Mesirow

‘One of these things is not like the others’

The differentiation of Mesirow’s Target Date Fund glide paths

Target Date Funds (TDFs) have been utilized since the Pension Protection Act (PPA) of 2006 in a Qualified Default Investment Alternative (QDIA) setting as a means of providing retirement savers with a one-stop solution suited to their age and, in some cases, risk tolerance level. Among the allowed QDIA options — which consist of managed accounts, balanced funds and TDFs — the target date option is the most utilized by far. The framework utilized with TDFs is meant to provide a comprehensive, generalized asset mix solution that is deemed appropriate for most retirement investors.

The associated asset mix glide path typically decreases in portfolio risk level over a person’s lifecycle. The original academic foundation of this lifecycle approach is Human Capital Theory, which was first posited by Jacob Mincer and Nobel economist Gary Becker in the late 1950s and early 1960s.[1, 2] Some later extensions of this work, including by Ravi Jagannathan and Narayana Kocherlakota,[3] more oriented toward lifetime savings strategies, posited that as the relative weight of the current financial value of the portfolio increases relative to the present value of future human capital, the ability to weather volatility shocks declines. In practice, TDF glide paths conform to the prescriptive advice of numerous practitioners that model volatility in conjunction with time horizon.

Empirical work by behavioral economists had demonstrated that, in practice, savers’ investment allocation choices in the absence of QDIA options tended to follow more haphazard construction approaches, such as equally allocating among investment options, otherwise known as the 1/n heuristic.[4] The systemic response to problems identified by behavioral economists resulted in a system comprised of stimulants and stabilizers designed to address historical behavioral shortcomings in investor retirement savings behavior, including automatic enrollment, automatic contribution rate escalation and the use of QDIAs.

As the most utilized QDIA option, it is important to understand what typical industry lifecycle glide paths look like as well as benchmark sets that are typically used in the industry. This is a topic that we cover in detail in our paper *Target Date Funds: An Industry Overview of Glide paths and Asset Allocations*.[5] This paper looks at the differentiation of Mesirow’s glide path allocations versus TDF universe averages that are highlighted in that earlier paper in both aggregate allocations to equity and fixed income, as well as detailed allocations within the equity sleeve. Additionally, we hypothesize on the underlying causes of these various differences.

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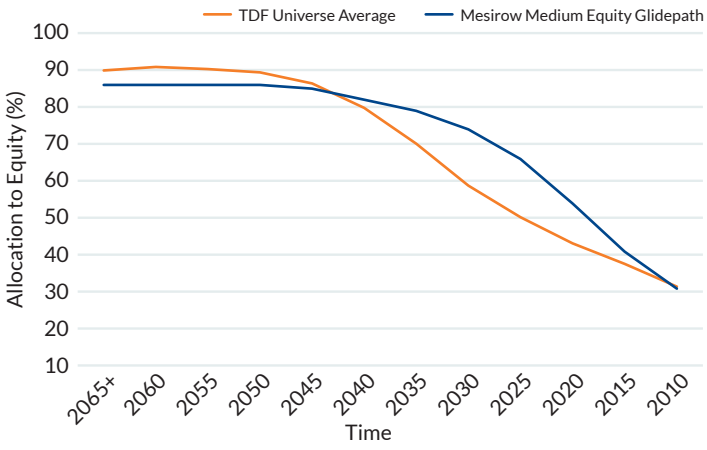
Mesirow aggregate allocations look different for a reason

In our earlier paper, we noted that there is an overall similarity in terms of aggregated equity and fixed income allocations across the TDF universe (i.e., not large dispersion) and for that universe average relative to the Morningstar Lifetime Moderate Index and S&P Target Date Through Index.

This overall similarity potentially implies that most target date fund providers, as well as the benchmark set providers, pursue reasonably similar approaches in determining the appropriate relative risk level for the various vintage years. In other words, the manner in which risk is modeled for different time horizons is likely similar among providers. Alternatively, it is possible that substantial herding behavior has occurred in this regard — if allocation similarity is not driven by similar underlying modeling methodology.

FIGURE 1: **"THROUGH RETIREMENT" TDF UNIVERSE DATA | EQUITY ALLOCATION**



Source: MPI Stylus and Mesirow Calculations

The overall TDF universe average is shown in Figure 1, along with Mesirow's medium risk glide path. These glide paths look decidedly different and, by extension, Mesirow looks different from the Morningstar Lifetime Moderate Index and the S&P Target Date Through Index. The Mesirow glide path clearly is more bow-shaped, with higher equity allocations in the middle vintage years, but lower equity allocations both in the long-dated and in the nearest-dated vintage year (post-retirement). This implies a difference in framework modeling between Mesirow and the average target date fund provider, which is a key differentiator for Mesirow.

While we can't account for each construction methodology among all of the providers, some difference in emphasis on theoretical approaches may account for this variation. The age-based lifecycle approach to investing has an established body of literature[6, 7, 8, 9, 10, 11, 12, 13, 14] and so does asset class volatility estimation over different time horizons.[15, 16, 17, 18, 19, 20] Additionally, while the two branches of research are often independent, there is also extensive overlap and an interplay between the academic literature when it comes to target date fund glide path construction.

Lifecycle investing is a theoretical foundation that is more qualitative and conceptual than it is empirical and quantitative. For instance, it proportions a human lifecycle into different baskets of human capital and financial capital. Over time the present value of human capital declines, which is presumably converted into both financial assets and real assets for future consumption when human capital is largely depleted. Some methodological frameworks will try to account for not only the specific retirement financial assets (i.e., TDF retirement glide path), but account for life insurance that hedges against the loss of human capital, other accumulated financial assets, real assets (such as real estate), as well as the future liability stream in an integrated asset liability optimization. Therefore, the TDF glide path construction may account for all of these other factors implicitly in its design.

Holistic approaches like this are a logistical challenge in terms of unifying assumptions for the population. There is a lack of adequate empirical data available on the cross-section of savers to link each individual across these different components and convert theory into a realistic 'average' that is implied in a TDF glide path appropriate for the 'average' retirement saver. For instance, suppose hypothetically that those who have high home equity (real asset) balances may have lower financial asset balances because they diverted their disposable income differently during the accumulation phase. The average of both data sets would miss any type of interplay among variables like this. There is large variation from one person to the next among all of these variables that is best accounted for in a customized managed account framework, rather than in a homogenized target date glide path that only accounts for age and risk tolerance. Many simplifying assumptions are required to get from a theoretical construct to a glide path for the average investor with all of these presumed variables as inputs.

For instance, one only need look at the relatively low median and average 401(k) balance of individuals approaching retirement to demonstrate the limitations of a theoretical lifecycle model that converts human capital (largely depleted at this point) smoothly into financial capital at retirement. The implication of low financial asset balances is that it requires future human capital subsidization for the average investor in the later part of the lifecycle with extending lifespans. In other words, retirees will continue to work and supplement income, or else, extract capital from their real assets (e.g., a reverse mortgage or HELOC).

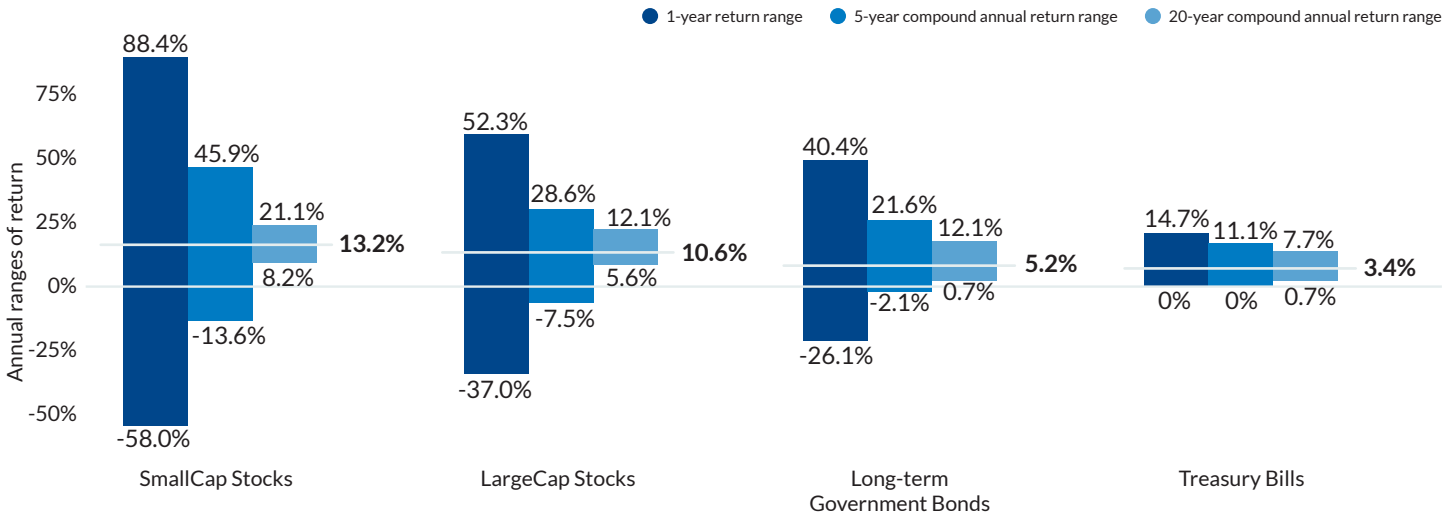
Lifecycle investing is a useful conceptual and theoretical foundation, but it is difficult to convert into a quantitative and empirical glide path outcome that is defensible on a standalone basis. In contrast to lifecycle theory, horizon volatility modeling, which looks at the time-varying risk of different assets or combinations of assets, is a largely quantitative and empirical discipline. Conceptual lifecycle theories of investing, in our view, require this type of empirical filter to convert them into a truly empirical implementation.

This is what Mesirow does by utilizing a conceptual lifecycle foundation merely as the starting point of our process. In practice, the glide path is driven by horizon volatility estimates in conjunction with a robust optimization and simulation framework. A lifecycle framework justifies an overall decrease in portfolio risk as time passes and a general trade off from equities to fixed income and cash in theory. Horizon volatility modeling can get us to the same place independently, but also tells us the appropriate mix of assets to achieve a specific portfolio risk level. In other words, horizon volatility modeling approaches could come to an appropriate result even in the absence of the theoretical lifecycle foundation.

Figure 2 shows the historical ranges of returns for various asset classes from 1936 (after the full implementation of the Securities and Exchange Act of 1934, which through its various provisions helped mitigate equity market volatility going forward) to 2022, which looks at the reduction in compound annual return outcomes over longer time horizons. Generally speaking, ranges of return and the standard deviation of returns are directly proportional for normally distributed data. This chart displays some individual asset class characteristics on a standalone basis, whereas horizon volatility modeling accounts for a detailed model of all assets and their interrelationships through time.

We can use capital market assumptions (CMAs) of return, standard deviation and correlation of the underlying asset classes utilized in a glide path to model the potential future return outcomes over various time horizons. Then the different vintage years in a glide path can be associated with a specific time horizon. From a probability distribution of future return possibilities, we can derive the outcome that is one standard deviation above the median return (84th percentile) and one standard deviation below (16th percentile) for a specific time horizon.

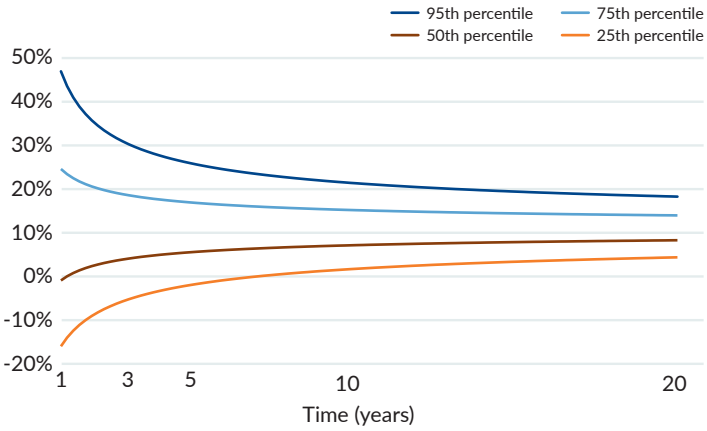
FIGURE 2: **REDUCTION RISK OVER TIME**



Source: MPI Stylus and Mesirow Calculations | Each bar shows the ranges of annualized total returns for each asset class over different holding periods from 1936-2022. This is for illustrative purposes only and not representative of any investment. Past performance is not indicative of future results.

Figure 3 shows what this typical "trumpet diagram" of volatility associated with time horizon looks like, which is similar to what is shown in Figure 2, but for one particular asset over all time horizons The difference between the 84th and 16th percentile returns becomes the range of potential compound annual return outcomes for a particular horizon in our analysis. Then we display appropriate vintage year in a glide path for each time horizon.[21] The results for different the different glide path allocations are shown in Figure 4.

FIGURE 3: **COMPOUND ANNUAL RETURN**

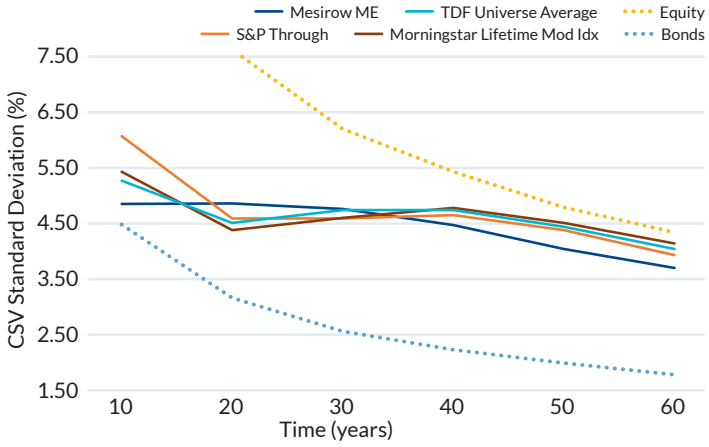


Source: MPI Stylus and Mesirow Calculations. Past performance is not indicative of future results.

An appropriate glide path smooths out horizon volatility, so that an appropriate mix results in generally similar predicted volatilities for most time horizons. The intent is to create portfolios of assets for different horizons that removes as much of the "trumpet" as possible from Figure 3. There is almost no way to prevent an upward slope to volatility for horizons within 10 years without very substantial allocations to cash equivalents, stable value products or guaranteed income products. Fortunately, for through-dated portfolios past retirement, the presumed horizon is quite long. Presumably, an investor will attempt to smooth out the consumption of the accumulated assets after retirement for their lifespans, which could be 20 to 30 years after retirement.

Viewed in this perspective, the Mesirow glide path shown in Figure 4 starts out with a volatility similar to that of equities, but lower for long-dated horizons and approaches that of bonds for near-dated horizons. The volatility path is smoother relative to the either the TDF universe average or the benchmark reference sets. As the time horizon shortens, these other glide paths increase in risk and then decrease in risk and then jump sharply for nearer-dated vintages.

FIGURE 4: **HORIZON VOLATILITY**



Source: MPI Stylus and Mesirow Calculations. Past performance is not indicative of future results.

A largely straight-line trade-off between equities and fixed income for the average glide path shown in Figure 1 could simply be driven by a heavy emphasis on a conceptual lifecycle framework instead of an empirical horizon volatility modeling framework. This would be a methodology difference explanation. The result in empirical terms of a more straight-line glide path versus a bow-shaped glide path, however, is clearly shown in Figure 4. It results in a jagged horizon volatility pattern for the straight-line glide path.

Alternatively, it is possible that early entrants into the target date space used a relatively simple conceptual lifecycle framework to construct more straight-line glide paths. Then later entrants copied earlier entrants in a type of herding behavior. Over time, there may have been additional modifications and herding behavior among providers. For instance, an extended bull market could lead the majority of glide paths toward more equity allocations over time. This is merely conjecture since any thesis in this regard would require a cross-sectional time series analysis of the timing of glide path provider entrants and the similarity or dissimilarity of glide paths, which we have not performed.

Some differences among providers may be methodological in origin and this could explain the difference between the average glide path and that of Mesirow. On the other hand, herding behavior among most participants would explain this primary difference but also explain the relatively low variation among provider glide paths.

Mesirow has more exposure to the size premium for most vintage years, but accounts for horizon risk

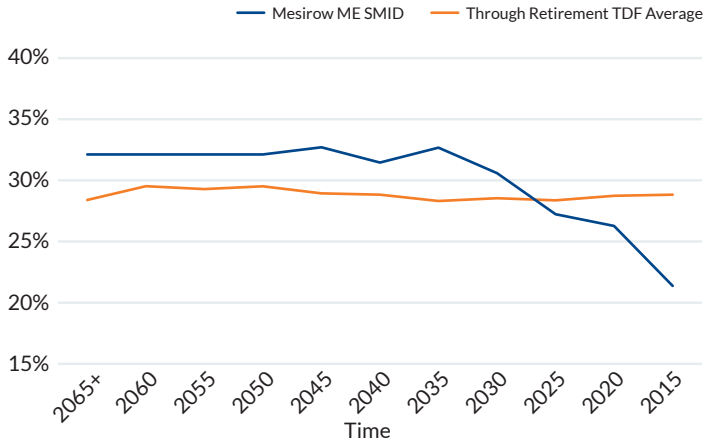
Allocations along the size spectrum differ between the average fund in the "Through Retirement" universe and the Mesirow glide path as shown in Figure 5. In this context, it is useful to understand what is meant by an allocation to SMID, which is a combination of the allocation to Midcap and Smallcap based on the Morningstar schema. Morningstar defines Megacap as the top 40% of stocks in the equity universe, Largecap as the next 30%, Midcap as the next 20% and Smallcap as the final 10% of stocks. Therefore, a 'market neutral' position to SMID relative to the stock universe in this definitional framework would be 30%, which is our primary reference point.

It should be noted that this framework aligns reasonably well with Russell, where its Top 200 Index (i.e., Megacap/Largecap in Morningstar schema) represents 68% of total market cap in the Russell 3000. By extension, the Russell Midcap and Russell 2000 indices together comprise roughly 32% of the total capitalization. In contrast, the S&P index framework is quite different, where the S&P 500 Index is currently over 90% of the S&P 1500, while the S&P 400 and 600 indices comprise less than 10% of total market cap.

While smaller stocks are more volatile than larger stocks (with a concomitant higher expected return), the average TDF maintains a similar allocation relative to total equity regardless of vintage year. In other words, the allocation does not change with time horizon.

Overall, the average TDF is under weight to SMID stocks relative to a 'market neutral' position, and therefore, the average TDF investor is under weight to smaller stocks and the size premium. The TDF universe allocation that is one standard deviation above the mean is just below the 'market neutral' threshold across the vintage years. The Mesirow glide path starts out with a roughly neutral (Russell framework) allocation for longer-dated vintage years and then declines sharply in the near-dated and post-retirement portfolios, such that our SMID stock allocation lands below that of the fund universe average.

FIGURE 5: TDF SIZE ALLOCATION RELATIVE ASSET CLASS (%)



Source: MPI Stylus and Mesirow Calculations

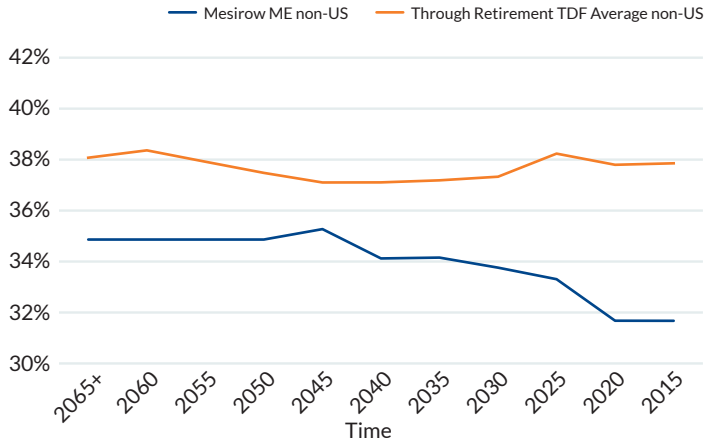
The average allocation to the smaller capitalization stocks as a percentage of equity has an impact in terms of relative risk that can be very roughly approximated by comparing the long-term standard deviations for the Russell indices. From January 1979 to December 2022, the standard deviation ratio for a proportional weighting of Russell Midcap Index and Russell 2000 Index combined relative to the Russell Top 200 Index was a ratio of a little more than 1.18 — so, roughly 18% more relative risk for SMID stocks on a standalone basis. The actual impact on the total portfolio risk would be slightly less than that, however, as the correlation between the Largecap and SMID assets is less than one, albeit relatively high.

This becomes particularly important in volatility estimates over shorter time horizons, as discussed earlier in the paper. So, while the average target date fund may be under-weight to the size premium for most vintage years, it may represent too high of an exposure from a risk and return perspective for near-dated portfolios.

Mesirow accounts for the more domestic nature of liabilities with lower international exposure

Figure 6 shows the allocations for the same representative data sets in terms of the allocations to non-US equity as a percentage of total equity, which includes both developed and emerging markets. Unlike the definition of size, the schema defining US vs. non-US equities is relatively well defined, but it is still useful to understand what percentage represents a 'market neutral' position in terms of total global equity capitalization as a reference point. The MSCI USA Index represents roughly 70% of the MSCI World Index and 62% of the MSCI ACWI Index as of the end of 2022. Therefore, non-US equities represent roughly 30%-38% of total market cap, depending on the schema, which would be technically 'market neutral' in global terms.

FIGURE 6: **TDF INTERNATIONAL ALLOCATIONS RELATIVE ASSET CLASS (%)**



Source: MPI Stylus and Mesirow Calculations

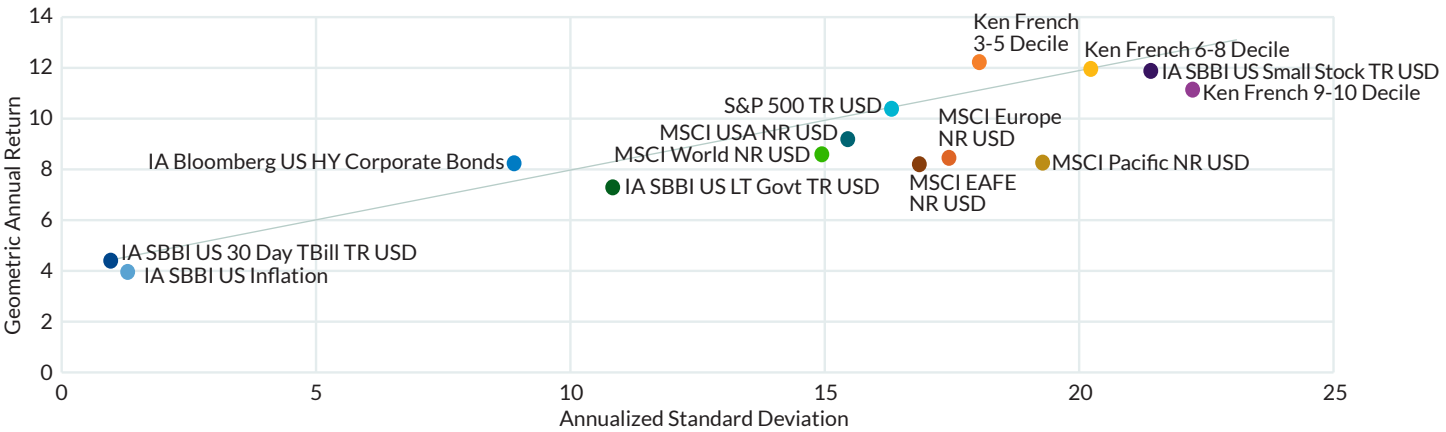
The "Through Retirement" universe average shows an allocation across the lifecycle that is between 37% and 39%. On average, these allocations seem to be most consistent with an MSCI ACWI weighting scheme, which includes emerging market exposure whereas MSCI World does not. The appropriate allocation for US-domiciled investors saving for retirement that represents a US-defined liability stream could be less than 'market neutral'. We cover this topic in our paper entitled, *Fifty Years of Broad-based International Data: What Have We Learned for Asset Allocation?*[22]

Historically, the longest-lived, broad-based data set from MSCI, which extends back to 1970, shows that non-US equities have returned less than the MSCI USA Index with a higher standard deviation. From January 1970 to December 2022, the MSCI USA generated an annualized return of 9.21% with a 15.45% standard deviation vs. 8.22% return and 16.86% standard deviation for the MSCI EAFE Index. Figure 7 shows a graphical risk-return representation for the 1970 to 2022 period.

The relatively low correlation (0.66 over the same period) between US and non-US equities still makes them attractive both historically as well as in most forward-looking asset allocation modeling frameworks, but at less than market neutral weights for US retirement savers in a defined contribution setting in our glide path modeling.

This lower return, coupled with the domestic nature of retirement liabilities accounts for Mesirow's less than 'market neutral' positioning.

FIGURE 7: **ASSET CLASS RISK AND RETURN: 1970-2022**

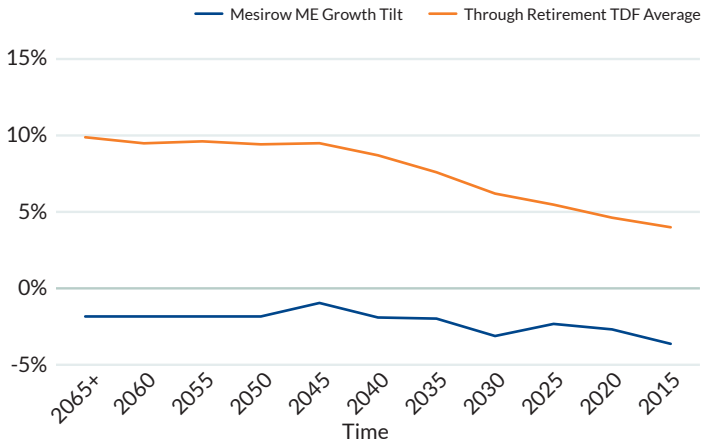


Source: MPI Stylus and Mesirow Calculations. Past performance is not indicative of future results.

The TDF universe exhibits a strong growth tilt

Interestingly, the "Through Retirement" TDF universe average exhibits a sizeable overall tilt towards growth stocks within the total equity allocation. Figure 8 shows the relative tilt to growth or value overall across vintage years, which is specified as a growth tilt being positive and a value tilt being negative. The TDF universe average starts out with a relatively high growth tilt that does decline with time horizon, but still maintains the overweight for near-dated vintage years. In contrast, Mesirow exhibits a slight value tilt that is expressed entirely among SMID stocks and increases slightly in this value tilt (i.e., away from growth) for shorter horizons as well.

FIGURE 8: **TDF STYLE ALLOCATION | GROWTH TILT RELATIVE ASSET CLASS (%)**



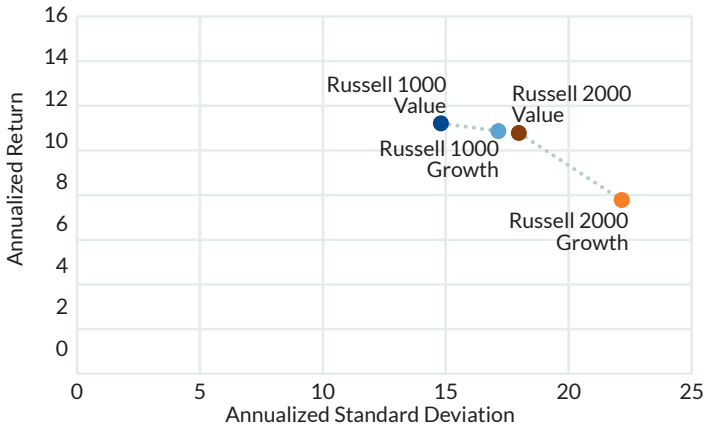
Source: MPI Stylus and Mesirow Calculations

While the very long-term historical data generally favors value equities, exhibiting both higher returns and lower standard deviation than growth equities, this has not been true over the last 40 years. Over that time frame, growth has generally outperformed value in terms of return, albeit generally with higher volatility. The style of equities that provided the highest Sharpe ratio varied depending on the specific time frame of observation and specific benchmarks. For instance, in terms of the Russell 1000 Growth and Russell 1000 Value, the growth index was favored in terms of Sharpe ratio for most trailing periods within the past 25 years, while the value index showed better ratios for periods greater than 25 years as of year-end 2022.

For the smaller capitalization Russell 2000 indices, the value index dominates more decisively over time frames longer than 10 years on raw return and on Sharpe ratios for most trailing periods greater than five years. Figure 9 shows the differences for growth and value indices for the last 40 years from the 1981 to 2022 period that encompasses the majority of the Russell data set.

We are unable to ascertain whether TDF providers are focusing more on the shorter time frames in their modeling process in this regard for constructing an overall growth tilt, which seems most likely, or whether there are other considerations that come to bear in the prevalent growth-tilted portfolio construction, but an emphasis on shorter time frames might explain the extreme growth tilt.

FIGURE 9: **LAST 40 YEARS** | 1981-2022



Source: MPI Stylus and Mesirow Calculations. Past performance is not indicative of future results.

Conclusion

The biggest contribution to overall risk and return prospects for TDF is largely determined at the aggregate asset allocation level in terms of the allocation to equities and fixed income. In this regard, we find a surprising level of consistency across the TDF provider universe, as well as the benchmark reference sets from Morningstar and S&P, but distinct differences for the Mesirow glide path. The bow-shaped equity and fixed income glide path from Mesirow results in a smoother horizon volatility transition than the more straight-line methodology frameworks. In contrast, these latter glide paths result in a jagged horizon volatility path.

There are meaningful second-order differences in allocations within the equity sleeve that contribute to variations in expected risk and return. In this paper, we highlight the various differences among the equity sub-allocations, including size, international equities and style tilts, where there are meaningful differences between the overall TDF universe average and the Mesirow glide path.

The overall universe average of TDFs is under weighted to the size premium for all vintages and does not account for any horizon-related volatility considerations. The Mesirow glide path, in contrast, starts with a relatively 'market neutral' position, but sharply reduces exposure to the more volatile smaller capitalization segment for nearer-dated vintages.

In terms of non-US equity allocations, the TDF universe average is generally in line with a 'market neutral' international weighting from a global perspective, but this may be too high in our estimation for investors with a largely US liability stream. Therefore, the Mesirow glide path maintains a lower weight across all of the vintage years than the average TDF provider.

With respect to the value premium, the average TDF fund glide path is not a believer. The magnitude of the growth tilt is surprising, however. Mesirow believes that the value premium has been largely arbitraged away in the Largecap segment, but still persists in the SMID size segment. Irrespective of the return premium, value stocks still exhibit a lower volatility profile and better risk-adjusted returns over most longer-dated time frames. The Mesirow glide path maintains a very slight value tilt across the vintage year spectrum that is expressed entirely in the SMID segment.

We hypothesize that some of the aggregate equity and fixed income differences are driven by different emphasis on simple lifecycle models versus more empirical horizon modeling, while some of the other differences may be driven by the average TDF emphasis on more recent asset class data relative to long-term data in allocation decisions withing the equity sleeve. While we have no empirical proof, we have anecdotal experience that that herding behavior also plays a role in some of these notable differences.

About Mesirow

Mesirow is an independent, employee-owned financial services firm founded in 1937. Headquartered in Chicago, with locations around the world, we serve clients through a personal, custom approach to reaching financial goals and acting as a force for social good. With capabilities spanning Global Investment Management, Capital Markets & Investment Banking, and Advisory Services, we invest in what matters: our clients, our communities and our culture.

Mesirow Fiduciary Solutions helps the retirement plan community achieve their intended investment objectives through our institutional 3(21) and 3(38) fiduciary partnership services, fiduciary technology and reporting, and customized default solutions.

To learn more about how Mesirow can help you, please contact us at fiduciaryinquiries@mesirow.com or visit mesirow.com/fiduciarysolutions.

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Index descriptions:

MSCI EAFE Index: The MSCI EAFE Index (Europe, Australasia, Far East) is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada. The MSCI EAFE Index consists of the following 22 developed market country indices: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland and the United Kingdom.

MSCI World Index: The MSCI World Index is a free float-adjusted market capitalization index that is designed to measure global developed market equity performance. As of May 2005, the MSCI World Index consisted of the following 23 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States.

MSCI ACWI Index: Captures large and mid cap representation across Developed Markets (DM) and Emerging Markets (EM) countries.

MSCI USA Index: The MSCI USA Index is designed to measure the performance of the large and mid cap segments of the US market.

Russell Top 200 Index: A market capitalization weighted index of the 200 largest companies in the Russell 3000 index.

Russell 1000® Growth Index: Measures the performance of the large-cap growth segment of the US equity universe. It includes those Russell 1000 companies with higher price-to book ratios and higher forecasted growth values.

Russell 1000® Value Index: Measures the performance of the large-cap value segment of the US equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values.

Russell 2000® Index: Measures the performance of the small-cap segment of the US equity universe. The Russell 2000 Index is a subset of the Russell 3000 Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership.

Russell 3000 Index: A market capitalization weighted equity index that provides exposure to the entire U.S. stock market.

Russell Mid Cap® Index: Measures the performance of the mid-cap segment of the US equity universe and is a subset of the Russell 1000 Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The Russell Midcap Index represents approximately 31% of the total market capitalization of the Russell 1000 companies.

S&P 500 Index: Often abbreviated as S&P 500, is an American stock exchange market index based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ. The S&P 500 index components and their weightings are determined by S&P Dow Jones Indices.

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S&P 1500 Index: Combines three leading indices, the S&P 500®, the S&P MidCap 400®, and the S&P SmallCap 600®, to cover approximately 90% of U.S. market capitalization. It is designed for investors seeking to replicate the performance of the U.S. equity market or benchmark against a representative universe of tradable stocks.

S&P 400 Index: A stock market index that serves as a gauge for the US mid-cap equities sector and is the most widely followed mid-cap index.

S&P 600 Index: A stock market index that serves as a gauge for the US small-cap equities.

Note: Neither principal nor the underlying assets of target date investments are guaranteed at any time, including the target date, and investment risk remains at all time. There is no assurance that the recommended asset allocation will either maximize returns or minimize risk or be the appropriate allocation in all circumstances for every investor with a particular time horizon. Mesirow refers to Mesirow Financial Holdings, Inc. and its divisions, subsidiaries and affiliates. The Mesirow name and logo are registered service marks of Mesirow Financial Holdings, Inc. © 2023, Mesirow Financial Holdings, Inc. All rights reserved. Some information contained herein has been obtained from sources believed to be reliable, but is not necessarily complete and its accuracy cannot be guaranteed. Any opinions expressed are subject to change without notice. Advisory Fees are described in Mesirow Financial Investment Management, Inc.'s Form ADV Part 2A. Mesirow does not provide legal or tax advice. Advisory services offered through Mesirow Financial Investment Management, Inc. an SEC-registered investment advisor.