

THE INTRODUCTORY GUIDE TO

Conservative Investing

Winning
by losing less

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Foreword

It gives us great pleasure to present you with this 'Guide to Conservative Investing', which highlights fundamental insights on low-risk investing, otherwise known as low volatility investing. The publication also sheds light on the Robeco Conservative Equities strategy, which offers clients a low-risk solution through a multi-factor defensive approach.

According to theory, long-term risk and return go hand in hand, meaning higher systematic risk results in higher returns. However, in practice we have seen that this relationship is actually flat or even negative and probably results in the most fundamental and robust anomaly in finance.

Defensive low-risk strategies are designed to exploit this premium and play an increasingly important role in equity portfolios: by lowering the overall portfolio risk, by further diversifying the equity portfolio, or by offering a defensive approach to dividend investing.

In this guide, we first set the scene by outlining why low-risk investing works by touching on our research on and insights into the low volatility effect – one of the key risk factors in the Conservative Equities model – and how it has gained prominence over the years.

With regards to the Conservative Equities strategy, we highlight its solid foundation based on academic research and its careful balancing of proprietary risk and return factors. More specifically, we explore how combining multiple risk dimensions leads to robust downside protection. Simultaneously, we outline how the inclusion of return factors enhances its upside potential, especially compared to generic low volatility strategies.

Investors in the Conservative Equities strategy also benefit from our proactive management and ever-evolving intellectual property. To this end, we showcase how our dedicated investment team uses research to continuously enhance the strategy, ensures optimal implementation, and provides human oversight to further control costs and risks.

In the final section of this guide, we also illustrate how a low-risk approach has generally exhibited resilience in periods that coincided with recession, expansion, peace, war, deflation or inflation, and how it has the potential to cushion macroeconomic risks. Moreover, we highlight how the Conservative Equities strategy can be used in the context of an overall equity portfolio to enhance dividends and reduce risk.

All in all, the Conservative Equities strategy not only aims for lower risk, but also higher compounded returns than the market over a full cycle. Since its inception in 2006, we have seen it deliver returns ahead of the market with substantially lower downside risk in terms of volatility.

It is our hope that this guide will provide you with insights on the benefits of the Conservative Equities strategy and how it can play a part in helping you to achieve your long-term investment goals.



Pim van Vliet

Head of Conservative Equities



1. Low Volatility investing: from academic theory to practical implementation

The Robeco Conservative Equities strategy is designed to capture the low-risk premium, which is one of the oldest anomalies in equity research. The concept and design of the strategy is based on research that documents how taking on more risk is not necessarily rewarded in the long run. This includes several studies on the low volatility effect.

Interestingly, this factor remains largely ignored by academics, despite it being supported by abundant empirical evidence. However, it has remained strong post-publication and we have seen its popularity steadily grow among investors. In the next section, we delve deeper into the low volatility anomaly before circling back to the Conservative Equities strategy which incorporates multiple risk (including low volatility) and return factors in its approach.

1.1. Historical foundations of Low Volatility investing

According to the theory, higher risk should, on average, lead to higher returns. To this end, the capital asset pricing model (CAPM) has long been the centerpiece used to explain the relationship between risk and return. However, a seminal academic paper¹ by Haugen and Heins – published back in the 1970s – demonstrated that less volatile stock portfolios generated higher returns than their riskier counterparts in the US market for the period from February 1926 to December 1971.

Then, in 2007, a Robeco publication² played a key role in establishing the low volatility effect, documenting similar findings for global and regional (Europe, Japan and US) markets over the period from January 1986 to January 2006. This anomaly was also observed in subsequent Robeco research in emerging markets³ and Chinese A-share⁴ stock markets.

These studies effectively demonstrated how low volatility investing defies the logic of the efficient market hypothesis. Contrary to popular belief, riskier investments do not necessarily translate into higher returns. Rather paradoxically, more volatile stocks tend to yield lower risk-adjusted returns in the long run, while their less volatile peers typically deliver higher risk-adjusted long-term performance.

Based on a novel US stock database, Robeco researchers also showcased in a study⁵ the persistent nature of the low volatility effect over a period of more than 150 years. As shown in Figure 1, the relationship between risk and return is initially marginally positive before becoming negative as volatility increases. In general, this informs us that taking on more risk on the stock market is not necessarily rewarded in the long run.

But pure low volatility portfolios are sometimes beset by high valuations and weak momentum. So to get an indication of how a more balanced defensive strategy benefiting from multiple alpha signals (such as net payout yields and price momentum) would have performed over this period, the researchers created a portfolio based on the Conservative Formula⁶ – which also serves as a rough proxy for the Conservative Equities strategy.

“Low risk is the most fundamental and robust anomaly in finance



David Blitz
Chief Researcher

1. Haugen, R. A., and Heins, J. A., December 1975, “Risk and the rate of return on financial assets: some old wine in new bottles”, Journal of Financial and Quantitative Analysis.

2. Blitz, D., and van Vliet, P., October 2007, “The volatility effect: lower risk without lower return”, Journal of Portfolio Management.

3. Blitz, D., Pang, J., and van Vliet, P., September 2013, “The volatility effect in emerging markets”, Emerging Markets Review.

4. Blitz, D., Hanauer, M.X., and van Vliet, P., April 2021, “The volatility effect in China”, Journal of Asset Management.

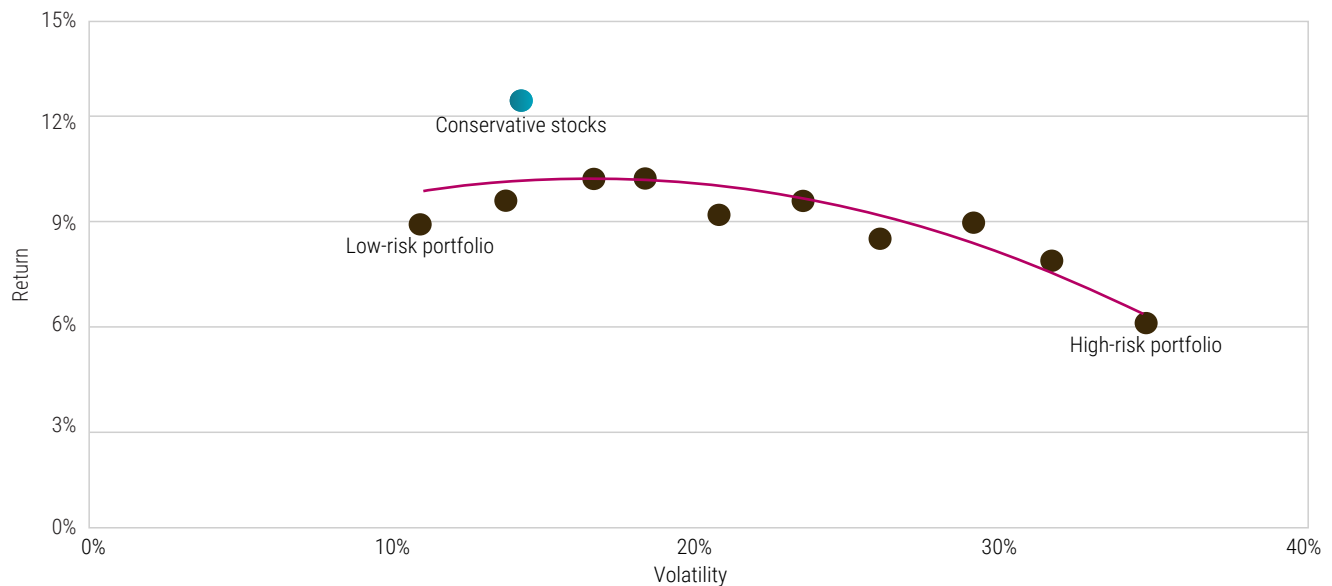
5. Baltussen, G., van Vliet, B. P., and van Vliet, P., May 2022, “150+ years of conservative investing: winning by losing less”, Robeco article.

6. Blitz, D., and van Vliet, P., August 2018, “The conservative formula: quantitative investing made easy”, Journal of Portfolio Management.

The Conservative Formula is based on a few rules:

- From the largest 1,000 stocks, 500 with the lowest three-year volatility are selected.
- From this subset, 100 stocks with the best net-payout-yield and price momentum are selected.
- The resulting equally-weighted portfolio is then rebalanced on a quarterly basis.

Figure 1 | Backtested portfolios sorted on volatility, January 1866 to December 2021



Source: Baltussen, G., van Vliet, B. P., and van Vliet, P., May 2022, "150+ years of conservative investing: winning by losing less", Robeco article. Performance in USD gross of fees and costs. For illustrative purposes only.

As outlined, the low volatility effect has been empirically proven to be one of the most persistent and puzzling market anomalies. And, better yet, it can be significantly enhanced with the inclusion of additional alpha factors, creating a portfolio of conservative stocks as illustrated by more than 150 years of data in Figure 1.

1.2. The Low Volatility effect is enduring

In a 2020 Robeco research paper,⁷ the authors outlined the main explanations behind the low volatility effect. Interestingly, they established how most of the drivers are actually premised on rational investor behavior. This is in contrast to other factor premiums that are driven largely by investor behavioral biases.

7. Blitz, D., van Vliet, P., and Baltussen, G., January 2020, "The volatility effect revisited", Journal of Portfolio Management.

Below we list a few reasons why we believe investors are biased towards high volatility stocks, which causes them to become overpriced while their low volatility counterparts are neglected in the process and become underpriced.

One of the key rationales is that relative returns often supersede absolute returns as a yardstick for performance or manager skill. Low volatility investing can therefore be unpopular due to how markedly different low volatility portfolios can look when compared to benchmarks. This results in higher tracking errors (relative risk) that are not acceptable for some investors, especially when short-term underperformance in up markets is a possibility.

Leverage constraints also contribute to the low volatility effect. Based on their risk appetite, investors can potentially enhance their returns by leveraging a low volatility portfolio. This allows them to increase their return potential by raising the volatility of their portfolios to levels similar to the market, without taking on additional risk thereafter.

But due to leverage (or borrowing) constraints enforced by mandate restrictions or regulations, they tend to overweight riskier investments in search of higher returns, underweighting their safer counterparts as a result.

Another reason is that mutual funds with the best near-term performance typically attract the largest inflows from investors. This measure is usually how investment professionals are incentivized, giving rise to so-called agency issues.

In this scenario, managers and analysts typically seek to maximize the value of their option-like contracts by targeting high portfolio returns, which we believe makes higher-risk stocks more attractive to them. Consequently, they may be willing to overpay for 'lottery ticket' stocks that outperform in up markets, which tend to be highly volatile in nature, and underpay for those that outperform in down markets, which typically have low volatility characteristics.

Thus, the desire to keep up with the markets against which portfolios are measured incentivizes investments in high volatility stocks. But to effectively harvest the low volatility premium, we believe an investor has to counterintuitively endure a bit of pain (typically lag during bull markets) to benefit from the investment style (market-like long-term returns with lower downside risk).

Going forward, we expect conservative investing to continue to work for several reasons. Firstly, benchmarking remains universally present and most professional investors still operate in a relative performance environment. Secondly, the regulatory and practical obstacles that prevent investors from leveraging up a portfolio of low volatility stocks have not been removed or relaxed. Thirdly, investors are driven by emotions such as fear and greed, while also being enamored by exciting narratives on stocks.

Against this backdrop, investors who follow a research-driven approach and are not constrained by benchmarks, regulators or emotions have a clear edge and can benefit from exploiting this anomaly in the years ahead.

“ The best offense is a good defense and this principle lies at the heart of conservative investing



Arnoud Klep
Portfolio Manager

FOMO and Einstein

The benefits of maintaining a long-term mindset when investing have long been touted. This includes avoiding emotional biases by sticking to a plan or harnessing the power of compounding. As the old adage goes: it is time in the market, not timing the market. Or in the words of Albert Einstein: “Compound interest is the eighth wonder of the world. He who understands it, earns it. He who doesn't, pays it”.

But in reality, numerous market participants experience the long term as a series of short terms. This is often driven by emotions such as greed and fear. It is in this context that the focus on short-term (relative) performance can often trump long-term investor goals.

The fear of missing out on bull markets is an example of how short-termism afflicts investors. This phenomenon can encourage exuberant investor behavior during risk-on environments. It can also potentially expose market participants to elevated downside risk when the tide turns. This is why adopting a long-term investment horizon is a prudent approach. This is because this mindset takes into account how a portfolio will perform across various market environments in a stock market cycle.

1.3. How Low Volatility has been embraced over time

Low volatility investing began taking shape in the mid-2000s as a practitioner-driven innovation. It was a little-known concept when we started practically applying it back in 2006. At the time, many investors could not discern its purpose, especially as they saw little distinction between it and value. But as early proponents, we saw it as a strategy that had the potential to deliver equity-like long-term returns with lower downside risk.

MSCI was the first index provider to offer a minimum volatility solution in 2008, lending credence to the approach. This also provided a reference that investors could use to compare active managers. But the watershed moment arrived with the 2008-2009 global financial crisis as the style provided risk reduction amid the broad-based sell-off. This period also distinguished low volatility from value as the latter failed to exhibit the same defensive features. This was evident again in 2011, when low volatility delivered positive returns while markets sold off due to European debt crisis concerns.

This ushered in a fruitful period for the style and low volatility became a viable option for institutional investors looking for alternatives to asset classes or styles that struggled in market drawdowns. As a result, numerous exchange-traded funds (ETFs) and actively managed solutions seeking to exploit the anomaly have since come to market, while the style has also been applied across different regions such as China, emerging markets, Europe and the US.

Over time, the style has garnered the attention of investment consultants. In a 2018 publication,⁸ Mercer outlined how it has long recommended an allocation to defensive equities such as low volatility strategies as part of a diversified equity portfolio. Mercer concluded that such approaches could potentially provide downside protection and improve risk-adjusted returns (primarily by lowering risk).

8. Mercer, July 2018, "Low volatility equities: time to leave the party?", Mercer publication.

In its 2022 analysis⁹ of various defensive equity strategies, bfinance outlined how low volatility sits at the most defensive end of the spectrum and seeks explicit risk reduction through targeting a lower volatility profile than the benchmark. The style was earmarked by bfinance as being suitable for investors looking to significantly reduce the volatility of returns, while also highlighting how it has consistently held up well in recent market downturns.

9. bfinance, August 2022, "Defensive equity and market downturns: is this time different?", bfinance publication.

Low volatility is now an established and well-understood concept, there are various ways to get exposure to this factor that could ultimately lead to differing outcomes. While differences might be expected across actively managed strategies, this is also evident even among ETFs, as index providers make subjective choices when building and rebalancing their respective indices.

2. Taking it to the next level: from Low Volatility to Conservative Equities



Investors might opt for generic single factor solutions in their bid to benefit from the low volatility anomaly such as ETFs offered by index providers. That said, there are a few design and implementation concerns worth considering when mulling over generic low volatility solutions. We have designed the Conservative Equities strategy to address these issues and offer clients a better and more balanced defensive equity solution. We show the main differences between these approaches in Table 1.

Table 1 | Pitting the Conservative Equities strategy against a generic Low Volatility approach

	Market Index	Low Volatility	Conservative Equities
Has exposure to equity premium	✓	✓	✓
Designed to reduce losses in down markets		✓	✓
Incorporates forward-looking distress risk factors			✓
Aims for high and stable dividend			✓
Includes multiple return factors			✓
Integrates sustainability			✓
Entails human oversight to reduce costs and risks			✓
Investment objective			
Aim (expected outcome)	Obtain market-like returns	Minimize expected risk	Maximize expected return/risk

Source: Robeco

All in all, investors need to be cognizant of the implications of their choice when selecting low volatility ETFs. But over and above that, they need to be aware of the main shortcomings of these generic strategies, as discussed below.

2.1 Reducing losses in down markets

Most investor goals revolve around growing capital, generating income and avoiding loss. Focusing on capital preservation is important as large financial losses require a disproportionate magnitude of capital growth to recover from. For example, a loss of 50% requires a gain of 100% to break-even. This asymmetry is a key reason why capital protection is important for stable, long-term capital growth.

As illustrated in the left-hand side chart in Figure 2, the MSCI Minimum Volatility Index and Conservative Equities strategy have provided some downside protection during sell-offs since the inception of the latter. In these instances, the defensive approaches have declined by around 6% while the market has slid about 13% on average.

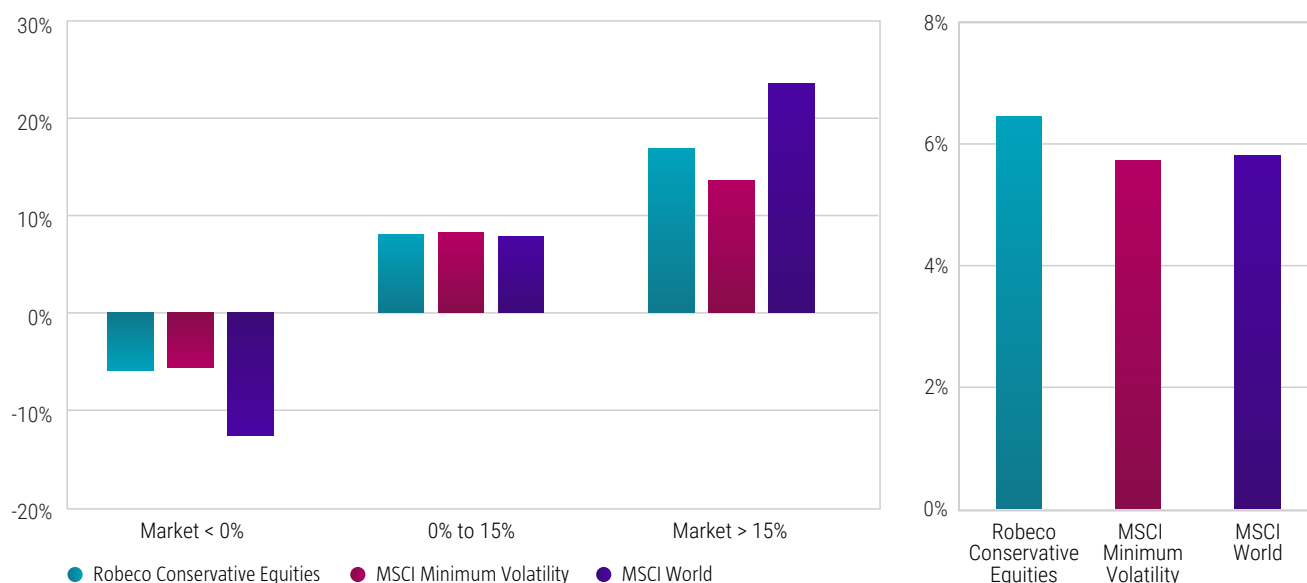
The right-hand side chart demonstrates how the Conservative Equities strategy wins by losing less in the long run as it has delivered higher and more stable compounded returns than the market over a full market cycle. This is because it is designed to achieve its long-term outperformance by preserving capital in down markets and participating meaningfully in up markets.

“Boring is beautiful in equity investing as we believe a slow and steady approach wins the marathon”



Jan Sytze Mosselaar
Portfolio Manager

Figure 2 | Losing less in down markets with good up-capture leads to better compounded returns, October 2006 to December 2022



Source: Robeco Performance Measurement and MSCI data as at 31 December 2022. The Conservative Equities strategy is based on the net asset value of the representative account Robeco Institutional Conservative Equities strategy since inception (October 2006), net of fees. MSCI World Index is a broad global equity index that represents developed markets. The MSCI Minimum Volatility Index is designed to serve as a transparent benchmark for minimum variance (or managed volatility) equity strategies. The strategy and its reference indices are unhedged for currency risk as at 30 June 2012. In reality, costs (such as management fees, transaction and other costs) are charged. These have a negative effect on the returns shown. The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

That said, it is important to note that while defensive strategies typically reduce losses in sell-off events, there are times when they do lag in bear markets. For example, we saw this play out during the early phases of the Covid pandemic in 2020. But in the long run, they typically show their true strength as the unexpected short-term periods of underperformance in down markets are effectively canceled out by the downside protection achieved in most bear markets.

2.2 Incorporating forward-looking distress variables

Similar to low volatility approaches, the Conservative Equities strategy uses a combination of statistical risk factors that we believe have strong predictive power for future risk. Still, these measures are backward-looking and ignore some important changing company characteristics which predict distress.

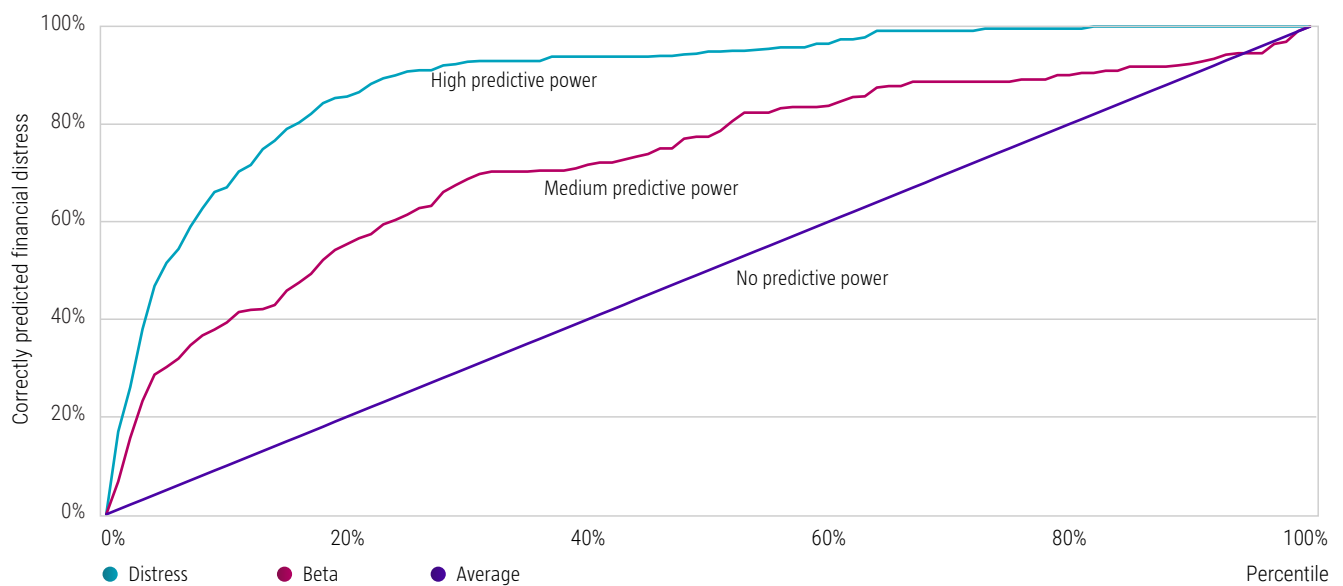
Specifically, volatility and beta measures are used in our efforts to exploit risk-seeking behavior from market participants. To complement these historical statistical risk measures, we also consider distress factors such as distance-to-default and credit spreads, while additionally taking into account a proprietary machine learning algorithm¹⁰ that forecasts stock price crash risk. This is important as the negative impacts of changing characteristics such as increased leverage are not picked up by volatility and beta.

Based on our research¹¹ and extensive testing in 2012, we documented that our distress risk model – that looks at balance sheet leverage and other forward-looking financial information related to a firm's corporate structure – exhibits strong predictive power and is a useful indicator for future financial distress, as indicated in Figure 3.

10. Swinkels, L., and Hoogteijling, T., June 2022, "Forecasting stock crash risk with machine learning", Robeco white paper.

11. Source: Huij, J., van Vliet, P., Zhou, W., and de Groot, W., February 2012, "How distress risk improves low volatility strategies: lessons learned since 2006", Robeco research paper.

Figure 3 | Forward-looking distress measures are better suited to predict tail risk, September 1991 to September 2009



Source: Huij, J., van Vliet, P., Zhou, W., and de Groot, W., February 2012, "How distress risk improves low volatility strategies: lessons learned since 2006", Robeco research paper.

Since our findings ten years ago, we have enhanced our distance-to-default variable. As a result it now takes into account business momentum and debt maturity when defining leverage, which improves the predictive power of the signal. As such, companies with longer maturities are favored as these are considered less risky in terms of liquidity and refinancing risk. Alongside this, credit spreads and our proprietary machine learning algorithm have been included because they work well as additional financial distress risk indicators, given their forward-looking nature.

2.3 Including value, quality, momentum and revisions variables

Low volatility indices can have a negative exposure to other proven factors like momentum, quality and value. Our research¹² shows that going against these proven factors can substantially hurt the performance of any low-risk strategy. As such, the Conservative Equities stock-ranking model has been designed to enable us to explicitly include any variables that we believe will add value.

12. Blitz, D., Hanauer, M. X., and van Vliet, P., February 2015, "Beauty and the beast of low volatility investing", Robeco article.

In addition to a wide range of low-risk variables such as beta, distress risk and volatility, numerous return factors such as value, quality, momentum and revisions are included in our stock-ranking model. By contrast, generic low volatility ETFs are typically solely focused on reducing volatility and tend to ignore everything else, unless other explicit constraints are taken into consideration.

To attain the end-goal of constructing a balanced defensive solution that provides downside protection in bear markets and broadly keeps pace in bull markets, all the decisions are based on this stock-ranking model which includes return factors to attain meaningful up-capture. The outcome is therefore fully driven by bottom-up stock selection.

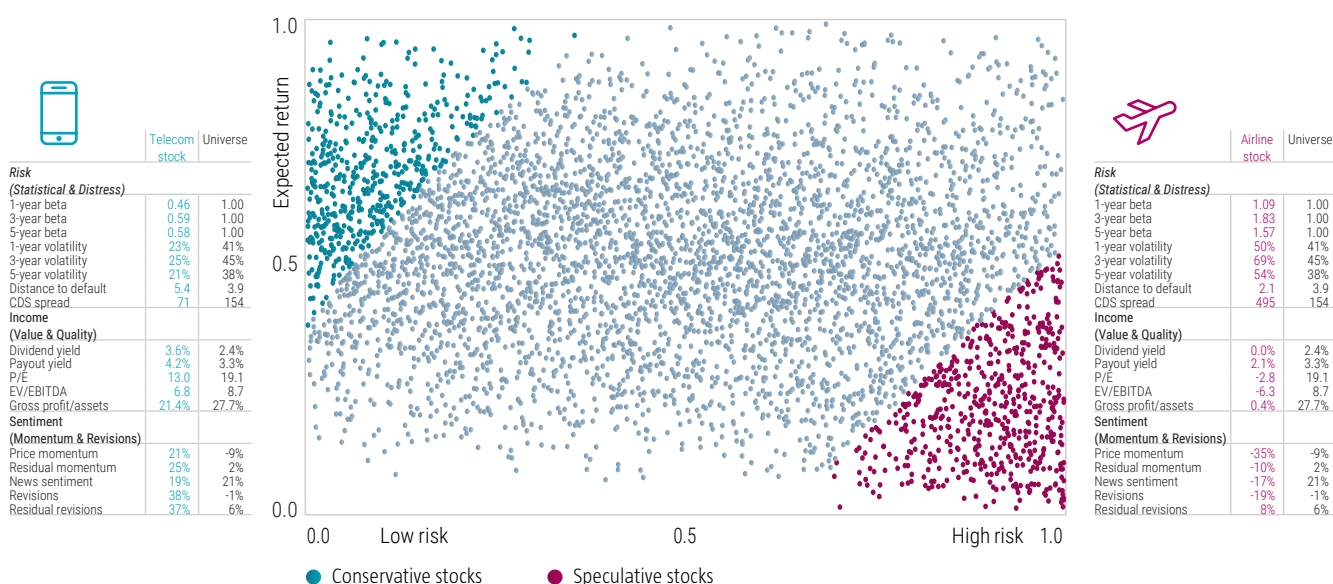
The starting point is a broad market index pertaining to the relevant region. Dual listings and stocks with data issues are then excluded and a liquidity screen based on a minimum average trading volume and minimum market cap is applied. This results in a total global investable universe of around 5,000 stocks for global markets. The stock ranking focuses on upside potential as low-risk strategies can be plagued by

high valuations and weak momentum. These elements can result in negative exposures to established equity factors, potentially dampening returns.

As such, several customized return factors are incorporated to mitigate this threat. Healthy income features are targeted through the use of value and quality variables such as dividend yields, profitability and net share buybacks. Moreover, positive sentiment is captured by assessing characteristics such as residual momentum, analyst revisions and news sentiment.

All the stocks in the investable universe are then ranked from most to least attractive by combining their scores on the different risk and return factors. The companies that are most likely to make it into the portfolio typically exhibit a lower risk profile, reduced market risk, lower correlations with the market, solid dividends, sound profitability, relatively enticing valuations, positive momentum, and favorable underlying developments of fundamentals such as earnings. These would be stocks found in the top left corner of Figure 4 as illustrated by the blue dots.

Figure 4 | Approach for identifying the most attractive low-risk stocks



Source: Robeco. Telecommunication services and airline stock examples are based on data as at 30 September 2022. For illustrative purposes only.

2.4 Integrating sustainability

Investing in a sustainable future by safeguarding economic, environmental and social assets is crucial for a healthy global economy and the goal of generating attractive returns in the future. The focus in the investment industry is, therefore, shifting from just creating wealth to creating wealth and well-being.

Quantitative strategies are especially suitable for this. Their rules-based nature makes it relatively easy to integrate additional quantifiable sustainability variables in the security selection and portfolio construction processes.

For the Conservative Equities strategy, a multi-dimensional sustainability profile is targeted to mitigate against unrewarded sustainability risks:

- Companies with potentially harmful business practices or products are precluded from the investable universe in line with Robeco's exclusion policy.¹³
- The portfolio is constructed so that it has higher exposure to companies that contribute positively to the SDGs than the market.

13. Robeco, October 2022, "Exclusion policy Robeco", Robeco publication.

- The portfolio is built so that it reflects a lower ESG risk profile and environmental footprint (carbon, waste and water) compared to the market.
- Voting and engagement duties are carried out on behalf of clients.

For the SDG & Climate Conservative Equities strategy, more specific sustainable themes are targeted and stricter levels of sustainability integration are applied:

- Companies with potentially harmful business practices or products are precluded from the investable universe in line with Robeco's exclusion policy and a broader values-based exclusion list.
- Companies that contribute negatively to the SDGs are omitted from the investable universe.
- An explicit ESG risk profile at least 10% lower than the market is aimed at.
- Waste and water footprints at least 20% lower than the market are explicitly targeted.
- A 50% lower carbon footprint than the market is explicitly committed to and a 10% year-on-year decarbonization path is followed as the strategy is Paris aligned.
- Voting and engagement duties are carried out on behalf of clients.

It is worth noting that the extent to which most generic low volatility ETFs integrate sustainability is quite limited, meaning that they might fail to address client sustainability preferences. Moreover, we believe above-average exposure to 'brown' companies and a higher ESG risk profile can materialize into unrewarded sustainability risks.

2.5 Dedicated investment team oversees end-to-end process

Sophisticated portfolio construction

The stock-selection process is based entirely on the ranking generated by the stock-ranking model. Through the application of a proprietary portfolio construction algorithm, the ranking results are efficiently implemented in an effort to create an optimal portfolio from a risk-return perspective as depicted in Figure 5.

Figure 5 | Reducing risk and enhancing returns



Source: Robeco. For illustrative purposes only.

The algorithm obtains maximum exposure to top-ranked stocks given research-based concentration limits, while also taking transaction costs into account using a proprietary transaction cost model. Region, country, sector, industry group and single stock weights are all subjected to concentration limits to ensure sufficient diversification.

Overall, the algorithm ensures that the portfolio characteristics are exactly as intended, leading to easily explainable portfolio positions and transactions as well as low turnover. The outcome is a high-conviction portfolio that consists of approximately 150 (European and US Conservative Equities) or 200 (Global and Emerging Conservative Equities) attractive, low-risk stocks.

Optimal implementation

In our approach, we prefer to focus on a broad investment universe. This is crucial as we do not just look for stocks that are low risk alone, but instead seek those that score well on return factors like momentum, quality and value according to our model. As such, we use around 30 different variables in our stock selection process. Therefore, a larger universe allows us to be more selective. Moreover, our research¹⁴ reveals that larger breadth enhances the risk-return profile of factor strategies.

The Conservative Equities strategy follows a proprietary investment process and details around its rebalancing are not publicly known. By contrast, low-risk ETFs are prone to index arbitrage given that the information related to their methodology, holdings and rebalancing dates is publicly available. Indeed, our research¹⁵ confirms that index rebalance announcements do influence subsequent stock price moves.

Robeco is also not restricted to following any index, rebalancing frequency or trading program. Generally, we trade via a barbell strategy. On the one hand, we follow a thin trading approach via small trades – with a low participation rate and low market impact in a liquidity-seeking manner – and use automatized algorithmic trading. On the other hand, we continuously scan the market for cheap block trading opportunities by providing liquidity to counterparties.

This process requires human oversight which is carried out by our traders and portfolio managers. Put differently, man and machine are combined to achieve the optimal trading results, instead of blindly implementing the outcome of the model through a standardized trading program.

Conversely, low volatility indices rebalance too infrequently. There are two drawbacks from this.¹⁶ Firstly, new information is ignored between index reviews. Secondly, index changes have to be processed in a short period of time. This can be a challenging task for traders as ETFs do not make use of the continuous market liquidity throughout the year.

Furthermore, we use cashflows to optimize portfolios for the Conservative Equities strategy by following the ranking scores based on the latest market information. Thus, inflows are used to invest in the top-ranked stocks, while outflows are used to divest from the least attractive stocks. This approach substantially reduces the turnover of portfolios which deal with frequent cashflows.

For systematic strategies that follow an index (or a model portfolio), however, cash inflows and outflows have to be invested according to the composition of an index at any point in time. Given that these indices rebalance infrequently, they can suffer from unnecessary turnover. For example, if a stock is no longer attractive and will likely be removed at the next rebalance, the index manager will still have to buy it if inflows occur before the next rebalance.

“ The journey of translating academic insights into alpha has been fascinating and fulfilling



Pim van Vliet

Head of Conservative Equities

14. Blitz, D., Lansdorp, S., Roscovan, V., and Vidojevic, M., April 2015, “Factor strategies need breadth”, Robeco article; and van Vliet, P., April 2020, “Small tilts matter for low volatility investors”, Robeco article.

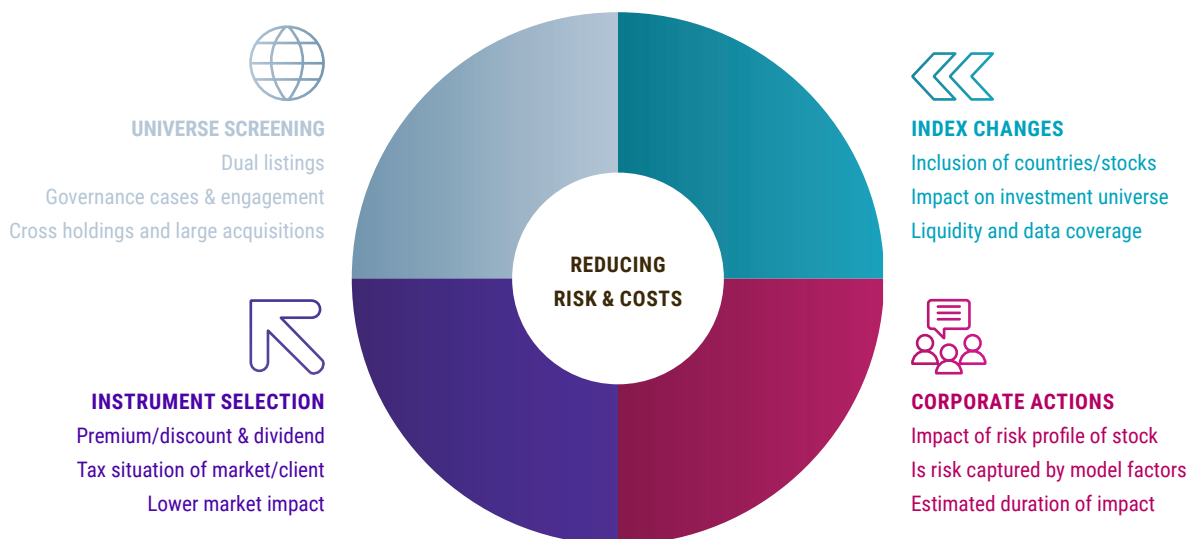
15. Huij, J., and Kyosev, G., October 2016, “Price response to factor index additions and deletions”, SSRN working paper.

16. Blitz, D., and Marchesini, T., July 2019, “The capacity of factor strategies”, Journal of Portfolio Management.

Sound human oversight

In addition to optimal implementation, the Conservative Equities portfolio managers provide oversight to reduce risks that are not systematically captured by the stock selection model and to lower costs by avoiding unnecessary transactions. These portfolio management decisions can be categorized into universe screening, index changes, instrument selection and corporate actions, as depicted in Figure 6.

Figure 6 | Reducing risk and managing conditions not captured by model



Source: Robeco. For illustrative purposes only.

The portfolio managers perform universe screening to prevent unreliable stock rankings that could arise due to events such as large acquisitions, which can result in significant changes in the corporate structure of the acquiring company. They also do this exercise to avoid double exposure to the same underlying firms with dual-listings or those that have a large holding in another company.

The portfolio management team anticipates index changes to prevent transactions in stocks that are expected to be affected by periodical index reviews. For example, this includes forgoing the immediate purchase of a stock that will likely face price pressure when it is deleted from an index.

In terms of optimal instrument selection, the portfolio managers take into account premiums and discounts of local shares versus American depositary receipts (ADRs) as well as the tax situations of various markets and clients, while also displaying a preference for instruments that have a lower market impact when traded.

As the investable universes are very large, many corporate actions and special situations can occur that require the attention of a portfolio management team. This includes verifying the reliability of stock rankings when corporate actions such as mergers or acquisitions take place.

Proactive enhancement of investment process

Investors in the Conservative Equities strategy can benefit from proactive management, given that it is based on ever-evolving intellectual property. Indeed, the portfolio management and research teams continuously look for ways to improve the investment process. Table 2 illustrates some of the key enhancements that have taken place since the inception of the strategy in 2006.

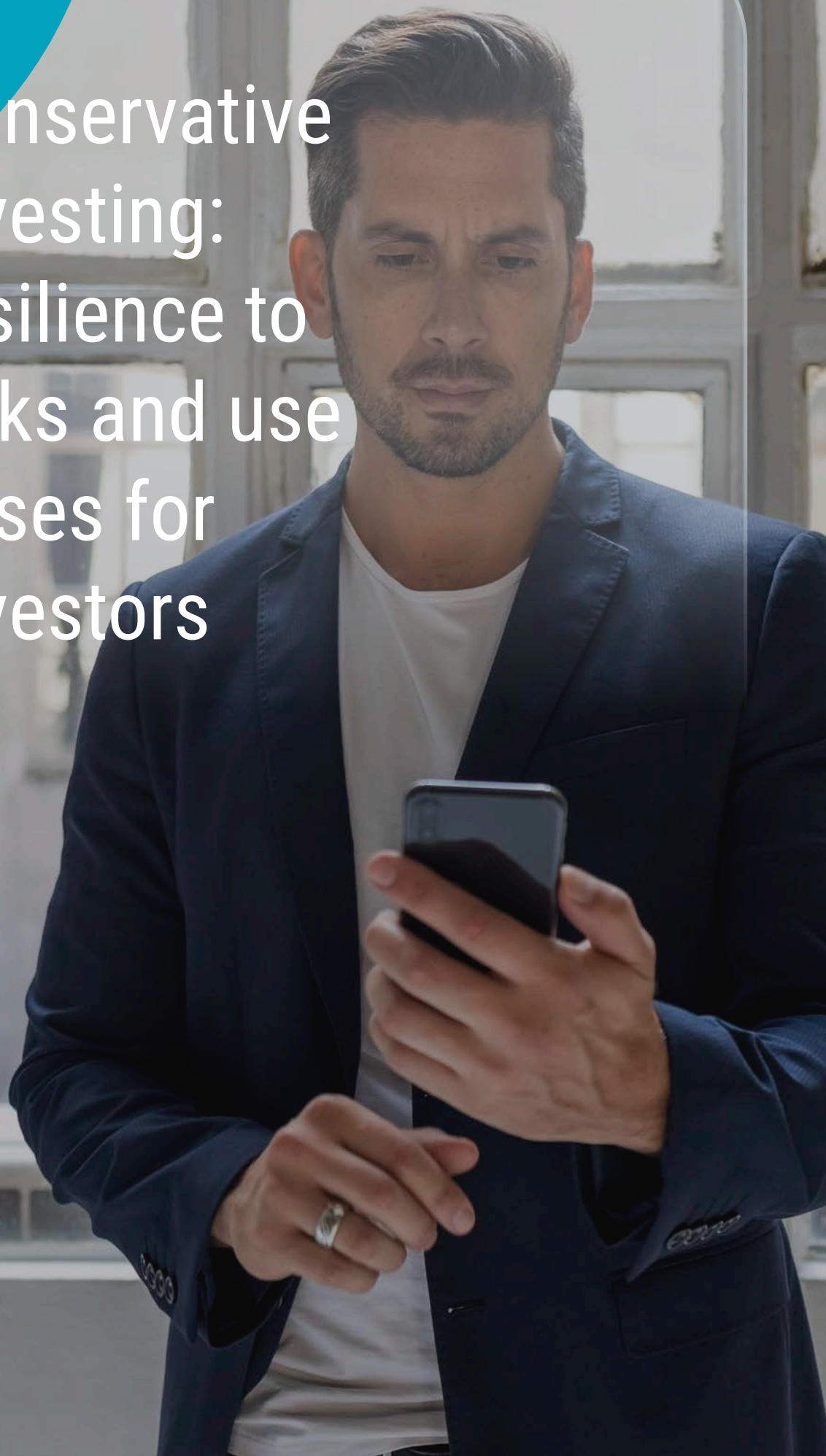
Table 2 | Key enhancements since the inception of the Conservative Equities strategy in 2006

Date	Enhancement
2009	Redefined limits for country/sector/industry group <ul style="list-style-type: none">- Reduce complexity of concentration limits
2010-2020	Gradually integrated ESG and carbon footprint factors in portfolio construction <ul style="list-style-type: none">- Increase sustainability profile and reduce unrewarded sustainability risk
2011	Explicitly incorporated distress risk in the model <ul style="list-style-type: none">- Better control of tail risk and downside risk
2012	Introduced residual momentum and analyst revisions variables <ul style="list-style-type: none">- Reduce time-varying style tilts and give more weight to company-specific momentum
2014-2015	Added CDS spreads and enhanced low-risk factors <ul style="list-style-type: none">- Deeper understanding of risk factors resulting in lower (downside) volatility
2016	Introduced rank difference as an additional element of the sell discipline <ul style="list-style-type: none">- Improve exposure to model factors
2018	Liquidity provisioning in trading <ul style="list-style-type: none">- Limit market impact through increased block trading
2019	Added news sentiment in momentum factors <ul style="list-style-type: none">- Benefit from alternative 'big data' momentum signal
2020	Included trade timing signals and increased portfolio liquidity <ul style="list-style-type: none">- Further improve trading efficiency
2022	Deployed machine learning forecasting stock crash risk algorithm <ul style="list-style-type: none">- Enhancement of downside risk reduction

Source: Robeco.

By contrast, the methodologies of low-risk ETFs tend to be generally static or are only slowly adapted despite the continuous growth in datasets and computing power, improving market insights, and evolving market conditions and client needs.

3. Conservative investing: resilience to risks and use cases for investors



3.1 Resilience during recessions, wars, and deflation

The Conservative Equities strategy has demonstrated its defensive characteristics over its track record of more than 15 years. That said, it is worthwhile looking back further in time to analyze if its approach would have resulted in downside protection during challenging market environments.

To do so, Robeco researchers used a novel US stock database to study infrequent macro events that have occurred since 1866. For instance, there have only been a handful of recessions over the last 30 years, but they were quite common in the 19th century. Similarly, there have not been many wartime periods in recent history, but since 1866 there have been seven US wars. Inflationary episodes were also more common back then compared to the last 30 years (excluding 2021 onwards).

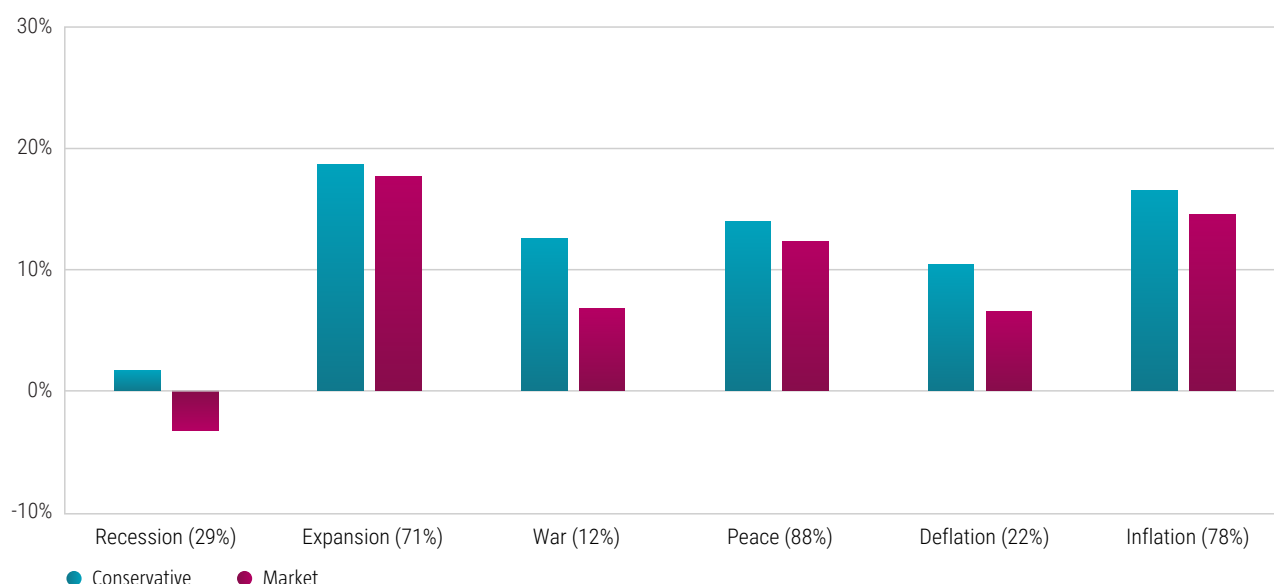
As such, a portfolio based on the Conservative Formula – which also serves as a rough proxy for the Conservative Equities strategy – was created to assess how it would have fared across these different scenarios. As shown in Figure 7, the Conservative portfolio would have generally exhibited resilience in periods that coincided with recession, expansion, peace, war, deflation or inflation.

“ Staying the course and being patient is all you need to reap the benefits of conservative investing



Arlette van Ditshuizen
Head of Quant Portfolio
Management

Figure 7 | Backtested conservative portfolio displays its timeless defensive characteristics, January 1866 to December 2021



Source: Baltussen, G., van Vliet, B. P., and van Vliet, P., May 2022, “150+ years of conservative investing: winning by losing less”, Robeco article. Performance in USD gross of fees and costs. For illustrative purposes only.

3.2 Cushioning macroeconomic risks

Investors are often preoccupied by the macroeconomic environment and the potential risks it poses to markets. This is probably more so when inflation picks up, interest rates rise, global economic growth slows and the mood among business people and consumers dampens. In such instances, volatility is typically a recurring market feature, risk is increasingly relevant, and fundamentals are top of mind for investors.

Recent research¹⁷ conducted over the period from January 1991 to December 2021 shows that low volatility portfolios – similar to the Conservative Equities strategy – can be effective in softening the impact of many sources of systematic risk. The findings illustrate that rising equity and bond implied volatilities tended to coincide with far larger negative returns for the market than for low volatility strategies.

17. Blitz, D., September 2022, “Macro risk of low volatility portfolios”, SSRN working paper.

Looking at commodities, low volatility indices were only half as sensitive to oil price changes versus the market, which can be attributed to their lower exposure to fossil fuel stocks. Meanwhile, the betas towards gold price movements were all insignificant, implying that these are not a relevant systematic risk factor.

In line with the previous findings, low volatility portfolios were consistently less exposed than the market to shifts in consumer sentiment, investor sentiment, the economic policy uncertainty index or the ISM purchasing managers' index. Again, the same trend appeared when changes in traditional macroeconomic indicators such as CPI, GDP, industrial production and unemployment were analyzed.

These findings suggest that low volatility portfolios do not merely reduce risk in general, but also consistently cushion macroeconomic risks. In fact, these defensive characteristics can potentially benefit investors in times of economic uncertainty and as such, the Conservative Equities strategy can play a resilient role within an equity portfolio, given how it is suited to withstand tough times.

3.3 How the Conservative Equities strategy can be applied to an equity portfolio

The Conservative Equities strategy is designed for clients who are interested in stable equity returns, capital preservation, dividend income or diversification. But investors should also consider how it can be applied to an existing equity portfolio. It can be combined with benchmark-driven approaches, a higher-risk strategies or high-dividend solutions.

It can be combined with benchmark-driven approaches

Given that the Conservative Equities strategy has a less volatile return pattern than many traditional equity solutions, it can offer diversification benefits when it is combined with benchmark-driven investment approaches (beta close to 1). As seen in Table 3, this combination can lead to a reduction in volatility as the allocation to the defensive strategy is increased, thereby stabilizing the absolute returns of the overall equity portfolio.

However, the tracking error of the combined portfolio will likely increase gradually given the differentiated and high-conviction nature of the Conservative Equities strategy. But thanks to its distinct positioning when compared to the benchmark, it offers strong diversification benefits for the overall equity portfolio, potentially leading to an improved risk-return profile.

“ Conservative investing is about building wealth slowly, in contrast to going broke fast with speculative investing



Maarten Polfliet
Portfolio Manager

Table 3 | How the Conservative Equities strategy fits in a portfolio

Adding the Conservative Equities strategy to a beta 1.0 portfolio					
% invested in Conservative Equities strategy	0%	15%	30%	45%	100%
Return	5.8%	5.9%	6.1%	6.2%	6.5%
Volatility	15.3%	14.6%	13.9%	13.3%	11.4%
Tracking error	-	1.0%	2.0%	3.0%	6.7%

Adding the Conservative Equities strategy to a beta 1.1 portfolio					
% invested in Conservative Equities strategy	0%	15%	30%	45%	100%
Return	6.3%	6.3%	6.4%	6.4%	6.5%
Volatility	16.9%	15.9%	15.0%	14.1%	11.4%
Tracking error	1.5%	0.9%	1.4%	2.5%	6.7%

Source: Robeco Performance Measurement. The figures are based on monthly data for the period from October 2006 to December 2022. The Conservative Equities strategy is based on the net asset value of the representative account Robeco Institutional Conservative Equities strategy, net of fees. The beta 1.0 portfolio is based on the MSCI World Index. The beta 1.1 portfolio is based on 110% of the MSCI World Index excluding lending costs. For better comparison, the index returns are hedged prior to July 2012. In reality, costs (such as management fees, transaction and other costs) are charged. These have a negative effect on the returns shown. The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

It can complement higher-risk strategies

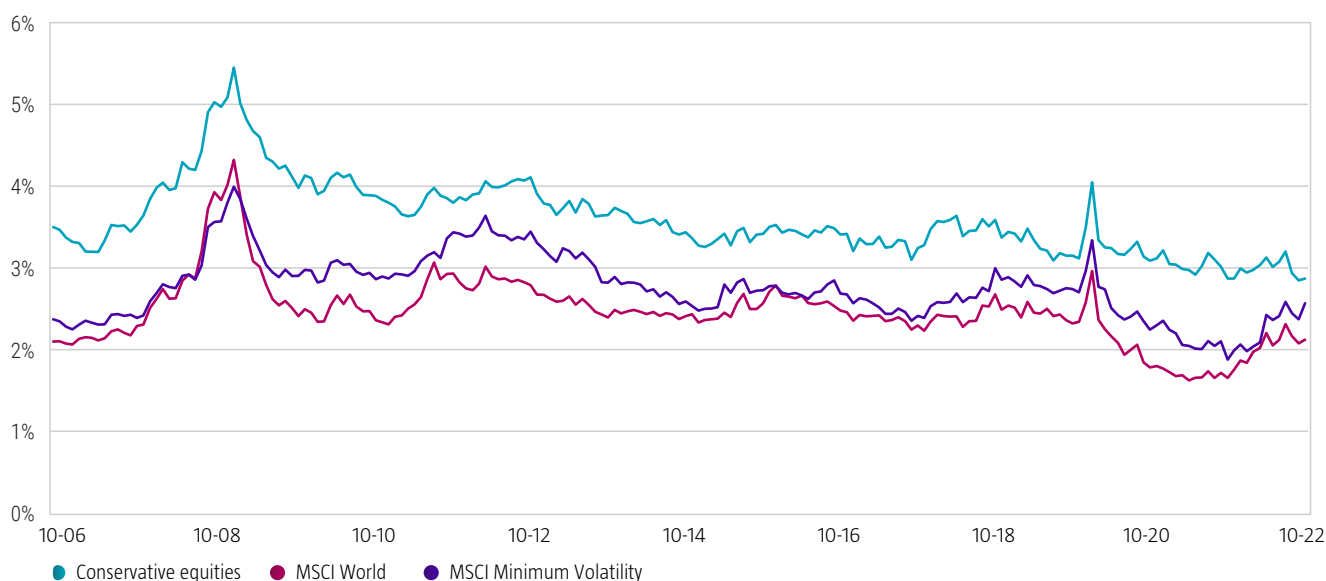
Similar to the previous outcome, the Conservative Equities strategy can provide diversification benefits to an equity portfolio that consists of higher-risk strategies (beta larger than 1). As a result, the tracking error can potentially decline at first as the defensive solution is initially added to higher-risk investments, before increasing again as depicted in second part of Table 3.

In practice, this combination also results in lower volatility for the overall equity portfolio as the allocation to the Conservative Equities strategy is increased. Again, this would result in a more stable absolute return profile, while also creating more room for investors to seek out higher-risk investments.

It can be a stable source of dividends

Given low volatility stocks are generally characterized by above-average dividend yields, income-oriented investors can also potentially use the Conservative Equities strategy for its income-generating capability as highlighted in Figure 8. High dividends can also be viewed as an attractive feature as they typically result in both lower risk and higher returns.

Figure 8 | Dividend yields, October 2006 to December 2022



Source: Robeco, FactSet as at 31 December 2022. For illustrative purposes only.

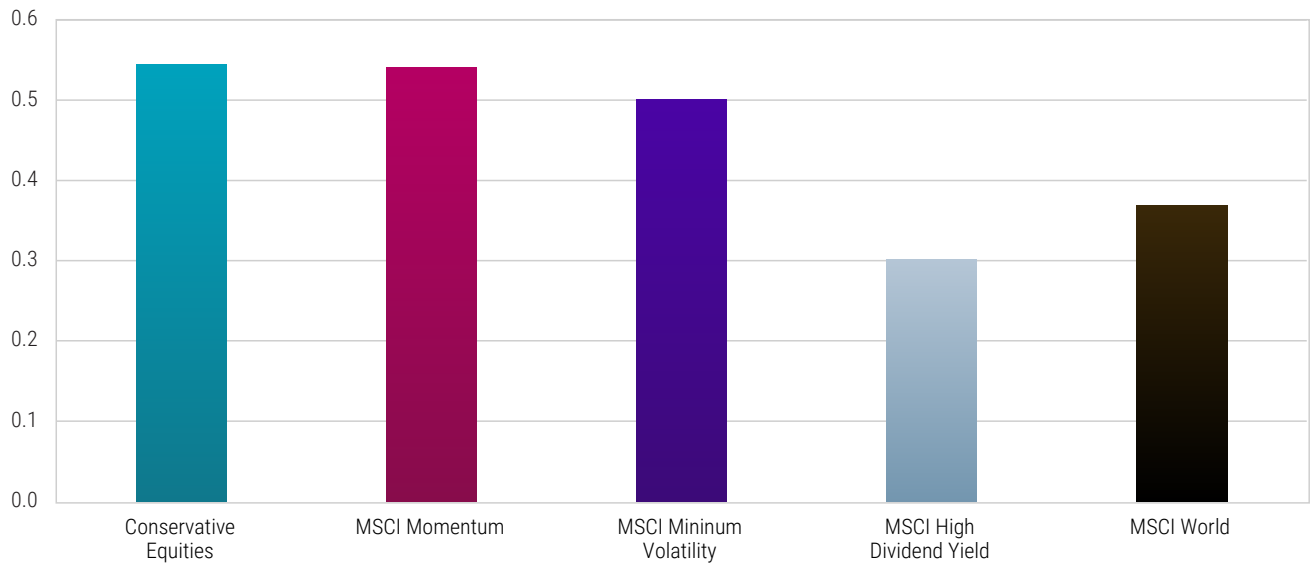
Although risk reduction (in terms of volatility) is the primary objective of the Conservative Equities strategy, the incorporation of return factors enhances its returns. These largely focus on income and sentiment characteristics, thus enabling the selection of companies with high and stable dividends.

Instead of focusing on simple dividend yields, we also consider net share buybacks as some firms prefer to repurchase shares rather than pay dividends, given that this is more tax efficient. But ultimately, this still results in a payout to investors. Moreover, we believe companies that exhibit strong momentum as well as positive earnings revisions are less at risk of seeing their dividends decrease over time.

From a different perspective, the Conservative Equities strategy can be seen as a compelling proposition compared to traditional market capitalization-weighted indices and factor indices.

For the period from October 2006 to December 2022, for instance, it has generated a high dividend in line with the MSCI High Dividend Yield Index; reduced risk (volatility) in line with the MSCI Minimum Volatility Index; and delivered solid returns ahead of the MSCI World Index (market) but a bit behind the MSCI Momentum Index. As shown in Figure 9, this has resulted in it achieving the highest return per unit of risk (volatility) in comparison to all four indices.

Figure 9 | Return per unit of risk (volatility), October 2006 to December 2022



Source: Robeco Performance Measurement, MSCI. The chart is based on monthly data for the period from October 2006 to December 2022. The Conservative Equities strategy is based on the net asset value of the representative Robeco Institutional Conservative Equities strategy, net of fees. In reality, costs (such as management fees, transaction and other costs) are charged. These have a negative effect on the returns shown. The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

It can go hand in hand with high-dividend solutions

The Conservative Equities strategy could be blended with another high dividend portfolio, given its differentiated positioning. This is because of the distinct stock selection processes that the two approaches adopt. More specifically, low-risk features are the starting point for the strategy and stocks with high dividend yields are preferred but not necessary. On the other hand, high-dividend solutions explicitly target only those stocks with high dividend yields. Therefore, the potential benefits derived from diversification could potentially lead to more stable equity returns with high income.

Foundational academic papers and book:

1. Blitz, D., and van Vliet, P., October 2007, "The volatility effect: lower risk without lower return", Journal of Portfolio Management.
2. Blitz, D., Pang, J., and van Vliet, P., September 2013, "The volatility effect in emerging markets", Emerging Markets Review.
3. van Vliet, P., and de Koning, J., November 2016, "High returns from low risk.", Wiley.
4. Blitz, D., and van Vliet, P., August 2018, "The conservative formula: quantitative investing made easy", Journal of Portfolio Management.
5. Blitz, D., van Vliet, P., and Baltussen, G., January 2020, "The volatility effect revisited", Journal of Portfolio Management.

Recommended Robeco articles:

1. Baltussen, G., van Vliet, B. P., and van Vliet, P., May 2022, "150+ years of conservative investing: winning by losing less", Robeco article.
2. Swinkels, L., and Hoogteijling, T., June 2022, "Forecasting stock crash risk with machine learning", Robeco white paper.
3. Robeco Quantitative Research, June 2022, "Guide to sustainable quant equities investing", Robeco publication.
4. Mosselaar, J., and van Vliet, P., February 2021, "Not all low volatility indices are created equal", Robeco article.
5. van Vliet, P., Polfliet, M., and Mosselaar, J., January 2019, "High dividend investing: buy them stable and strong", Robeco article.

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