

TOPIC OF FOCUS: STRATEGY

Macro Opportunities—An Analysis of Drawdowns

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Periods of negative performance tell us a lot about a manager because they may be forced to act against their will. We believe portfolio risk can be managed with a high degree of reliability and aligned with investors' appetite for risk; that is our primary job. Still, evaluating a manager's negative performance in a reliable and measured way can prove quite useful. This paper looks into periods of negative performance, or drawdowns, highlights how best to organize such data and what to look for, and finally, applies the analysis to our Macro Opportunities strategy.



Joseph Filicetti
Product Specialist

KEY TAKEAWAYS

- Put simply, a strategy is always either in a period of drawdown or is making “new highs.” The depth and length of any current drawdown is not known until the previous high is equaled.
- Graphing periods of drawdown for a particular strategy—an underwater graph—allows investors to see the “cadence” of loss experienced by the manager—a continuous picture of the interaction between risk taken and rewards earned.
- Asymmetry during loss periods may indicate style drift, a change in investment management or simply poor risk controls.
- The underwater graph says it all. It’s an unbiased record of a market period when no one knew the outcomes, showing risks taken and rewards earned.
- The data for our own MO strategy suggests that whatever it has done in terms of repositioning when suffering negative performance had provided the opportunity for it to outperform in subsequent periods. This is exactly in line with our strategy's stated objective of seeking to generate generous returns by taking concentrated positions when value disconnects from market pricing.

Macro Opportunities—An Analysis of Drawdowns

By Joseph Filicetti

Every manager will lose part of your money; the key question is can active management make it back?

Oftentimes the evaluation of an investment opportunity focuses on philosophy, people and process but may overlook an examination of a strategy's negative performance. Periods of negative performance tell us a lot about a manager because they may be forced to act against their will—they may need to reduce positions when it's least desirable to do so. Western Asset believes portfolio risk can be managed with a high degree of reliability and aligned with investors' appetite for risk; that is our primary job. Still, the question remains whether there is a clear-cut way to evaluate a manager's negative performance as easily as philosophy, people and process are differentiated. We believe so.

This paper focuses on exactly that. We'll take a deep look into evaluating periods of negative performance, or drawdowns, as they're commonly referred to. We'll highlight how best to organize the data what to look for, and finally, we'll apply this analysis to study the drawdowns of Macro Opportunities (MO).

An Introductory Example

MO is an aggressive, fixed-income strategy that seeks to provide significant returns over the long term. It does this by taking concentrated positions in key investment themes and attempts to offset those risks with negatively correlated macro strategies—two components in one straightforward portfolio.

With MO in its 10th year, let's look at the annualized gross returns since inception (*Past performance is not indicative of future results. Please see the Performance Disclosure for more information*):

- With rates at zero from 2012–2015, MO's annualized return was 10.0%.
- With rates rising from 2016 through 2018, MO's annualized return was 6.0%.
- With rates falling in 2019, MO returned 18.0%.
- In 2020, in the worst economic contraction in nearly 100 years, MO returned 7.0%.

It is at least somewhat remarkable that a fixed-income strategy not employing explicit leverage could be so profitable over nearly 10 years, especially when in 50% of those months, short-term rates were zero.

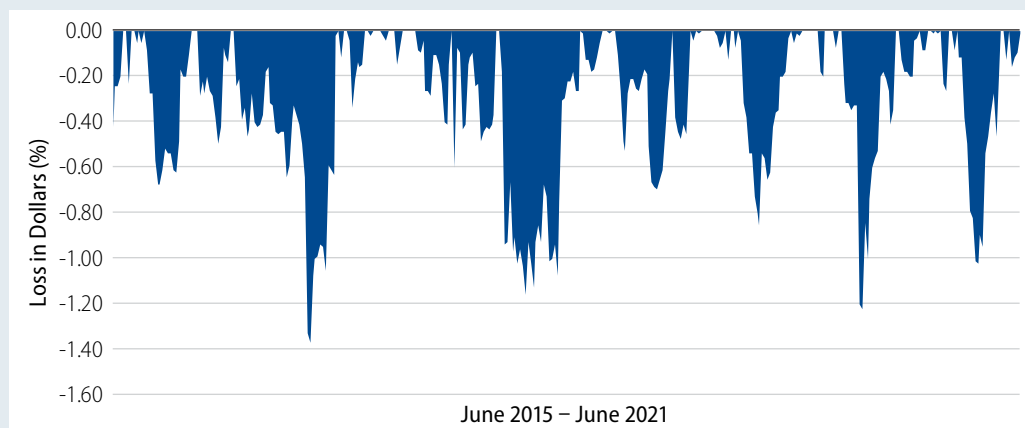
By this analysis alone it seems the strategy should be considered successful; it did achieve its goal to produce outsized returns. But is it a "good investment"? One can't answer that question by looking at returns alone. A fair question might be, "How much risk did MO take to generate such returns?" For that analysis, we need to examine its negative performance.

What Is a Drawdown?

Put simply, an investment strategy is always either in a period of drawdown or, is making "new highs." The depth and length of any current drawdown period is not known until the previous high is equaled—only then do we know with certainty the depth and length of the drawdown. Data for periods of negative performance, or drawdowns, is conveniently observed in a special chart (Exhibit 1) called an underwater equity curve. It's called "underwater" because it only highlights periods of negative performance. The underwater equity curve chosen for Exhibit 1 is

"Periods of negative performance tell us a lot about a manager ..."

Exhibit 1: Underwater Equity Curve



Source: Western Asset. As of 31 Jul 21.

an example of a strategy with a high Sharpe ratio and an attractive drawdown profile. Notice the negative performance depicted by shaded areas that look like paint dripping from the top x-axis; anytime performance reaches a new high NAV, it's not recorded on the x-axis—there is only empty space.

Cadence of Loss

Graphing periods of drawdown for a particular strategy enables investors to observe the “cadence” of loss experienced by the manager. It's a continuous picture of the interaction between risk taken and rewards earned. A desirable underwater equity curve for any strategy shows frequent periods of white space along the x-axis when the manager makes new high NAVs. These periods should be interspersed with somewhat symmetrical periods of loss and gain. Symmetry is the key theme; you want to see the strategy repeatedly taking risks matched quickly with the ability to recoup losses.

Asymmetry during loss periods may indicate style drift, a change in investment management or simply poor risk controls. It can also highlight losses yet to be overcome. Imagine a manager who lost 20% four years ago, but who makes returns of 4%, 5% and 6% the following three years. Performance seems attractive on a three-year lookback, but one would quickly realize that losses still haven't been fully recovered.

Why Are Drawdowns Important?

Drawdowns are important because they highlight one of the great challenges of investing: the asymmetry between risk and return, which usually works against the investor.

The mathematical asymmetry between gain and loss is straightforward; when you lose 10%, you need 11% to break even. This alone usually beats the novice investor. Factor in slippage, bid offer spreads, transaction costs and management fees and well, there's nothing symmetrical working in favor of the investor there. But even considering these factors, there is one more metric the investor needs to be wary of: the probability of ruin.

Once losses become large enough, the probability of losing everything increases exponentially. For example, if the drawdown reaches 50%, you need to make 100% on the remaining capital to break even, *but the risk required to do so will likely result in ruin*. The problem the manager faces is that drawdowns become increasingly difficult to mitigate. The problem the investor faces is that the manager won't be allowed to take the required amount of risk due to responsible investment guidelines. The underwater equity curve crystalizes this asymmetric struggle.

“Drawdowns are important because they highlight one of the great challenges of investing: the asymmetry between risk and return ...”

“The underwater graph says it all.”

The Predictability of Drawdowns

Of course, we wish our managers made money every trading day of the year, but they don't. None do. There are times when a manager is expected to be profitable and times when it is simply not possible. These patterns show up in the underwater equity chart. Many strategies have recognizable underwater equity curves because it's known in advance what risks they try to exploit.

For example, Systematic Global Macro CTAs (Commodity Trading Advisors), have somewhat predictable underwater equity curves, or drawdowns. Investors wisely use this drawdown profile to their advantage when they buy and hold such a strategy, in case markets dislocate unexpectedly. That's why over many decades, CTAs remain a very substantial percentage of the total AUM in the hedge fund space—for having exactly the lumpy, but predictable drawdown profiles they have.

How Useful Is This Data?

Western Asset believes it's enormously useful. A long-term chart of a manager's drawdowns as described here requires no “buy-in” from an investor as to the merits of one process over another, or even a manager's view of interest rates, the Federal Reserve (Fed) or inflation. No agreement is needed. The underwater graph says it all. It's an unbiased record of a market period when no one knew the outcomes, showing risks taken and rewards earned. *Performance and risk management is the only true validation of the philosophy, people and process that precedes it!*

Macro Opportunities' Drawdowns and Negative Performance

MO had six periods over a span of nearly 10 years where day over day it drew down 600 basis points (bps) or more from a previous equity peak. It's important to note that with an annual 10% standard deviation budget, statistically, this should be a somewhat frequently occurring event. Nevertheless, the table in Exhibit 2 highlights those periods along with the number of calendar days required to make a new, high NAV.

Exhibit 2: Macro Opportunities Drawdowns and Negative Performance

Drawdown Period	Drawdown Percent	Days to Recovery Low to Next Peak	Return from Drawdown
9/14/2012 - 11/8/2012	-6.5%	55	15.8%
6/21/2013 - 12/10/2013	-6.1%	172	22.6%
2/11/2016 - 3/30/2016	-9.0%	48	37.8%
10/31/2018 - 4/12/2019	-9.9%	163	25.9%
3/23/2020 - 7/27/2020	-20.2%	126	32.3%
3/18/2021 - 6/28/2021	-8.4%	102*	13.0%*
Annualized Return from Inception	8.8%		

Source: Western Asset. As of 28 Jun 21.

*As of the time this paper was written; period ongoing. Past performance is not indicative of future results. Please see the Performance Disclosure for more information.

The first observation is that the frequency of significant drawdowns is relatively low at six times in 10 years. Second, the cadence of loss appears consistent with a long-term, fundamental approach to investing. Each loss period coincides with a market dislocation in which the direction of monetary and fiscal policy was unusually opaque. In sequential order, the events were the announcement of the first “open-ended” QE3 in Sep 2012; the 2013 taper tantrum; fear of secular stagnation immediately following the first Fed hike in December 2015; realization that accelerating growth and inflation due to historical tax cuts and other stimulative policies did not materialize in October 2018; 2020 COVID-19; the 2021 anticipated spectacular growth and inflation due to economic reopening.

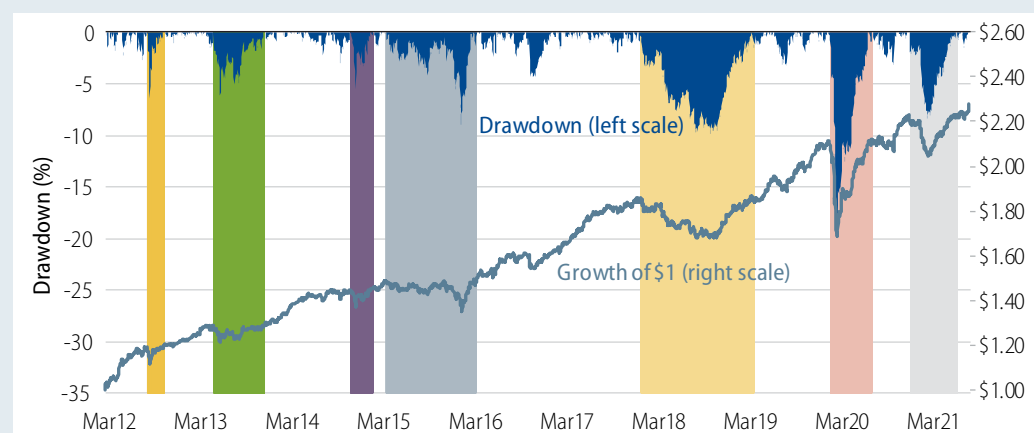
“Every single trading day of MO since inception, with the equity curve showing the positive return—there are no rolling windows or averaged data—you see every day as it happened.”

When noting the cadence of loss, look for periods when you expect the manager or strategy to have a difficult time; you want to see losses controlled and evidence of sustained positive performance immediately following each dislocating event. To evaluate this, simply measure performance from the lowest low to the next highest high (not the previous equity high which ended the drawdown). *The returns in the last column in Exhibit 2 clearly indicate MO has demonstrated significant periods of positive performance after its drawdowns.*

The data suggests that whatever MO does in terms of repositioning when suffering negative performance has provided an opportunity for significant outperformance in subsequent periods. This is exactly in line with its stated objective of attempting to generate significant returns by taking concentrated positions when value disconnects from market pricing. MO is a buy-and-hold strategy that seeks to deliver the best results to investors with a long-term horizon. So, for example, if an investor were willing to stay invested over one of the three- to five-year time horizons since inception, data suggests they would have been handsomely rewarded.

The chart in Exhibit 3 uses MO’s daily data as well as the value of \$1 invested over the life of the strategy. Note the symmetry of the gains and losses across the x-axis as well as the empty space during profitable periods. This last chart has it all. Every single trading day of MO since inception, with the equity curve showing the positive return—there are no rolling windows or averaged data—you see every day as it happened.

Exhibit 3: Macro Opportunities Daily Drawdown and Cumulative Return (Gross)



*Source: Western Asset. As of 31 Aug 21.
Past performance is not indicative of future results.*

A Word About 2020

Market volatility caused by COVID-19 in March 2020 was nothing short of spectacular. The VIX Index going from 25 on March 3 to 85 on March 18 evidenced that all markets, including the US Treasury market, were dysfunctional to the extent of requiring policy intervention. MO’s greatest drawdown of 20.2% occurred during this period on March 23, 2020.

MO’s drawdown was a 6 standard deviation (Std Dev) event for a strategy with a 10% volatility; the portfolio held concentrated positions in investment-grade and high-yield credit as well as in emerging market (EM) local currency sovereign debt. By comparison, the move in investment-grade credit measured as a 25 Std Dev event! High-yield suffered an 18 Std Dev event and JP Morgan EM Local Currency Debt a 6 Std Dev event . . . yet the strategy made a new high in only four additional months. We understand market returns are not normally distributed, but this back-of-the-envelope comparison, using historical or target volatilities and adjusting for the time frame, shows just how unprecedented the moves were. The point we make is that statistics, as many things in life, should be viewed within the context of their environment.

“The cadence of loss seems consistent with MO’s long-term, fundamental style of investing.”

Conclusion

At this point we seem better equipped to answer the question of whether or not MO is a “good investment” by looking at both the positive and negative performance. Here’s what we know:

1. MO was profitable when interest rates were zero.
2. MO was profitable when interest rates were rising.
3. MO was profitable when interest rates were falling.
4. Total return far exceeded the compounded level of risk-free rates over the same period.
5. Drawdowns occurred relatively infrequently given the length of the strategy’s performance record.
6. Losses appear symmetrical; although they happen quickly, recoveries also occurred quite fast.
7. The cadence of loss seems consistent with MO’s long-term, fundamental style of investing.
8. Recovery periods were both highly significant on a percentage basis and persisted materially longer than each preceding drawdown.
9. MO has been the top performer in its competitive universe over 1, 3, 5 and 7 years. (Source: eVestment Global Unconstrained Universe of managers with \$5 billion or more AUM.)

While past performance is never an indicator of future results, we believe these nine reasons support the conclusion that MO can indeed be a very attractive investment for a long-term investor.

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Rolling 1-Year Performance Returns Period Ending:	30 Sep 21	30 Sep 20	30 Sep 19	30 Sep 18	30 Sep 17
Macro Opportunities Composite (gross of fees)	6.99%	7.57%	14.00%	-5.59%	13.71%
Macro Opportunities Composite (net of fees)	5.94%	6.51%	12.88%	-6.53%	12.59%

Base Currency: USD

Past investment results are not indicative of future investment results. Source for performance figures is Western Asset. Please refer to the Performance Disclosure for more information. Currency exchange rate fluctuations will impact the value of your investment.

The value of investments and the income from them may go down as well as up and you may not get back the amount you originally invested.

Investment Risks:

The strategy does not offer any capital guarantee or protection and you may not get back the amount invested. The strategy is subject to the following risks which are materially relevant but may not be adequately captured by the indicator:

Asset-Backed Securities: The timing and size of the cash-flow from asset-backed securities is not fully assured and could result in loss for the strategy. These types of investments may also be difficult for the strategy to sell quickly.

Bonds: There is a risk that issuers of bonds held by the strategy may not be able to repay the investment or pay the interest due on it, leading to losses for the strategy. Bond values are affected by the market's view of the above risk, and by changes in interest rates and inflation.

Concentrated: The strategy's investment approach may result in the strategy being focused in one, or a small number of, countries, sectors or asset classes compared to other investment strategies. This means that the strategy may be more sensitive to economic, market, political or regulatory events than other strategies that invests across a broader range of countries, sectors and asset classes.

Counterparties: The strategy may suffer losses if the parties that it trades with cannot meet their financial obligations.

Currency: Changes in exchange rates between the currencies of investments held by the strategy and the strategy's base currency may negatively affect the value of an investment and any income received from it.

Derivatives: The strategy makes significant use of derivatives. The use of derivatives can result in greater fluctuations of the portfolio's value.

Emerging Markets: The strategy may invest in the markets of countries which are smaller, less developed and regulated, and more volatile than the markets of more developed countries.

Interest Rates: Changes in interest rates may negatively affect the value of the strategy. Typically as interest rates rise, bond values fall.

Low-rated Bonds: The strategy may invest in lower rated or unrated bonds of similar quality, which carry a higher degree of risk than higher rated bonds.

This strategy is managed by Western Asset. This information is only for use by professional clients, eligible counterparties or qualified investors. It is not aimed at, or for use by, retail clients.

Performance Disclosure

December 31, 2020

Macro Opportunities Composite

Composite Inception Date: 04/01/2012 | Composite Creation Date: 05/14/2012

	No. of Accts	Gross Total Return	Net Total Return	Benchmark Total Return	Gross Total 3-Yr St Dev	Benchmark Total 3-Yr St Dev	Internal Dispersion	Mkt. Value USD Mil	Percentage of Firm Assets	Firm Assets USD Mil
2011	-na-	-na-	-na-	-na-	-na-	-na-	-na-	-na-	-na-	443,140
2012 ¹	1	17.28%	16.77%	-na-	-na-	-na-	-na-	112	0.02%	461,891
2013	2	7.57%	6.85%	-na-	-na-	-na-	-na-	745	0.16%	451,632
2014	8	9.66%	8.67%	-na-	-na-	-na-	-na-	5,184	1.11%	466,036
2015	8	2.86%	1.84%	-na-	4.61%	-na-	0.24%	7,409	1.71%	433,747
2016	9	8.38%	7.31%	-na-	6.25%	-na-	0.25%	7,915	1.89%	419,207
2017	10	16.05%	14.92%	-na-	6.25%	-na-	0.69%	14,185	3.25%	436,309
2018	10	-4.50%	-5.45%	-na-	7.09%	-na-	0.85%	12,147	2.86%	424,136
2019	10	18.52%	17.36%	-na-	6.62%	-na-	0.19%	14,116	3.10%	455,276
2020	12	7.56%	6.50%	-na-	10.81%	-na-	0.77%	14,675	3.06%	479,810

Description: The Western Asset Macro Opportunities strategy is a macro-oriented, global, unconstrained strategy providing concentrated and opportunistic exposures to Western Asset's key themes. It aims to maximize total return and add value, while managing overall portfolio risk, through duration, yield-curve and volatility management as an offset to high-conviction long-term themes. These long-term themes consist of sector, country and currency rotation and security selection. The strategy invests in a diversified portfolio consisting of a core of liquid developed credit and currencies, combined with an actively managed global rates component constructed through liquid derivatives.

Benchmark Description: The Composite is not measured against a benchmark as accounts that may comprise the Composite are measured on an absolute return basis. There is no benchmark available that appropriately reflects the guidelines of all accounts within the Composite.

Base Currency: USD | **Composite Minimum:** No minimum asset size requirement as of 1/1/20 (previously \$40 million)(\$1 million prior to 1/1/16).

Current Fee Schedule: The investment management fee schedule for the separate account is 1%. The investment management fee for the Western Asset Macro Opportunities Portfolio Master Ltd. and the Western Asset Macro Opportunities Alternative Fund, Ltd, which are included in the composite is .90 of 1%. The total expense ratio as of December 31, 2019 for the Western Asset Macro Opportunities Portfolio Master Ltd. was .96 of 1% and for the Western Asset Macro Opportunities Alternatives Fund, Ltd was 1%.

¹ Partial period return (April 1, 2012 to December 31, 2012).

Western Asset claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Western Asset has been independently verified for the periods from January 1, 1993 to December 31, 2020.

A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. The Macro Opportunities Composite has been examined for the period from April 1, 2012 to December 31, 2020. The verification and performance examination reports are available upon request.

For GIPS® purposes, the Firm is defined as Western Asset, a primarily fixed-income investment manager comprised of Western Asset Management Company, LLC; Western Asset Management Company Distribuidora de Títulos e Valores Mobiliários Limitada is authorised and regulated by Comissão de Valores Mobiliários and Banco Central do Brazil; Western Asset Management Company Pty Ltd ABN 41 117 767 923 is the holder of the Australian Financial Services Licence 303160; Western Asset Management Company Pte. Ltd. Co. Reg. No. 200007692R is a holder of a Capital Markets Services Licence for fund management and regulated by the Monetary Authority of Singapore; Western Asset Management Company Ltd, a registered Financial Instruments Business Operator and regulated by the Financial Services Agency of Japan; and Western Asset Management Company Limited is authorised and regulated by the Financial Conduct Authority ("FCA") (FRN 145930), with offices in Pasadena, New York, London, Singapore, Tokyo, Melbourne, São Paulo, Hong Kong, and Zürich. Each Western Asset company is a wholly owned subsidiary of Franklin Resources, Inc. but operates autonomously, and Western Asset, as a Firm, is held out to the public as a separate entity. Western Asset Management Company was founded in 1971. Specialist Investment Manager of Franklin Resources, Inc. since July 31, 2020. This communication is intended for distribution to Professional Clients only if deemed to be a financial promotion in the UK as defined by the FCA. This communication may also be intended for certain EEA countries where Western Asset has been granted permission to do so. For the current list of the approved EEA countries please contact Western Asset at +44 (0)20 7422 3000.

Gross-of-fees returns are presented before management fees, but after all trading expenses. Net-of-fees results are calculated using a model approach whereby the current highest tier of the appropriate strategy's fee schedule is used. Effective January 1, 2020, for annual periods where the actual account weighted fees are higher than the composite model fee, the actual account weighted fees will be used for the net-of-fee composite return calculations. Net-of-fee composite return calculations using actual account weighted fees may include fund returns that incur higher fees than those applied to separately managed accounts. The portfolios in the Composite are all actual, fee-paying and performance fee-paying, fully discretionary accounts managed by the Firm for at least one full month. Investment results shown are for taxable and tax-exempt accounts and include the reinvestment of all earnings. Any possible tax liabilities incurred by the taxable accounts have not been reflected in the net performance. Policies for valuing investments, calculating performance, and preparing GIPS Reports are available upon request.

Composite returns are measured against a benchmark, when applicable. The benchmark is unmanaged and provided to represent the investment environment in existence during the time periods shown. For comparison purposes, its performance has been linked in the same manner as the Composite. The benchmark presented from third party sources deemed reliable but not guaranteed for accuracy or completeness. Benchmark returns and benchmark three-year annualized ex-post standard deviation are not covered by the report of independent verifiers.

Internal dispersion is calculated using the asset-weighted standard deviation of annual gross returns of those portfolios that were included in the Composite for the entire year. Periods with five or fewer accounts are not statistically representative and are not presented. The three-year annualized ex-post standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period.

Past investment results are not indicative of future investment results. Information contained herein is believed to be accurate, but cannot be guaranteed. Employees and/or clients of Western Asset may have a position in the securities mentioned.

Western Asset's list of composite descriptions, limited distribution pooled fund descriptions, and broad distribution pooled funds are available upon request. Please contact Derek Fan at 626-844-9465 or derek.fan@westernasset.com. All returns for strategies with inception prior to January 1, 2011 are available upon request.

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