MASTERING MARKET VOLATILITY OVER A FULL RISK CYCLE

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THE FULL RISK CYCLE

When dealing with investments, you will often hear about ***the market cycle:*** How to time it, the impact it may have on your portfolio and assets and what investment strategies should be employed to beat the market. However, in spite of all of these points of conversation and explanations, investors often don't learn how to view the market the way they should for optimal investing success – as a **full risk cycle**.

A **full risk cycle** is determined by the movement of the ***volatility index*** (VIX). One full cycle is measured beginning with an initial spike in measured volatility, followed by a decline in the index, and then finished off by another jump in volatility. These measures of up-and-down market movement can also be seen through the market trends that are described as 'bear' and 'bull' periods.

Currently (as of March 2017), investors are experiencing the ***second longest*** bull market in United States history.

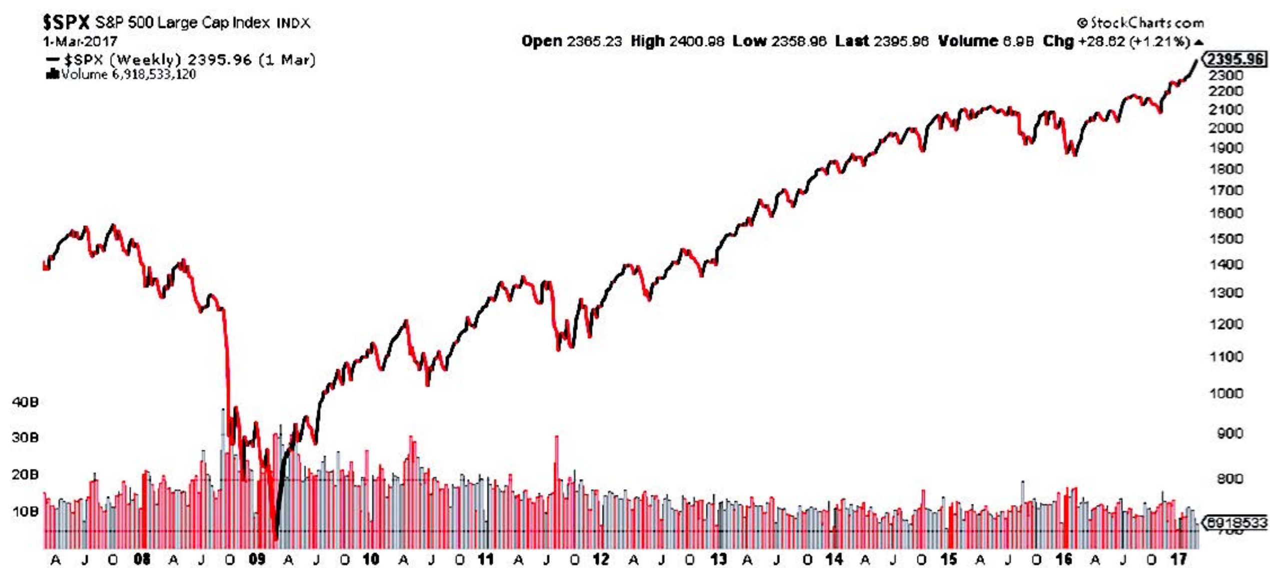

Figure 1: S&P 500 Large Cap Index measured from Jan. 2007-March 2017

This historic run marks a period of market performance that is typically viewed optimistically by investors. These defining aspects of a "bullish" environment cultivate a positive investor attitude, imply a strong or strengthening economy along with rising employment numbers. The term **bull market** is historically used after a ***20 percent rise*** in stock prices from the most recent lows. These bullish periods can last years (as the United States is currently experiencing) and is only considered over when there is another 20 percent decline observed. This decline marks the end of the bull market and the beginning of a new **bear market**.

A bear market is characterized by falling stock prices and investor pessimism. While these market trends are ***historically shorter*** than bull markets, the bearish periods are often exacerbated by investor anxiety. Falling prices trigger investors' anxiety, which in turn leads to increasing unease and ultimately selling. This perpetuates the cycle and extends the decline, resulting in a longer bear market.

> *While bull markets are typically longer, there is no way to gauge how long a market cycle – or a full risk cycle – will last.*

The cycle varies, depending on the particular market or holding you are tracking, and can only be measured through the ***four stages*** that the cycle will experience before restarting.

THE FOUR STAGES OF THE MARKET CYCLE

STAGE ONE: ACCUMULATION

Every cycle starts with an accumulation period, in which asset values begin to *consolidate* after experiencing a significant decline, marking the end of the previous market cycle. Once prices have declined to their lows, investors still perceive the market as bearish and are hesitant to buy – many have even just severed the last of their holdings in fear of suffering further losses. However, this allows for others to capitalize on the opportunity and acquire holdings at 'discounted' prices. As more investors begin to take advantage of this, market value and perception begins to take a positive turn.

STAGE TWO: MARK-UP

With the market beginning to see growth in prices and investor interest, the cycle enters the second stage, known as the mark-up phase. Due to the actions of investors in the accumulation stage who invested in stocks at or near the market lows, the markets start experiencing higher highs and higher lows. This in turn indicates to sideline investors that the time to rejoin the market has arrived. The uptrend in market performance encourages confidence amongst hesitant investors who still view the market as bearish, as they did in the accumulation stage. Witnessing the rising prices of stocks triggers demand from investors who do not want to miss out on the potential growth, resulting in additional market recovery or new highs.

STAGE THREE: DISTRIBUTION

As prices start to lose momentum and form a peak, the distribution phase of the cycle begins. Some investors, seeing that the market is no longer experiencing substantial growth, initiate liquidating their holdings in order to maximize their profits. Other investors, who still see hope for a bull market rally, will pick up these newly available assets, subsequently causing a period of higher volatility. With half of the buyers keeping one foot out the door, prices experience lower highs and lower lows, turning the tide on market sentiment.

STAGE FOUR: MARK-DOWN

The remaining investors slowly clue-in and see that what goes up must come down. Realizing that stock value is now suffering from a downtrend, those left in the market begin to panic and sell their assets, contributing to the further mark-down of prices. Some will still linger, holding on to their investments, leading them either to *capitulation* (panic selling that builds momentum, causing a dramatic decline in stock prices) or the position of a long-term investor. The depreciating prices begin to bottom-out, and investors who got out at the peak of the distribution phase will begin to buy the 'discounted' holdings, restarting the cycle with a new period of accumulation.

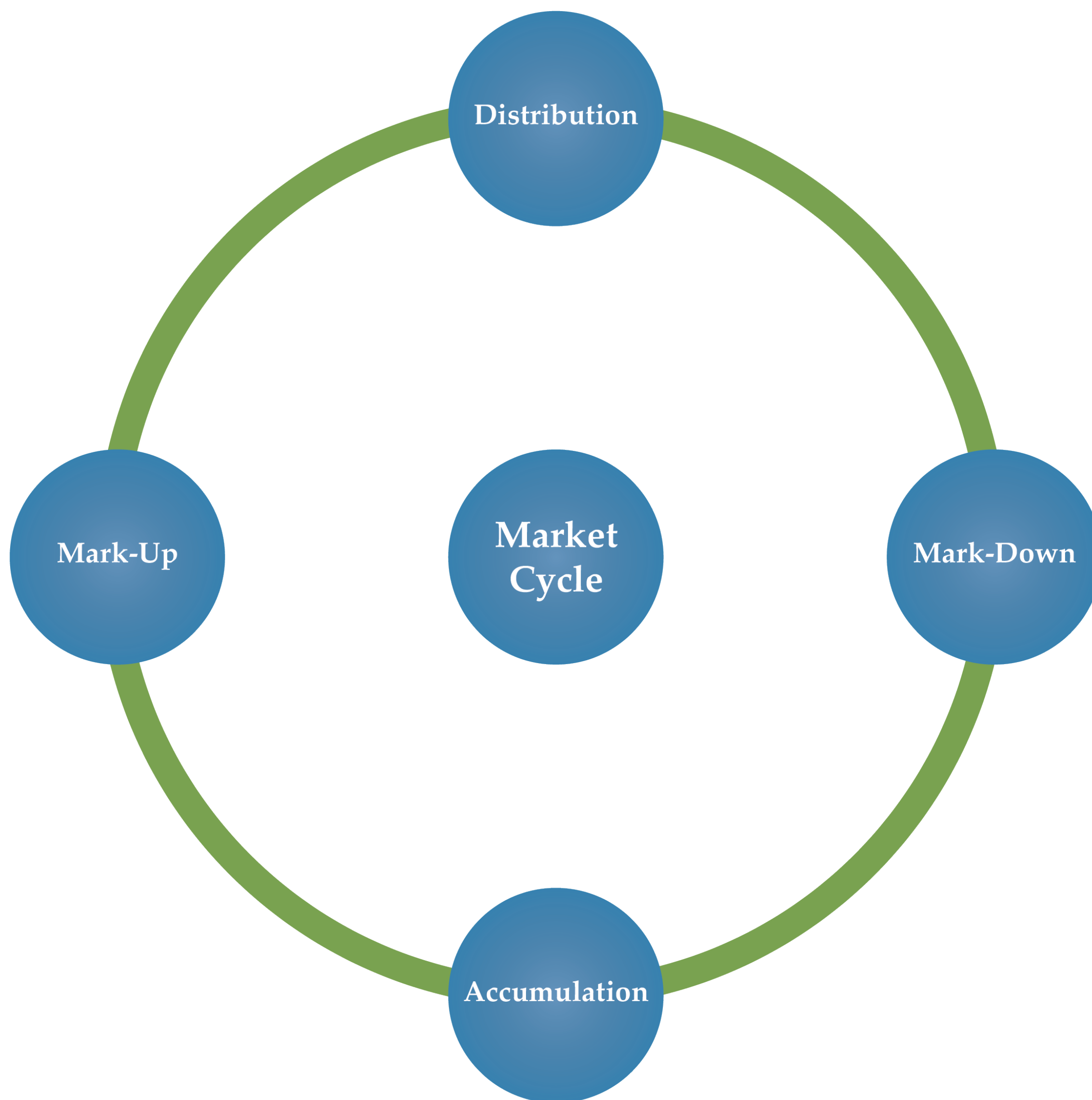

Figure 2: The four stages of the market cycle

The same economic stages that make up the market cycle, measured and marked by statistics, numbers and facts, reflect a parallel **emotional cycle** experienced by investors. This **investor cycle of emotion** can ***equally influence*** market performance. These behavioral responses sync with the components of the market cycle and simultaneously act as both a coping mechanism for investors and a catalyst for volatility.

THE FOUR STAGES OF THE INVESTOR EMOTION CYCLE

STAGE ONE: PESSIMISM

As the market cycle enters the accumulation stage after suffering from a decline in prices, many investors simultaneously enter the pessimistic phase of the emotional cycle. Investors believe the downtrend of market value is permanent and do not want to subject themselves to hope after having just lost their position within the market. They fear rejoining the market and experiencing further loss ***more than*** they fear missing out on the start of a new bull market.

STAGE TWO: OPTIMISM

Seeing that the market cycle is transitioning into a mark-up phase, where prices continue an uptrend momentum, investors begin to shrug off their leftover despondency from the last cycle. The market is once again viewed as an optimal opportunity, and investors excitedly begin to invest again as they regain confidence in the market's potential for returns.

STAGE THREE: EUPHORIA

Prices hit their highs, and while some investors are distributing their shares through selling, remaining investors celebrate their choice to participate in the uptrend and feel comfortable investing in additional assets. It appears as if the bull market will never end, and investors in the market will blindly push forward and position themselves at a point of high-risk to simply prolong the feeling of success.

STAGE FOUR: FEAR

While remaining investors are reveling in their euphoria, the market begins a somewhat volatile downtrend due to the mark-down of prices. As the decline continues, doubt begins to creep into investors' mindsets and eventually develops into full-blown panic. Not wanting to sell at a loss, many investors hold onto their assets for too long and set themselves up for a delayed inevitability – having to sell aggressively as a way to relieve themselves of coping with the fear and anxiety of their holding's performance, or lack thereof.

Each of these cycles coincides with and impacts market volatility. These up-and-down swings of market risk are influenced by many factors and influence both investor and portfolio behavior.

MARKET VOLATILITY

To better understand how investors profit from the markets, it's vital to understand what characteristics pose the greatest threat to your portfolio. By constantly tracking the swing of price movements, the VIX measures the amount of volatility facing the market and acts as an indicator as to what may happen next.

Movement in the VIX or ***'fear index'*** is typically caused by a number of variables. Factors such as energy supply and prices, geopolitical risks, economic performance and emerging market environments all play a role in the daily fluctuation of market volatility.

Investors may look at this measure of risk in the market and try to use it as a tool to anticipate what their next move should be. During times of higher volatility, short-term ***predictions*** often lead to mistakes that result in losses, making it nearly impossible to guess which way the market will trade. It's important to keep in mind that while market volatility increases portfolio risk, it is often investor-reaction to this index that is the prime source of risk to one's portfolio.

To help protect investors from market risk (and themselves), implementing a lower volatile portfolio strategy – incorporating long-term, lower risk holdings – can yield success. This type of approach may help preserve portfolios, minimize price swings and cultivate more consistent returns.

LOW VOLATILITY INVESTMENT STRATEGY

> *"Because the market is constantly changing and no two periods are identical – each varies in timespan, volatility and returns – it is imperative to adopt a strategy that may perform well in various conditions.*

Finance 101 familiarizes students with the theory that higher risk leads to higher returns, but research has shown that the concept is not entirely true. Dating all the way ***back to 1972***, the relationship between risk and return has been proven to be either disproportionate, flat or negative.

In a ***2009 study***, research found that stocks with higher idiosyncratic risk – factors that affect an asset, such as a stock and its underlying company, at the microeconomic level – typically have lower returns than stocks with lower idiosyncratic risk on both a national and global scale. The difference in average returns between the low volatility investments and high volatility investments was measured at 1.31 percent. While idiosyncratic risk is specific to a particular asset or industry, has little or no correlation with market risk and can be substantially mitigated or eliminated from a portfolio by using adequate diversification, further studies confirm that the low risk/high return relationship also applies on a larger scale.

A ***S&P Dow Jones Indices study*** (2012) stated that, "empirical evidence of numerous academic studies has illustrated that low-volatility or low-risk investing outperforms the broad market as well as high-risk strategies over a long-term investment horizon with much less realized volatility." The data then went on to state, "In the U.S. equity market, the S&P 500® Low Volatility Index returned 6.95% (10.75% standard deviation) and the MSCI USA Minimum Volatility Index returned 5.1% (12.32% standard deviation) on an annualized basis over the 10 years ended March 31, 2012, with 23% to 30% lower volatility than a market cap-weighted benchmark such as the S&P 500, which returned 4.12% (15.99% standard deviation)."

This difference in performance illustrates to investors the potential of low volatility investments. The possibility of owning a portfolio with lower risk and higher returns provides cause for serious due diligence and consideration. Not only have investors seen better returns, these portfolios typically offer greater downside protection, diversification and transparency throughout a complete market cycle. The best example of this would be low volatility investment performance in times of recent crises.

As established earlier, the unpredictability of the market can leave investors vulnerable to downturns, bubble bursts and bearishness. Since 1990, the United States has experienced two major crashes that resulted in major economic repercussions. In 2000, following the tech sector boom, the 'dotcom crash' saw trillions of dollars worth of stock value lost and the NASDAQ suffer a ***78 percent decline*** from peak to bottom. Later in the decade, over the span of 2007-2008, the combination of the housing market bust and credit crisis led to another major crash – this one resulting in both ***a 57 percent decline*** of the S&P 500 and a record-breaking 777.68 point drop in the Dow Jones Industrial Average in a single day. Both crashes were followed by recessions and greater stock market volatility, hurting investors and their portfolios.

However, in those turbulent times, portfolios that were composed of lower risk holdings were able to escape the heavy hits on returns. The S&P 500 Low Volatility Index shows that, in back-tested results, low-risk portfolios outperformed the S&P 500 throughout crashes and market uncertainty, on top of providing more capital protection and the ability to produce returns in negative markets.

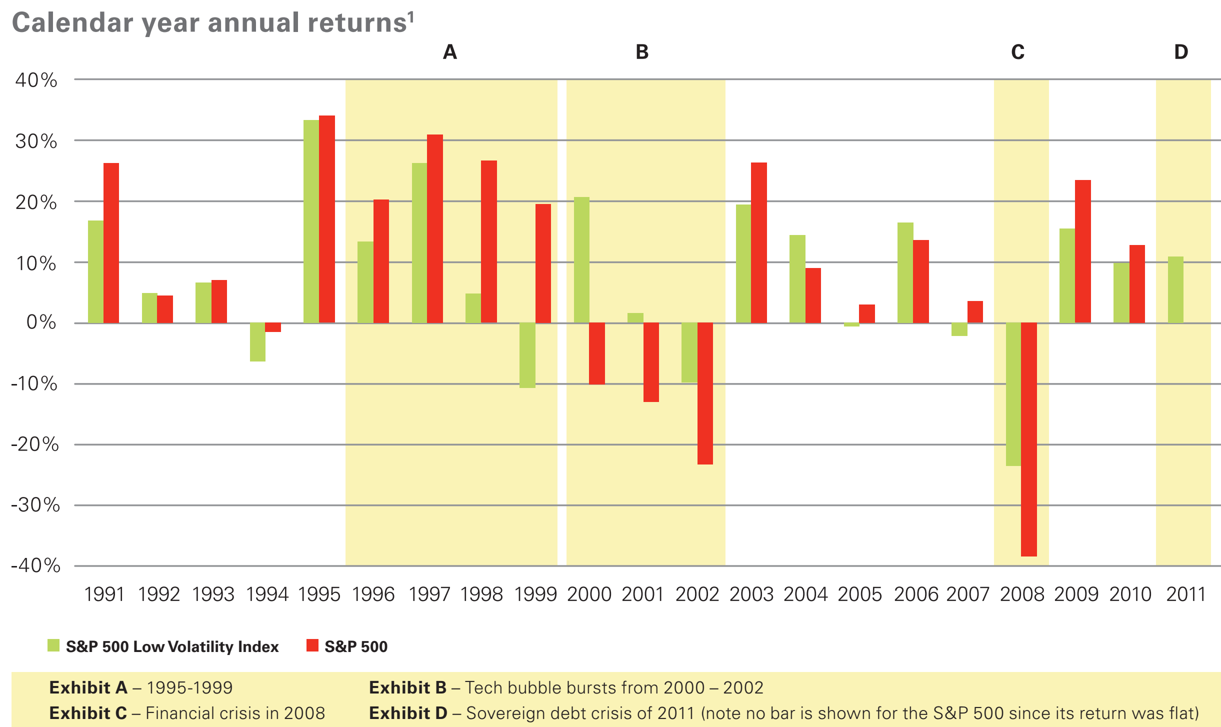

Figure 3: S&P 500 Low Volatility Index vs. S&P 500 -- calendar year annual returns. The inception date of the S&P 500 Low Volatility Index was April 20, 2011 at the market close. All information presented prior to the index inception date is back-tested. The back-tested calculations are based on the same methodology that was in effect when the index was officially launched.

Constructing a portfolio consisting of low-risk assets is achieved primarily by using either one of the principal low volatility strategies (minimum variance approach, rankings or factor based approach) or a mixture of the two.

MINIMUM VARIANCE APPROACH

Building a minimum variance portfolio (MVP) gives investors the lowest risk among all possible portfolios. Also known as the mean-variance optimized approach, the strategy was developed by Harry Markowitz in a ***1952 study***. The approach is incorporated into what is considered to be one of the most influential investment models – the **modern portfolio** theory.

The minimum variance approach emphasizes constructing a portfolio involving assets that have little to no correlation with one another. Lower correlation refers to how these holdings perform relative to one another. A minimum variance portfolio can be created by determining an investor's risk level and calculating the combination of assets that creates the portfolio with the lowest risk, as measured by its standard deviation, for a given return. This measure of risk/return is demonstrated on Markowitz's ***efficient frontier***, a graph displaying the greatest return for each risk level – a minimum variance portfolio will sit on the farthest left corner of the frontier because of the lower risk involved.

RANKINGS OR FACTOR BASED APPROACH

The second principal method of assembling a low volatility portfolio is the ***rankings or factor based approach***. A rankings-based construction strategy may use a variety of tactics or factors to determine how assets will be ranked. Some ranking strategies utilize beta or alpha factors to create a tiered portfolio, but the most commonly used ranking measure is based on universal volatility – the given 'universe' dependent on the decided market or sector. After determining the rankings based on the chosen criteria, a percentage of the least volatile holdings are taken, and a portfolio that is weighted by the measure of an asset's standard deviation, from lowest to highest, is created.

> *However, this one-dimensional analysis may leave an investor's portfolio vulnerable to other risk factors due to exposure bias and the failure to factor in other influences. In some cases, the rankings are not properly estimated – they do not take into consideration covariance between holdings and often neglect assets that lack available data.*

Regardless of the chosen approach, investors end up with a portfolio that tends to have a volatility reduction of ***25 to 35 percent*** and a beta between 0.7 and 0.8. Each strategy leaves investors with a portfolio defined by the characteristics of its lower risk assets.

PORTFOLIO CHARACTERISTICS & RISK FACTORS

In the creation and management of a de-risked, diverse low volatility portfolio, investors are able to identify and better understand the traits that are indicative of a low-risk asset. The characteristics of these holdings help determine their risk-level, and in turn they can be successfully navigated and managed through the low volatility approach.

Many investors strongly focus on just one attribute, but it is critical to factor in a variety of elements when considering building a portfolio. Some of the most ***important traits*** of a low-risk portfolio are the measure of volatility, the quality of the assets, growth, valuation and momentum.

Being able to identify these characteristics helps protect from the pervasive risk factors that threaten

to damage a low volatility portfolio's potential for capital preservation and returns. The risks are both quantitative and qualitative in measurement and impact different aspects of the holdings and portfolio.

One previously mentioned form of portfolio risk is beta. Beta calculates the volatility measurement of an asset's price movement in comparison to a representative market index. Beta observations can help display the trending volatility of a position in relation to the index. By carefully monitoring individual and aggregated assets, it is possible to see how price movements impact the entire portfolio.

Standard deviation of price volatility is another measure of risk that shows how widely returns vary over a certain period of time. Measuring standard deviation displays the price fluctuations of the holdings – higher standard deviation implies greater price fluctuation – and when combined with beta measurements, enables a more accurate read of risk and potential loss.

An important part of Markowitz's theory, another vital risk measurement, is **covariance**. Covariance shows how assets relate to one another within the portfolio and the impact that relationship has on both risk and the probability of loss. A higher measure of covariance suggests a portfolio lacking diversification. Covariance risk to a portfolio indicates that asset values will fall and rise at the same time, creating more risk exposure to loss.

Outside of quantitative risk factors, qualitative risks, such as **governance risk**, can affect portfolio performance. Governance risk is the risk associated with how a company's Board and "C" level management govern the organization in accordance with stated policies.

This threat requires more fundamental analysis and interpretation and is common among organizations with high turnover at key positions, such as the chairman of the board, CEO or CFO. The risk also becomes a key factor in times of mergers or acquisitions, where key positions are being eliminated or combined. Governance risk may change at any time based on the internal controls and decisions of the company.

Not only does governance risk threaten an organization and investors' portfolios, but **operational security risk** can also damage holdings. This risk is qualified as a hazard to a company's operations, and appears in the form of a threat to key operating personnel, plants and equipment, data breaches and more.

> "*Before incorporating an organization's stock into your portfolio, it is important to also weigh any legal risks facing the company. This particular risk is common among firms with outstanding Securities and Exchange Commission (SEC) investigations or a lack of transparency in regards to such investigations.*

With so many risks circling the market in addition to volatility, a low-risk investment strategy is a prudent way to maximize the upside potential of a portfolio while minimizing downside risk.

IN CONCLUSION

The unpredictability of the stock market may leave portfolios and investors vulnerable due to the numerous risk factors at play. However, by understanding that the market is cyclical in its movements and volatility, investors can position themselves in a way that reduces risk and retains returns, regardless of the market's fluctuations.

Adopting a low volatility investment strategy helps investors build portfolios with higher quality, lower risk assets that allow them to participate in and benefit from bull markets without sacrificing safety during drawdowns.

It's vital that an investor truly understands what they're holding and the impact of those assets within their portfolio. Bull markets do not last forever – will you be protected during the next downturn? It may be time to reevaluate your portfolio.

To learn more about low volatility investment strategies, contact Summit Global Investments.

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