

Trading Glossary · Jan 2, 2024 · 2 min read

Survivorship Bias in Trading: Hidden Pitfalls of Overlooking Delisted Stocks and Index Changes

Survivorship bias skews trading results by ignoring delisted stocks and past index changes. Including all historical data ensures realistic backtesting and more reliable strategies.

Peter

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Survivorship bias in trading can significantly skew our perception of market and strategy performance.

What Is Survivorship Bias?

This hidden pitfall occurs when we focus solely on successful, currently listed stocks while overlooking those that have been delisted or removed from indices. By ignoring delisted stocks and historical index constituents, we risk overestimating potential returns and underestimating risks.

Traders often encounter survivorship bias when analyzing the performance of stock trading strategies. It is easy to retrospectively find long momentum signals on a stock like NVDA when looking back from August 2024. But would you have chosen the same stock in 2010?

The problem arises when we choose to backtest a strategy on the current constituents of an index. The S&P 500, for example, regularly adds and removes companies, yet many

traders consider only its current composition in their backtests. This oversight can lead to unrealistic expectations and flawed investment choices.

To combat survivorship bias, we must incorporate data from both current and historical index constituents, including delisted stocks. By doing so, we gain a more accurate picture of market trends and potential pitfalls.

How We Overcome Survivorship Bias

When backtesting our strategies, we employ datasets that encompass both actively traded and delisted stocks. If a strategy involves selecting constituents from a specific index—such as using the Nasdaq 100 in our [NDX Momentum](#) strategy—we consistently utilize point-in-time historical index constituents. This ensures that for each trading day, we reference the exact index composition as it existed on that date. For stock markets, we use [Norgate Data](#), which includes comprehensive coverage of historical index constituents and delisted securities.

An Illustration of the Practical Impact of Survivorship Bias

Survivorship bias becomes increasingly significant the longer a position is held and the more we leverage market momentum.

Here is a comparative analysis of the [NDX Momentum](#) strategy tested with adjustments for survivorship bias (**Variant A**) versus without such adjustments, where we backtest using only the current constituents of the Nasdaq 100 index (**Variant B**):

Name	Dates	NetProfit	ROR	MaxDD	Trades	PctWins	AvgWin	AvgLoss	WinLen	LossLen	Expectan...	ProfitFactor	Sharpe
NDX Momentum - B	1/3/00 - 9/26/24	\$663,714	15.38%	-17.14%	1,095	58.17%	12.58%	9.47%	20.94	21.00	3.36%	1.94	1.15
NDX Momentum - A	1/3/00 - 9/26/24	\$265,820	11.37%	-21.22%	1,095	56.53%	10.98%	8.48%	20.87	20.97	2.52%	1.62	0.84

Comparison of Backtests for the Same Strategy. Variant A: Incorporates historical constituents of the Nasdaq 100 index, including delisted stocks. Variant B: Utilizes only the current index composition.

The results demonstrate that Variant B yielded substantially higher profits (\$663,714 vs. \$265,820) and operated with a lower maximum drawdown (-17.14% vs. -21.22%).

However, these outcomes are not realistic. In the year 2000, the composition of the

Nasdaq 100 index was vastly different from today. Therefore, it is crucial to account for survivorship bias in backtesting.

Conclusion

Accounting for survivorship bias is essential for realistic backtesting and robust strategy development in trading. Ignoring delisted stocks and historical index changes can lead to inflated profit expectations and underestimated risks, resulting in flawed investment decisions. By integrating both current and historical data—including delisted securities—traders can achieve a more accurate understanding of market dynamics and enhance the reliability of their backtesting results.

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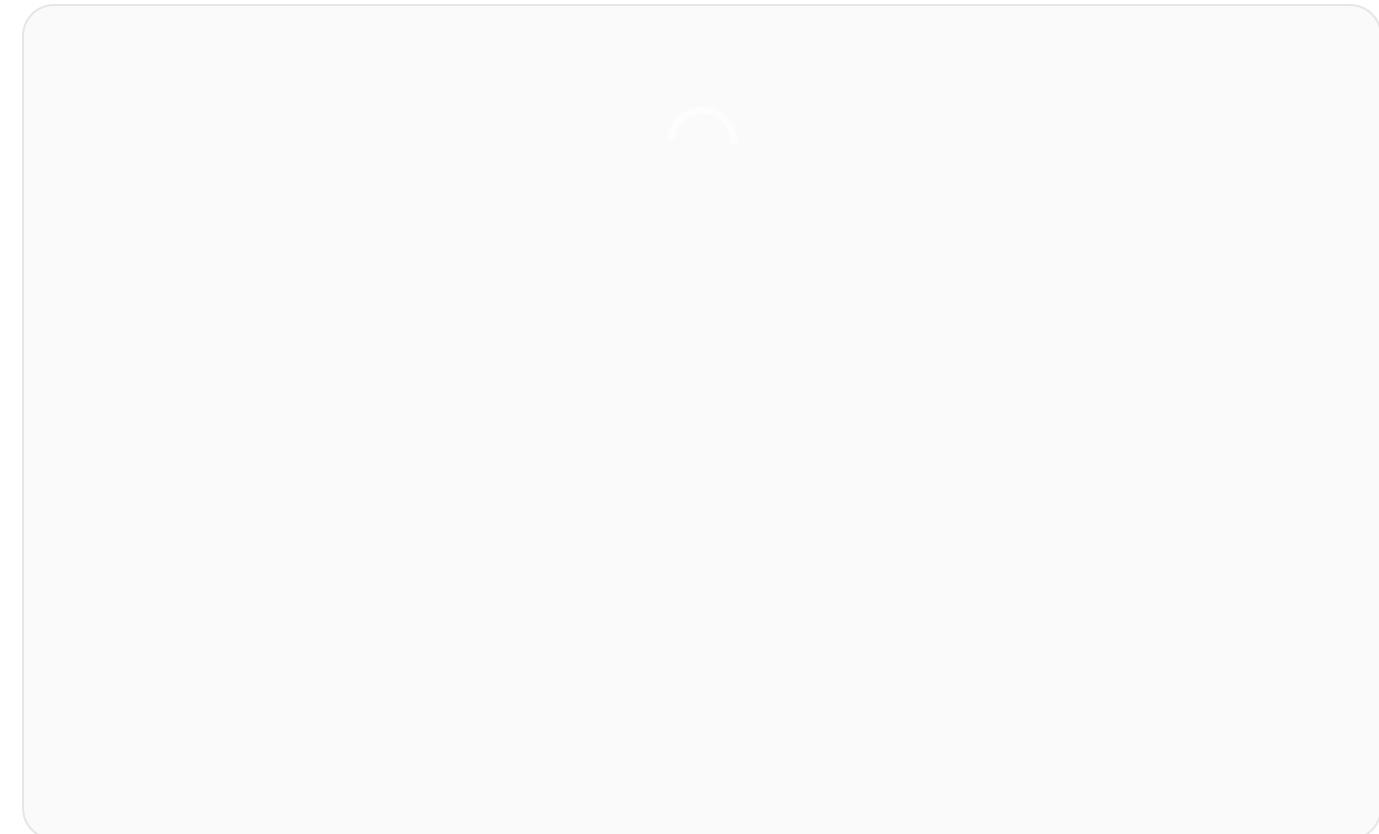
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