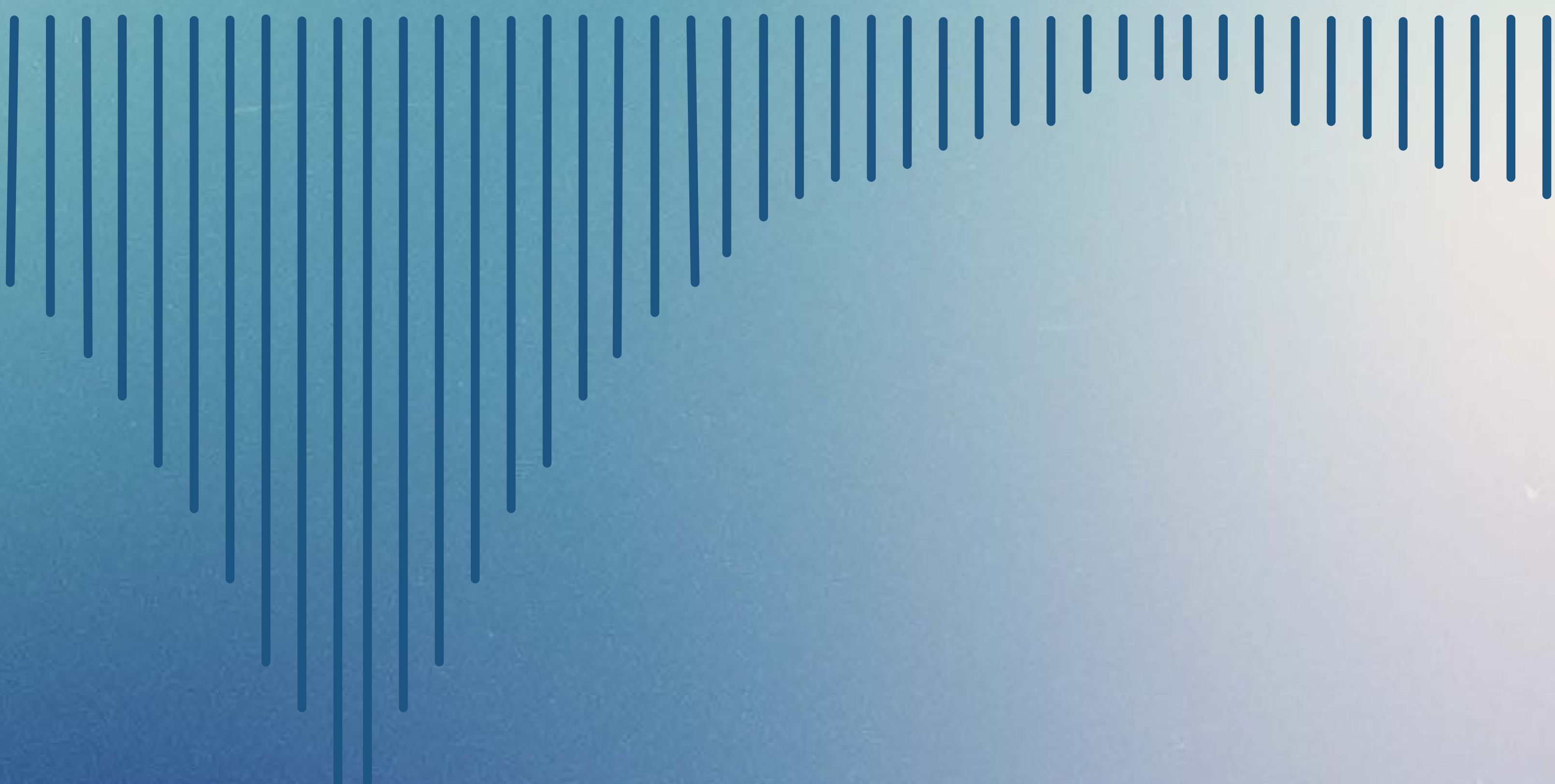
Managing Drawdowns



RiskBridge Advisors

www.riskbridgeadvisors.com

ABOUT RISKBRIDGE

RiskBridge Advisors, LLC ("RiskBridge") is an independent, full service investment office focused on helping investors achieve extraordinary outcomes. We offer discretionary portfolio solutions and risk-aware investment advice to institutional investors and individuals.

Our sole purpose is to serve those who serve others. We aspire to help our clients grow their businesses, find more cures, award more scholarships, deliver more grants, offer more community services, and build secure retirements and resilient legacies.

MANAGING DRAWDOWNS

Market drawdowns happen. We believe managing drawdowns is one of the best ways to **compound wealth** over the long term. Screening and selecting funds based on the portfolio manager's ability to navigate risk is a valuable skill shared by the RiskBridge investment team. By focusing on managing downside risk, RiskBridge aims to lessen the impact of portfolio drawdowns and help investors take advantage of the recovery to compound wealth more quickly.

MANAGING MARKET DRAWDOWNS

Volatility is not intuitive to many investors. Over time, it manifests as stock and bond market drawdowns. **Drawdown** measures an investment's, fund's, or portfolio's decline from a peak to a trough, usually expressed as a percentage.

For **example**, if an investment drops from a price of $100 to $75 during a specific period before recovering back to $100 or above, that represents a 25% drawdown.

Drawdowns provide a useful way to measure financial **risk**. In theory, the higher the drawdown, the more the investment's inherent volatility.

Since **1926**, seven major equity drawdown events and six major bond drawdown events have occurred. The average across all equity drawdown events is -45%, with the largest (-83%) occurring during the Great Depression. The average across all bond drawdown events is -8%, with the largest (-15%) occurring in 2022. Inflation-adjusted (real) bond drawdowns can last for decades. For example, the real bond drawdown that began with World War II extended well into the 1970s inflation crisis and ultimately reached a maximum drawdown of -44%.

DRAWDOWN EVENTS

7 Major equity drawdown events since 1926

6 Major bond drawdown events since 1926

-45% Average across all equity drawdown events

-8% Average across all bond drawdown events

-15% Largest bond drawdown event (**2022**)

ENTER THE CALMAR RATIO

How can investment committees and asset owners measure how effectively an investment fund manages market drawdowns?

The **Calmar ratio** (also known as the **"drawdown ratio"**) was developed and introduced in 1991 by a hedge fund manager looking for a monthly calculation of a portfolio's return relative to its drawdown. In other words, it looks at a fund's return on a **risk-adjusted basis**.

The Calmar ratio is a risk-adjusted performance metric for funds, conveying the return a fund has generated relative to the fund's maximum drawdown. In other words, it helps measure if an investor is adequately compensated for the risk they take.

Calmar Ratio Formula =
Average Annual Rate of Return / Maximum Drawdown

The strength of the Calmar ratio is that it is more understandable and less abstract than other risk gauges like the Sharpe ratio. The Calmar ratio provides insight into a fund manager's risk management skill, specifically the portfolio manager's efficiency at managing market drawdowns and how quickly the fund recovers to break even to continue compounding wealth.

The Calmar ratio appeals to RiskBridge as a **risk allocator** seeking to outperform during market drawdowns.

CHANGING MARKET STRUCTURE

The table below illustrates a measure of the return-to-drawdown risk metric for each major asset class, as measured by a standard reference index. The analysis separates the Calmar ratio into two distinct periods. The 21-year period ending in Dec 2011 captures three business cycles, three equity drawdown events, and one bond drawdown event.

The period starting in 2012 reflects the outsized influence of global central banks, including the effect of the Fed's quantitative easing (QE 2, announced in 2010) and the European Central Bank's "whatever it takes" speech (2012). In RiskBridge's opinion, excessive monetary policy altered the structure of global capital markets. We believe the data in the table below confirms this thesis. Equity markets generated outsized risk-adjusted returns in the past dozen years compared to 1990-2011. The opposite is true of global bond markets, where average returns declined, and the frequency and severity of bond drawdown events increased.

	Calmar Ratio		
Historical Calmar Ratio by Asset Class	**1990-2011**	**2012-2023**	**Change**
Russell 3000 Index	0.16	0.54	0.38
Russell 1000 Growth Index	0.12	0.52	0.40
Russell 1000 Value Index	0.16	0.41	0.25
Russell Mid Cap Index	0.19	0.44	0.25
Russell 2000 Index	0.16	0.31	0.15
MSCI ACWI Index*	0.01	0.37	0.36
MSCI EAFE Index	0.06	0.24	0.18
MSCI ACWI ex US Index*	0.03	0.20	0.17
MSCI Emerging Markets*	0.13	0.09	(0.04)
Bloomberg US Aggregate Bond Index	1.36	0.09	(1.27)
Bloomberg US Investment Grade Credit Index	0.49	0.14	(0.35)
Bloomberg US Intermediate Credit Index	0.62	0.19	(0.43)
Bloomberg US HY Credit Index	0.26	0.36	0.10
Bloomberg Municipal Bond Index	0.77	0.20	(0.57)
JP Morgan EMBI Global*	0.33	0.13	(0.20)
Bloomberg Commodity Index*	0.09	-0.03	(0.12)
FTSE NAREIT All Equity REIT Index	0.15	0.29	0.14
Alerian MLP Index*	0.40	0.04	(0.36)

Source: RiskBridge, Bloomberg, Russell, MSCI, JP Morgan, and FTSE.
(*) Indices with inception dates after Jan 1990 include ACWI, ACWI ex-US, and MSCI Emerging Markets (Jan 2000), JP Morgan EMBI Global (Jan 1994), Bloomberg Commodity Index (Jan 1991), and Alerian MLP Index (Jan 1996).

Since 2012, stocks benefited from a tailwind of outsized returns relative to drawdowns, while bonds failed to compensate investors for the downside risk.

Our thesis is that central bank largess fundamentally changed the market structure during this period. Further analysis is required to determine the impact of rising interest rates and quantitative tightening. The Calmar ratio is one of several useful tools RiskBridge uses to allocate risk for investment committees and asset owners. We believe it is important to understand an asset class's risk-adjusted returns in the context of its drawdown potential. When screening and selecting active fund managers, while past performance does not guarantee future results, we think a higher Calmar ratio holds the potential for superior long-term risk-adjusted returns.

BOTTOM LINE

RiskBridge specializes in navigating risk to compound wealth over time. Over 100 years of combined investment and wealth management experience have taught us that there is no return without risk, and investors are better prepared for uncertainty and complexity by considering risk holistically. Our duty is to ensure our investors are adequately compensated for the quantity and type of risk they take.

Our investment process aims to compound wealth more quickly by actively managing drawdown risk. We seek to build high-conviction, risk-aware portfolios aimed at generating consistent returns at or slightly above the benchmark (although we'll accept more) during good markets while generating returns far above the benchmark during market drawdowns.

We build high-conviction portfolios of third-party managers designed to deliver a client's target risk range. Our Investment Team screens and identifies strategies with a clearly defined investment "edge," a culture that fosters success, and a proven record of participating in good markets and outperforming during market drawdowns.

We invite you to contact the RiskBridge client service team to learn more.

DISCLOSURES

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