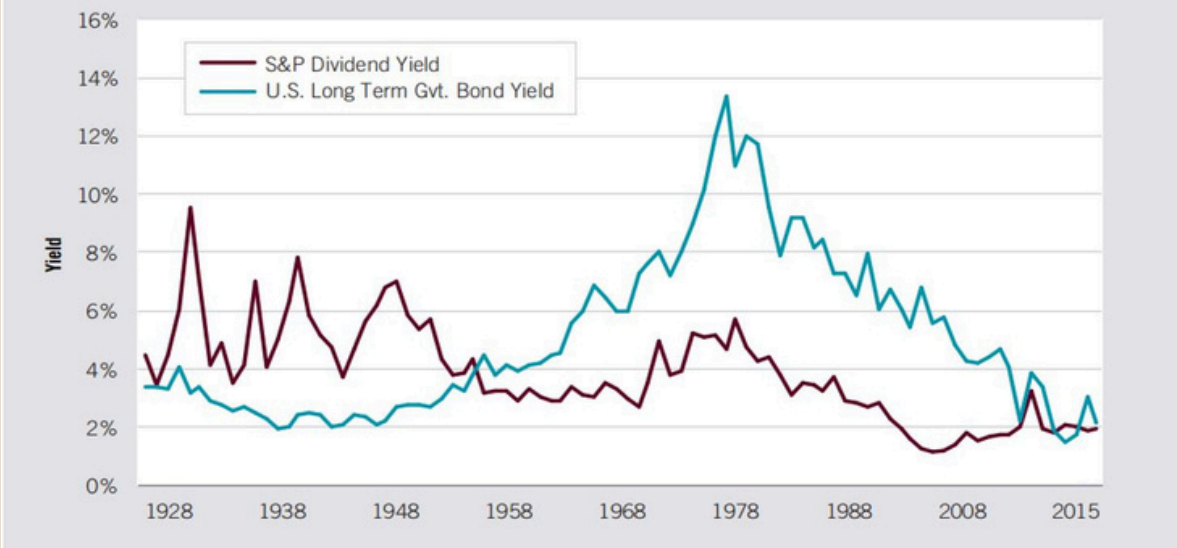



Source: Bloomberg, FRED, as of 12/31/25

income advantage. Nevertheless, dividend yields continue to provide a steady long-term income floor, particularly in markets with stronger payout traditions such as Europe and Japan. In the next section, we focus more sharply on the yield gap in the United States. Once again, we start with a chart (6.4.1) from the BI study in 2015 that showed how the S&P 500 dividend yield,

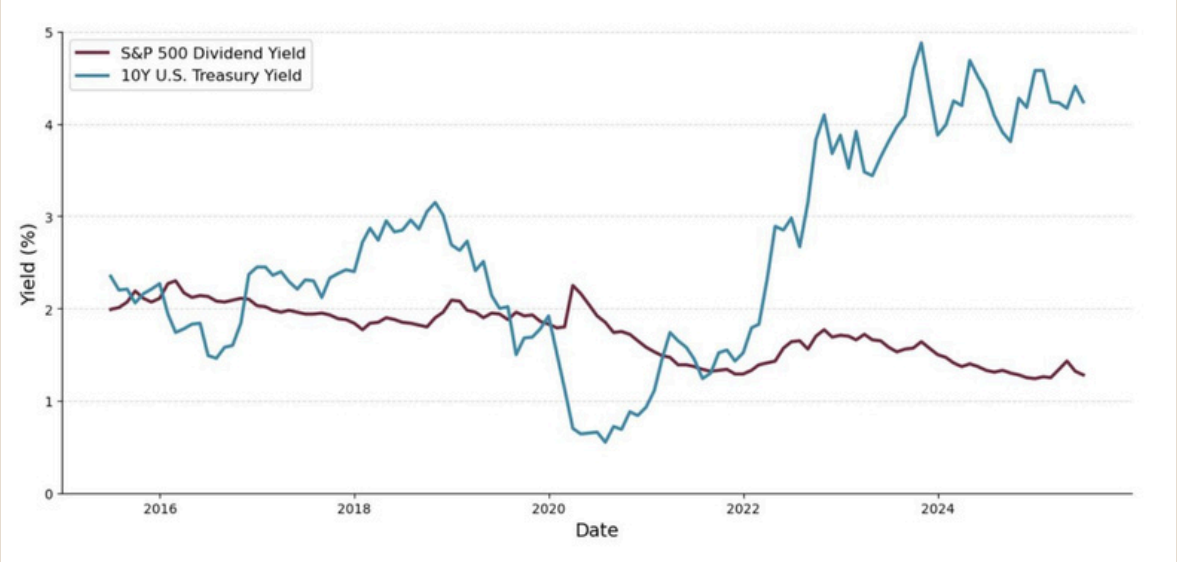
### 6.4 S&P 500 Dividend Yield vs. 10-Year Treasury Yield (2015-2025)

**Exhibit 6.4.1| Historical U.S. Dividend Yield vs. Long-Term Gvt. Bond Yield (1926-2015)**




Source: Brandes Institute, based on data from Ibbotson Associates, Global Financial Data, Inc. and FactSet, as of 6/30/15

**Exhibit 6.4.2| S&P 500 Dividend Yield vs. 10-Year US Treasury Yield (2015-2025)**




Source: Bloomberg, FRED, as of 6/30/25

which was lower than U.S. Government Bonds since the early 1950s, climbed above U.S. Treasuries briefly toward the end of the study period and remained comparable in June 2015.

From June 2015 to June 2025, the relationship between the S&P 500 dividend yield and the 10-year U.S. Treasury yield shifted significantly. As shown in Exhibit 6.4.2 on the previous page, during the low-rate period of 2015–2021, both yields hovered between 2% and 3%, and the dividend yield occasionally exceeded the bond yield, temporarily closing the long-standing reverse yield gap.

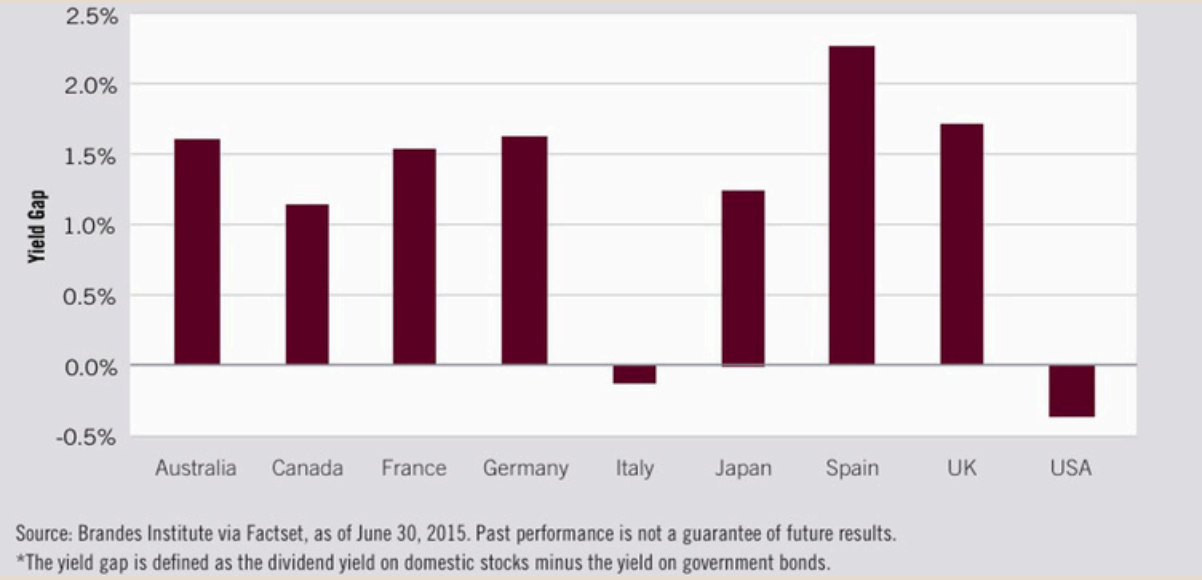
Since 2022, however, the Federal Reserve's aggressive rate hikes have pushed Treasury yields above 4%, while dividend yields have declined to around 1.3%. As a result, the yield gap has turned decisively negative—about -3 percentage points by 2024–2025—indicating that bonds once again offer higher nominal income than equities.

This outcome confirms the cyclical nature of the income relationship between stocks and bonds. In the current inflationary and high-rate environment, equity income has become less competitive, though equities continue to provide long-term growth potential. The findings are consistent with the BI results (2015), which observed a narrowing yield gap prior to 2015 and anticipated its re-emergence under future higher-rate conditions.

### 6.5 Dividend Yield vs. 10-Year Government Bond Yields in 2025

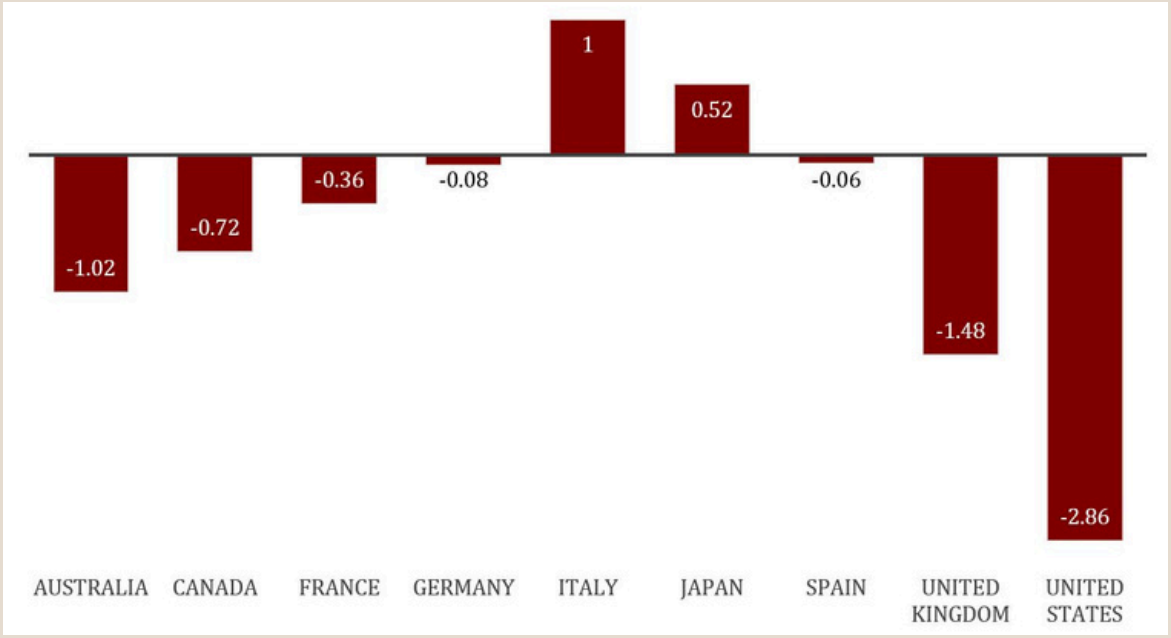
Exhibit 6.5.1 below shows the yield gaps across select, developed markets in 2015. Again, we draw this figure from the prior BI study. Data is as of June 30, 2015.

**Exhibit 6.5.1| Yield Gaps Around the World (6/30/15)**




Source: Brandes Institute via FactSet, as of 6/30/15. *The yield gap is defined as the dividend yield on domestic stocks minus the yield on government bonds.

**Exhibit 6.5.2| Yield Gaps Around the World (10/31/25)**




Source: MSCI, as of 10/31/25

Compared with 2015, when most markets showed positive gaps due to exceptionally low interest rates, the 2025 results reveal a broad reversal. Following the post-pandemic surge in inflation and tightening monetary policy, bond yields have risen substantially across developed economies. As a result, equity dividends now trail bond yields in most markets.

As noted earlier, the United States shows the largest negative gap (-2.9 pp), reflecting a low dividend payout culture and the sharp rise in U.S. Treasury yields. The United Kingdom and Australia also display notable negative gaps (-1.5 pp and -1.0 pp, respectively), as higher policy rates have lifted bond yields above historical averages.

In contrast, Japan and Italy stand out with positive yield gaps (+0.5 pp and +1.0 pp). In Japan, long-term interest rates remain anchored by the Bank of Japan's yield-curve control policy, allowing equity income to exceed bond yields. Italy's gap remains positive owing to comparatively high dividend payouts among domestic blue-chip companies.

Overall, we believe the era of "equity income dominance" observed in the 2010s has ended. The return of inflation and higher rates has shifted relative income attractiveness toward fixed income in most developed markets, though regional differences persist. This supports the BI's broader conclusion that income remains a key driver of long-term returns but its source and composition are cyclical and policy-dependent.

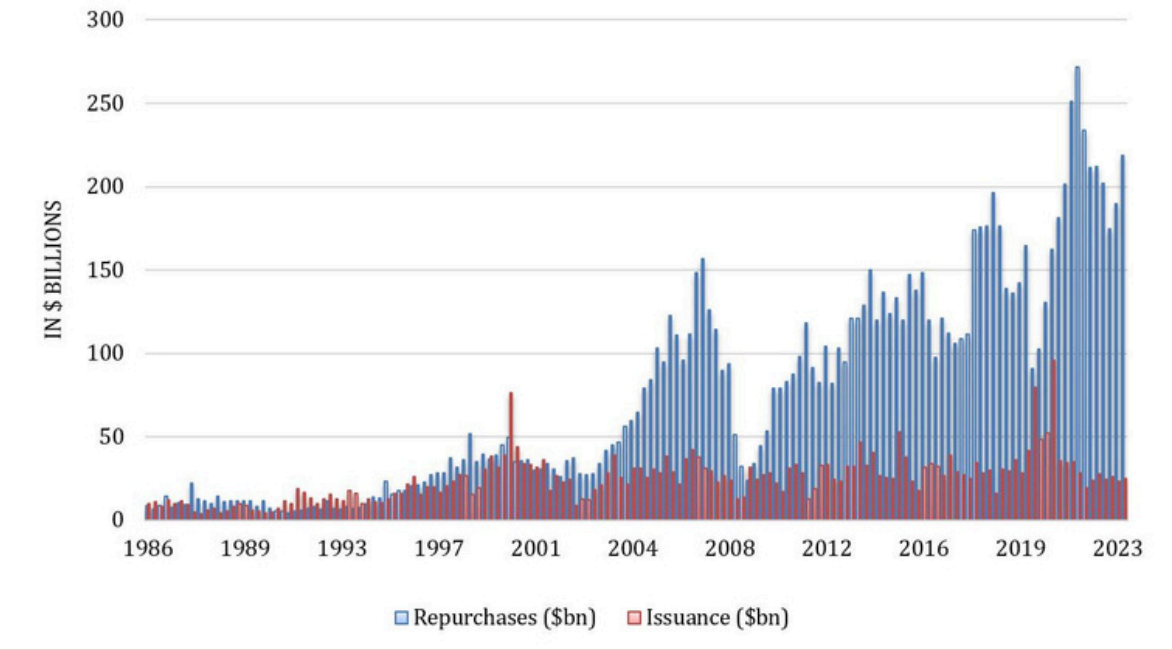
## 7. Results: Comparative Analysis of Stock Buybacks, Dividends, and Returns

Early in this report, we noted our work in expanding the scope of the original Brandes Institute study to include share buybacks. While the "income component" highlights the role dividends have played in total returns for individual investors, in Section 7, we address share buybacks from an aggregate market viewpoint. Here, we draw on Dr. Byungwook Kim's paper, "Do Share Repurchases Increase the Value of Non-Repurchasing Firms?"

*U.S. Share Repurchases — Levels, Trends, and Key Findings from Kim (2024)*

Using the historical data in Dr. Kim's paper, U.S. firms have undergone a structural shift in payout policy over the past four decades: share repurchases have overtaken dividends as the dominant form of shareholder payout.

**Exhibit 7.1| Share Repurchases and Issuance in the United States (1986-2023)**




Source: Kim, as of 12/31/2023

1. Long-Run Trends in U.S. Share Buybacks

The dollar amount of repurchases has grown steadily since the 1990s, reaching over $200 billion per quarter during 2021–2022. See Exhibit 7.1. When scaled by total market value, repurchases consistently represent 0.5%–1% of U.S. equity market capitalization in most years. As shown in Exhibit 7.2 on page 21, U.S. repurchases have been concentrated. Apple alone accounted for over 7% of all repurchases, and the top ten firms together in 2015 contributed more than 23% of total repurchase volume. This concentration implies that the actions of a small number of firms can materially influence market-wide liquidity.

**Exhibit 7.2| Top 10 Firms in Terms of Share Repurchases in 2015**

| Firm | Amount ($ bn) | Share (%) | Cumulative (%) |
|---|---|---|---|
| Apple | 36.21 | 7.34 | 7.34 |
| Microsoft | 13.81 | 2.80 | 10.15 |
| Qualcomm | 10.46 | 2.12 | 12.27 |
| Gilead Sciences | 9.68 | 1.96 | 14.23 |
| Oracle | 9.10 | 1.85 | 16.08 |
| Raytheon | 8.86 | 1.80 | 17.88 |
| AbbVie | 7.43 | 1.51 | 19.38 |
| Home Depot | 6.77 | 1.37 | 20.76 |
| Comcast | 6.71 | 1.36 | 22.12 |
| Boeing | 6.45 | 1.31 | 23.43 |

Source: Kim

2. Key Mechanisms and Findings from Kim (2024)

Kim (2024) provides comprehensive evidence that share repurchases influence the equity market primarily through a powerful and persistent flow-based mechanism. His research shows that buybacks systematically induce substantial capital inflows into equity mutual funds, with roughly one dollar of inflow occurring in the quarter following each dollar of repurchases. These inflows do not precede the repurchase event, eliminating the possibility that they reflect anticipation or information-based responses. Instead, the timing strongly suggests that mutual funds act as the primary absorbers of repurchased shares, and the inflows represent new capital entering the equity market. Because mutual funds allocate these inflows across their entire portfolios, the resulting demand affects a broad set of equities rather than being confined to

repurchasing firms alone. This mechanism elevates stock prices at the market level, and Kim shows that these price effects are non-transitory, persisting for multiple quarters without reversal.

His study further demonstrates that the flow-based nature of repurchases has meaningful implications for cross-sectional asset pricing and the evolution of style premia. Growth firms have historically repurchased significantly more shares than value firms. Consequently, the mutual fund inflows triggered by aggregate repurchase activity are disproportionately directed toward growth stocks, contributing to a sustained compression of the value premium—particularly prominent during the 2010s.

*3. Insights from the Discussion with Dr. Kim*

After reading his paper, we contacted Dr. Kim to pose a few questions. Our discussion with him provided several important insights into the mechanisms through which share repurchases influence equity markets. He emphasized that the primary channel is a flow-based mechanism, not traditional explanations such as undervaluation or signaling. According to Dr. Kim, nearly all the cash distributed through repurchases ultimately flows back into the stock market, mainly through equity mutual funds. This reinvested capital generates broad-based buying pressure that affects not only repurchasing firms but the overall market.

Dr. Kim also highlighted that the effects of buybacks spill over most strongly within industries. When a major firm conducts repurchases—such as a large technology company—the investors who sell their shares often reinvest the proceeds into other firms within the same sector. As a result, repurchases can lift valuations across entire industries rather than only benefiting the initiating firm.

A key quantitative insight from the meeting is that, after accounting for identification, a 1% inflow relative to total market capitalization can lead to roughly a 5% increase in market-wide equity prices. This finding underscores that repurchase-driven flows operate as a macro-level liquidity force with effects comparable to large monetary interventions.

When we asked Dr. Kim if he thought the share repurchase trend would continue, he said yes. “Why is a more difficult question,” he added. “This whole structural change in the way firms pay out is a key puzzle in finance literature—and we haven’t found a good explanation of why firms increasingly prefer to pay out through repurchases vs. dividends.”

He noted that one frequently cited explanation is the flexibility that share repurchase programs provide. “It's another puzzle which hasn't been resolved fully in the literature, but for some reason, when firms cut dividends, they get penalized a lot,” he said. “Investors get extremely frustrated.”

After a bit more reflection, he said that some share repurchases may be motivated by EPS considerations. “Corporate executives can boost EPS by increasing the numerator, but also by decreasing the denominator through buybacks.” Because executive and employee compensation frequently involves stock issuance, which dilutes EPS, firms may have incentives to offset these effects through

buybacks. While these factors may help explain the trend, he emphasized that they still fall short of accounting for the sheer size of buybacks and their explosive rise in popularity.

*Comparing/Contrasting Share Buybacks in the United States vs. Europe and Asia*

Across the G7 economies, corporate repurchase activity varies widely in scale, sector composition, and strategic intent. The United States remains the undisputed leader, with roughly 60–65% of listed firms conducting share buybacks during the past decade—by far the highest participation rate globally. These programs are heavily concentrated in technology (Apple, Microsoft, Alphabet, Meta), financials (JPMorgan, Bank of America), and consumer sectors (Home Depot, Procter & Gamble), which together account for over 80% of total repurchase value. U.S. corporations collectively spend more than 2.5–3 % of market capitalization annually on buybacks, making repurchases the dominant form of shareholder return and a central driver of earnings-per-share growth and market valuation.

In contrast, Japan and Canada exhibit hybrid payout models that blend stable dividends with growing buybacks. Japan's listed firms—led by Toyota, Sony, NTT, and Mitsubishi UFJ—have dramatically increased repurchases since corporate governance reforms in 2017, lifting annual buyback value above ¥10 trillion by 2023. Canadian corporations, particularly in banking (RBC, TD, Scotiabank) and energy (Suncor, Imperial Oil), follow a similar pattern, using buybacks cyclically alongside consistent dividend payments. The United Kingdom sits between these models, where energy (Shell, BP), consumer staples (Unilever, Diageo), and financials (HSBC, Barclays) drive a gradual shift toward more flexible, North American–style capital returns, though dividends remain the primary mechanism.

Finally, Germany, France, and Italy remain dividend-dominant markets. Repurchases are rare and episodic—typically limited to a few large-cap firms such as Siemens or Allianz in Germany, L'Oréal and TotalEnergies in France, and Enel, Eni, or Intesa Sanpaolo in Italy. For most continental European companies, dividend yields of 3–5% account for more than 90% of total shareholder returns, reflecting deeply entrenched income traditions and conservative corporate-governance norms.

Overall, the G7 markets trace a clear difference: from the buyback-dominant United States, through the hybrid adaptability of Japan, Canada, and the U.K., to the dividend-centered conservatism of Germany, France, and Italy. This pattern underscores how structural differences in governance, taxation, and investor expectations shape the global geography of shareholder capital returns.

### 7.1 Comparing and Contrasting Returns for Firms with High Levels of Stock Buybacks vs. Low Levels of Stock Buybacks

Next, we studied return dynamics for companies with high and low stock buybacks as well as high and low dividend payouts.
Firms with high stock buybacks achieved a substantially higher mean annual return (≈11.6%) compared to firms with high dividend payouts (≈5.8%) over the 2014–

2024 period. See Exhibit 7.1.1. Despite slightly higher volatility, the buyback group consistently outperformed dividend payers, suggesting that buybacks have become a more effective mechanism for enhancing shareholder value. See Exhibit 7.1.2.

The contrast indicates a structural shift in payout efficiency—we believe companies using buybacks tend to deliver stronger capital appreciation, possibly due to more flexible capital allocation and signaling effects tied to undervaluation. In contrast, high-dividend firms show lower growth potential, often reflecting mature or slower-expanding businesses.

**Exhibit 7.1.1| Average Returns for High Buyback and High Dividend Paying Firms (2014-2024)**

| Portfolio | Average Return |
|---|---|
| Top 30% by Buyback Rate | 11.65% |
| Top 30% by Dividend Payout Rate | 5.80% |

Source: WRDS, 2014-2024

**Exhibit 7.1.2| Average Annual Returns for High Buyback and High Dividend Paying Firms (2014-2024)**


Source: WRDS, 2014-2024

### 7.2 Comparing and Contrasting Returns for Firms with High Levels of Stock Buybacks vs. Low/No Stock Repurchases

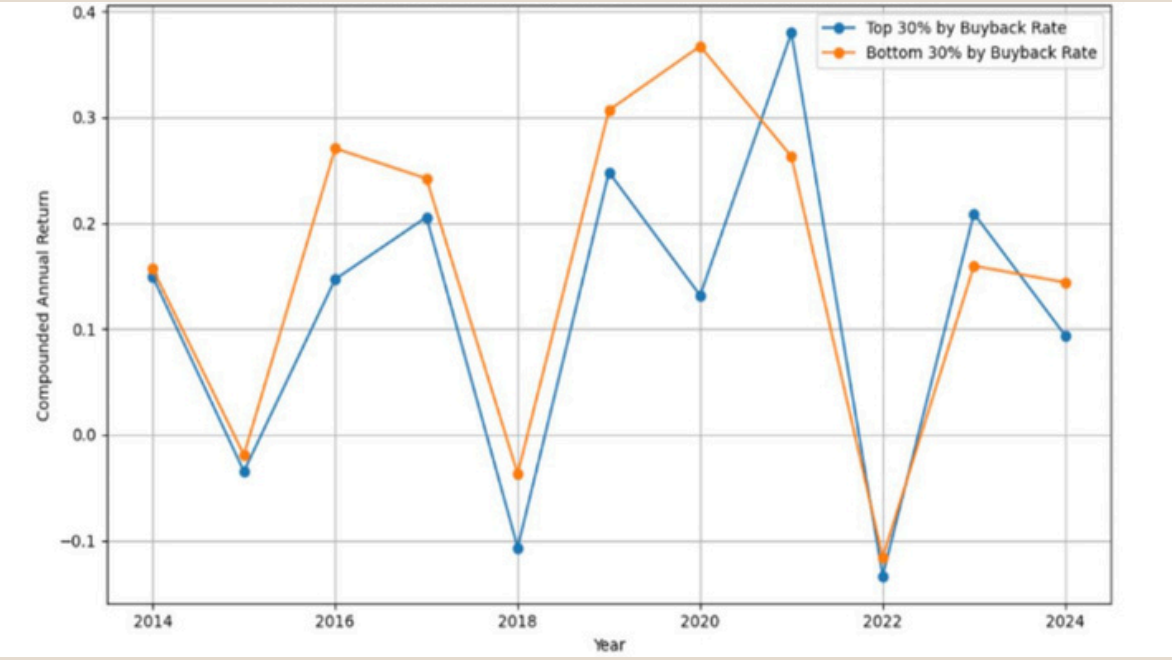
Focusing on share repurchases, we compared the returns of firms in the top 30% of buyback rates with those in the bottom 30%. The results, shown in Exhibit 7.2.1, indicate that low-buyback firms (bottom 30%) outperformed high-buyback firms (top 30%) over the 2014–2024 period, both in terms of average compounded returns and overall resilience.

**Exhibit 7.2.1| Average Returns for High Buyback and High Dividend Paying Firms (2014-2024)**

| Portfolio | Mean Return |
|---|---|
| Top 30% by Buyback Rate | 11.65% |
| Bottom 30% by Buyback Rate | 15.81% |

Source: WRDS, 2014-2024

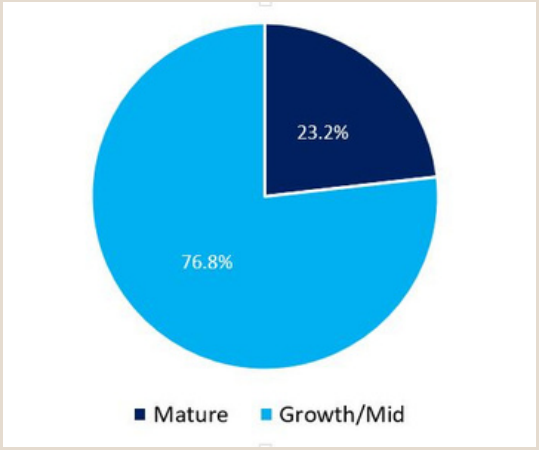
**Exhibit 7.2.2| Annual Compounded Returns for High Buyback and Low Buyback Firms (2014-2024)**



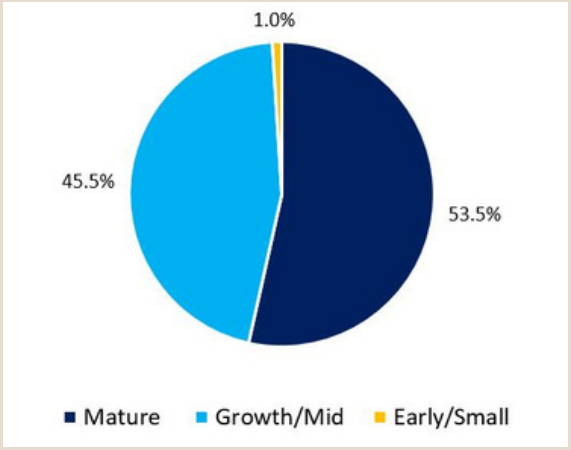

Source: WRDS, 2014-2024

**Exhibit 7.2.3| Maturity Stage Distribution of Bottom and Top 30% Buyback Firms**

Maturity of Low Buyback Companies – Bottom 30%




Maturity of High Buyback Companies – Top 30%




Source: WRDS, as of 12/31/2024

As shown in Exhibits 7.2.1 and 7.2.2, bottom-buyback firms delivered higher mean returns (15.81%) than top-buyback firms (11.65%) during the sample period. These results suggest that, contrary to common intuition, firms with lower repurchase activity may be more growth-oriented, resilient, or better positioned in certain macroeconomic environments—leading to stronger relative performance over this decade.

Based on our industry classification, we find a clear structural difference between the two groups. The Top 30% buyback firms are dominated by mature-stage companies (53.5%), particularly in Financials, Industrials, and Consumer Staples. See Exhibit 7.2.3. These firms typically generate stable cash flows and rely on repurchases as a tool to stabilize stock prices and distribute excess cash — a defensive capital allocation strategy.

In contrast, the Bottom 30% buyback firms consist largely of growth-stage companies (76.8%), especially in Technology, Utilities, and Energy. These firms prefer to reinvest profits into R&D, capital expansion, and market development rather than distributing cash to shareholders. As a result, their buyback ratios are structurally lower.

A key point to highlight — which explains what may initially appear contradictory — is that the U.S. market's overall buyback volume is heavily concentrated in a handful of mega-cap technology firms (e.g., Apple, Microsoft, Meta). These few giants account for a large share of total repurchase dollars, yet the majority of technology companies are still classified into the Bottom 30% because smaller and mid-size tech firms typically reinvest aggressively and rarely engage in buybacks. This concentration effect explains why the technology sector as a whole appears in the Bottom 30%, even though a few mega-caps dominate national repurchase activity.

This structural distinction provides a compelling explanation for the return patterns observed in our analysis. Top 30% firms, being mature and more defensive, offer stability but limited long-term growth. Bottom 30% firms, despite lower buybacks, possess higher reinvestment capacity and stronger earnings elasticity — characteristics that translate into superior long-term stock performance.

Therefore, the performance gap between high- and low-buyback firms is primarily driven by firm lifecycle, reinvestment strategy, and industry composition, rather than by buyback activity alone. The presence of high-buyback mega-cap tech firms does not contradict this pattern; instead, it highlights the importance of distinguishing between industry-wide behavior and activity concentrated in a few dominant firms.

### 7.3 Sharpe Ratios

7.3.1 Sharpe Ratios for High- and Low-Dividend Paying Stocks

Next, we calculated Sharpe ratios for high- and low-dividend paying firms and firms with high and low buyback activity between 2014 and 2024.

Low-dividend-paying firms achieved a markedly higher Sharpe ratio (0.84) compared with high-dividend payers (0.33). This indicates that, once risk is considered, retaining earnings rather than distributing large dividends produced better risk-adjusted returns. See Exhibit 7.3.1.

High-dividend firms, though often stable and income-oriented, exhibited lower return efficiency relative to their volatility, suggesting that aggressive dividend policies may cap growth and reduce total performance.

**Exhibit 7.3.1| Sharpe Ratios for High and Low Dividend-Paying Stocks (2014-2024)**

| Portfolio | Mean Excess Return | Std. Dev. | Sharpe Ratio |
|---|---|---|---|
| Top 30% by Dividend Payout Rate | 0.044 | 0.132 | 0.33 |
| Bottom 30% by Dividend Payout Rate | 0.186 | 0.221 | 0.84 |

Source: WRDS, 2014-2024

### 7.3.2 Sharpe Ratios for Firms with High vs. Low/No Share Buybacks

Both the high and low buyback portfolios generated solid risk-adjusted performance, but the low-buyback group recorded the highest Sharpe ratio (0.93), slightly outperforming firms with intensive repurchases (0.66).

This suggests that while buybacks contribute positively to total returns, excessively high repurchase activity may not yield proportionally higher risk-adjusted performance—possibly due to timing, valuation sensitivity, or concentration effects.

Overall, moderate or opportunistic buybacks appear to balance return enhancement with controlled volatility more effectively than consistently high repurchase levels, at least during the 10 years ended 2024.

**Exhibit 7.3.2| Sharpe Ratios for High Buyback and Low Buyback Firms (2014-2024)**

| Portfolio | Mean Excess Return | Std. Dev. | Sharpe Ratio |
|---|---|---|---|
| Top 30% by Buyback Rate | 0.103 | 0.155 | 0.66 |
| Bottom 30% by Buyback Rate | 0.144 | 0.156 | 0.93 |

Source: WRDS, 2014-2024

### 7.4 Firm-Level Stability of Dividends and Share Buybacks

Using panel data for S&P 500 constituents from 1998–2024, we quantify payout stability at the firm level. For each company, we first compute its time-series dividend yield and buyback yield by year. We then calculate the standard deviation of each yield over time as a measure of volatility in that firm's payout policy. Across all firms, the average standard deviation of dividend yield is about 0.019 (1.9%), with a median of about 0.008. By contrast, the average standard deviation of buyback yield is roughly 0.036 (3.6%), with a median around 0.025. In other words, the typical firm's buyback yield is almost twice as volatile as its dividend yield. The maximum firm-level volatility for buybacks (≈1.04) is also much larger than for dividends (≈0.35), indicating that a small group of firms engage in very sporadic or "on-off" repurchase programs, while maintaining relatively smooth dividend policies.

These results confirm our team's intuition: at the firm level, dividend payouts are structurally more stable and predictable, whereas share buybacks are used as a flexible, discretionary tool that firms adjust more aggressively in response to cash flows, valuation, or macro conditions.

**Exhibit 7.4.1| Volatility of Dividend and Buyback Yields (1998-2024)**

| | Average | Median | Maximum |
|---|---|---|---|
| Dividend Yield STD | 0.01889 | 0.00780 | 0.35003 |
| Buyback Yield STD | 0.03588 | 0.02458 | 1.04366 |

Source: WRDS, 1998-2024

### 7.5 Level of Stock Buybacks Over the Last Decade and Beyond

Using firm-level Compustat data for S&P 500 constituents, we calculated the annualized buyback yield and dividend yield from 2015 to 2024. Over this period, buybacks consistently exceeded dividends, demonstrating that U.S. firms increasingly favored share repurchases as their primary mechanism for returning capital to shareholders.

The average annualized buyback yield during this decade was approximately 2.7%, compared with an average dividend yield of around 1.9%. Buyback activity showed moderate fluctuations — declining in 2020 amid the Covid-19 pandemic, then rebounding strongly in 2021–2022 as firms regained profitability and confidence.

Dividend yields, in contrast, remained relatively stable, suggesting that while dividends remained a traditional form of payout, they were increasingly supplemented — and often surpassed — by buybacks in recent years.

Exhibit 7.3.1 on the next page illustrates the relationship between buyback and dividend yields between 2015 and 2024.

**Exhibit 7.5.1| S&P 500 Buyback and Dividend Yields (2015-2024)**


Source: WRDS, 2015-2024

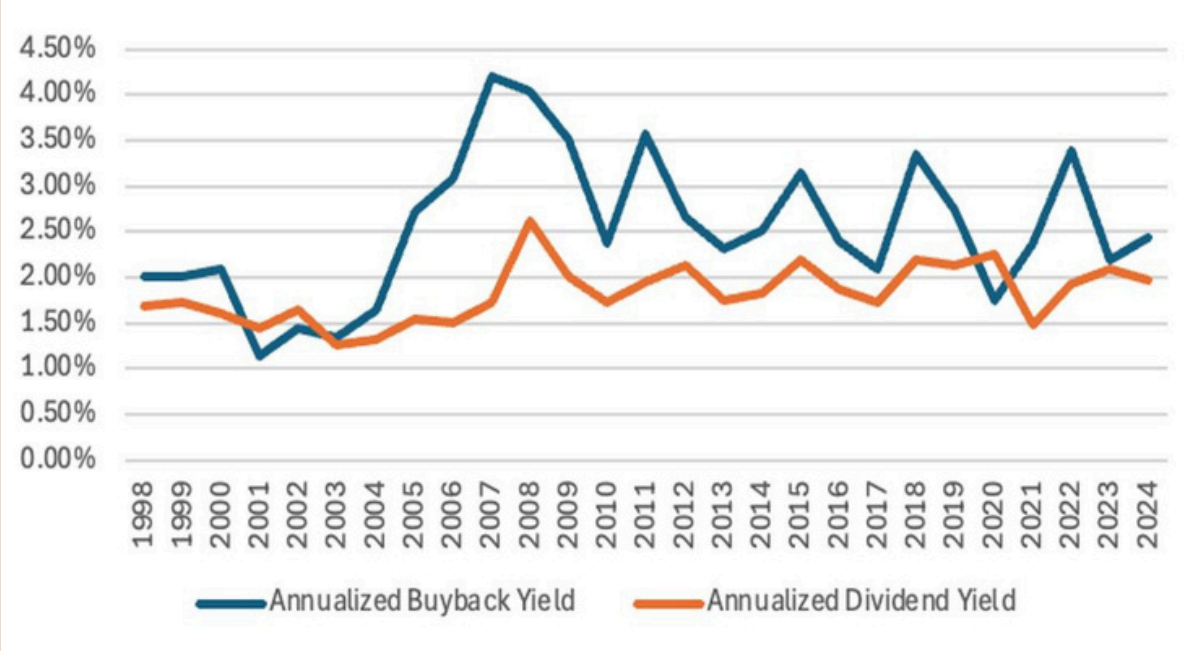
**Longer-Term Perspective (1998-2024)**

Extending the analysis to the 1998–2024 period, the data reveal a structural transformation in corporate payout behavior over the past three decades. In the late 1990s, buyback yields averaged around 2%, roughly in line with dividend yields.

However, beginning in the early 2000s, buybacks accelerated markedly, reaching peaks of nearly 4% in 2007–2008 and again in 2018 and 2022. Meanwhile, dividend yields have remained stable between 1.5% and 2.0%, highlighting a clear divergence between the two payout mechanisms. See Exhibit 7.3.2 on the following page.

This evolution extends the BI study findings: while dividends historically accounted for most of the income component of total returns, our results show that in the last two decades or so, share repurchases have become an equally important — and often dominant — form of shareholder payout. This shift reflects the changing nature of corporate capital distribution policies in U.S. markets, where firms now prioritize the flexibility and market impact of buybacks over the historic consistency of dividend commitments.

**Exhibit 7.5.2| S&P 500 Buyback and Dividend Yields (1998-2024)**




Source: WRDS, 1998-2024

### 7.4 Company-Specific Analysis

To this point, much of our analysis focused on either broad indexes or significant percentages of their constituents. In addition, we conducted Total Return Analysis in Bloomberg for five representative companies from 2014-2025: Apple, Microsoft, NVIDIA, AutoZone and Mercedes-Benz. Across the five companies, the composition of total shareholder return reveals fundamentally different payout philosophies.

Apple generated a cumulative return of roughly +1,450%, of which over 95% stemmed from price appreciation and buyback-driven EPS growth, and less than 5% from dividends. Its massive $500 billion repurchase program mechanically reduced share count and amplified per-share earnings, making buybacks the dominant return engine. Microsoft, with a similar +1,560% total return, showed a more balanced mix: about 90–92% from price gains and buybacks and 8–10% from dividends, reflecting its long-standing total-payout policy that integrates both cash and equity returns. AutoZone, despite offering no dividends, achieved strong long-term appreciation entirely through EPS accretion from continuous share repurchases, which is a benchmark of financial-engineering-driven compounding. NVIDIA, conversely, presents the pure growth model: nearly 100% of its +53,000% total return came from organic earnings expansion and valuation re-rating, as its dividend yield (<0.05%) and buybacks were negligible. At the other end of the spectrum, Mercedes-Benz produced about +100% total return, with over 90% derived from reinvested dividends and minimal contribution from repurchases or price appreciation.

Together, these companies provide a range of payout policies, from buyback-led capital appreciation (Apple, AutoZone) to balanced payout models (Microsoft), to growth-driven returns (NVIDIA), and dividend-dependent stability (Mercedes-Benz).

## 8. Conclusion and Implications

This study revisits the income component of total returns in the modern market environment and expands the traditional dividend-focused perspective by incorporating the rising importance of share repurchases. Using S&P 500 firm-level data and international comparisons across the G7, we document a structural transition in corporate payout policy, where buybacks have overtaken dividends as the dominant mechanism for returning capital to shareholders.

Across 2014–2025, U.S. firms with high buyback activity consistently delivered stronger performance than high-dividend or no-buyback firms. The top 30% buyback group generated nearly double the annual return of high-dividend firms and showed greater resilience during volatile or recovery periods. Long-run payout trends confirm this shift: from 1998 to 2024, buyback yields averaged 2.7%, exceeding dividend yields of 1.5–2.0%, underscoring the growing reliance on flexible repurchases rather than fixed dividend commitments.

Internationally, payout cultures vary substantially. The United States remains overwhelmingly buyback-driven, while Japan, Canada, and the U.K. employ hybrid models combining dividends and buybacks. Continental Europe continues to favor traditional dividends. In addition, company-specific case studies further illustrate that firms like Apple, Microsoft, and AutoZone generated exceptional long-term returns primarily through buyback-driven EPS growth, whereas firms like Mercedes-Benz relied almost entirely on dividends for shareholder income.

Taken together, the findings show that the income component of total returns has evolved, with buybacks now serving not only as a payout tool but as a system-level driver of equity performance, influencing liquidity, valuation, factor returns, and long-term wealth accumulation.

Based on the analysis of buyback performance and global payout patterns, we believe several investment implications can be drawn for different types of investors.

In our opinion, for individual investors, firms that conduct sustainable, cash-funded share repurchases should be prioritized, as these companies tended to generate stronger long-term returns and demonstrated greater financial discipline.

A balanced approach that combines buyback and dividend-paying firms—captured through the net payout yield—is recommended with the goal of achieving both income stability and capital appreciation. We believe individual investors should avoid companies that rely on debt-financed or irregular repurchases, which increase financial and cyclical risks.

For institutional investors, buyback activity may serve as a valuable factor signal in portfolio construction. Rising aggregate repurchases often indicate improving liquidity and market sentiment, supporting higher expected returns. Institutions may wish to integrate buyback intensity into factor models alongside profitability and quality metrics, while maintaining sector-neutral and style-diversified exposures to mitigate concentration risk in mega-cap technology stocks.

From a long-term investment perspective, we believe buybacks should be viewed as a structural driver of equity market returns. Pension funds and conservative investors may benefit from exposure to firms with consistent repurchase programs, strong free cash flow, and transparent governance. Combining dividend yield and buyback yield may provide inflation-adjusted income and long-term compounding growth.

Overall, across all investor types, quality and sustainability mattered more than scale. Buybacks were most beneficial when they reflected strong fundamentals rather than financial engineering. A disciplined focus on cash-funded, recurring repurchases, combined with stable dividend income, offered the most resilient strategy for long-term portfolio performance.

*Kazuki Girand assisted with data gathering, analysis and graphics for this report. She is a junior at UC San Diego, pursuing a Mathematics major and Japanese minor.*

*Dylan Schuman, Brandes Center Research Intern, also provided assistance with select graphics in this report.*

## 9. References


Bai, Yang. “150 Years of Return Predictability Around the World: A Holistic View.” (Aug. 19, 2022), arXiv:2209.00121.

Bayar, Onur, Thomas J. Chemmanur, & Mark H. Liu. “Dividends versus Stock Repurchases and Long-Run Stock Returns under Heterogeneous Beliefs.” Working Paper (Oct. 2020), pp. 1–81.

Bhattacharya, Sudipto. “Corporate Finance and the Legacy of Miller and Modigliani.” Journal of Economic Perspectives, Vol. 2, No. 4 (1988), pp. 95–114.

Brandes Institute. “Income and Growth: The Long-Term Contributions of Dividends to Total Returns.” San Diego: Brandes Investment Partners (2015).

Dimson, Elroy, David Chambers, Antti Ilmanen & Paul Rintamäki. “Long-Run Asset Returns.” Annual Review of Financial Economics, Vol. 16 (Nov. 2024).

Dimson, Elroy, Paul Marsh & Mike Staunton. *Triumph of the Optimists: 101 Years of Global Investment Returns*. Princeton, NJ: Princeton University Press (2002).

Jensen, Gerald R., Leonard L. Lundstrum, and Robert E. Miller, “What Do Dividend Reductions Signal?” Journal of Corporate Finance, Volume 16, Issue 5, 2010, Pages 736-747, ISSN 0929-1199, https://doi.org/10.1016/j.jcorpfin.2010.06.009

Kim, Byungwook, “Do Share Repurchases Increase the Aggregate Value of Non-repurchasing Firms?” (December 05, 2025). Available at SSRN: https://ssrn.com/abstract=5230607 or http://dx.doi.org/10.2139/ssrn.5230607

Kose, John & Joseph Williams. (1985). “Dividends, Dilution, and Taxes: A Signalling Equilibrium.” The Journal of Finance, 40(4), 1053–1070. https://doi.org/10.2307/2328394

Kuvshinov, Dmitry & Kaspar Zimmermann. “The Big Bang: Stock Market Capitalization in the Long Run.” Journal of Financial Economics, Vol. 145, No. 2 (Aug. 2022), pp. 527–552.

Miller, Merton H. & Franco Modigliani. “Dividend Policy, Growth, and the Valuation of Shares.” The Journal of Business, Vol. 34, No. 4 (Oct. 1961), pp. 411–433.

## 10. Endnotes

Brandes Institute (BI) methodology: The original Brandes Institute methodology reflected two return series: a total return series that included the reinvestment of dividends and capital gains distributions and one that was capital appreciation only. BI calculated the income component of returns by subtracting the capital appreciation only series from the total return series. Neither series reflected considerations for taxes, fees or other expenses.

## Disclosures

This document is for general information and educational purposes only, and must not be considered investment advice or a recommendation that the reader is to engage in, or refrain from taking, a particular investment-related course of action. Any such advice or recommendation must be tailored to your situation and objectives. You should consult all available information, investment, legal, tax and accounting professionals, before making or executing any investment strategy. You must exercise your own independent judgment when making any investment decision.

**Past performance is not a guarantee of future results.**

**No investment strategy can assure a profit or protect against loss.**

Diversification does not assure a profit or protect against a loss in a declining market.

All information contained in this document is provided "as is," without any representations or warranties of any kind. We disclaim all express and implied warranties including those with respect to accuracy, completeness, timeliness, or fitness for a particular purpose. We assume no responsibility for any losses, whether direct, indirect, special or consequential, which arise out of the use of this presentation.

All investments involve risk. There can be no guarantee that the strategies, tactics, and methods discussed in this document will be successful.

It should not be assumed that any security transactions, holdings or sector discussed were or will be profitable, or that the investment recommendations or decisions we make in the future will be profitable or will equal the investment performance discussed herein.

Stocks of small companies usually experience more volatility than mid and large sized companies.

Data contained in this document may be obtained from a variety of sources and may be subject to change. We disclaim any and all liability for such data, including without limitation, any express or implied representations or warranties for information or errors contained in, or omissions from, the information. We shall not be liable for any loss or liability suffered by you resulting from the provision to you of such data or your use or reliance in any way thereon.

Unlike bonds issued or guaranteed by the U.S. government or its agencies, stocks and other bonds are not backed by the full faith and credit of the United States. Stock and bond prices will experience market fluctuations. Please note that the value of government securities and bonds in general have an inverse relationship to interest rates. Bonds carry the risk of default, or the risk that an issuer will be unable to make income or principal payment. There is no assurance that private guarantors or insurers will meet their obligations. The credit quality of fixed income investments is no guarantee of their safety or stability.

## Disclosures-2

International and emerging markets investing is subject to certain risks such as currency fluctuation and social and political changes; such risks may result in greater price volatility. Strategies discussed herein are subject to change at any time by the managers in their discretion due to market conditions or opportunities.

Rolling periods represent a series of overlapping, smaller time periods within a single, longer-term time period. For example, over a 20-year period, there is one 20-year rolling period, eleven 10-year rolling periods, sixteen 5-year rolling periods, and so forth.

Please note that all indices are unmanaged and are not available for direct investment.

The declaration and payment of shareholder dividends are solely at the discretion of the issuer and are subject to change at any time.

The existence of a share repurchase authorization does not guarantee that any shares will be repurchased, and any such program may be amended, suspended, or discontinued at the issuer's discretion.

The MSCI data contained herein is the property of MSCI Inc. (MSCI). MSCI, its affiliates and its information providers make no warranties with respect to any such data. The MSCI data contained herein is used under license and may not be further used, distributed or disseminated without the express written consent of MSCI.

Nothing in this document should be interpreted to state or imply that past results are an indication of future performance. Investing involves substantial risk. It is highly unlikely that the past will repeat itself. Selecting an advisor, fund, or strategy based solely on past returns is a poor investment strategy.

The Regents of the University of California and UC San Diego are not connected or affiliated with, nor do they endorse, favor, or support any product or service of Brandes Investment Partners, L.P.

UC San Diego
RADY SCHOOL OF MANAGEMENT

1Q26


**THE BRANDES CENTER**
9500 Gilman Dr. #0553
La Jolla CA 92093

**CONNECT WITH US**
rady.ucsd.edu/brandes
brandes@rady.ucsd.edu


To receive new research and information about upcoming events, contact us or use the QR code below:

UC San Diego
**RADY SCHOOL OF MANAGEMENT**
The Brandes Center