



How Elm Invests

ELM Market Navigator ETF

NYSE ARCA: ELM

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Introduction

This paper is meant to provide a comprehensive overview of Elm Wealth's investment process for the ELM Market Navigator ETF, listed on the New York Stock Exchange. Further information can be found at elmfunds.com.

Our investment process is entirely rules-based and is intended to be understood by our investors, with no 'black box.' The philosophical foundations of our approach are laid out in our book *The Missing Billionaires: A Guide to Better Financial Decisions*, and we'll reference passages from the book as we go along for those interested in additional information and detail.

The goal of *The Missing Billionaires* is to give investors a framework for making their own principled financial decisions pertaining to both investing and spending. The goal of Elm is to provide investment solutions for our clients which allow you to efficiently harvest the long-term returns available from broad public markets.

One of the foundational concepts we discuss in *The Missing Billionaires* is called the Merton Share, for determining the optimal amount of wealth to invest in a risky asset or portfolio. [Ch. 2,3] The Merton Share is a 'rule of thumb' which, subject to a variety of assumptions,¹ reflects that if you can invest in a risky asset with excess return μ and volatility σ , then the optimal wealth fraction to invest is proportional to μ/σ^2 .

The Merton Share² is a more flexible relative of the well-known Kelly Criterion.³ It's derived from the theory of financial decision-making under uncertainty and is more natural for sizing investments like stocks and bonds. [p. 37] As a rule of thumb, it isn't appropriate to use directly in every situation, but nonetheless it provides an important core intuition: that we should want more of a risky asset when we're getting more *excess* return relative to a safe asset (and vice versa), and also that we should want more of the risky asset when it has less risk (and vice versa).

Conceptually, Elm's rules-based asset-allocation seeks to provide a practical, intuitive implementation of this principle across a universe of global asset classes which can be held through highly liquid, low-cost index ETFs.

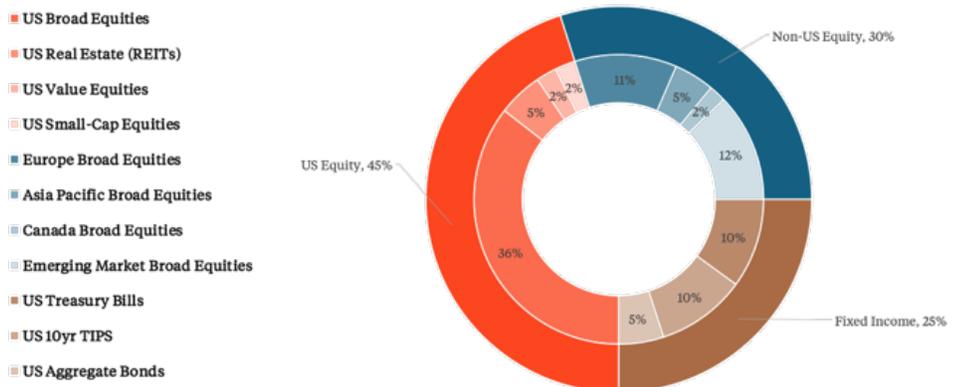
Note:
The content in this whitepaper is being provided for educational purposes only. It does not constitute any form of investment advice, or any form of recommendation to buy or sell any securities or adopt any investment strategy mentioned herein. This material does not have regard to specific investment objectives, financial situation and the particular needs of any specific reader. Any views regarding future prospects may or may not be realized. Past performance is no guarantee of future results.

¹ Specifically that you're trying to maximize CRRA utility, you can only invest in the risky asset or risk-free asset, returns are normally distributed, and you can continuously rebalance.

² The Merton Share refers to the optimal investment size based on an investor's risk aversion, maximizing expected utility in a portfolio context

³ The Kelly Criterion is a formula used to determine the optimal size of a series of bets to maximize logarithmic wealth over time.

Elm Portfolio Baseline Weights



ELM ETF History

The ELM ETF started life as a conversion from a private fund, Elm Partners Portfolio LLC (EPP), which started investing at the end of 2011. The conversion took place on February 10, 2025. The predecessor fund has an audited track record for the 13 years and 42 days up to the conversion, which can be found at elmfunds.com and in the ETF's prospectus.

The ELM Portfolio

Baseline Selection

The ELM ETF begins with a Baseline Portfolio 75% in equities and 25% in fixed income, as illustrated in Table 1. We have made this choice as we think it represents the asset allocation that a financially sophisticated investor focused on building long-term savings, and with a typical degree of risk-aversion, would want to hold in what we call the 'Baseline Environment.' In the Baseline Environment we assume that every major risk-asset class has a 4% 'risk premium' – the expected long-term return above the return of a safe asset – and a 'neutral' risk level (described in detail in Risk Level section below).

We determine the Baseline weights to be as representative of the global market portfolio as possible, subject to the availability of low-cost, liquid vehicles to express these exposures, and some compromises of practicality.⁴ We also want the Baseline Portfolio to be representative of the preferences of a typical US investor. We include a modest home bias for US equities versus non-US equities, and this is also why the portfolio of safe assets is 100% in US dollar fixed income, and mostly in US Treasuries.

We use ETFs to invest in each asset class. We only use broad-market, low-cost, market-capitalization weighted index ETFs. Most of the ETFs we use are sponsored by Vanguard or Blackrock. The weighted-average expense ratio of the ETFs in the ELM ETF's portfolio is typically about 0.05% per annum, but this changes slightly over time with changes in the portfolio composition. Since the predecessor Fund's inception at the end of 2011, the expense ratios of many of the ETFs we use have fallen, and we expect that to continue. We've listed one of our preferred ETFs next to each asset class in Table 1.⁵

⁴

We start with the global market cap weights, then modestly adjust for US home-bias, and regional Gross Domestic Product (GDP) and Earnings weights. The latter adjustments can help mitigate extreme valuations such as those seen in 1980s Japanese equities, causing one market to implausibly dominate the baseline.

⁵

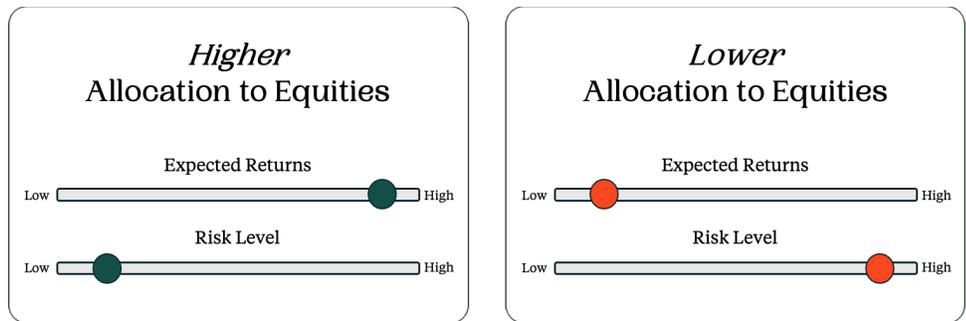
ELM Baseline as of June 30, 2025. You can find the most up-to-date figures on elmfunds.com.

The asset classes listed are for illustrative purposes only and do not constitute investment advice or recommendations. ELM may have different allocations now or in the future.

	Elm Baseline Weights	Sample ETF for Bucket	Issuer	ETF Expense Ratio
US Equity Assets	45.4%			
US Broad Equities	36.0%	VTI	Vanguard	0.03%
US Value Equities	2.2%	VTV	Vanguard	0.04%
US Small Cap Equities	2.2%	VB	Vanguard	0.05%
US Real Estate (REITs)	5.0%	SCHH	Schwab	0.07%
Non-US Equity Assets	29.5%			
Europe Broad Equities	11.3%	VGK	Vanguard	0.06%
Asia Pacific Broad Equities	4.8%	IPAC	iShares	0.07%
Canada Broad Equities	1.8%	BBCA	JPMorgan	0.19%
Emerging Marke Broad Equities	11.6%	WVO	Vanguard	0.07%
Fixed Income	25.0%			
US 10yr TIPS	10.0%	SCHP	Schwab	0.03%
US Aggregate Bonds	5.0%	AGG	iShares	0.03%
US Treasury Bills	10.0%	VBIL	Vanguard	0.06%
Total	100.0%			0.05%

Dynamic Asset Allocation

The Baseline Portfolio specifies the ideal asset allocation in the Baseline Environment, a hypothetical state of the world with 4% Risk Premium and neutral risk levels for all asset classes. We're not assuming that 4% is the average Risk Premium equity markets will experience over time or have experienced in the past. Rather, it's just a convenient reference point for establishing preferences in one state of the world.⁶ But of course actual Risk Premium and market risk levels are changing all the time, and Elm's asset allocation is designed to adjust to changing market environments. For each risk asset class, we adjust the Baseline Weight to a Target Weight based on that asset class's current level of Risk Premium and market risk. Portfolio weights must add up to 100%, and leverage and shorting are not allowed. Whatever isn't being allocated to the Risk Asset classes is split up amongst the Safe Assets.



Stock Market Risk Premium

Risk Premium deviations cause the Target weight to vary from the Baseline by the same proportion as the Risk Premium varies from 4%,⁷ with a maximum variation of $\pm 2/3$ the Baseline Weight. Changes in market risk level will cause the Target Weight to vary by either $+1/3$ (when the equity market is in a low-risk state) or $-1/3$ (when in a high-risk state) of the Baseline Weight.⁸

In implementing Elm's dynamic scaling, our Risk Premium metric for a broad equity market is $1/PCAPE$ minus 10-year TIPS⁹ Real Yield. CAPE is the Cyclically-Adjusted Price Earnings Ratio popularized by Robert Shiller and John Campbell. PCAPE is a slightly adjusted measure that we use at Elm which accounts for the impact of companies paying out less than all their earnings as dividends. You can read about PCAPE and CAPE in more detail [here](#). $1/PCAPE$ is a forecast for the long-term real return of equities, and the 10-year TIPS Real Yield is our preferred proxy for the long-term safe asset real return. [p. 50]

We believe that a broad stock market's earnings yield is a useful estimate of its long-term real return. Although there is not enough long-term stock market return data to conclusively prove the usefulness of earnings yield as an estimator, such data as exists support its use. Moreover, Elm's use of earnings yield is supported by a simple and intuitively-appealing model of long-term corporate earnings growth: namely, the proposition that if companies paid out all their earnings as dividends, their aggregate earnings would grow at the inflation rate. The past 125 years of US public corporate earnings growth is largely consistent with this thesis.¹⁰

⁶ Under the hood it's not exactly 4% for each asset class, but close to it. We make minor adjustments for various non-US markets to reflect differing risks and variation in expected return metrics as applied to different markets. However, the adjustments are small, keeping the 4% thought experiment is still valid.

⁷ This is the variation most consistent with the Merton Share.

⁸ With a narrow transition zone in-between for when risk level is close to neutral

⁹ TIPS, or Treasury Inflation-Protected Securities, are U.S. government bonds designed to protect investors from inflation, as their principal value increases with inflation.

¹⁰ After making the relevant adjustment for the fact that companies did not pay out 100% of the earnings as dividends.

Determining the Risk Level

For the market risk level, instead of measuring this directly, practical considerations have led us to use as a proxy a one-year momentum signal. If the current market level is above its one-year moving average we consider the market to be in a low-risk state, and in a high-risk state when below.¹¹ Using momentum as a proxy for market risk level is consistent with momentum-scaling and volatility-scaling producing very similar results when applied to equity markets.¹² We use a momentum signal to vary the mix of Safe Assets as well. For example, if TIPS' price momentum is positive, we'd hold 60% of Safe Assets in TIPS (vs. the 40% Baseline mix), or 20% if TIPS price momentum is negative.

Below we show the ELM ETF's asset allocation as of 6/30/25 as an example, which we will use to illustrate how we arrive at Target Weights for a given broad equity market. In this case, we will focus on the allocation to the US stock market, with relevant numbers in the red box:¹³

	Elm Baseline Weights	Baseline Deviation: Risk Premium	Baseline Deviation: Risk Level	Current Target Weights	Model Weights	
				2025-06-30	Risk Premium	Risk Level
US Equity Assets	45.1%	-29.9%	9.1%	24.2%		
US Broad Equities	35.6%	-23.7%	11.4%	23.2%	1.3%	Low
US Real Estate (REITs)	5.0%	-3.2%	-1.6%	0.1%	1.4%	High
US Value Equities	2.3%	-1.5%	0.1%	0.8%	1.3%	Neutral
US Small-Cap Equities	2.3%	-1.5%	-0.7%	0.1%	1.3%	High
Non-US Equity Assets	29.9%	4.8%	10.0%	44.7%		
Europe Broad Equities	11.5%	-0.8%	3.8%	14.5%	4.2%	Low
Asia Pacific Broad Equities	4.7%	1.6%	1.6%	7.9%	4.9%	Low
Canada Broad Equities	1.9%	-0.3%	0.6%	2.2%	3.3%	Low
Emerging Market Broad Equities	11.9%	4.3%	4.0%	20.2%	6.1%	Low
Fixed Income	25.0%			31.0%		
US Treasury Bills	10.0%			10.6%		
US 10yr TIPS (Real Yield = 2.02%)	10.0%			16.6%		Low
US Aggregate Bonds	2.5%			2.3%		High
US Muni Bonds	2.5%			1.6%		High
Total:	100.00%			100.00%		

¹¹ Adjusted for inflation, dividends, and risk premium.

¹² See our note [Steadfast, Greedy, or Fearful](#) for more on this topic.

¹³ ELM ETF Asset Allocation as of June 30, 2025. For current figures, please visit [elmfunds.com](#).

In this example, the baseline weight for Broad US equities is 35.6% and the Target Weight is an underweight allocation of 23.5%, because:

- The current risk premium is 1.3%. This is the difference between the Payout-and-Cyclically-Adjusted Earnings Yield (1/PCAPE) of the US equity market (3.27%) and the 10-year TIPS real yield (2.02%). This 1.3% is 67.5% lower than the Baseline level of 4% which is at the $\pm\frac{2}{3}$ maximum variation bound for our risk premium signal. The resulting Risk Premium adjustment of $-23.7\% = -67\% * 36\%$ is in the third column of numbers.
- The US stock market at the end of June 2025 was in a low-risk state because momentum was positive, so we adjust the target weight by $+\frac{1}{3}$ the Baseline Weight. This results in a Risk Level adjustment in the fourth column of numbers of $+12\% = (\frac{1}{3}) * 36\%$.
- Putting the two adjustments for risk premium and risk level together brings us to the target allocation for US equities (in the second column of numbers) of: $23.5\% = 35.6\% - 23.7\% + 11.7\%$.

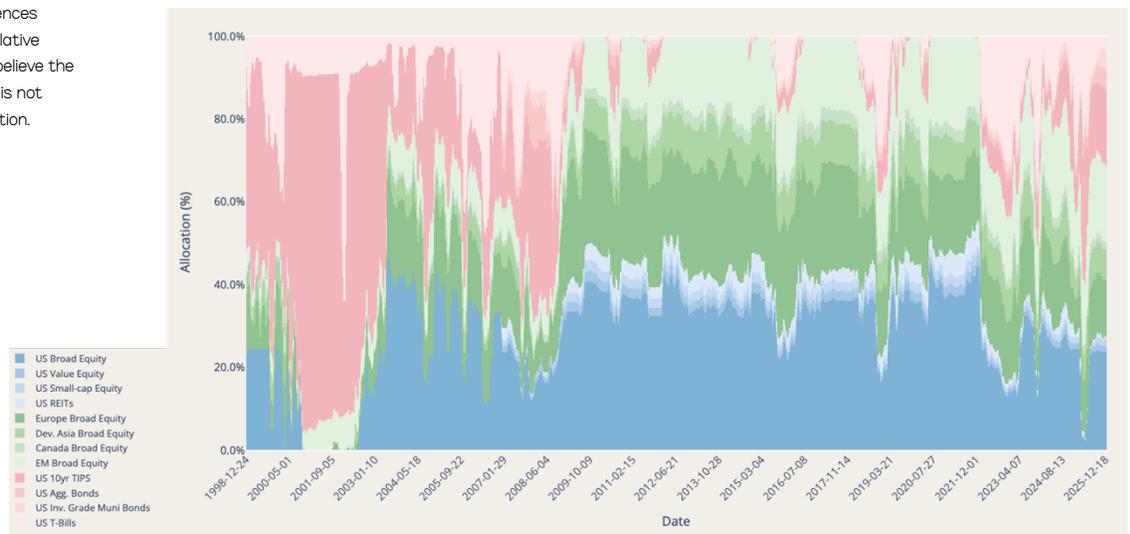
At the extremes, Dynamic Scaling can result in dramatic departures from the Baseline Portfolio, with as much as 100% or 0% in equities. For example, from 1990-2023 the total equity allocation would have varied from a low of about 10% to a high of 100% (simulated results prior to the December 2011 launch of the ETF's predecessor Fund). We expect a relative return variability of portfolio returns versus the Baseline Portfolio of about 5% per annum over long periods of time.¹⁴

While not a literal implementation of the Merton Share in a multi-asset world, Elm's dynamic scaling is clearly recognizable as being generally consistent with the Merton Share's call for asset allocations to scale proportionally with risk premia and inversely with market risk level. We think Elm's implementation of dynamic scaling strikes the right balance between simplicity, robustness, and theoretical consistency.

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				2025-06-30	Risk Premium	Risk Level
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US Broad Equities	35.6%	-11.8%	5.7%	29.4%	1.3%	Low
US Real Estate (REITs)	5.0%	-1.6%	-0.8%	2.6%	1.4%	High
US Value Equities	2.3%	-0.8%	0.0%	1.5%	1.3%	Neutral
US Small-Cap Equities	2.3%	-0.8%	-0.3%	1.2%	1.3%	High
Non-US Equity Assets	29.9%	2.4%	5.0%	37.3%		
Europe Broad Equities	11.5%	-0.4%	1.9%	13.0%	4.2%	Low
Asia Pacific Broad Equities	4.7%	0.8%	0.8%	6.3%	4.9%	Low
Canada Broad Equities	1.9%	-0.2%	0.3%	2.0%	3.3%	Low
Emerging Market Broad Equities	11.9%	2.2%	2.0%	16.0%	6.1%	Low
Fixed Income	25.0%			28.0%		
US Treasury Bills	10.0%			10.4%		
US 10yr TIPS (Real Yield = 2.02%)	10.0%			13.1%		Low
US Aggregate Bonds	2.5%			2.5%		High
US Muni Bonds	2.5%			2.1%		High
Total:	100.00%			100.00%		

¹⁴

By relative return variability, we specifically mean the standard deviation of the difference between the actual portfolio returns and baseline returns. For any particular year or period, differences significantly larger than the expected relative return variability are quite possible. We believe the distribution of relative return variability is not well-represented by the normal distribution.



Evaluating the ELM ETF Performance

We show up-to-date historical returns for the ELM ETF (and its predecessor private fund) on our funds website, as well as returns for a stock/bond balanced index published by Dow Jones Moderate Portfolio Index, the Bloomberg Aggregate Bond index¹⁵ and the MSCI ACWI IMI index.

Up-to-date performance information and Elm's latest quarterly fact sheet can be found at elmfunds.com.

We expect that using Elm's dynamic asset allocation will in the long run result in modestly higher expected risk-adjusted returns, compared to a static approach. However, due to the intrinsic noisiness of financial markets, it can be very challenging to accurately measure investment quality differences over the typical one- to ten-year holding periods for which most people look at their account performance. We explore this in detail in our note [What's Past is NOT Prologue](#), in which we see that it takes vastly more than 10 years of data to reliably distinguish between two strategies where one of the strategies has a Sharpe ratio¹⁶ 0.2 higher than the other. Depending on the base levels of the Sharpe ratios, that 0.2 difference can be very meaningful in terms of long-term investor expected welfare. Theory, reason, and history have combined to give us a strong prior belief about the merits of Elm's approach, and Bayesian analysis can be used to update our beliefs in light of new information. Here are a few additional suggestions for how you can evaluate the ELM ETF:

- Is your ELM ETF investment making it easier for you to achieve and stick with diversified, broad public markets exposure?
- Is your ELM ETF investment aligned with your personal preferences and financial situation?
- Is your ELM ETF investment improving the diversification and efficiency of your overall investing?
- Are the ELM ETF's asset allocation, activity, and costs consistent with what you'd expect based on this paper and your discussions with us?

We note that one of the ELM ETF's goals is *not* to generate higher returns compared to the S&P500, or whichever market index is doing the best over a given period. Setting aside whether this can be consistently achieved net of fees and costs, attempting to do this generally involves some combination of taking more risk and accepting less diversification, and all of Elm's choices are going in the other direction. The benefits of lower risk levels and greater diversification are harvested primarily through being able to maintain larger fractions of your wealth invested in risky assets [p. 59], through avoiding high fees and other costs, and through your spending policy [p. 132-141]. As Vanguard founder John Bogle counseled: *The best investment approach is the one you're going to stick with.*

¹⁵

The Bloomberg USAgg Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS and CMBS (agency and non-agency)

¹⁶

Sharpe Ratio measures an asset's excess return relative to its volatility, helping investors assess risk-adjusted performance.

Fund Details

Expense Ratio

The ELM ETF has an expense ratio of 0.24%. The 0.24% includes the expense ratios of the ETFs that the ELM ETF is invested in, which typically average about 0.04%.

Rebalancing

We rebalance the ELM ETF's asset allocation at least twice per month, based on an average of the current target weights over the past roughly four weeks. In effect this means that new market conditions can take up to about four weeks to fully filter through to the portfolio. This reduces the idiosyncratic risk associated with when we choose to rebalance and reduces portfolio turnover versus going fully to target weights each rebalancing.

Tax Efficiency

The ELM ETF is managed in a tax-aware manner and hopes to distribute little to possibly no capital gains tax distributions through tax loss harvesting in the portfolio, tax-sensitive trading and use of the in-kind creation and redemption of shares of the ETF.

UK HMRC Reporting Status

The ELM ETF has been granted UK Reporting Status by the UK HMRC. Some UK investors find UK Reporting Status beneficial. Please seek expert tax advice to see if this is of benefit to your particular circumstances.

Custody

The ETF's assets are custodied at US Bank. See the ELM ETF prospectus for more details, available on elmfunds.com.

Communications and Investor Resources

Twice a year, Elm holds a video call to which all Elm clients are invited, during which the managers discuss new developments and answer questions. Investors can read the articles we have published over the past 13-plus years, use tools which describe our asset allocation approach, and address numerous other investing questions at our elmwealth.com website. The Elm team is always available to answer questions from investors directly.

Getting Started

If you're interested in more details, up-to-date asset allocation, holdings and performance, please visit the elmfunds.com website. You can request a meeting by emailing our partner Jerry Bell (jerry@elmwealth.com).

Important Risk Disclosures

Before you invest in the Elm ETF, please refer to and carefully consider the summary or statutory prospectus for important information about the investment company, including investment objectives, risks, charges and expenses. You may obtain a hard copy of the prospectus by calling 1-800-617-0004. The prospectus or summary prospectus should be read carefully before investing.

As with any fund, there are risks to investing. An investment in the Fund is not a deposit of a bank and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. In addition to possibly not achieving your investment goals, you could lose all or a portion of your investment in the Fund over short- or long periods of time. Because the Fund is a Fund of Funds, the Fund is subject to the risks associated with the Underlying Funds in which it invests.

Newer Adviser Risk.

The Adviser has not previously served as an adviser to a registered investment company. As a result, there is no long-term track record of the Adviser serving as an adviser to a registered investment company against which an investor may judge the Adviser and it is possible the Adviser may not achieve the Fund's intended investment objective.

Fund of Funds Risk.

The Fund is a "fund of funds." The term "fund of funds" is typically used to describe investment companies, such as the Fund, whose principal investment strategy involves investing in other investment companies (funds), rather than directly in securities of individual companies. An investment in the Fund will be subject to substantially the same risks as those associated with the Underlying Funds in proportion to the Fund's allocation to those Underlying Funds, and the value of the Fund's investment in Underlying Funds will fluctuate in response to the performance of the portfolios of the Underlying Funds. In addition, at times, certain of the segments of the market represented by Underlying Funds in which the Fund invests may be out of favor and underperform other segments.

Asset Allocation Risk.

The Fund, through its investments in Underlying Funds, may allocate its investments among various asset classes.

Common Stock Risk.

While common stocks have historically generated higher average returns than fixed income securities over the long-term, common stock has also experienced significantly more volatility in those returns, although under certain market conditions, fixed-income investments may have comparable or greater price volatility.

Large-Cap Companies Risk.

Larger, more established companies may be unable to respond quickly to new competitive challenges such as changes in technology and consumer tastes. Large companies also may not be able to attain the high growth rates of successful smaller companies.

Small- and Mid-Cap Companies Risk.

There may be less trading in the stocks of small- and mid-cap companies, which means that buy and sell transactions in that stock could have a larger impact on the stock's price than is the case with larger company stocks.

Real Estate Investment Trust ("REIT") Risk.

The Fund's investment in REITs will subject the Fund to risks similar to those associated with direct ownership of real estate, including losses from casualty or condemnation, and changes in local and general economic conditions, supply and demand, interest rates, zoning laws, regulatory limitations on rents, property taxes and operating expenses.

Foreign Investments and Emerging Markets Risk.

Securities of non-U.S. issuers, including those located in foreign countries, may involve special risks caused by foreign political, social and economic factors, including exposure to currency fluctuations, less liquidity, less developed and less efficient trading markets, political instability and less developed legal and auditing standards.

Municipal Securities Risk.

The municipal market is volatile and can be significantly affected by adverse tax, legislative or political changes and the financial condition of the issuers of municipal securities.

Interest Rate Risk.

Changes in interest rates will affect the value of the Fund's investments.

Credit Risk.

An issuer of debt securities may not make timely payments of principal and interest and may default entirely in its obligations. A decrease in the issuer's credit rating may lower the value of debt securities.

Debt Securities Risk.

Increases in interest rates typically lower the value of debt securities held by the Fund. Investments in debt securities include credit risk. There is also the risk that a bond issuer may "call," or repay its high yielding bonds before their maturity dates.

High Yield Debt Securities ("Junk" Bond) Risk.

Below investment-grade debt securities (also referred to as high yield debt securities or "junk" bonds) involve greater risk of default or price changes due to changes in the credit quality of the issuer.

Cash Position Risk.

The ability of the Fund to meet its investment objective may be limited to the extent it holds its assets in cash (or cash equivalents) or is otherwise uninvested.

U.S. Government Obligations Risk.

The Fund will invest in securities issued by the U.S. government.

Market Risk.

The NAV of the Fund will change with changes in the market value of its portfolio securities. Investors may lose money.

High Portfolio Turnover Risk.

A high portfolio turnover rate (400% or more) has the potential to result in the realization and distribution to shareholders of higher capital gains, which may subject you to a higher tax liability. High portfolio turnover also necessarily results in greater transaction costs which may reduce Fund performance.

Management Risk.

The Fund is actively managed and may not meet its investment objective based on the Adviser's success or failure to implement investment strategies for the Fund.

The Elm Market Navigator ETF is distributed by Quasar Distributors, LLC.