

Advisory Services disclosure brochure for Vanguard Advisers, Inc.

Vanguard Advisers, Inc.

This brochure describes the qualifications and business practices of Vanguard Institutional Advisory Services® (VIAS), an advisory service offered through Vanguard Advisers, Inc., (VAI or "we," "us," and "our"). This brochure also describes how VIAS is compensated for the services provided to you. You should carefully consider the information in this brochure in your evaluation of this service. If you have any questions about its contents, please contact us at 800-662-0106. The information presented here has not been approved or verified by the U.S. Securities and Exchange Commission (SEC) or by any state securities authority.

Additional information about VAI is available on the SEC's website at adviserinfo.sec.gov. VAI is registered with the SEC as an investment advisor. Registration does not imply a certain level of skill or training.

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800-662-0106

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Material changes

This is an annual update to the VIAS brochure. Since the last published brochure on March 31, 2023, Vanguard Advisers, Inc., and its parent, The Vanguard Group, Inc., have entered into an agreement with Mercer Investments, LLC ("Mercer") under which Mercer acquired substantially all of the client agreements and employees of VIAS. Mercer also assumed VIAS's rights and obligations under VIAS's investment management agreements with its clients that consent to the transfer of investment advisory services to Mercer. Investment advisory services to nonconsenting clients were terminated, generally as of the date that the transaction closed, except that advisory services to clients that are ineligible to transfer to Mercer may continue for up to 90 days following the closing date. The transaction closed on March 15, 2024.

For such revisions, including any clarifications related to custom securities portfolios, see sections titled "Customized advisory services," and "VIAS recommendations and risk" for additional information.

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Advisory business

Vanguard Advisers, Inc., (VAI) is a Pennsylvania corporation that provides investment advisory services to a wide variety of clients, including the following:

- Vanguard Personal Advisor Select (formerly branded Vanguard Personal Advisor Services): ongoing advised account services for certain retail clients and point-in-time advice services for participants in eligible employer-sponsored retirement plans;
- Stable value: discretionary investment advisory services to separate accounts that are offered as investment options in state-sponsored education savings plans (529 plans);
- Vanguard Institutional Advisory Services: discretionary and nondiscretionary advisory services and administrative services to institutional clients such as endowments, foundations, employee benefit plans and trusts, and family offices;
- Vanguard ETF Strategic Model Portfolios: model portfolios composed of Vanguard funds and exchange-traded funds (ETFs) (as defined below) and mutual funds and ETFs managed by third-party asset managers that are accessed by third-party intermediaries through third-party platforms;
- Interactive Advice Tools: Personal Online Advisor (POA) is a nondiscretionary advisory service previously offered to certain retail clients and currently offered to participants of eligible employer-sponsored retirement plans. POA is sub-advised by Edelman Financial Engines Advisors L.L.C. (FEA), an independent investment advisory unaffiliated with VAI;
- Vanguard Personal Advisor®: discretionary advisory service offered to eligible participants of certain employer-sponsored retirement plans;
- Vanguard Digital Advisor®: discretionary advisory service offered to retail clients and to participants of eligible employer-sponsored retirement plans;
- Vanguard Situational Advisor™: point-in-time, nondiscretionary advice services and financial planning offered to participants in certain employer-sponsored retirement plans;
- Vanguard Managed Account Program™ (VMAP) and POA: discretionary advisory service offered to participants of eligible employer-sponsored retirement plans. POA is a nondiscretionary advisory service offered to participants of eligible employer-sponsored retirement plans. VMAP and POA are sub-advised by FEA.

As an SEC-registered advisor, VAI has a fiduciary duty to act in its clients' best interests and to abide by the duties of care and loyalty. VAI was incorporated in, and has been in business since, 1995. VAI is 100% owned by Goliath, Inc., a Delaware corporation. Goliath is 100% owned by The Vanguard Group, Inc. (Vanguard). As such, VAI is an indirect, wholly owned subsidiary of Vanguard, the sponsor and manager of the family of mutual funds and ETFs (exchange-traded funds) comprising The Vanguard Group of Investment Companies (Vanguard® Funds), which VAI typically recommends as investments. Please see the section of this brochure entitled "Other financial industry activities and affiliations" for more information.

VIAS is an investment advisory service offered by VAI. VIAS provides investment advisory and administrative services primarily to institutional clients such as endowments, foundations, employee benefit plans and trusts, and family offices. VAI has provided asset allocation guidance and portfolio advisory services to its clients since 1997.

VIAS services include:

- Asset allocation advisory services.
- Analysis and evaluation of each client's financial situation (current investments, spending, and policy needs).
- Performing sensitivity analysis of each client's portfolio using various spending assumptions under diverse economic and financial scenarios.
- Developing and communicating client-specific asset allocation recommendations.
- Preparing updated asset allocation recommendations that incorporate changes in a client's situation, risk tolerance, and assumptions.
- Analytical support, including, asset rebalancing and fund selection.
- Identification and analysis of client risk scenarios (for example, funding shortfalls, loss of purchasing power, increased or volatile pension contributions, and financial statement reporting of pension liabilities).
- Investment policy consulting.
- Fund evaluation, manager search, and ongoing due diligence.

Customized advisory services

VIAS provides investment advice to clients based on their specific situations. VIAS makes investment recommendations after a thorough analysis of client requirements using various analytic techniques and assumptions, taking into consideration a client's risk tolerance, current investments, spending requirements, investment policy guidelines, and other relevant factors. VIAS's recommendations are then customized to the individual client's needs and are designed to strike a balance between a client's goals and the risk/reward characteristics of various asset classes and investments.

VAI offers both discretionary and nondiscretionary investment advice through VIAS. Generally, VIAS provides continuous investment advice to both its discretionary and nondiscretionary clients but may also provide onetime nondiscretionary advice occasionally upon client request.

Regarding nondiscretionary investment advice, VIAS representatives may assist clients in implementing VIAS's recommended investment strategy if a VAI affiliate has custody of the client's assets. It is the client's responsibility to decide whether to act on the advice provided by VIAS and to ensure that the recommendations acted upon, with or without the assistance of VIAS, have been carried out correctly.

VIAS's investment advice principally recommends Vanguard's registered investment companies (mutual funds), which may be managed by Vanguard or an unaffiliated external advisor, and for certain employee benefit plans and trusts, collective investment trusts (CITs) managed by Vanguard Fiduciary Trust Company (VFTC). This brochure refers to Vanguard mutual funds and VFTC CITs collectively as "Vanguard Investments." VIAS also provides advice on investment strategies and issues, including investment return potential and risk, diversification, liquidity, and costs. VIAS generally will not recommend or solicit orders to buy or sell non-Vanguard registered investment companies, CITs, or other investment products, apart from an approved list of non-Vanguard Investments, except when necessary to meet a client-specific need or strategy where no suitable Vanguard Investment exists or the client has specified that VIAS invest some or all of the client's portfolio in non-Vanguard Investments.

VIAS generally will not recommend or solicit orders to buy individual securities, such as U.S. government securities, equity securities, warrants, corporate debt securities, commercial paper, certificates of deposit, municipal securities, option contracts, futures contracts, and interests in oil and gas partnerships. On a limited basis, VIAS may manage a portfolio or recommend the sale of securities held or acquired by independently of VIAS.

As of December 31, 2023, VIAS managed \$57,580,200,000 on a discretionary basis and \$6,792,800,000 on a nondiscretionary basis.

Fees and compensation

VIAS establishes advisory fees individually for each client. The agreed-upon fee will be set forth in the client's advisory contract. VIAS's advisory fee depends on the complexity of the portfolio, services being offered, and other factors. Fees, based on asset-level breakpoints, generally range from 1 to 65 basis points annually based on the value of the client's VIAS portfolio and are generally subject to a minimum annual fee.

A separate fee schedule will apply to portfolios of certain employee benefit trusts subject to ERISA, which may be entitled to credits for revenue that Vanguard or its affiliates receive in connection with investments in Vanguard mutual funds and ETFs, and certain third-party mutual funds, ETFs, CITs, and other investment vehicles (whether or not purchased or held directly through Vanguard Marketing Corporation (VMC), Vanguard's broker-dealer).

The advice provided by VAI through VIAS may include recommendations to sell, hold, or purchase Vanguard Investments. Acting in accordance with such advice will result in the payment of fees to the Vanguard Investment and to either Vanguard or VFTC, both affiliates of VAI. The purchase or sale of Vanguard Investments through Vanguard (whether or not suggested by VIAS) isn't subject to a load, sales charge, or commission. However, each Vanguard Investment incurs advisory, administrative, and custodial fees, as well as other fees and expenses paid out of the Vanguard Investment's own assets. The advisory, administrative, custodial, and other costs make up the Vanguard Investments' expense ratios. Also, some Vanguard Investments impose purchase and redemption fees, which are paid directly into the Vanguard Investment to offset the costs of buying and selling securities.

Clients that are invested in Vanguard Investments are subject to the applicable expense ratios and to any applicable purchase and redemption fees.

Thus, acting in accordance with VIAS's advice to purchase Vanguard Investments will result in the payment of fees to the Vanguard Investments and to Vanguard and/or VFTC, in addition to any advisory fees assessed by VIAS. Such fees are paid at the fund level and do not reduce the account-level fees described in VIAS's fee schedules, except in the case of portfolios subject to ERISA, as described earlier in this section. Please consult the Vanguard Investment's prospectuses or other offering documents for information about a specific Vanguard Investment's expense ratio and other expenses.

An employee benefit plan client may also indirectly bear the fees assessed by Vanguard and/or VFTC for services they provide to the plan. Vanguard may provide participant benefit payment services for which it receives fees that are separate from and in addition to any fees assessed by VAI. Similarly, VFTC may receive fees for serving as trustee of the employee benefit plan's trust. Thus, employee benefit plan clients who are receiving advice from VIAS may also bear the fees assessed by Vanguard and/or VFTC in connection with their services to the plan, in addition to any fees assessed by VIAS. A VIAS client will only incur these Vanguard and VFTC fees if the client separately contracts with Vanguard and/or VFTC for payment and/or trustee services. See below under Other Financial Industry Activities and Affiliations for more information about Vanguard and VFTC.

The purchase or sale of third-party fund shares through Vanguard or its affiliates may be subject to a load or sales charge, although VIAS generally recommends the purchase of no-load mutual funds and CITs. In addition, VIAS clients that are invested in third-party mutual funds indirectly bear the annual fund operating expenses charged by those mutual funds. A fund's or CIT's expenses are detailed in its prospectus or other offering documents.

If VIAS recommends that a client transact in non-Vanguard Investments or individual securities, clients may incur additional fees, including transaction fees, brokerage charges, sales charges, expense ratios, performance fees, allocations of carried interests, commissions, markups, or other fees or expenses. In addition, Vanguard or its affiliates may receive other compensation, including asset-based sales charges, service fees, revenue-sharing payments, 12b-1 fees, or other fees in connection with such investments. VIAS does not take into consideration whether Vanguard or any of its affiliates would receive fees from VIAS's recommendation to transact in non-Vanguard Investments.

Clients may have the option to purchase investment products that VIAS recommends through other financial intermediaries that aren't affiliated with VAI.

Additional fees and expenses

The advisory fees are separate and distinct from other expenses that the client's portfolio may incur for additional services elected from VIAS or its affiliates. Generally, the advisory fees will be set forth in the client's advisory contract for services from VIAS. Services from VIAS affiliates will be reflected in separate contracts between the client and those affiliates. Likewise, for a client that has its portfolio held by a third-party custodian, fees for the custodian's services will be reflected in a separate contract with the custodian. VIAS does not recommend or monitor the performance of any third-party custodian.

Payment of fees

Fees for both non-ERISA and ERISA portfolios are collected in quarterly installments in arrears. The market value of the portfolio is determined as of the last business day of each calendar quarter. VIAS may change fees upon 90 days advance written notice to the client. If the client does not object in writing within the 90-day period, fees will be revised in accordance with the written notice.

If a client's assets are held by Vanguard or another Vanguard affiliate, the client may designate one or more Vanguard funds from which VIAS may deduct applicable fees.

The designation and any changes must be in writing, and VIAS is entitled to rely upon such designation when making the deduction.

Where a client has not designated any Vanguard funds from which to deduct fees, VIAS determines the appropriate fund from which to make the deduction for discretionary accounts. For nondiscretionary accounts, fees will be deducted from the client's funds on a pro rata basis. If a client's assets are held at a third-party custodian, VIAS will invoice the client for fees.

Clients terminating investment advisory services after five days but within the first six months of service may be subject to an early cancellation fee to cover expenses incurred in connection with setting up their accounts, to be offset by any fees paid to VIAS for investment advisory services during the first six months of the advisory services agreement. Fees are charged in arrears, and amounts collected before the termination date will not be refunded.

Performance-based fees and side-by-side management

VIAS does not receive performance-based fees for advisory services provided to clients.

Types of clients

VIAS provides investment advisory and administrative services primarily to institutional clients, such as endowments, foundations, employee benefit plans and trusts, and family offices/trusts.

Methods of analysis, investment strategies, and risk of loss

VIAS's investment methodology incorporates its investment philosophies and beliefs, such as long-term strategic asset allocation, diversification, and strong-performing investments at a low cost. In formulating investment advice for clients, VIAS relies on information from a wide variety of sources, both public and private, regarding short-term and long-term economic and financial market characteristics and trends.

Key features of VIAS's methodology include:

- Goals-based methodology. The asset allocation strategy and investment choices that VIAS recommends are based on long-term financial goals and not on short-term investment performance.
- Broad diversification of assets. VIAS seeks to control risk through broad diversification among asset classes and by choosing investments that reflect a variety of market segments. VIAS does not attempt to predict which investments will provide superior performance at any given time. VIAS believes clients should be broadly diversified across all segments of a securities market because proper diversification is one of the most effective ways to reduce risk without sacrificing expected returns.

When making recommendations, VIAS evaluates a stock portfolio's mix of active management and index approaches and its exposure to large-, mid-, and small-capitalization stocks, to growth and value stocks, and to U.S. and international companies. For bond portfolios, VIAS evaluates the mix of short-, intermediate-, and long-term bonds, along with the mix of U.S. Treasury, government agency, and corporate securities, as well as international bonds. VIAS also evaluates certain alternative investment portfolios, including private equity funds, real estate/private real estate, commodities, market neutral funds, and quantitative alternative funds, in each case where suitable for a client's portfolio.

Vanguard Asset Allocation Model®

VIAS may employ the Vanguard Asset Allocation Model (VAAM) to assist in the formulation of investment advice to clients. VAAM is a proprietary portfolio optimization tool created to help clients make effective asset allocation decisions.

One of the inputs that VAAM utilizes is the Vanguard Capital Market Model's® (VCMM) forecast, which is based on the empirical foundation that the returns of various asset classes reflect the compensation investors receive for bearing different types of systemic risk (or beta). To reasonably forecast the potential distribution of future asset returns, the VCMM is designed to identify the primary macroeconomic and financial risk factors and how they influence asset returns over time. Using a long span of monthly financial and economic data from as early as 1960, the VCMM estimates a dynamic statistical relationship between risk factors and asset returns. Based on these calculations, the model uses regression-based Monte Carlo simulation methods to project these relationships in the future.

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Results may vary with each use and over time.

Key elements of VCMM

The return-forecast portion of the VCMM involves three fundamental processes: the core module, the attribution module, and the simulation module.

The core module is a dynamic statistical model of global macroeconomic and financial risk factors. Its main function is to generate forecasts of these economic and financial risk factors over different time horizons.

The model measures the interrelationship of the various risk factors with each other. This process begins with the model estimating relationships (more specifically, regression betas) among the system of risk factors, based on historical data. The module can then be used to project the estimated relationships into the future over any time horizon.

The attribution module relates the global economic and financial risk factors to the returns of various asset classes. The module's main function is to map the returns of those asset classes to contemporaneous changes in the VCMM's core global risk factors. This mapping is based on observed historical relationships and is estimated using regression techniques.

The simulation module constructs scenarios for all risk factors and asset classes represented in the first two modules. Here, the VCMM creates a distribution of future returns, which means that the model simulates a broad range of possible asset-return outcomes (as opposed to a single-point forecast). In this way, the VCMM accounts for the volatility of asset-return forecasts. For each quarter in the forecast horizon, the VCMM simulates 10,000 scenarios, yielding a distribution of potential future paths for the various risk factors and asset returns at various forecast horizons.

Portfolio-level analysis

Portfolios constructed in VAAM are intended to maximize the total expected utility of wealth at maturity coming from different risk sources (systematic, alpha, and factor risk), allowing the client to simultaneously consider various portfolio construction decisions. One of the key underlying assumptions used in VAAM is based on utility theory, which assumes that the goal of an investor is to maximize the expected utility of the wealth achieved at maturity from his or her portfolio.

It starts by randomly picking a set of weights that constitute a hypothetical asset allocation. Then, given a specific level of risk-aversion, the power utility function incorporates components

of behavioral theory to depict the preferences of the typical investor more accurately. Given the amount and types of each risk in the various portfolio solutions, an investor can achieve a certain level of expected wealth depending on the type of risks involved and their attitude or preference for those risks. VAAM then calculates the expected utility of the portfolio. This process is repeated thousands of times through an algorithm to choose the portfolio that has the highest utility score.

After repeating the calculation for a range of risk aversion coefficients, VAAM determines the subset of portfolios that maximizes the distribution of wealth (return) outcomes at the end of an investment period for each portfolio—the efficient frontier for the client's investment objectives. The efficient frontier quantifies the trade-offs that clients face in the portfolio selection process. More aggressive portfolios yield higher returns on average, but they are also more volatile and thus subject to more downside risk.

Based on this portfolio optimization, and taking into account the client's investment horizon and risk tolerance, VIAS can narrow down the menu of possibilities to a few potential portfolios on the frontier.

The investment objective of a total return strategy is often to increase the real corpus (i.e., the inflation-adjusted spending power of the capital invested) over time. The VCMM's simulated distributions of asset returns are used as inputs to construct efficient frontiers in VAAM. Several measures of expected investment performance—such as a portfolio's return, volatility, extreme-risk events, and terminal asset values—can be computed. In particular, the model's simulations enable investors to study different spending scenarios for the endowment, foundation, or pension plan. This spending scenario analysis is intended to analyze optimal spending rates that maximize both spending and wealth accumulation considering the investor's portfolio goals.

VIAS recommendations and risk

Although VIAS will recommend investments and investment strategies designed to be prudent and diversified, all investments, including pooled funds, involve some risk, including the possible loss of principal. Fluctuations in the financial markets and other factors may cause significant declines in the value of a client's account.

There is no guarantee that any particular asset allocation or mix of investments will meet a client's investment objectives or provide the client with a given level of income. Diversification does not ensure a profit or protect against a loss in a declining market. There is no assurance that a client will achieve positive investment results by using VIAS. VIAS cannot guarantee the future performance of your investments.

Investment strategy

VIAS believes in a coordinated multimanager approach to strategic long-term portfolio construction. VIAS leverages the capital markets modeling and the analytical expertise of in-house thought leadership and manager search teams at Vanguard to inform VIAS's client-specific asset allocation and portfolio implementation. Using quantitative and qualitative techniques, VIAS develops, synthesizes, and manages strategies designed to optimize long-term risk/return characteristics for any given client profile. Client assets are invested using an appropriate level of customization that aligns with our investment methodology.

Projections generated by the VCMM are based both on estimated historical relationships and on assumptions about the risk characteristics of various asset classes. As a result, the accuracy of VCMM forecasts depends on the relevance of the historical sample in simulating future events.

Forecasting is both an art and a science. The VAAM's quantitative output alone will not always provide the most accurate answer.

That is why VIAS investment consultants and analysts complement the model's raw quantitative predictions with additional qualitative analysis.

These qualitative overlays are based on the professional judgment and industry experience of the consultants and analysts and on objective but qualitative information, such as market-consensus expectations, consumer-sentiment indicators, and other information from external sources not captured within the VAAM, as well as client-specific constraints and preferences.

The VAAM was not designed as a short-term tactical asset allocation model. Generally speaking, portfolio analyses based on VAAM output focus on expected long-run returns over horizons of 10 years or more. The VAAM core module is updated quarterly and reestimated with the additional historical observation. New return forecasts for the core risk factors are then generated from the recently added data, and attribution modules are reestimated. As a result, the model parameters used to generate the simulations will change.

The time dependency of VCMM forecasts can be one of its strengths because the forecasts are the direct result of changes in current market conditions. Since VCMM forecasts are initialized to current market conditions (that is, the most current quarter of available data), simulation results are heavily influenced by the last data point. This is especially true for shorter forecast horizons.

Investment selection

VIAS portfolio recommendations primarily utilize Vanguard Investments, including both internally and externally managed investment funds following both passive (index) and active strategies.

The Vanguard Investments, including those that are advised by external managers, are designed from the ground up to reflect Vanguard's investment philosophy and guardrails, particularly broad diversification and low cost.

For example, the bench of actively managed Vanguard Investments used in the majority of VIAS client portfolios (where applicable) includes assets managed by more than 25 different unaffiliated external managers, as well as funds managed by Vanguard's in-house portfolio management teams. VIAS's recommendations for the selection and removal of Vanguard Investments from client portfolios reflect alignment (or lack thereof) with our core investment philosophy and consider the interaction effect of manager combinations.

Vanguard Investments cover the vast majority of client situations, but there are times when VIAS may look for an external investment product to fill a need or to identify an investment product that can be implemented within the guardrails of VIAS's investment methodology at client request. For example, VIAS will typically recommend Vanguard Investments for traditional active equity, passive, and quant strategies internally, and look for outside managers for alpha-centric or specialized strategies, such as private equity. VIAS can, upon client request, create portfolio recommendations consisting entirely of non-Vanguard securities.

For clients seeking a derivatives overlay strategy, VIAS will generally recommend that clients use another investment advisor to manage the discretionary derivatives overlay. VIAS generally recommends derivatives overlays only to pension plan clients for purposes of supplementing the VIAS-managed portfolio with a derivatives overlay to more closely track its pension liabilities (funding status) risk, particularly in connection with liability-driven investment (LDI) strategies, but may recommend to other types of clients with similar needs. VIAS will provide to the investment manager certain data regarding the duration and interest rate sensitivity of both the client's liabilities and investment holdings in its VIAS-managed portfolio on a periodic basis in order to inform the other investment advisor's implementation of the derivatives overlay strategy. Principally, such derivatives overlays are expected to consist of U.S. Treasury futures, centrally cleared interest rate swaps, and direct investments in U.S.

Treasury securities for liability tracking purposes, but VIAS may also recommend clients use derivatives overlays for portfolio rebalancing in certain instances, principally using equity index futures or other futures contracts pursuant to guidelines and other parameters provided by VIAS.

When recommending alternative investments, such as private equity, VIAS generally considers alternatives not as additional asset classes, but rather components of one or more of the five major asset classes (equity, fixed income, cash, real estate, and commodities). VIAS generally prefers to obtain private equity exposure for its clients through a broad-based fund that seeks to invest across a range of industries, deal structures, and geographies. This is a fund-of-funds structure that invests primarily or exclusively in a range of other private equity funds as the most efficient means to obtain that diversification.

Consistent with this investment philosophy, VIAS will only recommend private equity investments in the Vanguard HarbourVest Funds for those clients that meet the eligibility requirements to invest in private equity funds. The Vanguard HarbourVest Funds have been established and maintained by HarbourVest Partners as a series of annual vintage funds for the exclusive use of VIAS's clients and clients of certain Vanguard affiliates. These funds are intended to invest across a broad range of investment sectors through primary, secondary, and direct co-investments. VAI acts as limited partner representative to the Vanguard HarbourVest Funds and may exercise certain administrative rights on behalf of all limited partners, including VIAS clients, invested in the funds. HarbourVest and its affiliates are not affiliated with VIAS or Vanguard.

Although VIAS will not recommend that clients invest in private equity and alternative investments managed by other investment firms, if a client holds such investments, VIAS may agree to take such investments into account in managing the client's VIAS portfolio if VIAS receives sufficient information about such investments to properly evaluate them.

VIAS will not provide advice with respect to whether clients should attempt to sell (where possible) such investments or advise on the terms of such sale transactions.

Because alternative investments are often illiquid, VIAS generally recommends that the majority of a client's assets be invested in liquid, publicly traded investments or in CITs that are expected to be substantially liquid, although VIAS may recommend concentrated positions in alternative investments in certain asset classes where requested by or suitable for the client. The relative illiquidity of alternative investments means that clients should be able to withstand substantial variances from their target investment allocations since the illiquidity of alternatives means that VIAS will often be substantially limited in its ability to redirect clients' investments to bring them to within their target allocations, for example, as part of a quarterly rebalancing.

VIAS believes that private equity and other alternatives can be an important diversifier for appropriate investors with a long time horizon and substantial tolerance for illiquidity since they can provide exposure to investment strategies not available through traditional capital markets. More companies are private today than 10 years ago, and they are staying private longer. As a result, the private equity market represents a large and growing proportion of the broader equity market, and structural forces, such as the regulatory burden for public companies, may cause this trend to continue. Historically, private equity markets have provided excess return over the public markets principally via liquidity premium and alpha. Due to the growth of investor interest in the private equity space and corresponding competition of greater numbers of investors for the opportunities in this space, the excess return available through private equity may be less going forward than it has been in the past.

When evaluating any investment, VIAS uses quantitative metrics, such as fund size, risk, portfolio style consistency, performance, fees and costs, and tracking error, as well as

qualitative factors, such as the firm's ethics and culture, account and asset trends, client base, manager tenure and background, investment philosophy, and investment process, to evaluate and monitor both Vanguard Investments and third-party securities. VIAS believes that the historical performance, low costs, low tracking error, and superior qualitative factors, among other reasons, justify its preference for Vanguard Investments over third-party securities, in asset classes in which there are appropriate Vanguard Investments. However, VIAS has a conflict of interest when evaluating Vanguard Investments as compared with third-party securities because recommendations of Vanguard Investments may result in the payment of greater fees to Vanguard, VFTC, and the Vanguard Investments than recommendations of third-party securities. VIAS attempts to mitigate this conflict by adhering to a documented and consistent process for its evaluation of securities, and by establishing compensation incentives for VIAS advisory representatives that seek to minimize or eliminate bias toward any particular security. Importantly, advisory representatives' compensation does not vary based on whether they recommend Vanguard Investments or non-Vanguard Investments.

Investing with VIAS involves a number of other risks, which include:

Vendor risk: VIAS relies on third-party vendors to support certain aspects of its services. It is possible that clients could be negatively impacted due to the performance of a third-party vendor. Third-party vendors may limit their liability to VIAS's clients. Vanguard has developed a process for assessing the risk and controls implemented by vendors and has implemented mitigating controls where appropriate, which helps to manage risk and minimize the impact of any incidents.

Cybersecurity risk: The increased use of technology to conduct business could subject VAI and its third-party service providers to risks associated with cybersecurity. In general, a cybersecurity incident can occur as a result of a deliberate attack designed to gain unauthorized access to digital systems. If the attack is successful, an unauthorized person or persons could misappropriate assets or sensitive information, corrupt data, or cause operational disruption. A cybersecurity incident could also occur unintentionally if, for example, an authorized person inadvertently released proprietary or confidential information. Vanguard has developed robust technological safeguards and business continuity plans to prevent, or reduce the impact of, potential cybersecurity incidents. Additionally, Vanguard has a process for assessing the information security and cybersecurity programs implemented by third-party service providers, which helps minimize the risk of potential incidents. VAI leverages these capabilities for its clients. Despite these measures, a cybersecurity incident still has the potential to disrupt business operations, which could negatively impact VAI and VIAS's clients.

The following summarizes the principal risks of using equity and bond index funds, ETFs, or collective investment trusts (for purposes of this section, each a "fund"), whether or not Vanguard Investments, to implement VIAS's recommended investment strategies.

Index sampling risk: The chance that the securities selected for a fund, in the aggregate, will not provide investment performance matching that of a fund's target index.

ETF risk: Vanguard ETF® shares are not redeemable directly with the issuing fund other than in very large aggregations worth millions of dollars. ETFs are subject to market volatility.

When buying or selling an ETF, you will pay or receive the current market price, which may be more or less than net asset value.

Manager risk: The chance that poor security selection or focus on securities in a particular sector, category, or group of companies will cause a fund to underperform relevant benchmarks or other funds with a similar investment objective.

Fund of funds manager risk: A fund of funds is designed to invest primarily or exclusively in other mutual funds or other pooled investment funds. It is possible that poor security selection or focus on securities in a particular sector, category, or group of companies will cause one or more of a fund-of-fund's underlying funds—and, thus, the fund itself—to underperform relevant benchmarks or other funds with a similar investment objective.

Liquidity risk: The chance that the ETF may not be able to sell a security in a timely manner at a desired price. Liquidity risk varies by the specific ETF, with larger risk of widening price spreads during times of market volatility for ETFs that hold more thinly traded securities.

Equity-specific risks

Stock market risk: The chance that stock prices overall will decline. Stock markets tend to move in cycles, with periods of rising prices and periods of falling prices.

Sector risk: The chance that significant problems will affect a particular sector or that returns from that sector will trail returns from the overall stock market. Daily fluctuations in specific market sectors are often more extreme than fluctuations in the overall market. Because a fund invests all, or substantially all, of its assets in a particular sector, the fund's performance largely depends—for better or for worse—on the general condition of that sector.

Industry concentration risk: The chance that there will be overall problems affecting a particular industry.

Investment style risk:

- The chance that returns from large-capitalization stocks will trail returns from the overall stock market. Large-cap stocks tend to go through cycles of doing better—or worse—than other segments of the stock market or the stock market in general.

- The chance that returns from small-and mid-capitalization stocks will trail returns from the overall stock market. Historically, small-and mid-cap stocks have been more volatile in price than the large-cap stocks that dominate the overall market, and they often perform quite differently.

International risk or country/regional risk: The chance that world events—such as political upheaval, financial troubles, or natural disasters—will adversely affect the value of securities issued by companies in foreign countries or regions.

Because a fund may invest a large portion of its assets in securities of companies located in any one country or region, including emerging markets, its performance may be hurt disproportionately by the poor performance of its investments in that area. Country/regional risk is especially high in emerging markets.

Emerging markets risk: The chance that the stocks of companies located in emerging markets will be substantially more volatile, and substantially less liquid, than the stocks of companies located in more developed foreign markets.

Currency risk: The chance that the value of a foreign investment, measured in U.S. dollars, will decrease because of unfavorable changes in currency exchange rates. Currency risk is especially high in emerging markets.

Ownership Limitations and Regulatory Relief

The ability of Vanguard and external advisors to purchase or dispose of certain fund investments, or to exercise rights on behalf of a fund, is or may be restricted or impaired because of limitations imposed by law, regulation, or by certain regulators or issuers. As a result, Vanguard and external advisors, on behalf of certain funds currently and other funds potentially in the future, are required to limit purchases, sell existing investments, or otherwise limit the exercise of shareholder rights by a fund, including voting rights. These ownership restrictions and limitations can impact a fund's performance.

For index funds, this impact generally takes the form of a tracking error, which can arise when a fund is not able to acquire its desired amount of a security. For actively managed funds, this impact can result, for example, in missed investment opportunities otherwise desired by a fund's investment advisor. If a fund is required to limit its investment in a particular issuer, then a fund may seek to obtain regulatory or corporate consents or ownership waivers. Other options a fund may pursue include seeking to obtain economic exposure to that issuer through alternative means, such as through a derivative or through investment in a wholly owned subsidiary, both of which may be more costly than owning securities of the issuer directly. In the event a derivative, such as a swap, is used as an alternative means of exposure, Vanguard and external advisors on behalf of a fund are not able to guarantee the availability of derivatives necessary to allow economic exposure to the security, sector, or industry. This limited availability may have additional impacts to fund performance. Additionally, use of derivatives as an alternative means of exposure subjects a fund to derivatives-related risks. Ownership restrictions and limitations could result in unanticipated tax consequences to a fund that may affect the amount, timing, and character of distributions to shareholders.

Bond-specific risks

Call risk: The chance that during periods of falling interest rates, issuers of callable bonds may call (redeem) securities with higher coupons or interest rates before their maturity dates. The fund would then lose any potential price appreciation above the bond's call price and would be forced to reinvest the unanticipated proceeds at lower interest rates, resulting in a decline in the fund's income. Such redemptions and subsequent reinvestments would also increase a fund's portfolio turnover rate.

Call risk is generally low for short-term bond funds, moderate for intermediate-term bond funds, high for long-term bond funds, and high for high-yield bond funds.

Prepayment risk: The chance that during periods of falling interest rates, homeowners will refinance their mortgages before their maturity dates, resulting in prepayment of mortgage-backed securities held by the fund. The fund would then lose any price appreciation above the mortgage's principal and would be forced to reinvest the unanticipated proceeds at lower interest rates, resulting in a decline in the fund's income. Such prepayments and subsequent reinvestments would also increase a bond fund's portfolio turnover rate.

Extension risk: The chance that during periods of rising interest rates, certain debt securities will be paid off substantially more slowly than originally anticipated, and the value of those securities may fall. This will lengthen the duration or average life of those securities and delay a fund's ability to reinvest proceeds at higher interest rates, making a fund more sensitive to changes in interest rates. For funds that invest in mortgage-backed securities, extension risk is the chance that during periods of rising interest rates, homeowners will repay their mortgages at slower rates.

Credit risk: The chance that the issuer of a convertible security will fail to pay interest or dividends and principal in a timely manner or that negative perceptions of the issuer's ability to make such payments will cause the price of that security to decline.

Income risk: The chance that the fund's income will decline because of falling interest rates.

Income risk is generally high for short-term bond funds, low for long-term bond funds, and high for limited-term bond funds.

Interest rate risk: The chance that bond and loan prices overall will decline because of rising interest rates.

Liquidity risk: The chance that the fund may not be able to sell a security in a timely manner at a desired price. Liquidity risk is generally low for short-term bond funds, moderate for intermediate-term bond funds, and high for long-term bond funds.

Currency hedging risk: The risk that the currency hedging transactions entered into by a fund may not perfectly offset the fund's foreign currency exposure.

The following summarizes the principal additional risks of investing in private equity funds.

In addition to the above risks, clients that are invested in private equity are subject to a number of additional risks, or the risks described above may be materially greater in a private equity fund. Investing in alternative investments, such as private equity, requires substantial tolerance for illiquidity and substantial risk of loss, and therefore should only be elected by investors capable of evaluating and tolerating such risks. While, as noted below, private equity investing has provided excess return over public markets historically, there is no guarantee that this outperformance will continue or that investors will earn a return on their capital. Clients should read carefully the offering documents, including any prospectus, private placement memorandum, partnership and subscription agreements, and any other materials they may receive in connection with a private equity investment, and consult their legal counsel if they have any questions.

Liquidity risk: Private equity investing is generally suitable only for investors able to make long-term commitments, often a decade or more, because they have cash flow or other sources of liquid capital sufficient to meet their near-term spending needs, or do not otherwise expect to need access to the funds committed to private equity for the life of such an investment. Investors should not expect private equity funds to provide significant, or even any, cash flow, particularly in the early years of an investment.

Unlike publicly traded investments and most CITs, clients should not expect to be able to exit any private equity fund they have committed to during the term of the private equity fund. Private equity funds are themselves subject to substantial restrictions on their ability to exit deals or otherwise realize value from them.

There are also substantial legal and contractual restrictions on transferring private equity interests that limit a client's ability to sell a private equity fund position to another eligible investor in a private sale, and such sales are also generally subject to the approval of the general partner of the private equity fund. The illiquidity of private equity investments also means that an investor may experience a substantial loss on the sale of such investments even if the investor is able to find a buyer and obtains the necessary approvals to sell the investments.

Diversification risk: Although the type of private equity fund that VIAS will typically recommend will seek to diversify its investments across industries, deal structures, and geographies, there is no guarantee that the fund will be able to obtain its target diversification. The intense competition for investment opportunities in the private equity sector means that there can be no guarantee any private equity fund recommended by VIAS will be able to obtain access to any of the investment opportunities it targets or be able to invest the amount of funds desired in such opportunities.

Private equity investing is highly competitive and involves a high degree of uncertainty due to the absence of public information and disclosure about many investment and deal opportunities. These funds typically do not have prescriptive guidelines, but rather have "expected" or broadly defined allocations. They may vary considerably from these expected allocations due to market conditions or the available investment opportunities, however. There may be a limited number of available investment opportunities in certain or all industries, deal types and structures, and locations, that may lead the general partner of the fund to take more limited or more concentrated positions based on the opportunities that the general partner identifies in the marketplace. The general partner may also be unable to invest all committed capital due to the absence of attractive investment opportunities.

Capacity risk: Private equity funds often limit the numbers and types of investors they accept for business and regulatory reasons. As a result, not all VIAS clients desiring exposure to private equity investments may be able to obtain it either at all or at the desired level of investment.

Disclosure risk: VIAS and its clients will not have the opportunity to evaluate for themselves the investments that the private equity funds make on their behalf. Such investments are generally subject to confidentiality restrictions imposed on the private equity fund by their investment counterparties as a condition of deal participation. As a result, VIAS and its clients must depend solely on the ability of the general partner and its advisors to manage the fund.

In addition, in a fund of funds private equity fund, the private equity fund manager itself will be largely reliant on the investment performance of the managers of the underlying portfolio partnerships in which the fund invests. The private equity fund of funds manager will not have any active role in the management of the underlying portfolio partnerships or otherwise have any ability to influence the investment decisions or other operations of the underlying funds.

Valuations risk: VIAS and its clients will not have visibility to the underlying investments of a private equity fund and must rely on the private equity fund for valuation of the investments it holds. Many companies in which private equity funds invest are new or at an early stage of development. As such, they may have little or even no operating or earnings history on which to evaluate them. Other companies may be operating at a loss or have a need for substantial cash infusions to support their growth. In addition, in the case of a private equity fund of funds, the underlying partnerships and their general partners may themselves be newly formed entities with little or no operating history on which to evaluate them.

Market quotations or other third-party public sources of valuations usually are not available with respect to these investments. Even when market quotations are available for an underlying investment, it might not represent the value an investor would realize in a sale. The valuations of investments by the private equity fund is largely based on the manager's good-faith determination of the fair value of the assets based on a variety of financial and other metrics. As a result, the fund's reported valuations over time may vary significantly from the value, if any, that investors will ultimately realize from their investments in the fund.

VIAS will be making its investment decisions with respect to a client's portfolio based on the private equity fund valuations reported to it. Similarly, any performance reporting it provides to clients with respect to private equity fund holdings will reflect the valuations provided to it by the private equity fund.

Capital call risk: VIAS generally recommends that clients' portfolios be invested as fully as possible in their long-term allocations at all times. When a client has uncalled capital commitments to a private equity fund, VIAS will recommend that such uncalled commitments be invested in publicly traded or otherwise liquid investment funds in the same or similar asset class rather than cash. This will enable the client to most closely execute its long-term investment strategy but may result in withdrawals from an investor's liquid funds at a loss or otherwise at an inopportune time. VIAS will seek to manage a client's portfolio to maintain the client's long-term investment allocations, but the relative illiquidity of private equity may result in the client's portfolio varying significantly from its target allocations for extended periods of time due to the private equity fund's limitations on withdrawals and additional investments. Taxable investors in particular should be aware that such liquidations may also have negative tax consequences for the investor.

Failure to pay capital calls when due can subject an investor to a range of remedies under the private equity fund's governing documents, which may include significant financial penalties, such as reductions in the investor's capital account

balance. Defaults by other investors may also result in accelerated capital calls on other nondefaulting investors, up to their commitment level, to enable the fund to meet its own capital commitments or other funding obligations.

Discretionary and nondiscretionary clients whose assets are held by an independent custodian, and nondiscretionary clients whose assets are custodied by a VAI affiliate, are solely responsible for ensuring that the custodian transfers funds to pay capital calls timely.

Tax risk: Private equity funds are generally treated as partnerships for U.S. federal income tax purposes. For both tax-exempt and taxable investors, partnerships and partners are subject to a complex regime of federal, state, local, and non-U.S. taxes. An investor in a fund treated as a partnership for U.S. federal income tax purposes, including a tax-exempt investor not investing through a blocker fund (see below), may be taxed on income from a partnership regardless of whether the partnership actually distributes any cash, and therefore should have significant liquid funds available to satisfy any tax obligations. Investors may also be required to file a significant number of state, local, and non-U.S. tax returns in addition to a federal tax return as a result of participation in a private equity fund and may be subject to significant costs and administrative burdens in connection with preparing such necessary returns. Also, due to the complexity of many investment partnerships, VIAS clients should not expect to receive a final Schedule K-1 from a private fund before the due date for their tax returns and should expect to obtain any available extensions. Extension requests may require a cash payment with respect to an investor's estimated tax liabilities based on information available as of the date such extension request is filed.

To the extent that amounts paid in connection with an extension request are insufficient to meet an investor's tax liabilities for a given tax year, as finally determined, including as a result of an investment in a fund treated as a partnership for U.S. federal income tax purposes generating income that is taxable to an investor, such investor will need to pay the additional amount due in connection with filing a final tax return for

such tax year and may incur additional interest and penalties with respect to any taxes ultimately shown as due on such final return.

The majority of VIAS's clients are tax-exempt investors, such as employee benefit plans and endowments and foundations. Although such investors are ordinarily exempt from income taxes, certain investment strategies and investments selected by private equity funds may result in some or all of the income generated by a private equity fund to be considered unrelated business taxable income (UBTI). For an investment in a private equity fund treated as a partnership for U.S. federal income tax, this may occur as a result of receiving trade or business income through such fund or as a result of such fund's use of leverage to make investments, which may result in debt-financed income that is UBTI.

Some private equity funds may offer "blocker" structures that will seek to mitigate or eliminate UBTI for tax-exempt investors, but selecting a blocker structure may adversely affect the returns received by a tax-exempt investor due to taxes incurred by a blocker structure or additional costs that may be associated with the maintenance of a blocker structure. VIAS may seek out private equity funds that offer their clients a blocker structure option to mitigate or eliminate UBTI but cannot guarantee that every private equity fund it recommends will offer a blocker structure. In addition, future changes in the tax laws may eliminate or limit the ability to use a blocker structure to address UBTI, and a blocker structure might not eliminate all tax obligations and tax filing requirements with respect to every jurisdiction where a private equity fund invests.

Because incurring UBTI may create significant internal administrative burdens and costs for tax-exempt clients through the preparation of federal, state, local, and non-U.S. tax filings that are outside of VIAS's services, VIAS will generally defer to a client's preference on whether to invest in private equity through a blocked or unblocked structure. In the absence of a client's expressed preference, VIAS will cause tax-exempt clients to participate in private equity investments through a blocker structure for administrative simplicity, but such clients may experience a lower return as compared with an unblocked structure.

HarbourVest-specific risks: In addition to the general private equity investing risks described above, there are certain risks specific to VIAS's and Vanguard's relationship with HarbourVest. As described above, VAI acts as limited partner representative under the Vanguard HarbourVest Funds. In this role, VAI may execute certain decisions on behalf of all limited partners invested in the Vanguard HarbourVest Funds where the approval of the Vanguard HarbourVest Funds' limited partners, including VIAS clients, is requested or required. Many of these rights pertain to administrative matters with respect to the operations of the funds, but may also involve decisions with respect to more significant matters, including with respect to conflicts that HarbourVest or its affiliates may have with respect to the management of the funds and valuation policies. This impacts HarbourVest's compensation and, indirectly, VIAS's compensation to the extent of a client's investment in the Vanguard HarbourVest Funds. VIAS believes that most clients would expect VIAS to exercise such rights in any case, consistent with its role as the client's investment advisor, but VAI's decisions with respect to these matters may differ from those that VIAS clients may have made for themselves. Since neither VAI nor other Vanguard affiliates receive compensation from HarbourVest, VAI does not have a financial interest with respect to the Vanguard HarbourVest Funds that would lead it to favor HarbourVest. To the extent a decision relates to valuation policies, which could indirectly benefit VIAS, VIAS believes these are substantially mitigated because the Vanguard HarbourVest Funds are subject to an annual independent audit and because the Vanguard HarbourVest Funds are intended principally to be funds-of-funds and accordingly HarbourVest itself is largely reliant on the valuations provided by the underlying fund managers in valuing the Vanguard HarbourVest Funds. Further, absent unusual circumstances, VIAS will only recommend that its clients invest a limited portion of their portfolios in the Vanguard HarbourVest Funds, significantly limiting any potential benefit indirectly derived from HarbourVest's valuation policies.

The following summarizes the principal additional risks of investing in private real estate funds.

In addition to the above general investment risks, clients that are invested in private real estate are subject to a number of additional risks, or the general risks described above may be materially greater in the private real estate fund. The description above concerning the risks of private equity fund investing, apart from investment strategy, generally apply to private real estate funds as well, such as illiquidity and a substantial risk of loss. In addition, investors should consider certain additional risks specific to real estate investing as described below. Clients should read carefully the offering documents, including any prospectus, private placement memorandum, partnership and subscription agreements, and any other materials they may receive in connection with a private real estate fund investment, and consult their legal counsel if they have any questions.

The value of investments in real estate and real estate-related industries, whether held by a private real estate fund directly or indirectly via underlying funds in a fund-of-funds structure, are affected by a broad range of risks. In addition to changes in general economic and market conditions, real estate investments may be particularly susceptible to certain other risks, including but not limited to (i) local economic conditions, overbuilding, and competition; (ii) property taxes and other costs specific to owning real estate; (iii) changes in zoning or environmental laws that may significantly impact the value of properties held or their insurability in the event of casualty loss; (iv) availability of financing and changes in interest rates; (v) dependence on tenants' ability to pay their rental, mortgage, or other debt with respect to real estate held; and (vi) environmental liabilities associated with real property ownership, such as toxic or hazardous substances for which the private fund (or an underlying fund, if a fund of funds) may be liable for remediating and that may also subject the property owner to other material costs, such as government fines and liabilities for injuries to persons and property.

The following summarizes the principal risks of using derivatives to implement VIAS's recommended investment strategies.

Manager risk: Derivative products are highly specialized instruments that require investment techniques and risk analyses different from those associated with stocks, bonds, and other traditional investments. The use of a derivative requires an understanding not only of the underlying instrument but also of the derivative itself, without the benefit of observing the performance of the derivative under all possible market conditions. Like most other investments, derivative instruments are subject to the risk that the market value of the instrument will change in a way detrimental to the client's interest. An investor bears the risk that its derivatives advisor will incorrectly forecast future market trends or the values of assets, reference rates, indexes, or other financial or economic factors in establishing derivative positions for the client's portfolio.

If the derivatives advisor attempts to use a derivative as a hedge against, or as a substitute for, a portfolio investment, the client will be exposed to the risk that the derivative will have or will develop imperfect or no correlation with the portfolio investment. This could cause substantial losses for the client. Although hedging strategies involving derivative instruments can reduce the risk of loss, they can also reduce the opportunity for gain or even result in losses by offsetting favorable price movements in other fund investments. Many derivatives are complex and often valued subjectively. Improper valuations can result in increased cash payment requirements to counterparties or a loss of value to a client.

Margin risk: When a client enters into a cleared derivative, an initial margin deposit with a Futures Commission Merchant (FCM) is required. Initial margin deposits are typically calculated as an amount equal to the volatility in market value of a cleared derivative over a fixed period. If the value of the client's cleared derivatives declines, the client will be required to make additional "variation margin" payments to the FCM to settle the change in value. A client could lose margin payments it has deposited with its FCM if, for example, the FCM breaches its agreement with the client or becomes insolvent or goes

into bankruptcy. In that event, the client may be entitled to return of margin owed to it only in proportion to the amount received by the FCM's other customers, potentially resulting in losses to the client.

Liquidity risk: Derivatives may be subject to liquidity risk, which exists when a particular derivative is difficult to purchase or sell. A client could suffer losses if it is unable to close out a position because of an illiquid secondary market. Futures contracts may be closed out only on an exchange that provides a secondary market for such products. However, there can be no assurance that a liquid secondary market will exist for any particular futures product at any specific time. Thus, it may not be possible to close a futures position. Moreover, most futures exchanges limit the amount of fluctuation permitted in futures contract prices during a single trading day. The daily limit establishes the maximum amount that the price of a futures contract may vary either up or down from the previous day's settlement price at the end of a trading session. Once the daily limit has been reached in a particular type of contract, no trades may be made on that day at a price beyond that limit.

The daily limit governs only price movement during a particular trading day and, therefore, does not limit potential losses because the limit may prevent the liquidation of unfavorable positions. Futures contract prices have occasionally moved to the daily limit for several consecutive trading days with little or no trading, thereby preventing prompt liquidation of futures positions and subjecting some futures traders to substantial losses.

The inability to close futures positions also could have an adverse impact on the ability to hedge a portfolio investment or to establish a substitute for a portfolio investment. U.S. Treasury futures are generally not subject to such daily limits.

Pricing risk: Derivatives may be subject to pricing or "basis" risk, which exists when a particular derivative becomes extraordinarily expensive relative to historical prices or the prices of corresponding cash market instruments. Under certain market conditions, it may not be

economically feasible to initiate a transaction or liquidate a position in time to avoid a loss or take advantage of an opportunity.

Leverage risk: Because certain derivatives have a leverage component, adverse changes in the value or level of the underlying asset, reference rate, or index can result in a loss substantially greater than the amount invested in the derivative itself. Certain derivatives may have the potential for unlimited loss, regardless of the size of the initial investment. The risk of loss in trading futures contracts can be substantial because of the low margin deposits required, the extremely high degree of leverage involved in futures pricing, and the potential high volatility of the futures markets. As a result, a relatively small price movement in a futures position may result in immediate and substantial loss (or gain) for the investor. Thus, a purchase of a futures contract may result in losses in excess of the amount invested in the position. In the event of adverse price movements, a client would continue to be required to make daily cash payments to maintain its required margin. In such situations, if the client has insufficient cash, VIAS may have to sell portfolio securities and transfer cash to the client's derivatives advisor to meet daily margin requirements (and segregation requirements, if applicable) at a time when it may be disadvantageous to do so. In addition, on the settlement date, a client may be required to make delivery of the instruments underlying the futures positions it holds.

Disciplinary information

VAI has no disciplinary information to disclose.

Other financial industry activities and affiliations

The Vanguard Group, Inc.

VAI is 100% owned by Goliath, Inc., a Delaware corporation, which is wholly owned by The Vanguard Group, Inc. (Vanguard). Vanguard, also a registered investment advisor, provides a range of investment advisory and administrative services to the Vanguard family of mutual funds (Vanguard funds).

When giving advice to clients, VIAS will principally recommend the purchase of Vanguard funds (including exchange-traded funds, or “ETFs”) serviced by VAI’s corporate parent, Vanguard and, for employee benefit plans and trusts, CITs managed by Vanguard Fiduciary Trust Company (VFTC). VIAS addresses the competing interests that could arise between itself and its clients as a result of recommending proprietary funds by relying on its time-tested investment philosophies—such as the benefits of low costs, diversification, and indexing—when formulating target allocations for clients. VIAS discloses to prospective clients that it recommends Vanguard funds prior to or at the establishment of the advisory relationship. Although acting in accordance with VIAS advice to purchase Vanguard’s proprietary funds will result in the payment of fees to the Vanguard funds that are separate from, and may be in addition to, any fees assessed by VIAS, any competing interests that could arise are mitigated by the low-cost structure of these funds. In addition, VIAS advisory representatives are not compensated based on their recommendation of any Vanguard fund or ETF, or VFTC CIT.

Vanguard Marketing Corporation

Shares of the Vanguard funds are marketed and distributed by Vanguard Marketing Corporation (VMC), a registered broker-dealer that is a wholly owned subsidiary of Vanguard and an affiliate of VAI. VMC’s marketing and distribution services are conducted in accordance with the terms and conditions of a 1981 exemptive order from the Securities and Exchange Commission, which permits Vanguard funds to internalize and jointly finance such activities. Each Vanguard fund (other than a fund of funds) or each share class of a fund (in the case of a fund with multiple share classes) pays its allocated share of VMC’s marketing costs.

When giving advice to clients, VAI will recommend the purchase of Vanguard funds distributed by VAI’s affiliate, VMC. However, no competing interests arise from VAI’s affiliation with VMC due to VMC’s cost structure (described above)

and because neither VMC nor VAI receives transaction-based compensation in connection with the distribution of the Vanguard funds. Certain members of VAI’s management and the VIAS service are registered representatives of, or are affiliated with, VMC. Please refer to the VIAS supplement for further information.

Vanguard Fiduciary Trust Company (VFTC)

VAI also is affiliated with Vanguard Fiduciary Trust Company (VFTC), a limited-purpose trust company incorporated under the banking laws of the Commonwealth of Pennsylvania and a wholly owned subsidiary of Vanguard. VFTC serves as trustee and investment advisor for certain CITs that VIAS may recommend for investment to eligible employee benefit plans and trusts. In addition, VFTC may serve as a nondiscretionary trustee of employee benefit plan trusts receiving investment advice from VIAS. VFTC will receive compensation if clients invest in VFTC’s CITs as a result of VIAS’s advice or receive trustee services from VFTC.

Code of Ethics, participation or interest in client transactions, and personal trading

VAI operates under a code of ethics that complies with Rule 17j-1 of the Investment Company Act of 1940 and Rule 204A-1 of the Investment Advisers Act of 1940.

The code sets forth fiduciary standards that apply to all employees, incorporates Vanguard’s insider trading policy, and governs outside employment and receipt of gifts. In addition, the code imposes restrictions on the personal securities trading of Vanguard employees, as well as reporting requirements. The trading restrictions and reporting requirements are more involved for employees that have access to information about Vanguard fund trading activity or Vanguard client trading activity and are designed to ensure that Vanguard employees do not misuse fund or client information for their own benefit.

Vanguard will provide a copy of its Code of Ethical Conduct to any client or prospective client upon request at no charge.

Please see the section of this brochure titled Other Financial Industry Activities and Affiliations for a discussion of VAI's affiliations with other Vanguard entities and how those affiliations may affect clients of VAI.

Brokerage practices

VIAS generally does not recommend broker-dealers in connection with client transactions arising out of VIAS's advice. However, if VIAS recommends the purchase of Vanguard ETFs® or third-party mutual funds in the portfolio, or if clients have positions in individual securities that they would like VIAS to direct the sale of or advise upon, clients may be required to establish or use an existing brokerage account held through VMC for those securities, and will agree in the advisory agreement to execute all portfolio brokerage transactions through VMC.

Not all advisors require their clients to direct brokerage.

Transactions executed in a VMC brokerage account may be subject to VMC's usual and customary fees, markups, commissions, bid-ask spreads, and charges, separate and apart from the advisory fees assessed by VIAS in connection with the ongoing service. Client assets held within VIAS may be aggregated at the client level in order to permit access to more favorable share-class pricing.

VIAS does perform regular reviews to ensure clients are invested in the appropriate share classes in order for clients to take advantage of more favorable share-class pricing. Further, VIAS will conduct periodic reviews of its advisors' trading activity and perform additional due diligence of VMC to oversee VIAS's compliance with Best Execution including the brokerage services provided by VMC.

VMC routes equity and option orders to various markets. VMC uses a top-down approach in selecting market participants with which VMC will establish a relationship. This approach includes a review of system availability and quality of service, as well as financial and regulatory standing. The designated market participants to which orders are routed are selected based on the consistent high quality of their executions in one or more market segments. In analyzing quality of executions, VMC considers factors such as liquidity enhancement, price improvement, execution speed, and overall effective price compared with the national best bid or offer (NBBO). VMC regularly conducts analysis and reviews reports in order to evaluate quality of execution.

Mutual fund transactions

Mutual fund trades in a Vanguard Brokerage Account held through VMC are limited to those fund families with which VMC has entered into a selling agreement. VMC receives transaction fees, front-and back-end loads, sales charges, and 12b-1 fees in connection with certain transactions in third-party mutual funds through VMC's FundAccess® program. VMC may also receive fees for the provisioning of various shareholder services in connection with the participation of certain mutual funds in the FundAccess® program. These fees may be considered revenue sharing and represent a significant source of revenue for VMC.

A separate fee schedule will apply to portfolios of certain employee benefit trusts subject to ERISA, which may be entitled to credits for revenue that Vanguard or its affiliates receive in connection with investments in Vanguard mutual funds and ETFs, certain third-party mutual funds, ETFs, CITs, and other investment vehicles (whether or not purchased or held directly through Vanguard Marketing Corporation (VMC), Vanguard's broker-dealer). Determined in accordance with an asset-based formula, these payments may equal up to 0.40% of a mutual fund's assets under management at VMC on an annual basis.

As described above in "Fees and Compensation," employee benefit plans and trusts subject to ERISA may be entitled to credits against their VIAS fees for these payments to VMC. VMC may also receive operational payments from mutual funds in the form of networking or per-position fees of up to \$20 for each customer position in a mutual fund on an annual basis. These fees are reimbursed to VMC for the work it performs on behalf of the funds, which may include, but is not limited to, sub-accounting services, dividend calculation and posting, accounting, reconciliation, client confirmation and statement preparation and mailing, and tax statement preparation and mailing. Certain funds offered through the FundAccess® program assess purchase and redemption fees. If a client's portfolio transacts in a fund that assesses such fees or pays the aforementioned forms of compensation to VMC, those fees will be imposed on the transaction(s) and the compensation will be paid to VMC separate and apart from the advisory fees assessed by VIAS.

Exchange-traded fund transactions

If VIAS recommends ETFs for a client's portfolio, transactions will be placed to execute generally at the best available current market price or otherwise based on the liquidity needs, execution speed, and overall effective price achieved, in accordance with VIAS's Best Execution duties. ETF transactions are also subject to the bid-ask spread. Because secondary-market transactions occur at market prices, clients may pay more than the value of the underlying securities when ETF shares are purchased and receive less than the underlying securities' value when those shares are sold.

CIT transactions

Interests in VFTC CITs cannot be purchased through VMC or another broker-dealer. They may only be purchased directly through VFTC.

Private investment fund transactions

Interests in a private investment fund, such as a private equity fund or a private real estate fund, may only be purchased directly from the applicable private investment fund.

Review of accounts

At the outset of an advisory relationship, VIAS will formulate investment guidelines customized to a client's investment objectives after a thorough analysis of the client's requirements. This analysis will use various analytical techniques and assumptions, taking into consideration the client's financial situation, investment experience, investment objectives, risk tolerance, current investments, spending requirements, investment policy statement, and other relevant factors. The guidelines are based on the output from the VAAM. Upon approval by the client, the guidelines are implemented. VIAS conducts regular portfolio reviews, generally quarterly, to ensure adherence to the approved investment guidelines.

As registered owners of Vanguard fund shares, VAI clients will receive or have access to communications about those funds. These communications include transaction confirmations, quarterly account statements, prospectus updates, annual and semiannual reports, and proxy statements relating to their fund holdings (as appropriate), as well as general Vanguard newsletters, emails, and other communications.

Client referrals and other compensation

VAI receives referrals through its affiliate, VMC, pursuant to a referral arrangement under which compensation is provided to representatives of VMC. These representatives of VMC are not employees of VAI. The advisors and consultants providing advisory services through VIAS do not receive any additional or special compensation for referrals. Any fees paid under the referral arrangement with VMC do not result in any additional charges to clients. In addition to their normal compensation, certain VMC representatives may receive additional compensation based in part on the assets that they bring in to the VIAS advisory service. This is one of several components of a compensation plan that is designed to reward VMC representatives for providing a high level of service to clients.

Custody

If you hold a Vanguard mutual fund account directly with Vanguard, you will receive quarterly or more frequent account statements from Vanguard, the transfer agent for the Vanguard Funds, in lieu of a qualified custodian. Vanguard will also transmit transaction confirmations to you in connection with purchases and sales made in your Vanguard mutual fund account.

If you maintain a Vanguard Brokerage Account, VMC, a registered broker-dealer, serves as qualified custodian and will send out quarterly or more frequent account statements directly to you. VMC will also transmit transaction confirmations in connection with purchases and sales made in the client's Vanguard Brokerage Account (provided that VMC may furnish periodic statements of account activity in lieu of transaction confirmations in compliance with Rule 10b-10 of the Securities Exchange Act of 1934).

Clients should carefully review and compare all account statements and reports from Vanguard and VMC with any account information made available by VIAS and contact the applicable custodian directly with any questions. Clients may also appoint an independent custodian to hold their assets.

Investment discretion

VIAS clients have the option to retain VIAS on a nondiscretionary or discretionary basis. Nondiscretionary clients are solely responsible for determining whether to act on investment recommendations provided by VIAS, except as noted below with respect to capital calls.

Discretionary clients allow VIAS full authority to invest their assets as VIAS deems advisable. Clients grant VIAS discretionary authority in the investment management agreement executed between the parties. VIAS has the discretionary authority to (1) invest any money that the client designates for inclusion within their account; (2) initiate, exchange, and direct dividend

transactions among Vanguard Investments and other investments; and (3) initiate the payment of distributions or redemption proceeds from the holdings of the client's VIAS portfolio to the client at the client's address or bank of record.

VIAS's discretionary authority to buy or sell securities and other investments for clients, including the amount to be bought or sold, is based on the client's investment objectives, risk tolerance, time horizon, tax status, saving and spending patterns, or other factors determined by VIAS to be appropriate.

If VIAS, or one of its affiliates (for example, Vanguard, VFTC, or VMC), receives instructions from either a discretionary or nondiscretionary client to send redemption proceeds to a bank of record that was recently changed, VIAS may take steps to ensure that such instructions are authentic. If VIAS has reason to believe such instructions could be fraudulent, VIAS may take steps to protect client assets including, but not limited to, delaying the transmission of redemption proceeds to a new bank of record.

Procedures for handling capital calls

When VIAS receives a capital call from a private investment fund with respect to a discretionary or nondiscretionary client with respect to whom VIAS has custody of the client's liquid securities, VIAS will direct the sale of liquid securities from the client's account sufficient to fund the capital call. In liquidating securities, VIAS will seek to rebalance the client's portfolio to within the target allocations specified in the client's investment guidelines, to the extent possible.

For clients with external custodians, VIAS will direct the sale of securities (if discretionary) or provide recommendations on the sale of securities (if nondiscretionary) to fund capital calls, but clients will be solely responsible for working with their custodians to ensure transactions are executed and the proceeds timely transmitted to the investment fund to satisfy the capital call.

Voting client securities

In general, VIAS will not vote or exercise similar rights for client securities. The exercise of all voting rights associated with any security or other property held in the portfolio will be the responsibility of the client. Proxies will be delivered to the client by the issuer of the security, the custodian, or its agent. VIAS will not advise or act for the client in any legal proceedings, including bankruptcies or class actions, involving securities held or previously held by the portfolio or the issuers of those securities.

Although VIAS does not vote client securities, with respect to the program of private equity funds established under the Vanguard HarbourVest Private Equity Funds program (the "Program") that VIAS may recommend its clients, Vanguard Advisers, Inc. (VAI) may, pursuant to the limited partnership agreement governing the vintage funds under the Program, exercise voting rights or provide consents on behalf of all VIAS clients who are limited partners in the Program. VAI generally expects to exercise its right as limited partner representative to grant or withhold limited partner consent on behalf of VIAS clients invested in the partnership. VIAS clients should not expect to have the opportunity to vote on or consent to matters, such as amendments to the fund's governing documents, on which limited partners of a private investment fund might typically be expected to have voting or consent rights. VAI will not be, or be deemed to be, acting in the capacity of a general partner or manager of the Program or any individual fund thereunder, or otherwise acting in an advisory or fiduciary capacity to the limited partners when acting in its capacity as limited partner representative.

The limited partner representative has authority to provide consent on a range of matters, such as amendments to the partnership agreement, valuation policies, investment strategy, and the terms of HarbourVest's management agreement with the fund. Conflicts of interest may arise in connection with the VAI's exercise of its duties as limited partner representative.

Although VIAS will not receive a share of the management fees or carried interest as a result of serving as limited partner representative, VAI may receive benefits from this framework, such as training and knowledge-sharing from HarbourVest, that may incentivize VAI to consider the Vanguard HarbourVest Funds Program. There may be circumstances in which the limited partner representative gives or withholds its consent or approval with respect to the Program or an individual fund even though the limited partners holding the majority of the interests in the Program or fund desire a different or opposing outcome.

Financial information

VAI is not aware of any financial condition that is reasonably likely to impair its ability to meet contractual commitments to clients.

Requirements for state-registered advisors

VAI is a federally registered investment advisor.

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