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UNDERSTANDING THE BASICS OF PORTFOLIO PERFORMANCE

Executive Summary

- **Types of return metrics:** Price return measures capital appreciation only, total return includes income such as dividends, and excess return compares total return to a benchmark.
- **Risk-adjusted returns:** Measures how much return an investment generated relative to the amount of risk assumed.
- **Time-weighted vs. dollar-weighted returns:** Time-weighted return (TWR) measures investment manager performance independent of cash flows, while dollar-weighted return (DWR) helps to highlight the investor's personal experience by including timing of contributions and withdrawals.
- **Cumulative vs. annualized returns:** Cumulative return shows total gain over time, while annualized return normalizes this to an average yearly growth rate, aiding meaningful comparisons across investments.
- Understanding measures of performance such as price, total, excess, time-weighted, dollar-weighted, cumulative, and annualized returns helps investors interpret portfolio performance more accurately and make informed decisions.



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"My portfolio returned 7% this year. What does that really mean?"

A simple question like this captures the heart of investment performance evaluation. For investors, understanding how to measure portfolio performance is essential—not just to track progress, but to make informed decisions. This paper introduces key performance metrics, including the types of returns and ways to view returns, and explains how each contributes to a clearer picture of portfolio effectiveness. Investors may choose different metrics based on their goals and circumstances, but having a broad understanding of these methodologies is essential. It allows financial advisors to communicate performance clearly and helps investors interpret results with confidence by turning numbers into meaningful insights.

Understanding price return, total return, & excess return

To evaluate how an investment has performed, it's important to understand the different ways returns can be measured. Each of these returns offer a unique lens through which portfolio results can be interpreted and compared. Let's get started with the definitions of each:

- **Price return** measures the percentage change in the market value of an investment over a specific period. It captures only the capital appreciation or depreciation of the asset, excluding any income generated, such as dividends or interest, making it a useful but limited view of overall performance.

- **Total return** also measures the percentage change in the market value of an investment over a specific period, but includes any income generated from the investment, such as dividends or interest, making it a more comprehensive measure to evaluate the full performance of a portfolio.

It is important to note that the types of return referenced here reflect *gross* return, not *net* return. Gross return represents the investment's performance before deducting any management fees, expenses or other costs, while net return accounts for those deductions.

- **Excess return** measures the difference between the total return and an appropriate benchmark. For more information on benchmarks, refer to the Investment Essentials: Benchmarks - The framework for investment evaluation.

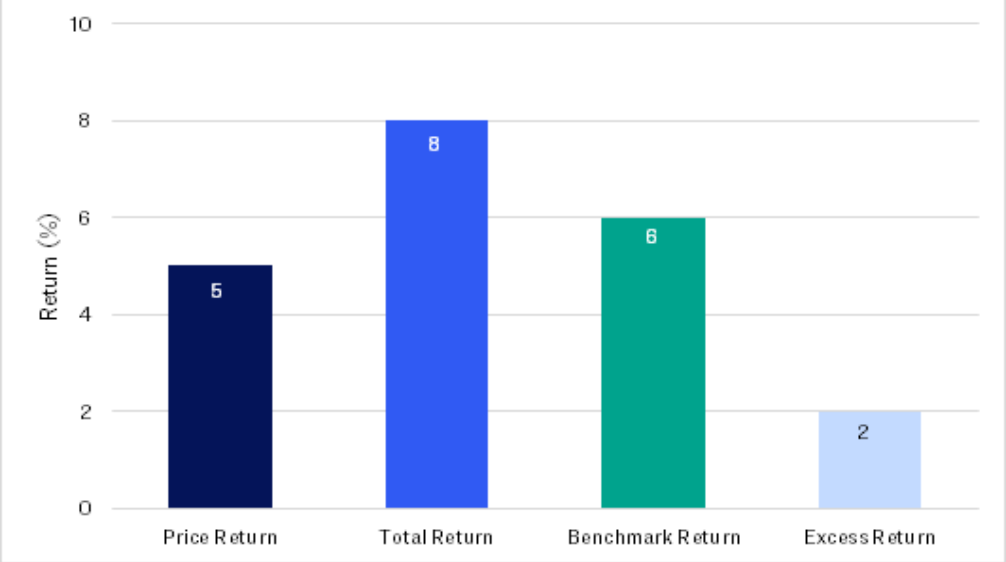
To illustrate the return concepts above, let's begin with an example where an investor invests $100,000 into fund XYZ at the beginning of the year. Fast forward to year end, the fund has appreciated to $105,000 for a gain of $5,000 and paid out dividends of $3,000. The benchmark, representing a comparable investment, returned 6% during the same period. How would one calculate the various returns previously discussed?

- **Price return:** The fund's market value increases from $100,000 to $105,000. **Price return = $5,000 gain from capital appreciation alone 5% price return.[1]** *(This reflects only the change in price, excluding dividends or interest.)*

- **Total return:** In evaluating total return, it's important to account for both the $5,000 gain from capital appreciation and the $3,000 received in dividends. **Total return = $5,000 gain + $3,000 in dividends = $8,000 gain, or 8% total return.[2]** *(Includes both price appreciation and income.)*

- **Excess return:** The benchmark returned 6% over the same period, while the investor in the example had a total return of 8%, resulting in an excess return of 2%. **Excess return (total return – benchmark return) = 8% total return – 6% benchmark return = 2% excess return.**

FIGURE 1
Return comparison for hypothetical fund XYZ.



Source: TIAA Wealth Management Chief Investment Office.

It's essential to understand the different types of returns and what each one captures. While price return shows how much an investment's market value has changed, it leaves out a key part of the picture—income such as interest and dividends. If you only looked at price return, you'd miss the extra $3,000 in dividends, which can be a meaningful contributor to overall performance. That's why total return is often the preferred measure: it offers a more complete view of how an investment is truly working for you, especially when evaluating performance relative to a benchmark.

1 Price return = (Ending price – starting price) / starting price x 100. In this example, [($105,000 – $100,000)/$100,000] x 100 = 5%.
2 Total return = (Ending price – starting price + dividends) / starting price x 100. In this example, [($105,000 – $100,000 + $3,000)/$100,000] x 100 = 8%.

Understanding risk-adjusted returns

While total return provides valuable insight into portfolio performance, it doesn't tell the complete story as it fails to account for the level of risk taken to achieve those returns. That's where risk-adjusted returns factor in. Risk-adjusted metrics evaluate how much return an investment generates relative to the risk assumed. For instance, two portfolios may each generate a 10% annual return, but the one that achieves this with lower volatility or downside exposure is considered more efficient from a risk-adjusted perspective.

Some common risk-adjusted return measures include:

- **Sharpe Ratio:** Assesses excess return per unit of total volatility.
- **Sortino Ratio:** Focuses specifically on downside deviation, offering a more refined view of risk.

Risk-adjusted returns give investors the ability to compare the risk associated with various portfolios on a level playing field. Without this, investors may be inclined toward higher-risk portfolios, as higher risk often leads to higher returns.

Understanding time-weighted return (TWR) vs. dollar-weighted return (DWR)

When reviewing a portfolio, two common methods for evaluating performance are time-weighted returns (TWR) and dollar-weighted returns (DWR). Understanding both provides a more complete picture of your investments.



Time-weighted return (TWR):

Answers the question "How has the investment performed?"

This method measures how well the actual investments performed, regardless of when money has been added or withdrawn. It's like asking "How did this mutual fund do this year?" or "How has the portfolio manager done this year?" Time-weighted returns are useful for comparing different funds or benchmarks because they eliminate the impact of personal timing decisions.



Dollar-weighted return (DWR):

Answers the question "How did you/your portfolio perform?"

This method includes the impact of contributions and withdrawals and helps highlight one's personal investment experience. It answers, "How did my money actually grow?" Timing of deposits and withdrawals can significantly affect this number.

To illustrate the concept, Jack, Jill, and John each invested $100,000 in the same fund on December 31, 2024. The fund declined 4% from December 31, 2024 through June 30, 2025, and then appreciated by 6% between June 30, 2025 through the end of the year (December 31, 2025):

- Jack added $50,000 on June 30, 2025, right before the gain, for a personal return of 3.82%.
- Jill withdrew $50,000 on June 30, 2025, after the decline, for a personal return of -1.66%.
- John made no changes, for a personal return of 1.76%, which matched the stated return of the fund.

All three had the same time-weighted return of 1.76%, but very different personal experiences based on their timing decisions, as summarized in Figure 2.

FIGURE 2

Cash flow activity has a significant impact on DWR.

	Jack	Jill	John
Investor's cash flow activity on June 30, 2025	Contributed +$50,000 to the portfolio	Withdrew -$50,000 from the portfolio	No action taken
Time-weighted return (TWR)	1.76%	1.76%	1.76%
Dollar-weighted return (DWR)	3.82%	-1.66%	1.76%
Results	Investor A's decision to contribute to the portfolio had a positive impact on the portfolio's dollar weighted performance, as the contribution came just before a positive period.	Investor B's decision to withdraw from the portfolio had a negative impact on the portfolio's dollar weighted performance, as the withdrawal came just after a decline.	Investor C's portfolio did not make any cash flow decisions to impact the portfolio performance. Therefore, both TWR and DWR returns are identical.

Source: TIAA Wealth Management Chief Investment Office.

For a full spectrum view of portfolio performance, it's essential to consider both TWR and DWR. TWR helps evaluate fund managers and compare investment options objectively, while DWR reflects the personal investment experience, highlighting the impact of timing decisions. These complementary measures demonstrate that while cash flow timing can influence outcomes, investors should generally focus on consistent, disciplined contribution strategies rather than attempting to time the market.

Understanding cumulative return vs. annualized return

It's also worth noting the distinction between cumulative and annualized return when determining performance of a portfolio.

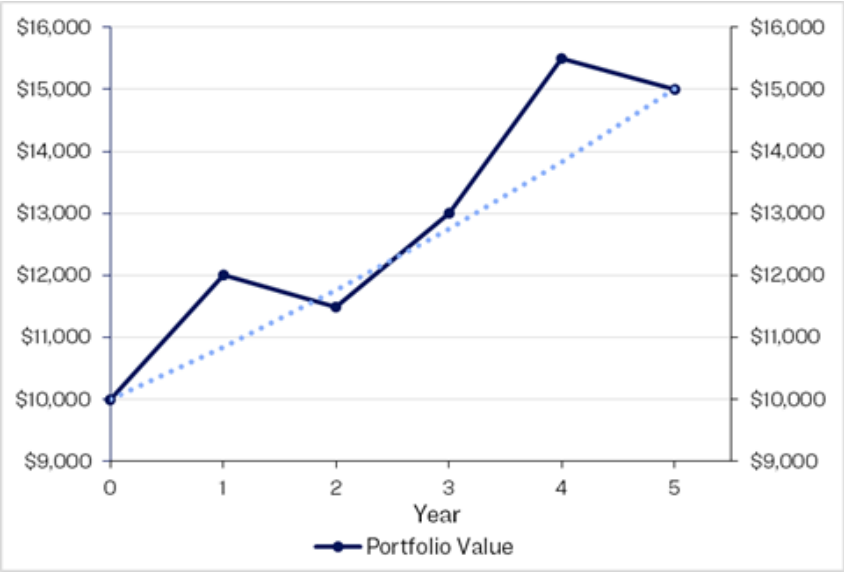
The **cumulative return** on an investment is the aggregate amount that the investment has gained or lost over time, regardless of the length of time. The measurement period for returns can be any length of time, e.g., one day, one month, one quarter, one year, 5 years, etc.

For cumulative returns that are measured over a period greater than one year, it is often useful to determine the **annualized return**. The annualized return represents the geometric average amount that an investment has earned each year over a specified period. This is the return commonly shown in investor account statements to help standardize performance comparisons across different timeframes.

For example, let's look at an initial $10,000 investment into a portfolio that is worth $15,000 after 5 years, assuming all dividends and interest have been reinvested (Figure 3). The cumulative return (dark blue line) would be 50% and the annualized return would be 8.45%.

FIGURE 3

Determining cumulative vs. annual return on an investment over 5 years.



Source: TIAA Wealth Management Chief Investment Office.

Recognizing the difference between cumulative and annualized returns helps investors avoid misinterpreting long-term performance, as cumulative figures can exaggerate growth without accounting for the time horizon, while annualized returns offer a normalized view that supports more meaningful comparisons across investments.

Conclusion

Grasping the various forms of investment returns, such as price, total, excess, time-weighted, dollar-weighted, cumulative, and annualized, is crucial for accurately assessing portfolio performance as summarized in the table below (Figure 4).

FIGURE 4

Summary of performance return metrics.

Return metric	What it reflects	Best Used For
Price return	Change in market value only	Quick snapshot
Total return	Market value + income	Full performance picture
Excess return	Return relative to a benchmark	Evaluating manager skill vs. benchmark
Risk adjusted-returns	Evaluating whether investment returns adequately compensate for the level of risk assumed	Comparing investments on a fair basis by accounting for risk, not just raw returns
Time-weighted return (TWR)	Performance of the investment itself	Comparing managers or strategies
Dollar-weighted return (DWR)	Investor's actual experience	Personal financial planning
Cumulative return	Total growth over an entire period	Long-term performance tracking
Annualized return	Average yearly growth rate	Comparing investments over different horizons

Source: TIAA Wealth Management Chief Investment Office.

By understanding the distinctions among performance measures, investors are empowered to make informed decisions and accurately interpret how their portfolios perform over time. Leveraging a variety of metrics offers a more complete and meaningful view of investment outcomes, enhancing clarity and confidence in the evaluation process.

CIO INVESTMENT ESSENTIALS

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