



Form ADV Part 2A

## **TIAA-CREF Investment Management, LLC**

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**March 28, 2024**

This Brochure provides information about the qualifications and business practices of TIAA-CREF Investment Management, LLC (“TCIM”). If you have any questions about the contents of this Brochure, please contact us at (212) 490-9000. The information in this Brochure has not been approved or verified by the United States Securities and Exchange Commission or by any state securities authority.

Additional information about TCIM also is available on the SEC’s website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov).

TCIM is a registered investment adviser. Registration of an investment adviser does not imply any certain level of skill or training.

## **Item 2 Material Changes**

There were no material changes to this Brochure dated March 28, 2024 from the last annual update on March 31, 2023. There were non-material additions, changes and elaborations, including to fees, policies, affiliates, strategies, risk factors, and enhancements and clarifications throughout.

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## **Item 4 Advisory Business**

TIAA-CREF Investment Management, LLC (“TCIM”) provides investment management and certain administrative services necessary for the operation of the College Retirement Equities Fund (“CREF”), a diversified open-end registered investment management company consisting of eight accounts that issues individual, group and tax-deferred variable annuity contracts. TCIM tailors its advisory services to the needs of CREF, its only client.

TCIM’s responsibilities include, without limitation, investment advisory services, research services, recommending and placing of orders for the purchase and sale of securities for the CREF portfolios (based on the investment objectives and needs of each CREF account as documented in the CREF prospectus (the “Prospectus”) and statement of additional information (the “Statement of Additional Information”)), supervising relations with custodians, transfer and pricing agents, accountants, auditing, underwriters and other persons interacting with CREF, developing management and shareholder services for CREF, and furnishing reports, evaluations and analysis on a variety of matters.

TCIM is a subsidiary of TIAA-CREF Asset Management LLC, which is an indirect subsidiary of Nuveen, LLC (“Nuveen”). Nuveen is a subsidiary and represents the investment management division of Teachers Insurance and Annuity Association of America (“TIAA”), a leading financial services provider. TIAA constitutes the ultimate principal owner of TCIM. For additional information on the ownership structure, please see Form ADV Part 1, Schedules A and B, and Item 10.

TCIM was formed on December 17, 1997 and registered with the SEC as an investment adviser on December 31, 1990.

As of December 31, 2023, TCIM managed \$ 249.9 billion in discretionary client assets. TCIM did not manage any non-discretionary client assets as of December 31, 2023.

## **Item 5 Fees and Compensation**

TCIM provides its investment advisory and administrative services to CREF on an “at- cost” basis. A daily deduction is made from the assets of CREF’s investment portfolios in connection with the advisory and administrative services provided. These rates are designed to reflect the cost of advisory and administrative services and are not intended to include any profit. The rates of these deductions are revised from time to time, based solely on estimates of expenses anticipated to be incurred, with the objective of keeping the deductions as close as possible to actual expenses. As soon as is practicable, after the end of each quarter, adjusting charges or credits are made to correct any difference between the deductions and the expenses actually incurred. Accordingly, the amounts deducted each year as a percentage of the net assets of each investment portfolio may be higher or lower than the current annual deduction rates, depending upon expense experience.

For CREF equity accounts managed by TCIM, management fees are expected to range from approximately 5.5 basis points to 9.5 basis points.

For the CREF index account managed by TCIM, management fee is expected to be approximately 1 basis point.

For CREF fixed income accounts managed by TCIM, management fees are expected to range from approximately 2.5 basis points to 7 basis points.

For the CREF specialty/balanced account managed by TCIM, management fee is expected to be approximately 4.5 basis points.

For the CREF money market account managed by TCIM, management fee is expected to be approximately 2 basis points.

The Investment Management Services Agreement between TCIM and CREF is subject to approval by the board of trustees of CREF (the “Board of Trustees”), including a majority of Trustees who are not parties to the Agreement or “interested persons” of any party to the Agreement. TCIM’s fees under such Investment Management Services Agreement are set forth in the registration statements and other documents of CREF on file with the SEC.

The Investment Management Services Agreement between TCIM and CREF may be terminated at any time upon the mutual consent of the parties. To avoid a penalty, the Board of Trustees of CREF must give 60 days’ written notice to TCIM or TCIM must give 60 days’ written notice to the Board of Trustees.

### **TCIM’s Fees in General**

TCIM’s fees, which are non-negotiable, are exclusive of transactions costs related to the buying and selling of securities such as brokerage commissions, odd-lot differentials, transfer taxes, wire and electronic transfer fund fees, and other fees and taxes on brokerage accounts and securities

transactions. In addition, clients accounts may incur other certain charges imposed by third parties. Such fees are charged by custodians, broker-dealers, administrators, and distributors and are exclusive of and in addition to TCIM's fee. TCIM shall not receive any portion of these commissions, fees, and costs.

TCIM is reimbursed for the expenses assumed in connection with its advisory services to CREF through daily payments based on an annual rate agreed upon by CREF and TCIM. The agreed upon rate is an estimate of the costs of the services that TCIM will provide with the objective of keeping the actual payments for the services close to the estimated costs.

The daily payment to TCIM is from the net assets of each client account, each valuation day for each calendar day of the valuation period. On a quarterly basis, the amount necessary to correct any differences between the payments to TCIM and the expenses actually incurred by TCIM will be determined. This amount will be paid by or credited to TCIM as the case may be, in equal installments over the remaining days in the quarter.

The internal management fees associated with the accounts managed by TCIM and which may be incurred by investors in the accounts are disclosed in CREF's Prospectus in the section titled "About Expenses."

Additionally, an account may purchase shares of other types of investment companies, which may include exchange-traded funds ("ETFs") principally used for cash management, investment exposure or defensive purposes. Typically, a client account would purchase ETF shares to obtain exposure to all or a portion of the stock or bond market. When a client account invests in another investment company, like an ETF, it bears a proportionate share of expenses charged by the investment company in which it invests.

Item 12 further describes the factors that TCIM considers in selecting or recommending broker-dealers for client account transactions and determining the reasonableness of their compensation (*e.g.*, commissions).

## **Item 6 Performance-Based Fees and Side-By-Side Management**

The compensation paid by CREF to TCIM is based on a percentage of assets under management (on an at-cost basis). TCIM does not have any performance-based fee arrangements in connection with its advisory business.

## Item 7 Types of Clients

TCIM provides portfolio management services to CREF which provides variable annuities for certain types of retirement and tax-deferred savings plans for employees of colleges, universities, other educational and research organizations, and other governmental and non-profit institutions. CREF's main purpose is to invest funds for retirement and pay income based on investments in its eight registered investment accounts:

### **Equity Accounts**

- Stock Account
- Global Equities Account
- Growth Account

### **Index Account**

- Equity Index Account

### **Fixed Income Accounts**

- Core Bond Account
- Inflation-Linked Bond Account

### **Specialty/Balanced Account**

- Social Choice Account

### **Money Market Account**

- Money Market Account

The accounts have no minimum account size requirements.

### **CREF Class Eligibility (Class R1, Class R2, Class R3 and Class R4)**

#### **Class R1**

- Institutions with CREF assets under management below \$20 million.
- Individual and Annuity Products – Individual Retirement Accounts (IRA) and Keogh Contracts.

#### **Class R2**

- Institutions with CREF assets under management of \$20 million or more, but less than \$400 million.
- Individual and Annuity Products – After-Tax Retirement Annuity (ATRA).

#### **Class R3**

- Institutions with CREF assets under management of \$400 million or more.
- Individual and Annuity Products – Immediate Annuity and Accumulation Unit Deposit Option (AUDO).

#### **Class R4**

- Institutions utilizing Retirement Choice/Retirement Choice Plus Contracts and that have entered into a recordkeeping services agreement with TIAA.



## **Item 8 Methods of Analysis, Investment Strategies and Risk of Loss**

TCIM uses a variety of different analytic methods and investment strategies depending on the nature of the client account it is managing. This section first describes the analytical methods TCIM uses and then separately the investment strategies and their associated risks. For additional detailed information, please refer to the current CREF Prospectus and Statement of Additional Information.

### **Methods of Analysis**

#### **Active Management**

For the equity client accounts, TCIM looks for stocks that it believes are attractively priced based on an analysis of the company's prospects for growth in earnings, cashflow, revenues and other relevant measures. TCIM also looks for companies whose assets appear undervalued in the market. In general, TCIM focuses on companies with shareholder-oriented management dedicated to creating shareholder value. TCIM may invest in companies of any size, including small companies.

For the fixed income client accounts, TCIM concentrates on security selection, sector allocation, yield-curve positioning, and duration management. TCIM seeks to preserve capital along with a favorable long-term rate of return.

TCIM invests in securities rated investment grade or below investment grade ("high yield"), and such investments for certain portfolios may be substantial. Additionally, a taxable fixed income client account may invest a portion of its assets in securities and other instruments that are, at the time of investment, illiquid. A taxable fixed income client account's assets may also be invested in U.S. dollar and non-dollar denominated debt obligations of non-U.S. corporations and governments, including those located in emerging markets countries. Taxable fixed income client accounts may pursue other strategies or invest in other instruments described in this Brochure.

A rating includes the rating given plus or minus. For taxable fixed income, TCIM generally relies on the applicable rating(s) of S&P, Moody's and/or Fitch. Split rated securities (i.e., those rated differently by different applicable rating agencies) are generally deemed to receive, as applicable: the middle of three ratings or the lower of two ratings. A portion of a client account's assets may also be invested in securities that are unrated but that TCIM deems to be of comparable quality to a particular rating.

Taxable fixed income portfolios may also invest in other types of fixed income securities, such as asset-backed securities, residential and commercial mortgage-backed securities, corporate debt obligations, municipal securities and inverse floating rate securities.

Taxable fixed income portfolios may invest in and employ derivatives including, but not limited to, futures; interest rate swaps, caps, collars and floors; index swaps, total return swaps, credit default swaps and non-U.S. currency swaps; forward currency contracts and non-deliverable

forward currency contracts; options on futures, non-U.S. currencies and swaps (as well as selling call options and purchasing put options on individual or a basket of securities, as well as on swaps);

and/or other derivatives. The derivatives in which the taxable fixed income client accounts may invest may be exchange traded or traded over the counter. Taxable fixed income client accounts may also invest a portion of their total assets in dollar roll transactions.

A taxable fixed income client account may utilize derivatives strategies to enhance return, hedge some of the risks of their investments in securities, as a substitute for a position in an underlying asset, to reduce transaction costs, to maintain full market exposure, to manage or generate cash flows, to manage the effective maturity and duration of portfolio securities, to increase yield or enhance returns, to create debt or non-U.S. currency exposure, to limit exposure to losses due to changes to non-U.S. currency exchange rates, to preserve capital, and/or other reasons to the extent permitted by client account guidelines. The portion of a taxable fixed income client account that is invested in derivatives at times may be substantial.

Taxable fixed income client accounts may also invest a portion of their assets in cash and cash equivalents. Additionally, certain taxable fixed income client accounts may invest in equity securities and warrants acquired in connection with investments made in certain fixed income securities.

Client accounts may invest in municipal securities that are secured by insurance (including, in certain portfolios, insurance that guarantees the timely payment of principal and interest), bank credit agreements, or escrow accounts. A certain portion of client account's assets may be invested in taxable bonds. Inflation-protected client accounts seek a current yield that compensates an investor for current inflation expectations, and also seek to mitigate the effect that subsequent increases in inflation may have on the purchasing power of the client account by investing in inflation-linked instruments, such as Consumer Price Index ("CPI") swaps, in amounts sufficient to approximate the duration characteristics of the client account's underlying municipal bond portfolio.

Certain investors select municipal bond strategies for interest that is exempt from U.S. federal income tax, and in some cases, state and/or local income tax. Changes in tax laws, adverse interpretations by the Internal Revenue Service or state tax authorities, or noncompliant conduct of a bond issuer, among other events, could lead to declines in the value of municipal bonds and other unfavorable results. Investors are encouraged to consult their own financial, tax and legal advisors regarding the suitability of investing in municipal bond strategies. Certain client accounts invest in lower quality municipal bonds, including high yield bonds. Municipal bond portfolios may pursue other strategies or invest in other instruments described in this Brochure.

## **Quantitative Indexing**

TCIM may use several different investment techniques to build a portfolio of stocks and fixed income securities that are structured to resemble and share the risk characteristics of various segments of the benchmark index, while also seeking to outperform that benchmark index.

Quantitative strategies often employ proprietary, quantitative modeling techniques for security selection, country allocation and portfolio construction. Quantitative analysis involves the use of mathematical models and computer programs that attempt to outperform the index by over- and underweighting certain stocks in the index.

### **Pure Indexing**

TCIM uses investment techniques designed to track various segments of the component indices of a client account's composite index. When using this technique, TCIM buys most, but not necessarily all, of the securities of the component indices and attempts to closely match the overall investment characteristics of such indices.

### **ESG**

Nuveen has adopted certain principles on responsible investing at the enterprise level. TCIM generally endeavors to include material environmental, social and governance (ESG) factors as part of investment research and portfolio construction process for public markets securities in active strategies to the extent relevant, as further described below. For strategies that expressly undertake to employ ESG, green, impact or other responsible investing factors, or as otherwise expressly agreed with CREF, TCIM's approach to ESG is subject to the guidelines and terms relating to such strategies and services.

For active public markets strategies, TCIM seeks to make available certain ESG research that investment research and/or portfolio managers may consider in their discretion to the extent ESG factors are deemed financially relevant from an investment perspective. TCIM does not undertake to apply specific requirements in this regard, and the degree to which ESG factors are integrated largely depends on the particular portfolio management team, strategy and guidelines and requirements, and other factors, and may vary materially. TCIM's ESG research is generally not available, or is integrated to a lesser extent, in certain strategies, accounts and securities, including, for example and without limitation, distressed bonds, convertible bonds, short selling, certain fixed income holdings below certain size thresholds, as well as passive and quantitative public markets strategies.

Unless a strategy expressly undertakes to employ ESG, green, impact, or other responsible investing factors, or as otherwise agreed with CREF, TCIM will not necessarily include in or exclude from portfolios certain securities, industries or sectors based solely on such criteria. CREF should consult its Board of Trustees to consider the suitability and risks of select strategies that expressly pursue ESG, green, impact or other responsible investing objectives. See "ESG Criteria and Impact Risk" below.

## **Investment Strategies**

### **Equity Accounts**

- **Stock Account**

Seeks a favorable long-term rate of return through capital appreciation and investment income by investing primarily in a broadly diversified portfolio of common stocks.

- **Global Equity Account**

Seeks a favorable long-term rate of return through capital appreciation and income from a broadly diversified portfolio that consists primarily of foreign and domestic common stocks.

- **Growth Account**

Seeks a favorable long-term rate of return, mainly through capital appreciation, primarily from a diversified portfolio of common stocks that present the opportunity for exceptional growth.

### **Index Accounts**

- **Equity Index Account**

Seeks a favorable long-term rate of return from a diversified portfolio selected to track the overall market for common stocks publicly traded in the United States, as represented by a broad stock market index.

### **Fixed Income Accounts**

- **Core Bond Account**

Seeks a favorable long-term rate of return, primarily through high current income consistent with preserving capital.

- **Inflation-Linked Bond Account**

Seeks a long-term rate of return that outpaces inflation, primarily through investment in inflation-indexed bonds—fixed income securities whose returns are designed to track a specified inflation index over the life of the bond.

### **Specialty/Balanced Accounts**

- **Social Choice Account**

Seeks a favorable long-term rate of return that reflects the investment performance of the financial markets while giving special consideration to certain social criteria.

### **Money Market Accounts**

- **Money Market Account**

Seeks high current income consistent with maintaining liquidity and preserving capital.

## **Description of Material Risks Associated with Investment Strategies**

Investing in securities involves a risk of loss that client accounts should be prepared to bear. Also, some of the strategies may involve frequent trading which may increase the brokerage and other transaction costs and taxes associated with such a strategy. These increased costs and taxes may negatively affect the performance associated with such strategies.

### **Principal Risks of Investing in Equity Accounts**

In general, the value of equity investments fluctuates in response to the performance and financial condition of individual companies that issue them and in response to general market and economic conditions. Therefore, the value of an investment in the accounts that hold equity securities may decrease. The fact that a particular risk below is not specifically identified as being heightened under current conditions does not mean that the risk is not greater than under normal conditions. There is no guarantee that a client account will meet its investment objective.

An investment in an equity account, the Index Account, or the equity portion of the Social Choice Account, or any client account's equity investments, typically will be subject to the following principal investment risks described below:

- **Issuer Risk** - (often called **Financial Risk**) – The risk that the issuer's earnings prospects, credit rating, and overall financial position will deteriorate, causing a decline in the value of the issuer's financial instruments over short or extended periods of time. In times of market turmoil, perceptions of an issuer's credit risk can quickly change, and even large, well-established issuers may deteriorate rapidly with little or no warning.
- **Market Risk** – The risk that the price of equity investments may decline in response to general market and economic conditions or events, including conditions and developments outside of the financial markets such as significant changes in interest and inflation rates, the availability of credit and the occurrence of other factors, such as natural disasters or public health emergencies (pandemics and epidemics) as well as armed conflict. There is an increased likelihood that these types of events or conditions can, sometimes rapidly and unpredictably, result in a variety of adverse developments and circumstances, such as reduced liquidity, supply chain disruptions and market volatility, as well as increased general uncertainty and broad ramifications for markets, economies, issuers, businesses in many sectors and societies globally. Accordingly, the value of the equity investments that a client account holds may decline over short or extended periods of time. Any investment is subject to the risk that the financial markets as a whole may decline in value, thereby depressing the investment's price. Such conditions may add significantly to the risk of volatility in the accumulated unit value ("AUV") of the client account's units and adversely affect the client account and its investments. Equity markets, for example, tend to be cyclical, with periods when prices generally rise and periods when prices generally decline. Foreign equity markets tend to reflect local economic and financial conditions and, therefore, trends often vary from country to country and region to region. During periods of unusual volatility or turmoil in the financial markets, a client account may undergo extended periods of decline. From time to time, a client

account may invest a significant portion of its assets in companies in one or more related sectors or industries, which would make an account more vulnerable to adverse developments affecting such sectors or industries.

**Client accounts that make foreign investments are subject to:**

- **Emerging Markets Risk** – The risk of foreign investment often increases in countries with emerging markets or otherwise economically tied to emerging market countries. For example, these countries may have more unstable governments than developed countries, and their economies may be based on only a few industries. Emerging market countries may also have less stringent regulation of accounting, auditing, financial reporting and recordkeeping requirements, which would affect a client account’s ability to evaluate potential portfolio companies. Certain emerging market countries may also face other significant internal or external risks, such as the risk of war, macroeconomic, geopolitical, global health conditions, and ethnic, religious and racial conflicts. As a result, there could be less information available about issuers in emerging market countries, which could negatively affect TCIM’s ability to evaluate local companies or their potential impact on the account’s performance. Because their financial markets may be very small, share prices of financial instruments in emerging market countries may be volatile and difficult to determine. Financial instruments of issuers in these countries may have lower overall liquidity than those of issuers in more developed countries. In addition, foreign investors, such as client accounts are subject to a variety of special restrictions in many emerging market countries. Moreover, legal remedies for investors in emerging markets (including derivative litigation) may be more limited, and U.S. authorities (such as the SEC or U.S. Department of Justice) may have less ability to bring actions against bad actors in emerging market countries. National policies (including sanctions programs) may limit an Account’s investment opportunities including restrictions on investment in issuers or industries deemed sensitive to national interests. The risks outlined above are often more pronounced in “frontier markets” in which a client account may invest. Frontier markets are those emerging markets that are considered to be among the smallest, least mature and least liquid. These factors may make investing in frontier market countries significantly riskier than investing in other countries.
- **Foreign Investment Risk** – Foreign investments, which may include securities of foreign issuers, securities or contracts traded or acquired in non-U.S. markets or on non-U.S. exchanges, or securities or contracts payable or denominated in non-U.S. currencies, can involve special risks that arise from one or more of the following events or circumstances: (1) changes in currency exchange rates; (2) possible imposition of market controls or currency exchange controls; (3) possible imposition of withholding taxes on dividends and interest; (4) possible seizure, expropriation or nationalization of assets; (5) more limited financial information or difficulties interpreting it because of foreign regulations and accounting standards; (6) lower liquidity and higher volatility in some foreign markets; (7) the impact of political, social or diplomatic events; (8) economic sanctions or other measures by the United States or other governments; (9) the difficulty of evaluating some foreign economic trends; and (10) the possibility that a foreign government could restrict an issuer from paying principal and interest to investors outside the country. Additionally, to the extent that the

underlying securities held by a client account trade on foreign exchanges or in foreign markets that may be closed when the U.S. markets are open, there are likely to be deviations between the current price of an underlying security and the last quoted price for the underlying security. Economic sanctions and other similar governmental actions or developments could, among other things, effectively restrict or eliminate a client account's ability to purchase or sell certain foreign securities or groups of foreign securities, and/or thus may make the Account's investments in such securities less liquid (or illiquid) or more difficult to value. The type and severity of sanctions and other similar measures, including counter sanctions and other retaliatory actions, that may be imposed could vary broadly in scope, and their impact is impossible to predict. The imposition of sanctions could, among other things, cause a decline in the value and/or liquidity of securities issued by the sanctioned country or companies located in or economically tied to the sanctioned country and increase market volatility and disruption in the sanctioned country and throughout the world. Sanctions and other similar measures could limit or prevent a client account from buying and selling securities (in the sanctioned country and other markets), significantly delay or prevent the settlement of securities transactions, and significantly impact the client account's liquidity and performance. Sanctions and other similar measures may be in place for a substantial period of time and enacted with limited advanced notice. Brokerage commissions and custodial and transaction costs are often higher for foreign investments, and it may be difficult to use foreign laws and courts to enforce financial or legal obligations. In some cases, as a result of economic sanctions and other similar governmental actions or developments, a client account may be forced to sell or otherwise dispose of foreign investments at inopportune times or prices. To the extent a client account invests in depositary receipts, the client account will be subject to many of the same risks as when investing directly in non-U.S. securities. The holder of an unsponsored depositary receipt may have limited voting rights and may not receive as much information about the issuer of the underlying securities as would the holder of a sponsored depositary receipt. To the extent a client account invests a significant portion of its assets in the securities of companies in a single country or region (or depositary receipts representing such securities), it is more likely to be impacted by events or conditions affecting that country or region. Investment in a client account may be more exposed to a single country's or a region's cycles, stock market valuations and currency, which could increase its risk compared with a more geographically diversified client account. In addition, political, social, regulatory, economic or environmental events that occur in a single country or region may adversely affect the values of that country's or region's securities and thus the holdings of a client account.

The risks described above often increase in countries with emerging markets. For example, these countries may have more unstable governments than developed countries, and their economies may be based on only a few industries. Financial instruments of issuers in these countries may have lower overall liquidity than those of issuers in more developed countries. Emerging market countries typically have less established legal, accounting and financial reporting systems than those in more developed markets, which may reduce the scope or quality of financial information available to investors. Governments in emerging market countries are often less stable and more likely to take extra legal action with respect to companies, industries, assets, or foreign ownership than those in more developed markets.

Moreover, it can be more difficult for investors to bring litigation or enforce judgments against issuers in emerging markets or for U.S. regulators to bring enforcement actions against such issuers. Because the financial markets of emerging market countries may be very small, prices of issuers in emerging market countries may be volatile and difficult to determine. In addition, foreign investors, such as a client account, are subject to a variety of special restrictions in many such countries. The economies of some emerging markets may be particularly exposed to or affected by a certain industry or sector, and therefore issuers and/or securities of such emerging markets may be more affected by the performance of such industries or sectors.

**Client accounts that are managed, in whole or in part, according to a growth investment style are subject to:**

- **Style Risk/Risks of Growth Investing** – Use of either a growth investing or value investing style entails the risk that equity securities representing either style may be out of favor in the marketplace for various periods of time, and result in underperformance relative to the broader market sector or significant declines in a client account’s portfolio value. Due to their relatively high valuations, growth stocks are typically more volatile than value stocks. For example, the price of a growth stock may experience a larger decline on a forecast of lower earnings, or a negative event or market development, than would a value stock. Because the value of growth companies is often a function of their expected earnings growth, there is a risk that such earnings growth may not occur or cannot be sustained. Accordingly, a stock with growth characteristics can have sharp price declines due to decreases in current or expected earnings and may lack dividends that can help cushion its share price in a declining market. In addition, growth stocks, at times, may not perform as well as value stocks or the stock market in general and may be out of favor with investors for varying periods of time.

**Client accounts that are managed, in whole or in part, according to indexing techniques are subject to:**

- **Index Risk** – The risk that the performance of a client account may not correspond to, or may underperform, its benchmark index for any period of time. Although each client account attempts to use the investment performance of its respective index as a baseline, it may not duplicate the exact composition of that index. In addition, unlike a client account, the returns of an index are not reduced by investment and other operating expenses, and therefore, the ability of a client account to match the performance of its index is adversely affected by the costs of buying and selling investments as well as other expenses. Therefore, a client account cannot guarantee that its performance will match its index for any period of time.
- **Non-Diversification Risk** – While the Equity Index Account is considered to be a diversified investment company under the Investment Company Act of 1940, as amended (the “Investment Company Act”), this client account may become non-diversified under the Investment Company Act without client account participant approval when necessary to continue to track its benchmark index. Non-diversified status means that this client account can invest a greater percentage of its assets in the securities of a single issuer than a diversified investment



company. Investing in a non-diversified investment company involves greater risk than investing in a diversified investment company because a loss in value of a particular investment may have a greater effect on the investment company's return since that investment may represent a larger portion of the investment company's total portfolio assets, which could lead to greater volatility in the investment company's returns.

**Client accounts that are managed, in whole or in part, according to active management investment techniques are subject to:**

- **Active Management Risk** – The risk that the performance of a client account, which is actively managed, reflects in part the ability of the portfolio manager(s) to make active investment, strategic or trading decisions that are suited to achieving the client account's investment objective. As a result of strategy, investment selection or trading execution, such client account could underperform its benchmark or other investment products with similar investment objectives and may not produce expected returns.

**Client accounts that are managed, in whole or in part, according to quantitative investment techniques are subject to:**

- **Quantitative Analysis Risk** – The risk that securities selected for client accounts in whole or in part, according to quantitative analysis methodology can perform differently from the market as a whole based on the model and the factors used in the analysis, the weight placed on each factor and changes in the factor's historical trends and the risk that such quantitative analysis and modeling may not adequately take into account certain factors, may contain design flaws or inaccurate assumptions and may rely on inaccurate data inputs. If inaccurate market data is entered into a quantitative model, the resulting information will be incorrect. Because such models are based on assumptions of these and other market factors, the models may not take into account certain factors, or perform as intended, and may result in a decline in the value of an account's portfolio.

**Client accounts that invest in large cap securities are subject to:**

- **Large Cap Risk** – The risk that, by focusing on securities of larger companies, an account may have fewer opportunities to identify securities that the market misprices and that these companies may grow more slowly than the economy as a whole or not at all. Also, larger companies may fall out of favor with the investing public as a result of market, political and economic conditions, including for reasons unrelated to their businesses or economic fundamentals.

**Client accounts that invest in mid cap securities are subject to:**

- **Mid Cap Risk** – Securities of medium-sized companies may experience greater fluctuations in price than the securities of larger companies. From time to time, medium-sized company securities may have to be sold at a discount from their current market prices or in small lots over an extended period, since they may be harder to sell than larger-cap securities. In addition,

it may be difficult to find buyers for securities of medium-sized companies that a client account wishes to sell when the company is not perceived favorably in the marketplace or during periods of poor economic or market conditions. Such companies may be subject to certain business risks due to their smaller size, limited markets and financial resources, narrow product lines and frequent lack of depth of management. The costs of purchasing and selling securities of medium-sized companies may be greater than those of more widely traded securities.

**Client accounts that invest in medium-sized and small-sized securities are subject to:**

- **Small Cap Risk** – Securities of small-sized companies may experience greater fluctuations in price than the securities of larger companies. The securities of small-sized companies often have lower overall liquidity than those of larger, more established companies. The number of small-sized companies whose securities are listed on securities exchanges has been declining while investor demand for the securities of such issuers has been increasing, in each case relative to historical trends, which may increase a client account's exposure to illiquid investments risk. As a result, a client account's investments in the securities of small-sized companies may be difficult to purchase or sell at an advantageous time or price, which could prevent a client account from taking advantage of investment opportunities. From time to time, small-sized company securities may have to be sold at a discount from their current market prices or in small lots over an extended period, since they may be harder to sell than larger-cap securities. In addition, it may be difficult to find buyers for securities of small-sized companies that a client account wishes to sell when the company is not perceived favorably in the marketplace or during periods of poor economic or market conditions. Such companies may be subject to certain business risks due to their smaller size, limited markets and financial resources, narrow product lines and frequent lack of depth of management. The costs of purchasing and selling securities of small-sized companies may be greater than those of more widely traded securities.

**The Social Choice Account is subject to:**

- **ESG Criteria and Impact Risk** —The risk that because the client account's ESG criteria and/or proprietary impact framework exclude securities of certain issuers for nonfinancial reasons, the Account may forgo some market opportunities available to funds or accounts that do not use these criteria. TCIM's evaluation of ESG criteria or the Impact framework in connection with its management of the client account may also cause the client account's performance to differ from funds or accounts that do not use such criteria. Sustainability data, including sustainability data obtained from independent research vendor(s), may be incomplete, inaccurate, inconsistent or unavailable, which could adversely affect the analysis of a particular investment. It is possible that the investments identified by TCIM as being aligned with its ESG criteria or impact framework will not operate as expected or that, because the assessment of whether an issuer meets the ESG criteria or Impact framework is conducted at the time of investment, an issuer initially meeting the criteria will not continue to do so over time. Investors may differ in their view of whether a particular investment fits within the ESG criteria or impact framework, and as a result, the client account may invest in issuers that do not reflect the beliefs and/or values of any particular investor. The decision not to invest in certain investments as a result of the ESG criteria or Impact framework may adversely affect

client account performance at times when such investments are performing well. The regulatory landscape with respect to ESG and impact investing in the U.S. is still under development and, as a result, future regulations and/or rules adopted by applicable regulators could require the client account to change or adjust its investment process with respect to ESG and impact investing.

- **Low-Carbon Risk** —The risk that because the client account’s investment strategy includes a special emphasis on companies with low current carbon emissions and an absence of fossil fuel reserves ownership, the client account’s portfolio might exclude certain issuers for nonfinancial reasons and the client account may forgo some market opportunities that otherwise would be available.

### **Principal Risks of Investing in the Fixed Income Accounts and the Money Market Account**

An investment in a Fixed Income Account, the Money Market Account or the fixed-income portion of the Social Choice Account, or any client account’s fixed income investments, typically will be subject to the following principal investment risks described below:

#### **Fixed Income and Money Market Risks**

- **Active Management Risk** – The risk that the performance of a client account, which is actively managed, reflects in part the ability of the portfolio manager(s) to make active investment, strategic or trading decisions that are suited to achieving the client account’s investment objective. As a result of strategy, investment selection or trading execution, such account could underperform its benchmark or other investment products with similar investment objectives and may not produce expected returns.
- **Call Risk** - The risk that an issuer will redeem a fixed income security prior to maturity. This often happens when prevailing interest rates are lower than the rate specified for the fixed income security. If a fixed income security is called early, a client account may not be able to benefit fully from the increase in value that other fixed income securities experience when interest rates decline. Additionally, a client account would likely have to reinvest the payoff proceeds at current yields, which are likely to be lower than the fixed income securities in which the client account originally invested, resulting in a decline in income.
- **Credit Risk (a type of Issuer Risk)** – The risk that a decline, or perceived decline (whether by market participants, rating agencies, pricing services or otherwise), in an issuer’s financial position may prevent it from making principal and interest payments on fixed income investments when due. Credit risk relates to the possibility that the issuer could default on its obligations, thereby causing a client account to lose its investment. Credit risk is heightened in times of market turmoil, when perceptions of an issuer’s credit risk can quickly change and even large, well-established issuers and/or governments may deteriorate rapidly with little or no warning. Additionally, credit risk is heightened in market environments where interest rates are rising, particularly when rates are rising significantly, to the extent that an issuer is less

willing or able to make payments when due. Credit risk is also heightened in the case of investments in lower-rated, high-yield fixed income securities because they are speculative in nature and their issuers are typically in weak financial health and their ability to pay interest and principal is uncertain. Compared to issuers of investment-grade securities, issuers of lower-rated, high-yield fixed income investments are more likely to encounter financial difficulties and to be materially affected by such difficulties. High-yield securities may also be relatively more illiquid; therefore, they may be more difficult to purchase or sell than more highly rated securities.

- **Current Income Risk** – The risk that the income an account receives may fall as a result of a decline in interest rates.
- **Derivatives Risk** – The risks associated with investing in derivatives and other similar instruments (referred to collectively as “derivatives”) may be different from and greater than the risks associated with directly investing in the underlying securities and other instruments, including leverage risk, market risk, counterparty risk, liquidity risk, operational risk, and legal risk. Operational risk generally refers to risk related to potential operational issues, including documentation issues, settlement issues, systems failures, inadequate controls, and human error, and legal risk generally refers to insufficient documentation, insufficient capacity or authority of counterparty, or legality or enforceability of a contract. Derivatives such as swaps are subject to risks such as liquidity risk, interest rate risk, market risk and credit risk. These derivatives involve the risk of mispricing or improper valuation and the risk that the prices of certain options, futures, swaps (including credit default swaps), forwards and other types of derivative instruments may not correlate perfectly with the prices or performance of the underlying security, currency, rate, index or other asset. Certain derivatives present counterparty risk, or the risk of default by the other party to the contract, and some derivatives are, or may suddenly become, illiquid. Changes in the value of a derivative may also create margin delivery or settlement obligations for a client account. A client account may have to sell securities or other instruments at a time when it may be disadvantageous to do so to meet such payment requirements. Some of these risks exist for futures, options and swaps which may trade on established markets. Unanticipated changes in interest rates, securities prices or currency exchange rates may result in poorer overall performance of a client account than if it had not entered into derivatives transactions. The potential for loss as a result of investing in derivatives, and the speed at which such losses can be realized, may be greater than investing directly in the underlying security or other instrument. Derivative can create leverage by magnifying investment losses or gains, and a client account could lose more than the amount invested.
- **Downgrade Risk** – The risk that securities may be subsequently downgraded should TCIM and/or rating agencies believe the issuer’s business outlook or creditworthiness have deteriorated. If this occurs, the values of these investments may decline, or it may affect the issuer’s ability to raise additional capital for operational or financial purposes and increase the chance of default, as a downgrade may be seen in the financial markets as a signal of an issuer’s deteriorating financial position.

- **Extension Risk** – The risk that, during periods of rising interest rates, borrowers pay off their mortgage loans later than expected, preventing a client account from reinvesting principal proceeds at higher interest rates, resulting in less income than potentially available. These risks are normally present in mortgage-backed securities and other asset-backed securities. For example, homeowners have the option to prepay their mortgages. Therefore, the duration of a security backed by home mortgages can lengthen depending on homeowner prepayment activity. A decline in the prepayment rate and the resulting increase in duration of fixed income securities held by a client account can result in losses to investors in the client account.
  
- **Fixed Income Foreign Investment Risk** – Foreign investments, which may include fixed income securities of foreign issuers, or securities or contracts payable or denominated in non-U.S. currencies, can involve special risks that arise from one or more of the following events or circumstances: (1) changes in currency exchange rates; (2) possible imposition of market controls or currency exchange controls; (3) possible imposition of withholding taxes on dividends and interest; (4) possible seizure, expropriation or nationalization of assets; (5) more limited financial information about the foreign debt issuer or difficulties interpreting it because of foreign regulations and accounting standards; (6) lower liquidity and higher volatility in some foreign markets; (7) the impact of political, social or diplomatic events; (8) economic sanctions or other measures by the United States or other governments; (9) the difficulty of evaluating some foreign economic trends; and (10) the possibility that a foreign government could restrict an issuer from paying principal and interest on its debt obligations to investors outside the country. Additionally, to the extent that the underlying securities held by a client account trade on foreign exchanges or in foreign markets that may be closed when the U.S. markets are open, there are likely to be deviations between the current price of an underlying security and the last quoted price for the underlying security. Economic sanctions and other similar governmental actions or developments could, among other things, effectively restrict or eliminate a client account's ability to purchase or sell certain foreign securities or groups of foreign securities, and/or thus may make the account's investments in such securities less liquid (or illiquid) or more difficult to value. The type and severity of sanctions and other similar measures, including counter sanctions and other retaliatory actions, that may be imposed could vary broadly in scope, and their impact is impossible to predict. In some cases, as a result of economic sanctions and other similar governmental actions or developments, an account may be forced to sell or otherwise dispose of foreign investments at inopportune times or prices. The imposition of sanctions could, among other things, cause a decline in the value and/or liquidity of securities issued by the sanctioned country or companies located in or economically tied to the sanctioned country and increase market volatility and disruption in the sanctioned country and throughout the world. Sanctions and other similar measures could limit or prevent a client account from buying and selling securities (in the sanctioned country and other markets), significantly delay or prevent the settlement of securities transactions, and significantly impact an account's liquidity and performance. Sanctions and other similar measures may be in place for a substantial period of time and enacted with limited advanced notice. It may also be difficult to use foreign laws and courts to force a foreign issuer to make principal and interest payments on its debt obligations. In addition, the cost of servicing external debt will also generally be adversely affected by rising international interest rates because many external debt obligations bear interest at rates which are adjusted based upon

international interest rates. In some cases, as a result of economic sanctions and other similar governmental actions or developments, a client account may be forced to sell or otherwise dispose of foreign investments at inopportune times or prices.

The risks described above often increase in countries with emerging markets. For example, the ability of a foreign sovereign issuer, especially in an emerging market country, to make timely and ultimate payments on its debt obligations may be strongly influenced by the issuer's balance of payments, including export performance, its access to international credit and investments, fluctuations of interest rates and the extent of its foreign reserves. If a deterioration occurs in the foreign country's balance of payments, it could impose temporary restrictions on foreign capital remittances. In addition, there is a risk of restructuring certain foreign debt obligations that could reduce and reschedule interest and principal payments. Financial instruments of issuers in these countries may have lower overall liquidity than those of issuers in more developed countries. Emerging market countries typically have less established legal, accounting and financial reporting systems than those in more developed markets, which may reduce the scope or quality of financial information available to investors. Governments in emerging market countries are often less stable and more likely to take extra legal action with respect to companies, industries, assets, or foreign ownership than those in more developed markets. Moreover, it can be more difficult for investors to bring litigation or enforce judgments against issuers in emerging markets or for U.S. regulators to bring enforcement actions against such issuers. The economies of some emerging markets may be particularly exposed to or affected by a certain industry or sector, and therefore issuers and/or securities of such emerging markets may be more affected by the performance of such industries or sectors.

- **Floating and Variable Rate Securities Risk** – Floating and variable rate securities provide for adjustment in the interest rate paid on the obligations. The terms of such obligations typically provide that interest rates are adjusted based upon an interest or market rate adjustment as provided in the respective obligations. The adjustment intervals may be regular, and range from daily up to annually, or may be event-based, such as based on a change in the prime rate. Because of the interest rate adjustment feature, floating and variable rate securities provide an investor with a certain degree of protection against rises in interest rates, although the investor will participate in any declines in interest rates as well. Generally, changes in interest rates will have a smaller effect on the market value of floating and variable rate securities than on the market value of comparable fixed income obligations. Thus, investing in floating and variable rate securities generally allows less opportunity for capital appreciation and depreciation than investing in comparable fixed income securities. Floating and variable rate securities may be subject to greater liquidity risk than other debt securities, meaning that there may be limitations on a client account's ability to sell the securities at any given time. Such securities also may lose value.
- **Illiquid Investments Risk** – The risk that illiquid investments may be difficult to sell for the value at which they are carried, if at all, or at any price within the desired time frame. Illiquid investments are those that are not reasonably expected to be sold or disposed of in current market conditions in seven calendar days or less without the sale or disposition significantly

changing the market value of the investment. Pursuant to applicable SEC regulations, a client account may not invest more than 15% of its net assets in illiquid investments that are assets. The client accounts have implemented a liquidity risk management program and related procedures to identify illiquid investments pursuant to this regulation. A client account may be limited in its ability to invest in illiquid and “less liquid” investments, which may adversely affect a client account’s performance and ability to achieve its investment objective. A client account’s investments in illiquid investments may reduce the returns of the client account because it may be unable to sell the illiquid investment at an advantageous time or price, which could prevent the client account from taking advantage of other investment opportunities. There is also a risk that unusually high withdrawal requests from certain large plans or participants (such as institutional investors) or asset allocation changes, may make it difficult for a client account to sell investments in sufficient time to allow it to meet withdrawals or require an account to sell illiquid investments at reduced prices or under unfavorable conditions. Illiquid investments may trade less frequently, in lower quantities and/or at a discount as compared to more liquid investments, which may cause an account to receive distressed prices and incur higher transaction costs when selling such investments. Securities that are liquid at the time of purchase may subsequently become illiquid due to events such as adverse developments for an issuer, industry-specific developments, market events, rising interest rates, changing economic conditions, changes in interest rates or investor perceptions and geopolitical risk. Dislocations in certain parts of markets are resulting in reduced liquidity for certain investments. It is uncertain when financial markets will improve and economic conditions will stabilize. Liquidity of financial markets may also be affected by government intervention and political, social, health, economic or market developments. During period of market stress, a fund’s assets could potentially experience significant levels of illiquidity.

- **Income Volatility Risk** – Income volatility refers to the degree and speed with which changes in prevailing market interest rates diminish the level of current income from a portfolio of fixed income securities. The risk of income volatility is that the level of current income from a portfolio of fixed income securities may decline in certain interest rate environments.

**Interest Rate Risk** (a type of **Market Risk**) – The risk that the value, liquidity or yield of fixed income investments may decline if interest rates change. In general, when prevailing interest rates decline, the market values outstanding of fixed income investments (particularly those paying a fixed rate of interest) tend to increase while yields on similar newly issued fixed income investments tend to decrease, which could adversely affect a client account’s income. Conversely, when prevailing interest rates increase, the market values outstanding fixed income investments (particularly those paying a fixed rate of interest) tend to decline while yields on similar newly issued fixed income investments tend to increase. If a fixed income investment pays a floating or variable rate of interest, changes in prevailing interest rates may increase or decrease the investment’s yield. Fixed income investments with longer durations tend to be more sensitive to interest rate changes than shorter-duration investments. Interest rate risk is generally heightened during periods when prevailing interest rates are changing. There is a risk that interest rates across the financial system may change, possibly significantly and/or rapidly. In general, changing interest rates, including rates that fall below zero, or a lack of market participants may lead to decreased liquidity and increased volatility in the fixed

income or debt markets, making it more difficult for a client account to sell fixed-income investments. During periods of very low or negative interest rates, a client account may not be able to maintain positive returns. Low interest rates may magnify the risks associated with rising interest rates. A client account may also be subject to heightened interest rate risk when the U.S. Federal Reserve changes interest rates. A wide variety of factors can cause interest rates to change (e.g., central bank monetary policies, inflation rates, general economic conditions). Rising interest rates may cause issuers to not make principal and interest payments on fixed-income investments when due. Other factors that may affect the value of debt securities include, but are not limited to, economic, political, public health, and other crises and responses by governments and companies to such crises. In general, changing interest rates could have unpredictable effects on the markets and may expose fixed-income and related markets to heightened volatility. Changes in interest rates may also lead to an increase in a client account redemptions, which may result in high portfolio turnover costs, thereby adversely affecting a client account's performance.

- **Issuer Risk** - (often called **Financial Risk**) – The risk that the issuer's earnings prospects, credit rating, and overall financial position will deteriorate, causing a decline in the value of the issuer's financial instruments over short or extended periods of time. In times of market turmoil, perceptions of an issuer's credit risk can quickly change and even large, well-established issuers may deteriorate rapidly with little or no warning.
- **Market Volatility, Liquidity and Valuation Risk (types of Market Risk)** – Trading activity in fixed income securities in which a client account invests may be dramatically reduced or cease at any time, whether due to general market turmoil, limited dealer capacity, problems experienced by a single company or a market sector, or other factors such as natural disasters or public health emergencies (pandemics and epidemics). In such cases, it may be difficult for a client account to properly value assets represented by such investments. In addition, a client account may not be able to purchase or sell a security at a price deemed to be attractive, if at all, which may inhibit a client account from pursuing its investment strategies or negatively impact the values of portfolio holdings. Further, an increase in interest rates or other adverse conditions (e.g., inflation/deflation, increased selling of fixed income investments across other pooled investment vehicles or client accounts, changes in investor perception or changes in government intervention in the markets) may lead to increased redemptions and increased portfolio turnover, which could reduce liquidity for certain client account investments, adversely affect values of portfolio holdings and increase a client account's costs. If dealer capacity in fixed income markets is insufficient for market conditions, this has the potential to further inhibit liquidity and increase volatility in fixed income markets. Certain fixed income investments with longer durations or maturities may face heightened levels of liquidity risk.
- **Mortgage Roll Risk** – The risk that TCIM not correctly predict mortgage prepayments and interest rates, which will diminish the investment performance of a client account compared with what such performance would have been without the use of the strategy.



- **Non-Investment Grade Securities Risk** – Issuers of non-investment grade securities, which are usually called “high-yield” or “junk bonds,” are typically speculative in nature, in weaker financial health and such securities can be harder to value and sell and their prices can be more volatile than more highly rated securities. While these securities generally have higher rates of interest, they also involve greater risk of default than do securities with a higher-quality rating. In addition, high-yield securities generally are less liquid than investment-grade securities and the risks associated with high-yield securities are heightened during times of weakening economic, political, unusual or adverse market conditions or rising interest rates. Any investment in distressed or defaulted securities subjects an Account to even Any investment in distressed or defaulted securities subjects a client account to even greater credit risk than investments in other below- investment grade securities.
- **Portfolio Turnover Risk** – In pursuing its investment objectives, a particular account may engage in trading that results in a high portfolio turnover rate which may vary greatly from year to year, as well as within a given year. A higher portfolio turnover rate may result in correspondingly greater transactional expenses that are borne by a client account. Such expenses may include bid-ask spreads, dealer mark-ups and other transactional costs on the sale of securities and reinvestments in other securities and may result in the realization of taxable capital gains (including short-term gains, which are generally taxed to participants as ordinary income). These costs, which are not reflected in annual client account operating expenses may affect a client account’s performance.
- **Prepayment Risk** – The risk that, during periods of falling interest rates, borrowers may pay off their mortgage loans sooner than expected, forcing a client account to reinvest the unanticipated proceeds at lower interest rates, resulting in a decline in income. These risks are normally present in mortgage-backed investments and other asset-backed investments. For example, homeowners have the option to prepay their mortgages. Therefore, the duration of a security backed by home mortgages can shorten depending on homeowner prepayment activity. A rise in the prepayment rate and the resulting decline in duration of fixed income investments held by a client account can result in losses to participants in the client account.
- **Special Risks Relating to Inflation-Indexed Bonds** – The risk that market values of inflation-indexed investments held by a client account may be adversely affected by a number of factors, including changes in the market’s inflation expectations, changes in real rates of interest or declines in inflation (or deflation). There is a risk that interest payments in inflation-indexed investments may fall because of a decline in inflation (deflation). In addition, the Consumer Price Index for All Urban Consumers (CPI-U) may not accurately reflect the true rate of inflation. If the market perceives that any of these events have occurred, then the market value of those investments could be adversely affected.
- **U.S. Government Securities Risk** – U.S. Treasury obligations and some obligations of U.S. Government agencies and instrumentalities are supported by the full faith and credit of the U.S. Government. Other U.S. Government agencies or instrumentalities are backed by the right of the issuer to borrow from the U.S. Treasury. Still others are supported only by the credit of the issuer. No assurance can be given that the U.S. Government would provide financial support

to its agencies or instrumentalities if not required to do so by law, and such agencies or instrumentalities may not have the funds to meet their payment obligations in the future. Therefore, securities issued by U.S. Government agencies or instrumentalities that are not backed by the full faith and credit of the U.S. Government may involve increased risk of loss of principal and interest. In addition, the value of U.S. Government securities may be affected by changes in the credit rating of the U.S. Government. To the extent a client account invests significantly in securities issued or guaranteed by the U.S. Government or its agencies or instrumentalities, any market movements, regulatory changes or changes in political or economic conditions that affect the securities of the U.S. Government or its agencies or instrumentalities in which a client account invests may have a significant impact on the client account's performance. Events that would adversely affect the market prices of securities issued or guaranteed by one U.S. Government agency or instrumentality may adversely affect the market prices of securities issued or guaranteed by other agencies or instrumentalities.

Please also note that some of the strategies may involve frequent trading which may increase the brokerage, other transaction costs, and taxes associated with such strategy. These increased costs and taxes may negatively affect the performance associated with such strategies.

## **Global Risks**

- **Global Economic Risk** – National and regional economies and financial markets are becoming increasingly interconnected, which increases the possibilities that conditions in one country, region or market might adversely impact issuers in a different country, region or market. Changes in legal, political, regulatory, tax and economic conditions may cause fluctuations in markets and securities prices around the world, which could negatively impact the value of a client account's investments. Major economic or political disruptions, particularly in large economies, may have global negative economic and market repercussions. Additionally, events such as war, terrorism, natural and environmental disasters and the spread of infectious illnesses or other public health emergencies may adversely affect the global economy and the markets and issuers in which a client account invests. These events could reduce consumer demand or economic output, result in market closure, travel restrictions or quarantines, and generally have a significant impact on the economy. These events could also impair the information technology and other operational systems upon which a client account's service providers, including the investment adviser, TCIM, rely, and could otherwise disrupt the ability of employees of an account's service providers to perform essential tasks on behalf of a client account. In addition, sanctions and other measures could limit or prevent a client account from buying and selling securities (in sanctioned country and other markets), significantly delay or prevent the settlement of securities transactions, and significantly impact liquidity and performance. Governmental and quasi-governmental authorities and regulators throughout the world have in the past responded to major economic disruptions with a variety of significant fiscal and monetary policy changes, including but not limited to, direct capital infusions into companies, new monetary programs and dramatically lower interest rates. An unexpected or quick reversal of these policies, or the ineffectiveness of these policies, could increase volatility in securities markets, which could adversely affect a client account's investments.

A client account's investments may be subject to inflation risk, which is the risk that the real value (i.e., nominal price of the asset adjusted for inflation), liquidity of assets or income from investments will be less in the future because inflation decreases the purchasing power and value of money (i.e., as inflation increases, the real value of a client account's assets can decline as can the value of the client account's distributions). Inflation rates may change frequently and significantly as a result of various factors, including unexpected shifts in the domestic or global economy, changes in monetary or economic policies (or expectations that these policies may change), public health policies, and other crises and responses by governments and companies to such crises. The market price of debt securities generally falls as inflation increases because the purchasing power of the future income and repaid principal is expected to be worth less when received by a client account. The risk of inflation is greater for debt instruments with longer maturities and especially those that pay a fixed rather than variable interest rate. In addition, this risk may be significantly elevated compared to normal conditions because of monetary policy measures and the current interest rate environment and level of government intervention and spending.

### **Cybersecurity Risk**

- Client accounts and their service providers (including, but not limited to, the client accounts' administrator, custodian, transfer agent, distributor and their delegates) are susceptible to operational, information security and related risks through breaches in cybersecurity. In general, cybersecurity attacks can result from infection by computer viruses or other malicious software or from deliberate actions or unintentional events, including gaining unauthorized access through hacking or other means to digital systems, networks, or devices that are used to service the client accounts' operations in order to misappropriate assets or sensitive information, corrupt data, or cause operational disruption. Cybersecurity failures or breaches affecting the client accounts and their service providers have the ability to cause disruptions and impact business operations, potentially resulting in financial losses, interference with the client accounts' ability to calculate their AUV, impediments to trading, the inability of client account participants to transact business, destruction to equipment and systems, violations of applicable privacy and other laws, regulatory fines, penalties, reputational damage, reimbursement or other compensation costs and/or additional compliance costs. In addition, substantial costs may be incurred by the client accounts and their service providers to prevent any cybersecurity breaches in the future.

### **Technology and Model Risk**

- TCIM regularly uses technology in a variety of ways in its investment processes for certain strategies. Such technology may include quantitative models, algorithms, artificial intelligence, internal databases, and other proprietary and third-party systems. These systems are developed and/or implemented based on certain assumptions, including the accuracy and reliability of input data. Data imprecision, technology design flaws, inaccurate assumptions, software or other technology malfunctions, programming inaccuracies and similar circumstances may impair the performance of this technology, which may result in taking

certain steps that would not have been taken (or not taking certain steps that would have been taken) had the technology performed as intended. Data inaccuracies, including incomplete data, assumptions that prove to be incorrect, or errors in the implementation of technology may occur from time to time and may not be identified and/or corrected. Reliance on technology that does not perform as designed or as intended may result in losses to client accounts.

### **Additional Market Disruption Risk**

- In late February 2022, Russia launched a large-scale military attack on Ukraine. The invasion significantly amplified already existing geopolitical tensions among Russia, Ukraine, Europe, NATO and other western nations, including the U.S. In response to the military action by Russia, various countries, including the U.S., the United Kingdom, and European Union issued broad-ranging economic sanctions against Russia. Such sanctions included, among other things, a prohibition on doing business with certain Russian companies, large financial institutions, officials and oligarchs; a commitment by certain countries and the European Union to remove selected Russian banks from the Society for Worldwide Interbank Financial Telecommunications (“SWIFT”), the electronic banking network that connects banks globally; and restrictive measures to prevent the Russian Central Bank from undermining the impact of the sanctions. In particular, U.S. sanctions prohibit any “new investment” in Russia which is defined to include any new purchases of Russian securities. U.S. persons also are required to freeze securities issued by certain Russian entities identified on the List of Specially Designated Nationals, which includes several large publicly traded Russian banks and other companies. Russia has issued various countermeasures that affect the ability of non-Russian persons to trade in Russian securities. Additional sanctions may be imposed in the future. Such sanctions may adversely impact, among other things, the Russian economy and various sectors of the global economy, including but not limited to, the financials, energy, metals and mining, engineering and defense sectors. The sanctions and any related boycotts, tariffs, and financial restrictions imposed on Russia’s government, companies and certain individuals may cause a decline in the value and liquidity of Russian securities; weaken the value of the ruble; downgrade the country’s credit rating; freeze Russian securities and/or funds invested in prohibited assets and impair the ability to trade in Russian securities and/or other assets; and have other adverse consequences on the Russian government, economy, companies and region. Further, several large corporations and U.S. states have announced plans to divest interests or otherwise curtail business dealings with certain Russian businesses.

The ramifications of the hostilities and sanctions, however, may not be limited to Russia and Russian companies but may spill over to and negatively impact other regional and global economic markets (including Europe and the United States), companies in other countries (particularly those that have done business with Russia) and on various sectors, industries and markets for securities and commodities globally, such as oil and natural gas. Accordingly, the actions discussed above and the potential for wider conflict could increase financial market volatility, cause severe negative effects on regional and global economic markets, industries, and companies and have a negative effect on a Fund’s investments and performance beyond any direct exposure to Russian issuers or those of adjoining geographic regions. In addition, Russia may take retaliatory actions and other countermeasures, including cyberattacks and

espionage against other countries and companies around the world, which may negatively impact such countries and the companies in which a Fund invests.

The extent and duration of the military action or future escalation of such hostilities, the extent and impact of existing and future sanctions, market disruptions and volatility, and the result of any diplomatic negotiations cannot be predicted. These and any related events could have a significant impact on Fund performance and the value of an investment in a Fund, particularly with respect to Russian exposure.

## **Item 9 Disciplinary Information**

There are no legal or disciplinary events that are material to CREF's evaluation of, or the integrity of, TCIM or its management persons.

## **Item 10 Other Financial Industry Activities and Affiliations**

TCIM has arrangements that are material to its advisory business, its client, CREF, or its advisory affiliates or any persons under common control with TCIM (“Related Persons”). Also, certain management persons of TCIM and/or other personnel are registered representatives and associated persons of one or more affiliated broker-dealers.

As discussed above, TCIM is a subsidiary of TIAA-CREF Asset Management LLC, which is an indirect subsidiary of Nuveen. Nuveen is a subsidiary, and represents the investment management division of TIAA, a leading financial services provider. TIAA constitutes the ultimate principal owner of TCIM. For additional information on the ownership structure, please see Form ADV Part 1, Schedules A and B.

TIAA’s subsidiaries include various financial industry entities, including broker-dealers, other investment advisers, commodity pool operators and/or commodity trading advisors, banking or thrift institutions, insurance companies or agencies, pension consultants, sponsors or syndicators of limited partnerships, and sponsors, general partners, or managing members of pooled investment vehicles, among other entities. For further information on these subsidiaries, please see Exhibit A.

TIAA is considered a control person of TCIM, and TIAA’s other financial industry entities may be considered affiliates of TCIM under various other regulatory regimes, including as applicable the Investment Advisers Act of 1940, as amended (the “Advisers Act”), the Investment Company Act and the Employee Retirement Income Security Act of 1974 (“ERISA”).

TCIM is committed to putting the interests of client accounts first and seeks to act in a manner consistent with its fiduciary and contractual obligations to client accounts and applicable law. At times, TCIM may determine, in an exercise of its discretion, to limit or refrain from entering into certain transactions, for some or all client accounts, in order to seek to avoid a potential conflict of interest, or where the legal, regulatory, administrative, or other costs associated with entering into the transaction are deemed by TCIM to outweigh the expected benefits. Further, certain regulatory and legal restrictions or limitations and internal policies (including those relating to the aggregation of different account holdings by TCIM and its affiliates) may restrict certain investment or voting activities of TCIM on behalf of client accounts. For example, TCIM’s investment and proxy voting activities with respect to certain securities, issuers, regulated industries and non-U.S. markets may be restricted where applicable laws or regulations impose limits or burdens with respect to exceeding certain investment thresholds when aggregated with its affiliates.

To the extent permitted by the Advisers Act, the Investment Company Act, ERISA, and other law, as applicable, TCIM may give advice, take action or refrain from acting in the performance of its duties for certain client accounts that may differ from such advice or action, or the timing or nature of such advice or action, for other client accounts including, for example, for clients subject to one or more regulatory frameworks.

From a business perspective within Nuveen, TCIM's business is part of a functional group (known internally as Nuveen Equities and Fixed Income), which seeks to provide alignment and collaboration among certain Nuveen affiliates managing public equity and fixed income asset classes. These affiliates include Teachers Advisors, LLC ("TAL"), Nuveen Asset Management, LLC ("NAM"), Winslow Capital Management, LLC, and others.

From an investment perspective within Nuveen, TCIM's municipal fixed income, taxable fixed income, and equities investment services are part of a broader Nuveen organizational framework that seeks to promote greater collaboration among and provide leadership to the respective investment teams. TCIM's municipal bond and taxable fixed income investment teams comprise investment and trading personnel who are "multi-hatted" as employees ("Multi-hatted Personnel") across TCIM, TAL and NAM. These teams coordinate and share investment and certain trading processes with respect to client accounts in municipal bond and taxable fixed income, and equity (excluding public real assets ) strategies. These integrated municipal bond and taxable fixed teams are sometimes referred to in the marketplace as Nuveen Municipals, Nuveen Fixed Income, and Nuveen Equities, respectively.

Multi-hatted Personnel face conflicts in providing services for various clients of multiple affiliates, such as in the areas of trade sequencing and allocating opportunities. These conflicts are similar to the conflicts they face in providing services for various clients (including affiliated and proprietary accounts) of a single investment adviser. Through its policies, procedures, and practices, TCIM seeks to provide for the fair and equitable treatment of client accounts. See Item 12.

TIAA affiliates market, distribute, make referrals of, use and/or recommend investment products and services (including funds and pooled investment vehicles, and investment advisory services) of other affiliates (including TCIM), and such affiliates may pay and receive fees and compensation in connection thereto. As a result of the potential additional economic benefit to TCIM and/or its affiliates resulting from such activities, there is a potential conflict of interest for TCIM, which TCIM seeks to mitigate in a variety of ways, depending on the nature of the conflict, such as through oversight of these activities and/or by disclosure in this Brochure. Affiliated broker-dealers and their personnel act as distributors with respect to and/or promote and provide marketing support to affiliated funds and broker-dealer personnel are internally compensated for those activities. Such distribution activities are subject to the broker-dealer's own procedures.

TCIM's affiliates or shared services units, including Nuveen Services, LLC, provide it with supplemental account administration, trading, operations, client service, sales and marketing, product development and management, risk management, information technology, legal and compliance, human resources, and other corporate, finance or administrative services. TCIM may likewise provide services for its affiliates. Multi-hatted personnel may perform services for both TCIM and one or more TCIM affiliates. The scope of certain such services and arrangements varies depending on the particular strategy, distribution channel, program, and client size and type.

In providing investment advisory services to accounts in certain strategies, TCIM may use portfolio management, research, trading and other resources of one or more non-US affiliates,



including Nuveen Hong Kong Limited, Nuveen Singapore Private Limited, Nuveen Investment Management International Limited and/or others, that are not registered with the SEC. Certain of such services are provided through a “participating affiliate” arrangement, as that term is used in relief granted by the SEC staff allowing U.S. registered investment advisers such as TCIM to use portfolio management resources of advisory affiliates subject to the regulatory supervision of the registered investment adviser.

## **Item 11 Code of Ethics, Participation or Interest in Client Transactions and Personal Trading**

### **Code of Ethics**

TCIM adheres to the Nuveen Code of Ethics and the Code of Ethics Policy Supplement (together, the “Code of Ethics”). TCIM has adopted policies and procedures designed to detect and prevent conflicts of interest relating to personal trading by its employees, and to ensure that TCIM effects transactions for client accounts in a manner that is consistent with its fiduciary duty to its client accounts and in accordance with applicable law.

TCIM’s employees who wish to purchase or sell most types of securities in their personal accounts may do so only in compliance with certain procedures outlined in the Code of Ethics, such as pre-approval of non-exempted securities by compliance personnel and periodic holdings reporting. Additionally, TCIM Investment Persons, as defined below, are prohibited from effecting transactions in individual municipal securities. Furthermore, employees are required, with limited exceptions, to maintain brokerage accounts with select broker-dealers who provide automated, electronic reporting of transactions and account information to assist the Nuveen Ethics Office in the monitoring of employee transactions. The Code of Ethics also prohibits the misuse of material nonpublic information and confidential information. A copy of the Code of Ethics will be provided upon request of any client or prospective client. Please see the cover page to this Brochure for contact information.

TCIM and its Related Persons may invest in securities for their personal accounts that are also recommended to TCIM client accounts. Potential conflicts arise in this situation because TCIM or its Related Persons may have a material interest in or relationship with the issuer of a security or may use knowledge about pending or currently considered securities transactions for client accounts to profit personally. To address these potential conflicts, employees are required to review and certify securities trading activity quarterly and to provide securities holding reports upon commencement of employment and to review and certify securities holdings thereafter on an annual basis. In addition, employee transactions are subject to limitations regarding the type and timing of transactions, including certain trading prohibitions, and pre-approval and monitoring by compliance professionals and/or certain Related Persons.

TCIM, its employees, and its affiliates may give advice and take action in the performance of their duties for some client accounts that may differ from advice given, or the timing or nature of actions taken, for other client accounts or for their proprietary or personal accounts. TCIM employees, household members, and others affiliated with the firm (collectively “employees”) can be clients of TCIM.

Subject to the restrictions described above, TCIM and its employees may at any time hold, acquire, increase, decrease, dispose of or otherwise deal with positions in investments in which a client account may have an interest from time to time. TCIM has no obligation to acquire for a client account a position in any investment which it, acting on behalf of another client account, or an

employee, may acquire, and the client accounts shall not have first refusal, co-investment or other rights in respect of any such investment.

The following restrictions apply to Related Persons of TCIM who (i) in connection with their regular functions or duties make or participate in making recommendations or decisions concerning the purchase or sale of securities for a client account, or (ii) are natural persons in a control relationship with TCIM or its affiliates and obtain information concerning recommendations made to a client account, portfolio managers, research analysts, research assistants, or any other persons designated as such by TCIM or any affiliated entity (each such person is an “Investment Person”). Investment Persons are subject to a personal trading prohibition during the period starting seven (7) calendar days before and ending seven (7) calendar days after any trade in the same (or related, or equivalent) security on behalf of a client account for which he/she has portfolio management responsibility. In some cases, the Investment Person may be required to reverse a trade and/or forfeit an appropriate portion of any profits associated with his or her transaction. These consequences can apply whether or not the trade was pre-approved.

With respect to other Related Persons that are not Investment Persons, TCIM and its advisory affiliates maintain procedures (including certain information barriers) designed generally to provide for independent exercise of investment and voting power.

To the extent the Nuveen Ethics Office determines that there is no material conflict of interest, certain officers and employees of TCIM from time to time may engage in outside business activities, including serving on boards of unaffiliated entities.

Employees may be offered or receive business gifts, meals, and entertainment from parties with whom TCIM conducts business. Receipt of business gifts, meals, and entertainment from CREF, consultants or broker-dealers may inappropriately influence investment or trading decisions. Similarly, the giving of business gifts, meals, and entertainment could inappropriately influence CREF, consultants, or broker-dealer in an effort to gain an unfair advantage in acquiring or retaining CREF. Employees are subject to certain limitations and reporting obligations regarding the receipt/giving of business gifts, meals, and other benefits in the form of entertainment from parties with whom TCIM conducts business. For a discussion of conflicts related to gifts and entertainment, please refer to Item 14.

Similarly, employees may from time to time make political contributions. The inappropriate influencing of CREF to gain an unfair advantage in acquiring or retaining client accounts creates a conflict of interest. TCIM has established procedures seeking to comply, at a minimum, with federal law. In addition, all applicable contributions require preclearance and employees are required to certify on a quarterly basis that they have reported all applicable monetary or in-kind political contributions.

#### **Participation or Interest in Client Transactions**

TCIM may periodically recommend securities to its client accounts that are also recommended by one or more of its Related Persons to their clients. TCIM has policies and procedures such as the fair

allocation policies described in Item 12 to address any conflicts that may arise from such transactions.

TCIM may purchase or sell securities for client accounts in which TCIM or a Related Person may have a position of financial or other interests and may buy or sell for itself securities that it also recommends to client accounts. TCIM has established a variety of restrictions, procedures and disclosures designed to address any potential conflicts of interest that may arise as a result of these arrangements.

TCIM, when appropriate, may advise its client accounts to invest in securities that are being purchased by its parent, TIAA. TCIM has an established trade allocation policy to seek to ensure that the purchased securities are allocated fairly. See Item 12.

### **Material Non-Public Information**

From time to time, TCIM receives material non-public information (“MNPI”) and becomes subject to limitations on its investment activities relating to the possession of MNPI. Under applicable law, TCIM and its personnel are prohibited from improperly disclosing or using MNPI for their own benefit or the benefit of their client accounts. Possession of MNPI could limit TCIM’s ability to transact in affected investments, which could be detrimental to client accounts. TCIM may in its discretion seek to employ the use of certain approaches or procedures to seek to minimize such limitations, but there is no assurance that TCIM will employ such procedures or that such procedures will be effective in alleviating the limitations associated with possessing MNPI.

### **Cross Trades**

A cross trade occurs when an adviser effects a trade between two or more of its advisory client accounts and does not charge a fee for effecting the transaction. Given the fiduciary duty owed to both accounts when effecting such trade, the use of cross trades raises potential conflicts of interest.

Subject to applicable law, TCIM causes a client account to enter into a cross trade only in cases where it believes that the cross trade would be in the best interests of both selling and buying accounts. TCIM believes that cross trades have the potential to provide benefits to both the buying and the selling account, including eliminating or reducing transaction costs. Further, cross trades can provide a potentially attractive alternative to selling or buying a small-lot size of a desirable security in the open market, especially when the small-lot is part of a larger block position held by other client accounts.

TCIM may execute transactions between client accounts and certain other client accounts managed by its affiliates (including the registered funds managed by TAL). Any such transactions will be executed in accordance with Rule 17a-7 under the Investment Company Act and procedures adopted by the TCIM’s Boards of Trustees (as applicable). Neither TCIM nor any broker-dealer affiliated with TCIM receives any commission, transaction fees or other transactional compensation in connection with effecting cross trades.

Cases may arise where trading or investment personnel do not know or have reason to know the identity of the other side of a trade prior to execution, which may result in TCIM-advised accounts

selling to other TCIM-advised accounts. For example, in seeking best execution, TCIM trading and investment personnel at times find it advantageous to use electronic trading platforms (e.g., Bloomberg Tradebook, MarketAxess, etc.), which generally seek to provide the best price under the circumstances. These platforms typically match buyers and sellers among a large universe of market participants based on price. TCIM users of such platforms generally do not know or have reason to know the identity of the other side of the trade prior to execution. Additionally, trading or investment personnel may operate independently within different teams and/or for different accounts, asset classes or strategies in which such personnel generally do not know or have reason to know the identity of the other side of the trade prior to execution. TCIM considers the foregoing facts and circumstances, and factors such as the liquidity of the securities, uncoordinated timing of sell/buy transactions and no linkage in transaction fees for sell/buy transactions in determining its treatment of such trades under various regulatory regimes.

### **Capital Structure**

Conflicts will also arise in cases where different client accounts of TCIM or affiliates of TCIM invest in different parts of an issuer's capital structure, including circumstances in which one or more client accounts may own private securities or obligations of an issuer and other client accounts may own public securities of the same issuer. For example, a client account may acquire a loan, loan participation or a loan assignment of a particular borrower in which one or more other accounts have an equity investment. In addition, different client accounts may invest in securities of an issuer that have different voting rights, dividend or repayment priorities or other features that may be in conflict with one another. In negotiating the terms and conditions of any such investments, or any subsequent amendments or waivers, TCIM or its affiliates may find that their own interests and the interests of client accounts could conflict. For example, a debt holder may be better served by a liquidation of the issuer in which it may be paid in full, whereas an equity holder might prefer a reorganization that holds the potential to create value for the equity holders. Any of the foregoing conflicts of interest will be discussed and resolved on a case-by-case basis. Any such discussions will take into consideration the interests of the relevant client accounts, the circumstances giving rise to the conflict and applicable laws.

For additional information, see Item 10.

## Item 12 Brokerage Practices

### **Broker–Dealer Selection**

TCIM is responsible for decisions to buy and sell securities for its accounts as well as for selecting broker-dealers and, where applicable, negotiating the amount of the commission rate paid. It is the intention of TCIM to place brokerage orders with the objective of obtaining the best execution.

When selecting broker-dealers to add to its approved broker-dealer list, TCIM considers a variety of factors including, but not limited to, the broker’s trading capabilities, ability to provide market intelligence, knowledge and understanding of TCIM’s trading activities, syndicate capabilities, participation in commission sharing arrangements for equities trading through which TCIM is able to pay for research products and services, and their clearance and settlement capabilities. In addition, TCIM considers electronic trading venues and algorithmic trading systems when it believes they can offer efficient execution and benefit to client accounts.

When selecting broker-dealers to execute transactions in equity securities, TCIM takes into consideration best price and additional factors including, but not limited to, the value, nature and quality of the broker-dealer’s services, the broker’s participation in commission sharing arrangements through which TCIM is able to pay for research products and services, execution capability, commission rate, financial responsibility (including willingness to commit capital), the likelihood of price improvement, the speed of execution and likelihood of execution for limit orders, the ability to minimize market impact, the maintenance of the confidentiality of orders, and responsiveness of the broker-dealer. For equity transactions, the determinative factor is not the lowest possible commission cost, but whether the transaction represents the best qualitative execution under the circumstances. Subject to the satisfaction of its obligation to seek best execution, TCIM may also consider the broker-dealer’s access to new issues or initial public offerings (“IPOs”). TCIM and certain affiliates utilize a shared centralized equity trading desk for trading equities for Funds and Institutional Separate Accounts, and a separate shared centralized trading desk for trading equities for Retail SMAs.

Transactions on equity exchanges and other agency transactions involve the payment of negotiated brokerage commissions. Such commissions vary among different brokers-dealer. Trades are regularly monitored for best execution purposes by the equity trading desk.

TCIM’s fixed income traders select the broker-dealers with whom they do business independent of any research, strategy pieces or trade recommendations provided to TCIM. The research, credit opinions and relative value trade recommendations provided by broker-dealers are evaluated, but there is no direct linkage between that evaluation and TCIM’s selection of a particular broker-dealer for trade execution. The vast majority of institutional fixed income trading is conducted over-the-counter rather than on exchanges, with set prices. Fixed income trading is based on the risk-taking practice of market making by broker-dealers, which attempt to capture the bid/ask spread on trades where capital is committed (principal model) or on a pre-negotiated spread concession for riskless principal trades (agency model). The directive to TCIM’s fixed income traders, and the conventional trading construct within the fixed income market, is based on the

practice of fiduciary efforts to achieve best execution. Client referrals do not play a role in TCIM's broker-dealer selection process. When selecting a broker-dealer, the traders follow established trading protocols for data aggregation, price discovery, inventory mining and information protection and conduct an assessment of counterparty performance. The protocol incorporates TCIM's knowledge of and experience with select broker-dealers with respect to providing liquidity, namely the highest bid price or lowest offer price for a particular security.

Best execution is not evaluated on a transaction-by-transaction basis, but on an overall basis over an extended period of time.

### **Centralized Trading Desks**

TCIM employs the use of shared trading desks and multi-hatted personnel (including most trading for equities, taxable fixed income securities, and municipal bond new issues) that trade for TCIM accounts as well as the accounts of affiliates. These desks and personnel face conflicts, such as in trade sequencing and allocating opportunities, in trading for clients of different affiliates. These conflicts are similar to the conflicts they face in providing services to clients (including affiliated and proprietary accounts) of a single investment adviser. Through its policies, procedures and practices, TCIM seeks to provide for the fair and equitable treatment of its and its affiliates' clients. See Item 10.

### **Best Execution Committee and Risk Management Oversight**

TCIM exercises oversight and policy making responsibility for TCIM's equity and fixed brokerage practices through one or more committees that meet periodically. Transaction and broker-dealer metrics are reviewed by the Equity or Fixed Income Best Execution Committee, as appropriate, which is comprised of representatives from trading, portfolio management, compliance, and law. Risk management also reviews the creditworthiness of all broker-dealers.

### **Affiliated Broker-Dealers**

TCIM does not use affiliated broker-dealers to execute any trades on its behalf.

### **Prohibition on Directed Brokerage Arrangements**

TCIM has adopted policies and procedures prohibiting directed brokerage arrangements prohibited by Rule 12b-1(h) under the Investment Company Act. This rule prohibits investment companies from using brokerage commissions to compensate any broker-dealer for the promotion or sale of investment company shares. TCIM's policies and procedures prohibit it from using select broker-dealers to execute account portfolio securities transactions, or directing commissions to broker-dealers, in consideration of promotional or sales efforts with respect to the accounts. In addition, the affiliated investment companies including the TIAA-CREF Funds, TIAA-CREF Life Funds, and TIAA Separate Account VA-1, their respective investment adviser, and any principal underwriter of the funds may not enter into any agreement (whether oral or written) or other understanding under which a fund directs, or is expected to direct, fund portfolio securities transactions, or any remuneration (including but not limited to any commission, mark-

up, mark-down, or other fee or portion thereof received or to be received from the fund's portfolio transactions effected through any other broker-dealer), to a broker-dealer in consideration for the promotion or sale of fund shares. In particular, commissions may not be allocated to a broker-dealer in return for sale of the funds, for "shelf space" for the funds, for exposure of funds to the broker-dealer's sales force or clients, or for any other arrangement that is designed to support or promote the broker-dealer's sales of the client account shares.

### **Transactions for Initial Purchase of Equity or Debt Instruments**

Transactions involving the initial purchase of equity or debt instruments generally involve an investment banker that charges a fee to the issuer of the equity or debt securities. TCIM does not directly pay a fee or negotiate the fee.

### **Research and Services Provided by Broker-Dealers**

With respect to equity securities, TCIM has adopted a policy embodying the concepts of Section 28(e) under the Securities Exchange Act of 1934, which provides a safe harbor allowing an investment adviser to cause an account to pay a higher commission to a broker-dealer that also provides research services than the commission another broker-dealer would charge (generally referred to as the use of "soft dollars"). To utilize soft dollars, the adviser must determine in good faith that the commission paid is reasonable in relation to the value of the brokerage and research services provided and that, over time, each account paying soft dollars receives some benefit from the research obtained through the use of soft dollars. An adviser may make such a determination based upon either the particular transaction involved or its overall responsibilities of the adviser with respect to the accounts over which it exercises investment discretion. Therefore, specific Research Services may not necessarily benefit all accounts paying commissions to such broker-dealer. Research Services obtained through soft dollars may be developed by the broker-dealer or a third party, where the obligation to pay is between the broker-dealer and the third party. In such cases the Research Services will be paid for through a Commission Sharing Arrangement or similar arrangement.

Research Services obtained through soft dollars generally consists of products and services including some or all of the following: economic analysis and forecasts, financial market analysis and forecasts, industry and company specific analysis, interest rate forecasts, arbitrage relative valuation analysis of various debt securities, analytical tools for investment research and related consulting services, meetings arranged by broker-dealers with corporate management teams and spokespersons, as well as industry spokespersons, access to broker-dealer conferences, and other reports, meetings and services that assist in the investment decision-making process. The receipt of soft dollar benefits generally, creates an incentive for TCIM to direct brokerage based on its interest in receiving such soft dollars benefits rather than on its clients' interest in receiving most favorable execution. To address conflicts of interests, TCIM has adopted policies and procedures for the use of soft dollars.

TCIM uses Commission Sharing Arrangements administered by its centralized equity trading desk. Under these arrangements, when TCIM pays a commission to an executing broker, a portion of the commission is for execution of the trade (brokerage) and a portion is for research



services (together “Research Services”). The broker will allocate the Research Services portion of the commission to a pool of commission credits it maintains. The commission manager, at TCIM’s direction, pays Research Services providers for Section 28(e)-eligible Research Services (“Commission Sharing Arrangements”). An executing broker may or may not be a Research Services provider. TCIM uses Commission Sharing Arrangements to pay for both proprietary and third-party Research Services. Additionally, TCIM may pay for Research Services directly with hard dollars. The centralized equity trading desk does not select Research Services.

Under TCIM’S Commission Sharing Arrangements, Nuveen Equities (the integrated equity investment team of TCIM and certain affiliates) aggregates commission credits into a single pool and allocates the Research Services among the respective Nuveen Equities investment teams based on factors such as asset size of the team’s equity strategy and the strategy’s geographic considerations (e.g., U.S. vs non-U.S., developed markets vs emerging markets).

TAL generally has authority to cause a client account to pay a broker-dealer a commission higher than that which another broker-dealer might have charged for effecting the same transaction (a practice commonly referred to as “paying up”), in recognition of the value of the brokerage and research products and services (“Research Services”) the broker-dealer provides. The broker-dealer may directly provide Research Services to TAL or may purchase them from a third party for TAL. In such cases, TAL is in effect paying for the Research Services with client commissions, so-called “soft dollars.” When TAL uses soft dollars to obtain Research Services, TAL receives a benefit because it does not have to produce or pay for the Research Services. TAL will only cause an account to pay up if TAL, subject to its overall duty to seek best execution, determines in good faith that the Research Services are eligible brokerage and research under Section 28(e) of the Securities Exchange Act of 1934, and the amount of the commission is reasonable in relation to the value of the Research Services provided, viewed in terms of either that particular transaction or the overall responsibilities of TAL or its affiliates in managing its clients’ accounts.

TCIM will use Research Services to benefit any client account or its affiliates and at times the Research Services will not directly benefit the particular client account(s) that generated the brokerage commissions used to acquire the Research Services. For example, TCIM uses client account equity commissions to pay for Research Services that at times will benefit other client accounts of TCIM and its affiliates. Also, some TCIM portfolio management, research and trading personnel are multi-hatted employees of one or more affiliated advisers. These employees use Research Services in providing advisory services to the affiliated adviser’s accounts, and vice versa. Additionally, CREF limits or prohibits TCIM’s use of soft dollars and negotiates for reimbursements when TCIM uses client account equity commissions for Research Services.

The Research Services that TCIM receives from broker-dealers supplement TCIM’s own research activities. As a practical matter, in some cases TCIM could not, on its own, generate all of the Research Services that broker-dealers provide without materially increasing its expenses. Soft dollar arrangements create a potential conflict by giving TCIM an incentive to trade frequently to generate commissions to pay for Research Services, which may not be in the best interests of clients. In some cases, TCIM has an incentive to trade actively in certain accounts to obtain Research Services used primarily by other, less frequently traded accounts. TCIM attempts to

mitigate these potential conflicts through its review and oversight of the use of commissions. When TCIM uses soft dollars to obtain Research Services, TCIM receives a benefit because it does not have to produce or pay for the research, products or services, and TCIM may have an incentive to select or recommend a broker-dealer based on its own interest in receiving the research or other products or services rather than on CREF's interest in receiving most favorable execution. TCIM may cause investors to pay commissions higher than those charged by other broker-dealers in return for soft-dollar benefits. CREF mitigates this conflict by negotiating for reimbursements when TCIM uses equity commissions for Research Services.

In certain instances, Research Services providers provide Research Services directly to TCIM which has been created by an affiliate of the broker-dealer or an independent third-party, so-called "co-branded" research. TCIM also receives Research Services from broker-dealers in connection with certain "eligible riskless principal transactions."

TCIM does not allocate soft dollars to broker-dealers in exchange for so-called "mixed use" products or services. From time to time, a small amount of Research Services is accessed by non-investment related personnel. TCIM considers such usage by non-investment related personnel to be de minimis. TCIM periodically reviews the usage of all soft dollar arrangements to determine new/on-going mixed-use applicability.

At least annually, TCIM reviews the amount, nature and quality of the Research Services, and sets non-binding total commission targets intended to be used to pay for certain research products and services under the CSA.

Quarterly, TCIM reviews the amount and nature of research and sets CSA targets for the Research Services providers on the basis of such considerations. If the CSA target is met for the quarter, commissions default to an execution-only rate.

TCIM does not acquire Research Services when it trades fixed income (including municipal bond) securities and the broker-dealer is acting as principal. However, at times, a broker will provide TCIM proprietary research that may be based in part on fixed income (including municipal bond) trading TCIM directs to that broker-dealer. Similarly, TCIM's trades for clients that follow an index or quantitative strategy, or its execution-only trades, may not generate soft dollars, but at times a broker-dealer will provide TCIM proprietary research that is based in part on such trades.

## **Transaction Errors**

TCIM's policy is to review, report, and correct transaction-related errors that occur in connection with client public market securities transactions as soon as possible, so that client accounts are not disadvantaged as a result of an error. Transaction exceptions are escalated for review to the Transaction Error Review Committee, a group comprised of senior-level control partners including representatives from Law, Compliance, Risk Management, Finance and Operations. The Committee is responsible for overseeing the reimbursement of transaction errors in client accounts. The Committee reviews the facts and circumstances of each error presented and has the authority to act on behalf of TCIM to determine the appropriate reimbursement of client accounts. The

Committee also analyzes the root cause of exceptions and evaluates the remediation of control gaps. All exceptions, reimbursements and corrective actions taken to remediate process gaps are reviewed and approved by the Committee.

### **Aggregation and Allocation of Orders**

#### **Equity Securities**

TCIM has adopted aggregation and allocation of orders procedures designed to treat each account fairly and equitably over time in the allocation of investment opportunities and the aggregation and allocation of trades. The procedures also impose restrictions on potentially inconsistent trading and provide guidelines for trading priority. Moreover, TCIM's trading activities are subject to supervisory review and compliance monitoring to assist in addressing and mitigating conflicts of interest and to ensure that client accounts are being treated fairly and equitably over time. In determining whether a client account's participation in an order is appropriate, TCIM considers the account's investment objectives, investment restrictions, cash position, need for liquidity, sector concentration and other objective criteria.

TCIM may aggregate various client account orders and client account orders of TCIM's affiliates, consistent with TCIM's policy to seek best execution for its orders.

In summary, subject to best execution, open orders for the same single security are aggregated with other orders for the same single security with the same trading priority guidelines received at the same time as well as with open or unfilled portions of earlier orders of the same single security with the same trading priority. If aggregated orders are fully executed, each participating account is allocated its share pro rata based on order size on an average execution price and trading cost basis. In the event the order is only partially filled, each participating account receives a pro-rata share of the securities purchased (or a pro-rata share of the proceeds of securities sold) based on the size of its order relative to the aggregated order.

Basket trades are generally not aggregated with orders for the same security in other baskets or with single security order for the same security, because they are used to pursue quantitative strategies and rely on an automated process to implement trades on an as needed basis (as indicated by the relevant index or model). Also, because of their size, execution of the basket trades occurs in stages and TCIM must be able to monitor characteristics (e.g., cash, region, sector, beta, neutrality) of the baskets in the aggregate in order to be able to make changes to the baskets as necessary. In certain instances, (e.g., portfolio transitions), single name aggregation may occur if a trader determines that, based on basket characteristics as well as total volume to traded and illiquid nature of a particular security, one or more large single orders within a basket should be removed from the basket and aggregated with other orders (whether single security trades or other basket trades) to achieve best execution.

The procedures also impose restrictions on potentially inconsistent trading of single securities. For example, a portfolio manager of TCIM may not sell a single security short for an account if the same portfolio manager either is long in the security or is neutral or overweight the long position against the benchmark of the account holding the securities long. Similarly, a portfolio manager

may not buy a security long if the same portfolio manager has a short position in the same security. This limitation does not apply to a portfolio manager buying a security to close or reduce a short position or underweight long position against the benchmark of an account. This limitation also does not apply to securities, futures, or derivative instruments representing broad-based indices or baskets of underlying securities (e.g., certain ETFs that track index of broad-based securities) or trades for model-driven quantitative strategies. Basket trades do not have the same types of restrictions on potentially inconsistent trading because they are tailored to a particular index or model portfolio based on the risk profile of a particular account pursuing a particular quantitative strategy.

In addition, the procedures set forth guidelines for long and short trades. Both long and short trades generally are routed by portfolio managers to the same trading desk. Single security trades (both long and short) are time-recorded and prioritized for execution based on when they are received by the trading desk.

Exceptions to TCIM's aggregation and allocation of orders procedures must be approved in accordance with the procedures.

### **Fixed Income Securities**

The Fixed Income Desk continually seeks to obtain the overall best trade execution given prevailing market conditions while utilizing approved broker-dealers as authorized by the Best Execution Committee.

Fixed income trades are typically executed on a net yield basis – the dealers through whom we execute client account transactions do not charge explicit commissions, commission equivalent (e.g., separately identifiable mark-ups and mark-downs in such transactions) or spreads. Fixed income orders entered into the fixed income trading systems are aggregated to assist in the best execution of trade orders.

Most multiple client account orders that are not completely filled after the initial trade execution are then allocated pro-rata automatically by the OMS platforms which incorporates the firm-wide de minimis and rounding requirements. The allocation for these orders is made pro-rata by account, based upon the original trade order each client account's portfolio manager entered into the trading system or communicated to the trading desk using pre-established rules.

Should a portfolio manager notify the trading desk post-trade allocation that they wish to transfer a portion of or an entire allocation from one client account to another client account, a written exception request must be submitted to trading management for review and approval. In cases where a portfolio manager opts to *withdraw* their entire allocation, either the balance will be offered to the remaining client accounts on a pro-rata basis or the withdrawn balance will be sold in the secondary market, with performance attribution being assigned to the original portfolio account.

With respect to investment and trading personnel of TCIM that concurrently perform services as Multi-hatted Personnel of TCIM, TAL and NAM, such personnel face conflicts relating to

providing services for various clients of multiple different affiliates, such as in the areas of trade sequencing and allocating investment opportunities. These conflicts are similar to the conflicts faced by such personnel in providing services for various clients (including affiliated and proprietary accounts) of a single investment adviser. Through its policies, procedures, and practices, TCIM seeks to provide for the fair and equitable treatment of such client accounts. See Item 10.

### **Municipal Securities**

Generally, secondary market trades are not managed by a centralized trading desk. Accordingly, while individual portfolio managers may aggregate trades for multiple accounts they manage, in most cases, such trades are not aggregated with trades initiated by other portfolio managers. In circumstances where a portfolio manager has reason to believe that other client accounts managed by other portfolio managers may be in the market at the same time selling the same security, a central trading desk will coordinate the selling activity by coordinating and aggregating such sell orders.

### **Allocations – Equity IPO and Secondary Offerings**

TCIM has adopted written procedures with respect to allocation of initial public offerings (“IPOs”). IPO allocations will be made in a fair and equitable manner consistent with fiduciary obligations. Portfolio managers wishing to participate in a particular IPO or Secondary Offering must communicate their indications to the trading desk either in writing, through a secure computer system, or by calling the trading desk. The trading desk documents the indications. In situations where IPO or Secondary Offering shares allocated to the firm are less than the total amount of shares TCIM indicated for all portfolio managers, default allocations among portfolio managers who have indicated for the IPO or Secondary Offering will be performed pro rata, based on the amount of assets that the portfolio manager manages for each participating client account, subject to a ceiling based on the maximum amount indicated for each client account to ensure that the client account does not receive more shares than originally instructed during the initial indication.

When indications are made on behalf of certain concentrated funds (“Specialty Funds”), the trading desk uses a modified allocation process to assist in ensuring that Specialty Funds receive a fair allocation of IPO and Secondary Offerings that fall within their areas of industry or market sector concentration. For the purposes of this IPO and Secondary Offering Allocation Policy, Specialty Funds are funds, institutional separately managed accounts or other pooled products managed by the Advisers that, as a fundamental investment policy (or principal investment strategy, for institutional separately managed accounts or other pooled products) concentrate more than 25% of total assets in any one industry or market sector.

TCIM has procedures to address situations where allocations are to be changed after the order is placed, provided the reason for the change is in writing and signed off by appropriate senior management of TCIM.

### **Allocations – Municipal Securities**

New issues of municipal securities are allocated through a municipal bond centralized trading desk pursuant to procedures that are designed to treat all accounts fairly and equitably over time. Generally, if an allotment of a new municipal issue is for less than the total bonds for which TCIM placed orders, the total allotment received generally will be allocated pro rata among Funds and Institutional Separate Accounts, on the one hand, and Retail SMAs on the other, based on the number of bonds requested by such accounts, to the extent practicable. The allocation among client accounts will generally be made pro rata, based on each account's order size, subject to exceptions. Non pro rata allocations are generally based on specialty mandates that require preferable allocations of certain issues (such as state specific, high yield, ESG or insured bond mandates) because of the more limited supply of investment opportunities for such mandates, rounding lot sizes, the relative availability of cash (or expected cash), and other factors.

## **Item 13 Review of Accounts**

TCIM's only client is CREF which consists of eight investment portfolios, but which may consist of additional portfolios in the future. The portfolio managers or their designee review on a coordinated basis TCIM's client accounts for which they are responsible. The TIAA Public Investments Oversight Committee is an internal management committee established as a sub-committee of Nuveen Risk Management Committee (the "Nuveen RMC") to oversee the investment risk, and compliance risk profiles, the design and implementation of risk management and compliance frameworks, and to report up to Nuveen RMC in fulfilling its risk and compliance oversight responsibilities for TCIM. The Committee includes representatives from Risk Management, Compliance, Valuations, Legal, Product, Client Portfolio Management, Fund Administration, Operations/IT and Investment Oversight.

The portfolio managers are responsible for managing each portfolio according to its specific investment objectives. Portfolio managers review on a continuous basis all CREF investment portfolios for which they are responsible, and the members of the Investment Committee monitor the performance of the portfolios. Analysts and traders may also be part of this review process, as appropriate. When the CREF investment portfolios are reviewed, the portfolio manager considers various matters, including any changes in firm policy or the objectives and needs of the client account; changes in market conditions or changes of security positions; the current structure of the portfolio and the effect on the portfolio of any known additions or withdrawals from the portfolios in the future. In particular, TCIM monitors CREF portfolios daily and reports on the investment performance of CREF to the Board of Trustees at regularly scheduled meetings.

TCIM provides the Board of Trustees with periodic reports that may include, among other information, holdings and transaction information, performance and attribution analysis, brokerage allocation, soft dollar information, accounting data, portfolio reviews, reviews of diversification, and distribution information, as well as additional information or reports as requested by the Board of Trustees. Fund investors receive shareholder or investor reports in accordance with the terms, conditions, and regulatory requirements applicable to the client account.

## **Item 14 Client Referrals and Other Compensation**

TCIM does not participate in referral arrangements for its client accounts.

In the ordinary course of business, TCIM or a Related Person provides business gifts, meals and entertainment such as tickets to cultural and sporting events to personnel of firms that do business with TCIM or its affiliates. Such gifts, meals and entertainment provided by TCIM, or a Related Person, generate a conflict of interest to the extent that they create an incentive for the recipient or beneficiary to use, recommend, offer or include products or services of TCIM.

In the ordinary course of business TCIM employees also are the recipients of corporate gifts, meals, and entertainment. TCIM's receipt of gifts, meals and entertainment generates a conflict of interest to the extent that they create an incentive for the recipient or beneficiary to use the services of the provider (e.g., in the case of a broker-dealer, brokerage services) of the gifts, meals and entertainment. The giving and receipt of gifts and other benefits are subject to reporting and limitations under internal policies and procedures.



## **Item 15 Custody**

TCIM does not have custody of client account assets. As mentioned previously, TCIM's only client is CREF, a registered investment company. The portfolio securities of CREF are held with third-party qualified custodians.

## **Item 16 Investment Discretion**

TCIM is responsible for decisions to buy and sell securities for its client's accounts. TCIM's authority is subject to certain limits, including the client account's investment objectives and policies as well as regulatory constraints. Such investment limitations are set forth in the CREF registration statement filed with the SEC. Also, TCIM's authority to trade securities for its client, CREF, may also be limited by certain federal securities and tax laws.

See Item 4.

## Item 17 Voting Client Securities

TCIM is generally authorized to vote proxies for its client accounts, which includes exclusively registered investment company clients, as part of its duties as a discretionary investment adviser. TCIM does not vote proxies where CREF withholds proxy voting authority or in certain other circumstances summarized below. TCIM votes proxies in accordance with its policies and procedures in effect from time to time.

Nuveen's Proxy Voting Committee ("PVC") provides a governance framework to facilitate and monitor TCIM's exercise of proxy voting and to fulfill obligations of reporting and recordkeeping under federal securities laws. TCIM has adopted proxy voting guidelines which are reasonably designed to ensure TCIM votes proxies in the best interests of its client accounts.

TCIM leverages the expertise and services of an internal group within Nuveen, the Nuveen Stewardship Group to provide proxy voting recommendations and administer TCIM's proxy voting activities. Depending on the issue, the Nuveen Stewardship Group considers the research and recommendations of one or more proxy advisors to help formulate its substantive positions on recurring proxy issues and criteria for addressing non-recurring issues. TCIM maintains the fiduciary responsibility for all of its proxy voting decisions. From time to time, a TCIM portfolio manager or research analyst may initiate action to override the Nuveen Stewardship Group's recommendation for a particular vote. Any such override will be reviewed for material conflicts.

TCIM's policy permits it to refrain from voting in certain circumstances, including where it determines that it would be in the client account's overall best interest not to vote (e.g., where proxy voting would result in a financial, legal, regulatory, or operational encumbrance or burden that outweighs the potential benefit to the client account of voting); with respect to securities on loan through a securities lending program; and with respect to legacy securities and securities in accounts where TCIM's advisory services have been terminated.

In special circumstances, TCIM may vote a proxy based on instructions of CREF or its representative. TCIM's ability to vote proxies is subject to timely receipt of the proxy from CREF's proxy advisory firm, custodian, or other party, and, in the case of proxies relating to certain non-U.S. securities, subject to the establishment by applicable parties of any necessary local documentation (e.g., power of attorney).

*Equity Securities* - TCIM will vote equity securities in accordance with its policies and procedures discussed above.

*Fixed Income Securities* - A client account may indirectly acquire equity securities that issue proxies. For example, a client account may acquire, directly or through a special purpose vehicle, equity securities of a bond obligor whose bonds are already held in a client's account when such bonds have deteriorated or are expected shortly to deteriorate significantly in credit quality. The purpose of acquiring equity securities generally will be to seek to prevent the credit deterioration or facilitate the liquidation or other workout of the distressed issuer's credit problem. In the course

of exercising control of a distressed issuer, TCIM may pursue the client account's interests in a variety of ways, which may entail negotiating and executing consents, agreements and other arrangements and/or otherwise influencing the management of the issuer. TCIM does not consider such activities proxy voting for purposes of Rule 206(4)-6 under the Advisers Act, but nevertheless provides reports to the relevant parties on its control activities on a quarterly basis. In the rare event that a fixed income issuer were to issue a proxy, TCIM would generally vote in accordance with its policies and procedures.

TCIM recognizes that there are circumstances where it has a perceived or real material conflict of interest in voting the proxies of issuers. TCIM will vote proxies in the best interest of its client accounts regardless of such real or perceived conflicts of interest. TCIM attempts to minimize the risk of conflicts by establishing reasonable procedures to identify and monitor real or perceived material conflicts of interest. If it is concluded that a material conflict does exist, the Nuveen Stewardship Group will normally vote the proxy in accordance with a proxy advisory firm's benchmark recommendation. To the extent the Nuveen Stewardship Group believes there is a justification to vote contrary to the proxy advisory firm's benchmark recommendation, such requests are escalated to the PVC for evaluation and mitigation.

TCIM's proxy voting policies are available upon written request to: Stuart Brunet, Chief Compliance Officer, TIAA-CREF Investment Management, LLC, 560 Mission Street, 9th Floor, San Francisco, CA 94105.

A record of all proxy votes cast is updated weekly and available at:  
[https://vds.issgovernance.com/vds/#/MTIwODY=](https://vds.issgovernance.com/vds/#/MTIwODY=/)

## **Item 18 Financial Information**

TCIM does not require or solicit prepayment of more than \$1,200 in fees per client account six months or more in advance and, thus, has not included a balance sheet of its most recent fiscal year. TCIM is not aware of any financial condition that is reasonably likely to impair its ability to meet its contractual commitments to CREF, nor has TCIM been the subject of a bankruptcy petition at any time during the past ten years.

## Additional Information

### Exhibit A

#### Primary Financial Industry Subsidiaries under Nuveen, LLC, the investment management division of TIAA

Entity Name	Primary Financial Industry or Related Affiliation*
AGR Partners, LLC	Registered Investment Adviser
Churchill Asset Management LLC	Registered Investment Adviser
Churchill DLC Advisor LLC	Registered Investment Adviser
Gresham Investment Management LLC	Registered Investment Adviser CFTC Registered Commodity Pool Operator CFTC Registered Commodity Trading Adviser
Nuveen Alternatives Advisors, LLC	Registered Investment Adviser
Nuveen Asset Management, LLC	Registered Investment Adviser CFTC Registered Commodity Trading Adviser
Nuveen Fund Advisors, LLC	Registered Investment Adviser
Snowhawk LP	Registered Investment adviser
Teachers Advisors, LLC	Registered Investment Adviser
TIAA-CREF Investment Management, LLC	Registered Investment Adviser
Winslow Capital Management, LLC	Registered Investment Adviser
Greenworks Lending LLC	Commercial Property Assessed Clean Energy Financing; Relying Adviser
Nuveen Securities, LLC	Registered Broker Dealer
Nuveen Services, LLC	Shared Services Entity
Symphony Alternative Asset Management LLC	Relying Adviser
Greenwood Resources Capital Management LLC	Forestry Management
Westchester Group Investment Management, Inc.	Farmland Management
Westchester Group Real Estate, Inc.	Real Estate Broker or Dealer
Nuveen Real Estate (Australia Limited	Australian ASIC Registered Entity
Nuveen Canada Company	Canadian Exempt Market Dealer
Nuveen Hong Kong Limited	HK SC Registered Entity
Nuveen Japan Co. Ltd	Japan FSA Registered Entity
Nuveen Alternatives Europe SARL	Luxembourg CSSF Registered Entity
Nuveen Asset Management Europe SARL	Luxembourg CSSF Registered Entity
Nuveen Singapore Private Ltd	Singapore MAS Registered Entity
Arcmont Asset Management Limited	UK FCA Registered Entity
Clean Energy Partners LLP	UK FCA Registered Entity
Glennmont Asset Management Limited	UK FCA Registered Entity
Glennmont Partners I Limited	UK FCA Registered Entity
Nuveen Investment Management International Limited	UK FCA Registered Entity
Nuveen Management AIFM Limited	UK FCA Registered Entity

#### Other Primary Financial Industry Subsidiaries of TIAA

TIAA-CREF Individual & Institutional Services, LLC (aka Advice and Planning Services)	Registered Investment Adviser Registered Broker Dealer
TIAA-CREF Tuition Financing, Inc.	Registered Investment Adviser Registered Municipal Advisor
TIAA Kaspick, LLC	Registered Investment Adviser
Teachers Insurance and Annuity Association of America	Insurance Company or Agency
TIAA-CREF Life Insurance Company	Insurance Company or Agency
TIAA-CREF Insurance Agency, LLC	Insurance Company or Agency
TIAA Trust, N.A.	Banking or thrift institution

\*The list above refers to TIAA subsidiaries in financial industry affiliation categories referenced in Form ADV, Part 2A, Item 10.C, excluding numerous entities organized primarily to serve as sponsor, general partner, managing member (or equivalent) or syndicator of one or more pooled investment vehicles or limited partnerships (or equivalent). For a list of such entities that have material arrangements with the registrant, please

see the registrant's Form ADV, Part 1, Section 7.A. o Schedule D. The list above refers to the primary financial industry affiliation category and certain TIAA subsidiaries listed above may have additional financial industry affiliations, as further described in its respective disclosure documents (Form ADV, in the case of a registered investment adviser).

# Privacy Statement

TIAA-CREF Investment Management, LLC, a subsidiary of Nuveen, considers your privacy our utmost concern. In order to provide you with individualized service, we collect certain nonpublic personal information about you from information you provide on applications or other forms (such as your address or social security number), and information about your account transactions with us (such as purchases, sales and account balances). We may also collect such information through your account inquiries by mail, email, telephone, or our web site. This privacy statement should not be construed as establishing a contractual relationship.

We do not disclose any nonpublic personal information about you to anyone, except as permitted by law. So that we may continue to offer you applicable products and services that best meet your investing needs, and to effect transactions that you request or authorize, we may disclose the information we collect, as described above, to companies that perform administrative or marketing services on our behalf, such as transfer agents, custodians, printers and mailers that assist us in the distribution of investor materials. These companies will use this information only for the services for which we hired them and are not permitted to use or share this information for any other purpose.

If you decide at some point either to close your account(s) or to become an inactive customer, we will continue to adhere to the privacy policies and practices described in this notice.

With regard to our internal security procedures, we restrict access to your personal and account information to those employees who need to know that information to service your account. We maintain physical, electronic and procedural safeguards to protect your nonpublic personal information.

A copy of our privacy notice is posted at [www.nuveen.com/privacy](http://www.nuveen.com/privacy). If you have any questions about our policy or would like additional copies of this notice, please call us toll free at (800) 257-8787 or send us an e-mail through our website [www.nuveen.com](http://www.nuveen.com) or write to us at Nuveen at 333 West Wacker Drive, Chicago, IL 60606.

**For California residents, please visit the following link for more information:**

<https://www.nuveen.com/privacy-ccpa>

**For EU/UK residents, please visit the following link for more information:**

<https://www.nuveen.com/en-us/resources/nuveen-european-union-united-kingdom-privacy-notice>

**For individuals located in Brazil, please visit the following link for more information:**

<https://www.nuveen.com/en-us/resources/Brazil-privacy-notice>

**For information on our use of personal data in accordance with the Data Protection Law of the Cayman Islands, please visit the following link for more information:**

<https://www.nuveen.com/en-us/resources/cayman-islands-privacy-notice>