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Long/Short Equity Strategy

A long/short equity strategy shifts the principal risk from market risk to manager risk based on the premise that skilled stock selection drives positive returns.

What is Long/Short Equity?

The long/short equity strategy is rooted in the classic Jones model, which combines three strategies – long equities, short equities and modest leverage to generate optimal risk-adjusted returns. This model is based on the premise that skilled stock selection drives positive returns. A long/short equity strategy therefore shifts the principal risk from *market* risk to *manager* risk. According to Hedge Fund Research Inc. (HFRI), long/short equity (also referred to as hedged equity) is currently the largest strategy with approximately 30% of US\$1 trillion in hedge fund assets.¹

What are the Nuts and Bolts of Long/Short Equity?

Long/short equity is a versatile strategy given the size, depth and liquidity of global equity markets, and the ease and transparency of public equity pricing. In a company's capital structure, the shareholders have a residual claim on the assets after creditors, and risk losing all of their capital. The range of outcomes for shareholders is therefore zero on the downside and theoretically infinite on the upside. Conversely, selling equities short theoretically has unlimited risk.²

The components of equity returns include the dividend (if any), the dividend's growth and the change in the share price, which depends on the market's valuation of a company's future cash flows (typically revenues, earnings and dividends). This valuation or cash flow multiple, and how it changes, has been a primary equity return driver over the past 50 years. Prevailing interest rates and the risk premium demanded by shareholders also have a strong influence on equity valuations. Further, a company's management effectiveness is a key determinant of fundamental equity returns and also has an indirect influence on valuations. Activist long/short equity managers often try to use their influence to enact management changes to generate returns for shareholders. Activist managers may also work with existing management teams to enhance shareholder value.

Note on Key Terms: There is a "Glossary of Key Terms" at the end of the strategy paper on Page 10. The key terms are italicized and underlined in the text.

¹ Source: Hedge Fund Research Inc., September 2005.

² AIMA Canada's paper *An Overview of Short Stock Selling* summarizes the mechanics of selling stocks short.



Each of the return components, together with a company's management effectiveness provide long/short equity managers with fundamental factors to evaluate. These factors help to determine the appropriate long and short equity positions. The respective long and short positions are also a function of market volatility, where long positions with high betas require more offsetting capital on the short side (i.e., on an absolute dollar basis). Long/short equity funds generally use fundamental analysis and discretionary trading, and may also use *technical analysis*. There are also model-driven variants with systematic trading, such as statistical arbitrage, which is a component of equity market-neutral, as this strategy typically has no *net market exposure*.³

The steps in a traditional long/short equity strategy are as follows:

1. **Screen and Identify Undervalued/Overvalued Stocks:** Long/short equity managers look for fundamentally or technically mis-priced stocks. Trading ideas are generated through fundamental research, quantitative screening methods, and the hedge fund manager's networks and contacts. The idea generation process is an important consideration for investors.
2. **Select Appropriate Stocks:** This process generally involves fundamental analysis of a particular stock, including industry analysis, review of historical financial information, forecasting future financial results, valuation analysis, and company management interviews. Fundamental field work, including company visits and customer and employee interviews, is often more effective in less developed or under-researched markets.
3. **Weight Portfolio Positions and Execute Trades:** In general, the manager uses a combination of fundamental and technical factors to select stocks, size the positions and execute the trades. The trading function is also a major risk management function, especially with defined trading rules such as stop-loss limits. Trading is a key tool to maintain

appropriate position weights, to manage risk, and to take advantage of short-term opportunities.

4. **Build Portfolio with Appropriate Long/Short Ratio:** The manager establishes the appropriate amount of long, short and *gross market exposure*, as well as the *net market exposure*, which may be as a residual of stock selection or deliberately managed using options and/or futures. Managing the "short book" is a key determinant of the portfolio's performance. Managers who have high net market exposure typically use modest or no leverage, while managers who have low net market exposure tend to have higher gross market exposure and may use leverage.⁴
5. **Manage Portfolio Risk:** The dynamics of the long and short equity books differ in that short positions *increase* when they go against the manager, and theoretically have unlimited risk. Therefore, managing the short book is a primary risk consideration. Further, the manager must manage the portfolio's long, short, gross and net exposures on both a company and sector basis, within the limits set out in the fund's offering memorandum. Long/short equity managers use trading, underlying company due diligence, and strict portfolio exposure limits to appropriately manage risk across their portfolios. (Note: We discuss the specific risks of a long/short equity strategy in detail below.)

³ AIMA Canada's paper *Equity Market-Neutral Strategy* provides a detailed discussion of this strategy.

⁴ In a long/short equity portfolio, the *gross market exposure* may range from less than 100% (e.g., \$0.60 long exposure + \$0.30 short exposure = \$0.90 of gross market exposure, with *net market exposure* of \$0.30; this portfolio is deemed to use no leverage on the long side) to more than 200% (e.g., \$1.30 long exposure + \$0.80 short exposure = \$2.10 of gross market exposure, with net market exposure of \$0.50; this portfolio uses leverage of \$0.30 on the long side). AIMA Canada's paper *An Overview of Leverage* summarizes the key definitions and types of leverage used in the different hedge fund strategies.



What are the Different Approaches to Long/Short Equity?

The specific approach used by a long/short equity manager generally determines the fund’s sources of return. While approaches to long/short equity vary widely, managers can be categorized by one or more of the factors in Table 1 below.

A manager’s approach to market exposure defines the market hedge (i.e., the total long and short positions, and the *net market exposure*). There are generally two approaches:

1. **Bottom-up Stock Selection:** The net market exposure is a residual of bottom-up fundamental stock selection. Little attempt is made to target or manage the specific market exposure and the resulting portfolio *volatility*. Gross and net portfolio exposures are driven purely by stock selection.
2. **Top-down Net Market Exposure:** The manager may make top-down decisions concerning sector and net market exposure, in place of, or in addition to, bottom-up stock selection. In effect, stock selection,

sector allocation, and gross and net market exposures are actively traded and managed.

Investors should ensure that the strategy’s return attribution matches the fund’s stated approach to market exposure. While an active trading strategy should deliver superior risk-adjusted returns, return attribution can be difficult to measure. Similarly, a strictly bottom-up, fundamental approach may generate more volatile returns. Investors must understand whether this approach is statistical “noise” or, in a drawdown, a permanent capital loss.

Managers may combine a “core and satellite” approach to market exposure by holding a “core” portfolio of fundamentally researched positions, and also maintain a trading book of “satellite” positions. Managers typically have a core competency and should maintain this approach through various market conditions. It may be a warning sign of *style drift* if a significant amount of a manager’s attribution is generated from a non-core style (e.g., a fundamental bottom-up manager generates significant returns from macro calls on equity market direction rather than from stock selection).

Table 1: Key Factors of a Long/Short Equity Strategy

Style	Market Capitalization	Geographic	Market Exposure	Sector	Philosophy
<ul style="list-style-type: none"> ▪ Value ▪ Growth ▪ Momentum 	<ul style="list-style-type: none"> ▪ Small ▪ Mid ▪ Large 	<ul style="list-style-type: none"> ▪ U.S. ▪ Japan ▪ Europe ▪ Canada ▪ Emerging Markets ▪ Asia ▪ Global 	<ul style="list-style-type: none"> ▪ Net Short ▪ Neutral ▪ Net Long 	<ul style="list-style-type: none"> ▪ Specialist ▪ Generalist 	<ul style="list-style-type: none"> ▪ Trading ▪ Thematic ▪ Activist ▪ Combination ▪ Fundamental



Short selling skill is the crucial component of all long/short equity approaches. This skill enables managers to capitalize on corporate events, earnings announcements, regulatory changes, mergers and acquisitions as well as buyouts. Short selling stocks has a myriad of complexities and is *not* simply the opposite of executing long positions. Special considerations include: potentially unlimited losses, declining returns as positions become profitable, borrowing securities, and short squeezes. At the portfolio level, the short book provides a crucial market hedge. Investors should look for strong short selling experience and results, together with a sound risk management process in a long/short equity strategy.

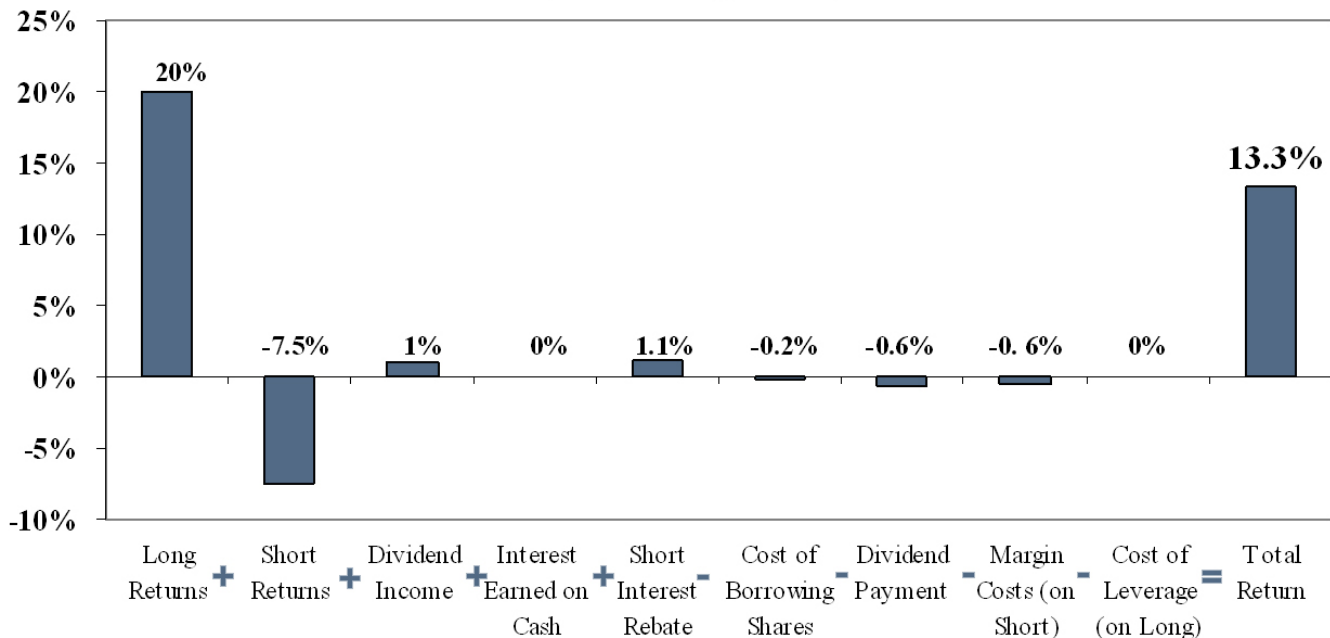
What are the Sources of Return of Long/Short Equity?

The sources of return for a long/short equity strategy are diverse and the contribution from leverage is generally modest relative to other strategies. Figure 1 provides an

overview of the typical return sources for a long/short equity strategy. (The sources of return in Figure 1 can be cross-referenced with the respective explanations below. The numbers in Figure 1 are based on the long/short equity example in Table 3 on Pages 8-9.)

The proportion of a long/short equity fund's return from each of the different sources varies widely depending on the manager's style, whether long-biased, short-biased, growth-oriented, value-oriented and based on other characteristics by geography or sector. For example, a long-biased fund would attribute less of its return from gains/losses on short positions and short rebates. Certain sector-focused or growth-oriented funds may hold largely non-dividend paying stocks. In general, a significant number of long/short equity funds would typically generate a significant proportion of returns from long positions.

Figure 1: Example of Equity Long/Short Return Attribution (No Leverage Used)





Notes to Figure 1: Equity Long/Short Return Attribution (No Leverage Used)

Note: The return attribution for a long/short equity portfolio has been simplified to highlight the key concepts. The portfolio is \$1 long and \$0.75 short, resulting in gross market exposure of 175% and net market exposure of 25%. Note: No leverage is used on the long side in the example. The volatility of this type of long/short equity portfolio is typically lower than that of a long-only equity portfolio.

Returns Generated on Long Positions + Short Positions: Capital gains/losses, either realized or unrealized, that are generated on long and short positions in various equity securities (i.e., equities, options, warrants, etc.). Returns are affected by growth in company earnings, cash flow and valuation contraction or expansion.

+ **Dividend Income (on Long Positions):** Dividend income earned on long equity positions.

+ **Interest Earned on Cash:** Interest is earned on excess cash balances, typically when a manager has low gross market exposure and holds a cash balance rather than using leverage (e.g., a long exposure of \$0.55 and a short exposure of \$0.30 results in net market exposure of \$0.25, gross market exposure of \$0.85, and a cash balance of \$0.15).

+ **Short Interest Rebate:** A short stock sale is typically executed with the following steps: borrow shares, sell shares short, receive cash in return for stock sale, earn interest on cash proceeds from short sale (i.e., the short rebate), buy back shares, and return shares to the stock lender. The rebate varies depending on prevailing market interest rates (i.e., typically the broker "call rate," which is the prime rate minus 50-75 bps).

- **Cost of Borrowing Shares:** When a short stock sale is executed, a long/short equity fund must borrow shares to facilitate the transaction. The fund typically pays the stock lender a nominal rate based on the total value of the shares borrowed and the period of the stock loan. The available supply of a particular stock impacts the borrowing cost with tightly held, illiquid stocks often commanding a premium borrow rate.

- **Dividend Payment (on Short Positions):** When a long/short equity fund holds a short position in a dividend-paying stock, that fund must pay the stock lender the value of any dividends that would have been received on the shares.

- **Margin Costs (on Short):** Costs associated with shorting stocks. (Note that the general cost of margin loans often differs by jurisdiction.)

- **Cost of Leverage (on Long):** If the fund manager uses leverage to increase long positions beyond \$1, the fund must pay interest on the loan to its prime broker.⁵ (Note: No leverage has been used on the long side in this trade example.) The total return would depend on the amount and cost of leverage employed.

= **Total Return (i.e., Gross Return Before Fees)**

⁵ AIMA Canada's paper *The Role of a Prime Broker* provides an overview of the general prime brokerage functions.



What are the Key Risk Factors of Long/Short Equity?

The following are the key risks of a long/short equity strategy:

1. **Manager Risk:** Long/short equity managers use a broad array of sub-strategies and variations in style, including differences in position concentration, sector exposure, net market exposure, gross market exposure, and significant differences in stock selection. A manager may make poor judgments regarding any one of these variables. As a result, assessing manager skill *and* style is essential when evaluating a long/short equity strategy. (Note: Manager risk also includes the firm's operational risk.)
2. **Market Risk (Beta Risk):** Long/short equity managers do not typically manage a market-neutral portfolio and are therefore exposed to a certain degree of market exposure (long or short), depending on the portfolio's net exposure at a given time. This exposure also varies depending on the long equity portfolio's beta relative to the short equity portfolio's beta. Long/short equity managers often measure the *beta-adjusted net exposure* to help gauge the level of market risk.
3. **Leverage:** Long/short equity managers may borrow funds to magnify returns and to allow a larger amount of capital to be invested in a given set of positions. While this leverage risk is somewhat mitigated by the fact that a manager has reduced market exposure with offsetting long and short positions, leverage can result in significant losses if not used prudently.
4. **Liquidity:** The manager's ability to enter/exit a position with minimal market impact directly affects profitability. This risk can be magnified if a manager provides fund investors with generous liquidity terms and receives significant redemptions of fund assets in a short period. The liquidity of a manager's underlying securities can also impact friction or trading costs and affect net returns.
5. **Stock Loan:** An effective short stock sale depends on a manager's ability to secure and maintain a cost-effective borrow on the short stock positions. Short positions in stocks with high levels of *short interest* may be difficult to maintain, and even if secured, can be costly to borrow. If a stock loan is "called-in" at an inopportune time, it could adversely affect the trade's profitability.
6. **Counterparty Risk:** As with any hedge fund strategy, high quality global service providers are essential. For a long/short equity strategy, an effective prime broker well suited to the manager's particular market helps to ensure sound trade execution and secure stock loan. Using a large and well-capitalized prime broker assists a long/short equity manager in minimizing counterparty risk.
7. **Security and Sector Risk:** Security-specific risk can impact a long/short equity manager if adverse and unexpected developments arise in a company. Significant long or short exposure to a particular sector or sub-sector can also magnify the risk level of a particular long/short equity strategy.
8. **Currency Risk:** Buying and selling stocks in multiple countries creates currency risk for a long/short equity fund. The cost of hedging, or not hedging, can significantly affect the fund's return.
9. **Macro and Geopolitical Risk:** Geopolitical events can result in higher market and currency risk. This event risk is a key risk for all investments.



What is the Historical Performance of Long/Short Equity?

As Table 2 highlights, a long/short equity strategy, measured by the *HFRI Equity Hedge Index*, produced stable and attractive returns from January 1990 to

December 2005. The long/short equity returns compare favourably with long-only equity returns. With higher returns and lower volatility (i.e., standard deviation), an equity long/short strategy generated a superior *Sharpe Ratio* to traditional long-only equity.

Table 2: Equity Long/Short Performance Comparison (Jan-1990 to Dec-2005)

Index	Annualized Compound Return	Annualized Standard Deviation	Maximum Drawdown (Loss)	1-month Maximum Gain	1-month Maximum Loss
HFRI Equity Hedge Index (US\$)	17.3%	8.8%	-10.3%	10.9%	-7.7%
S&P 500 Total Return Index (US\$)	11.5%	14.0%	-44.7%	11.4%	-14.5%
MSCI World Index (US\$)	8.6%	13.6%	-46.8%	10.5%	-13.4%
S&P/TSX (Toronto) (in Cdn. \$)	10.9%	14.7%	-43.2%	11.9%	-20.2%

Sources: TD Securities Inc. and Hedge Fund Research Inc. (Hedge fund data is net of all fees.)

What is a Practical Example of a Long/Short Equity Trade?

Table 3 below summarizes a hypothetical long/short equity pairs trade.


Table 3: Example of Long/Short Equity Trade

Background to The Trade: The trade involves a long position of \$1,000,000 in Retail Co. A with a beta of 1, and a short position of \$750,000 in Retail Co. B with a beta of 1.5, assuming \$1,000,000 of capital. Retail Co. A's dividend yield is 1%, while Retail Co. B's dividend yield is 0.8%. It is assumed that the manager holds the positions for 1 year. It is assumed that margin costs are 2.5% p.a.

I. Determining Total Return

Return Source	Cost Base	Exit Proceeds	Return (\$)	Assumptions/Notes
Long Position: Retail Co. A	\$1,000,000	\$1,200,000	\$200,000	100,000 shares purchased @ \$10/sh.; Beta = 1.0
Short Position: Retail Co. B	(\$750,000)	(\$825,000)	(\$75,000)	75,000 shares shorted @ \$10/sh.; Beta = 1.5
Dividend Income (on Long Position)			\$10,000	Dividend yield of 1% on Retail Co. A
Interest Earned on Cash			\$0	No excess cash
Short Rebate (on Short Position)			\$11,250	Rate of 1.5% earned on short proceeds of \$750,000
Cost of Borrowing Shares			(\$1,875)	Rate of 0.25% paid on initial stock loan with a borrow value of \$750,000
Dividend Payment (on Short Position)			(\$6,000)	Dividend yield of 0.8% on Retail Co. B
Margin Costs (on Short Position)			(\$5,625)	\$1,000,000 Capital; Long Cost = (\$1,000,000); Short Cost = Margin of \$225,000 @2.5%, which is calculated as follows: (\$975,000) ⁶ + \$750,000 proceeds = (\$225,000); Net Margin Used = (\$1,000,000) + (\$225,000) + \$1,000,000 in capital = (\$225,000) in margin @ 2.5% rate
Cost of Leverage (on Long Position)			-	Note on Leverage: No leverage has been used on the long side of this trade.
Total Return			\$132,750	
% Return			13.3%	\$132,750/Initial capital of \$1,000,000

⁶ The 130% short margin is based on the prime broker's margin requirement (i.e., \$750,000 X 130% short margin = (\$975,000)).


Table 3: Example of Long/Short Equity Trade (Cont.)

II. Assessing Net Exposure			
Details	At Trade Inception	At Trade Exit	Notes
Long Exposure	100.0%	120.0%	Note on Beta-adjusted Net Exposure: ▪ Trade Inception: (Long exposure of 100% X beta of 1) + (short exposure of 75% X beta of 1.5) = (100% - 112.5%) = -12.5% ▪ Trade Exit: (Long exposure of 120% X beta of 1) + (short exposure of 82.5% X beta of 1.5) = (120% - 123.75%) = -3.75%
Short Exposure	<u>-75.0%</u>	<u>-82.5%</u>	
Net Exposure	25.0%	37.5%	
Gross Exposure	175.0%	202.5%	
Beta-adjusted Net Exposure	-12.5%	-3.75%	
III. Analyzing Return Sources (Cross-reference to Figure 1)			
Return Source	Contribution		
Long Position: Retail Co. A	20.0%		
Short Position: Retail Co. B	-7.5%		
Dividend Income (on Long)	1.0%		
Interest Earned on Cash	0.0%		
Short Rebate	1.13%		
Cost of Borrowing Shares	-0.19%		
Dividend Payment (on Short)	-0.60%		
Margin Costs (on Short)	-0.56%		
Cost of Leverage (on Long)	0.0%		
Total Return	13.3%		

Conclusion

The long/short equity strategy is the most diverse of all hedge fund strategies. The significant size, depth and liquidity of global equity markets has cultivated a broad array of sub-strategies within the long/short equity group. Long/short equity remains the most prevalent of all hedge fund strategies with more than US\$300 billion in assets. The strategy focuses on exploiting manager skill while mitigating market risk. Long/short equity managers use a variety of approaches across key factors, such as style, market capitalization, geography, market exposure, sector and philosophy. Due to the diversity of long/short equity strategies, investors must carefully assess a manager's skill and risk management process. Short selling skill is particularly important, as it differentiates long/short equity from a traditional long-only equity strategy. With the continued growth of global equity markets, long/short equity will likely remain one of the largest and most diverse hedge fund strategies available to investors.

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Glossary of Key Terms

Beta-adjusted Net Exposure: (Beta of long positions X long position weighting) - (beta of short positions X short position weighting)

Gross Market Exposure: Long exposure + (absolute value of) short exposure

Long/Short Ratio: Total long positions relative to short positions.

Net Market Exposure: Long exposure - short exposure

Prime Broker: Refers to a broker offering professional services specifically aimed at hedge funds and other large institutional clients. The prime broker clears the trades, custodies the securities, provides margin financing, lends stock to cover short sales, and provides cash and position reports. When a hedge fund designates a prime broker, it instructs all executing brokers to settle its trades for cash with a single firm. After the fund executes a trade, it reports the details to its prime broker.

Sharpe Ratio: A ratio based on the first two moments of the return distribution (i.e., the mean and the variance), calculated as the ratio of the mean return minus the risk-free rate (excess return) to the standard deviation. The higher the Sharpe Ratio, the more favourable the risk/reward trade-off.

Short Interest: Short position in a particular stock as a percentage of the total shares outstanding.

Short (Interest) Rebate: A portion of the interest in a T-bill account earned by a hedge fund from shorting a security. When selling a stock short, a hedge fund borrows the stock from a prime broker (who borrows it from an existing shareholder) and the short sale proceeds are typically held in a T-bill account as collateral with the prime broker. Much of the T-bill interest is then

rebated to the hedge fund. (Note: The hedge fund must pay dividends to the original shareholder.)

Short Selling Stock: Borrowing shares to sell in the open market with the goal of buying these shares back at lower prices in the future, and at that time return the shares to the lender.

Style Drift: The tendency of hedge fund managers to deviate from their stated investment style or strategy over time.

Survivorship Bias: Tendency for failed hedge funds (that no longer exist or no longer report to data providers) to be *excluded* from historical performance analysis. Survivorship bias causes the results of hedge fund analysis to skew higher because the analysis only includes funds that are successful enough to survive to the end of the analysis period.

Technical Analysis: A method of forecasting security prices and market direction by examining patterns of variables such as trading volume, price changes, rates of change, and changes in trading volume, without regard to underlying fundamental market factors.

Volatility: The degree of price fluctuation for a given asset, rate, or index. The variability of investment returns is one form of investment risk and is measured by the standard deviation of the returns.



Notes to Strategy Paper Series:

- **Educational Materials:** This document is designed solely for information and educational purposes. The examples used have generally been simplified in order to convey the key concepts of the hedge fund trading strategy.
- **Hedge Fund Strategy Performance Data:** The statistical data on the hedge fund strategy presented in this paper is both *end-date* sensitive and *period* sensitive. We have used the period and end date in this paper, as it reflects the overall performance of the hedge fund strategy for the longest period to date (at the time of writing), based on available data from Hedge Fund Research Inc. (HFRI). Different periods and end dates may result in different conclusions.
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