

TIAA-CREF Investment Management, LLC

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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.

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

This Brochure was amended on March 31, 2017 from the previous annual update of this Brochure dated March 25, 2016

There were non-material additions, changes and elaborations, including to strategies, risk factors, fees, policies and to related persons, 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 prospectus and 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 Asset 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, 2016, TCIM managed \$220,924,205,000(rounded in thousands) in discretionary client assets and \$0 in non-discretionary client assets. TCIM does not operate any wrap fee programs.

Item 5 Fees and Compensation

TCIM provides its investment advisory services to CREF “at-cost.” A daily deduction is made from the assets of CREF’s investment portfolios in connection with the advisory services provided. These rates are designed to reflect the cost of advisory 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 8 basis points to 15 basis points.

For the CREF index account managed by TCIM, management fee is expected to be approximately 2.5 basis points.

For CREF fixed-income accounts managed by TCIM, management fees are expected to range from approximately 4.5 basis points to 11.5 basis points.

For the CREF specialty/balanced account managed by TCIM, management fee is expected to be approximately 8.5 basis points.

For the CREF money market account managed by TCIM, management fee is expected to be approximately 4 basis points.

The Investment Management Services Agreement between TCIM and CREF is subject to approval by the Board of Trustees of CREF, 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 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 may incur other certain charges imposed by third parties. Such fees are charged by custodians, brokers, 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 and the objective is to keep the actual payments for the services close to the estimated costs.

The daily payment to TCIM is from the net assets of each CREF 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 section titled "About Expenses."

Additionally, an account may purchase shares of other investment companies including mutual funds and exchange-traded funds. An account may use ETFs for cash management purposes or other purposes, including to gain exposure to certain sectors or securities that are represented by ownership in ETFs. When an 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 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 arrangement 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

- Bond Market 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.

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

TCIM may use a variety of different analytic methods and investment strategies depending on the nature of the account it is managing. This section describes the analytical methods TCIM uses and then separately the investment strategies.

Methods of Analysis

Active Management

TCIM concentrates on individual companies rather than sectors or industries. TCIM looks for stocks that it believes are attractively priced based on an analysis of the company's prospects for growth in earnings, cash flow, 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.

Enhanced Indexing

TCIM may use several different investment techniques to build a portfolio of stocks that is structured to resemble and share the risk characteristics of various segments of the benchmark index, while also seeking to outperform that benchmark index. Enhanced index strategies often employ proprietary, quantitative modeling techniques for stock 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 while keeping the overall financial and risk characteristics similar to those of the benchmark index. In general, the enhanced indexing methodology is designed so that an account diverges from and may outperform its benchmark more than an indexing approach, but remains closer to the benchmark than other equity accounts using a traditional active management style. Enhanced index strategies will typically hold more stocks than traditional active strategies.

Pure Indexing

TCIM may use investment techniques designed to track various segments of the component indices of an account's composite benchmark index. When using this technique, TCIM buys most, but not necessarily all, of the stocks in the indices of the its composite benchmark index, and will attempt to closely match the overall investment characteristics of its composite benchmark index.

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 Account

- **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

- **Bond Market 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

Special/Balanced Account

- **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 Account

- **Money Market Account**

Seeks high current income consistent with maintaining liquidity and preserving capital

Description of Material Risks Associated with Investment Strategies

Equity Risks

- **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 and the availability of credit. Accordingly, the value of the equity investments that an account holds may decline over short or extended periods of time. Any equity investment is subject to the risk that the financial markets as a whole may decline in value, thereby depressing the investment's price. 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, an account may undergo extended periods of decline.
- **Issuer Risk** - (often called **Financial Risk**) - The risk that the issuer's earnings prospects and overall financial position will deteriorate, causing a decline in the security's value over short or extended periods of time. In times of market turmoil, perceptions of a company's credit risk can quickly change and even large, well-established companies may deteriorate rapidly with little or no warning.

Equity Risks Associated with Particular Strategies

- **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 foreign 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. 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.

- **Emerging Markets Risk** - The risk of foreign investment often increases 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. Because their securities markets may be very small, share prices of issuers in emerging market countries may be volatile and difficult to determine. Securities of issuers in these countries may be less liquid than those of issuers in more developed countries. In addition, foreign investors are subject to a variety of special restrictions in many such countries.
- **Style Risk/Risks of Growth Investing** - Accounts that use an investing style, such as growth investing, entail the risk that equity securities representing a growth investing 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 an 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.
- **Index Risk** - The risk that an account's performance will not correspond to, or may underperform, its benchmark index for any period of time. Although each 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 an account, the returns of an index are not reduced by investment and other operating expenses, and therefore, the ability of an 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, an account cannot guarantee that its performance will match its index for any period of time.

- **Enhanced Index Risk** - The risk that an account may underperform its benchmark index due to differences between the investments of the account and its benchmark index. In addition, seeking enhanced results relative to an index may cause an account using enhanced index techniques to underperform its respective index, resulting in losses. Unlike an account, the returns of an index are not reduced by investment and other operating expenses, and therefore, the ability of an account to match the performance of its index is adversely affected by the costs of buying or selling investments as well as other expenses. Because an account follows a quantitative strategy and does not seek to replicate its benchmark index, the account may underperform its index to a greater extent than an account that follows a passive index strategy.
- **Active Management Risk** - The performance of an account, which is actively managed, reflects in part the ability of the portfolio managers to make active investment, strategic or trading decisions that are suited to achieving the account's investment objective. As a result of security selection or trading execution, such account could underperform its benchmark or other investment vehicles with similar investment objectives.
- **Quantitative Analysis Risk** - The risk that securities selected for accounts that are actively managed, 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. 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.
- **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.
- **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 an 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.

- **Small-Cap Risk**—Securities of small-sized companies may experience greater fluctuations in price than the securities of larger companies. 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 an 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.
- **ESG Criteria Risk** – The risk that because the account’s social criteria exclude securities of certain issuers for nonfinancial reasons; the account may forgo some market opportunities available to accounts that do not use these criteria.

Fixed income and Money Market Risks

- **Interest Rate Risk (a type of Market Risk)** - The risk that the value 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) tends to increase while yields on similar newly issued fixed-income investments tend to decrease, which could adversely affect an account’s income. Conversely, when prevailing interest rates increase, the market values outstanding fixed-income investments (particularly those paying a fixed rate of interest) tends 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, change 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-term investments. Interest rate risk is generally heightened during periods when prevailing interest rates are low or negative. During periods of very low or negative interest rates, an account may not be able to maintain positive returns. Currently interest rates in the United States and in certain foreign markets are at or near historic lows, which may increase an account's exposure to risks associated with rising interest rates. In general, changing interest rates could have unpredictable effects on the markets and may expose fixed-income and related markets to heightened volatility.

- **Prepayment Risk** - The risk that during periods of falling interest rates, borrowers pay off their mortgage loans sooner than expected, forcing an account to reinvest the unanticipated proceeds at lower interest rates, resulting in a decline in income. 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 shorten depending on homeowner prepayment activity. A rise in the prepayment rate and the resulting decline in duration of fixed-income securities held by an account can result in losses to investors in the account.
- **Extension Risk** - The risk that during periods of rising interest rates, borrowers pay off their mortgage loans later than expected, preventing an 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 an account can result in losses to investors in the account.
- **Issuer Risk** - (often called **Financial Risk**) - The risk that the issuer's earnings prospects 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.
- **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 declines in certain interest rate environments.
- **Credit Risk** (a type of **Company Risk**) - The risk that a decline in a company's

financial position may prevent it from making principal and interest payments on fixed-income securities when due. Credit risk relates to the ability of an issuer of a fixed-income security to pay principal and interest on the security on a timely basis and is the risk that the issuer could default on its obligations, thereby causing an account to lose its investment in the security. This risk is heightened in the case of investments in lower-rated, high-yield fixed-income securities. Further, in times of market turmoil, perceptions of a company's credit risk can quickly change and the financial condition of even large, well-established companies may deteriorate rapidly with little or no warning. Credit risk is also heightened in the case of investments in lower-rated, high-yield fixed-income securities because 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.

- **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, an account may not be able to benefit fully from the increase in value that other fixed-income securities experience when interest rates decline. Additionally, an 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 account originally invested, resulting in a decline in income.
- **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 foreign 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 of 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. 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. 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.

- **Active Management Risk** – The risk that the performance of an account, which is actively managed, reflects in part the ability of the portfolio manager(s) to make active, strategic or trading decisions that are suited to achieving the 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.
- **Market Volatility, Liquidity and Valuation Risk (types of Market Risk)** - Trading activity in fixed-income securities in which an 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. In such cases, it may be difficult for an account to properly value assets represented by such securities. In addition, an account may not be able to purchase or sell a security at a price deemed to be attractive, if at all, which may inhibit an 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 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 account securities, adversely affect values of portfolio holdings, and increase an 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 sectors of fixed-income investments, such as asset-backed securities, with longer durations or maturities may face heightened levels of liquidity risk.

- **Mortgage Dollar Roll Risk** - The risk that the adviser will not correctly predict mortgage prepayments and interest rates, which will diminish the investment performance of an account compared with what such performance would have been without the use of the strategy.
- **Downgrade Risk** - The risk that securities may be subsequently downgraded should rating agencies believe the issuer's business outlook or creditworthiness have deteriorated. If this occurs, the values of these securities 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.
- **Non-Investment Grade Securities Risk** - Issuers of non-investment grade securities, which are usually called "high-yield" or "junk bonds," are typically 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 of a higher-quality rating.
- **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 timeframe. Illiquid investments are those that cannot be sold or disposed of in the ordinary course of business within seven days at approximately the value at which an Account has valued the investment. An account's investments in illiquid investments may reduce the returns of the account because it may be unable to sell the illiquid investment at an advantageous time or price, which could prevent the account from taking advantage of other investment opportunities. Redemption requests could 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 or investor perceptions and geopolitical risk.
- **Derivatives Risk** - The risks associated with investing in derivatives may be different and greater than the risks associated with directly investing in the underlying securities and other instruments. 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, and their prices, may not correlate perfectly with the prices or performance of the underlying security, currency, rate, index or other asset. Certain derivatives present the risk of default by the other party to the contract, and some derivatives are, or may suddenly become, illiquid. Some of these risks exist for futures and options which may trade on established markets. Unanticipated changes in interest rates, securities prices or currency exchange rates may result in poorer overall performance of an 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 investments can create leverage by magnifying investment losses or gains, and an account could lose more than the amount invested.

- **Special Risks Relating to Inflation-Indexed Bonds** - The risk that market values of inflation-indexed investments held by an 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 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.
- **Current Income Risk** - The risk that income an account receives may fall as a result of a decline in interest rates. In a low or negative interest rate environment, an account may not be able to achieve a positive or zero yield.
- **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 an account focuses its

investments 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 an account invests may have a significant impact on the 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.

- **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 an account's ability to sell the securities at any given time. Such securities also may lose value.

Please note that investing in securities involves a risk of loss that clients should be prepared to bear. 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 a strategy. These increased costs and taxes may negatively affect the performance associated with such strategies.

Item 9 Disciplinary Information

As a registered investment adviser, TCIM is required to disclose all material facts regarding any legal or disciplinary events that would be material to the evaluation of TCIM or the integrity of TCIM's management. To that end, TCIM discloses the following disciplinary disclosures:

Chetan Mohan Joglekar (CRD Number 4887506)

Mr. Joglekar has plead not guilty to felony charges against him and eleven other defendants under the following provisions of the Indian penal code for alleged non-payment of loans obtained by two steel and commodity trading companies in India for the purchase of materials under letters of credit: two counts under sections 120-B (punishment of criminal conspiracy) and 467 (forgery of valuable security, will, etc.); and one count under sections 468 (forgery for purpose of cheating), 471 (using as genuine a forged document or electronic record) and 13 (criminal misconduct by a public servant). TCIM understands that (1) the term charge has a different meaning under American law than under Indian law and (2) under the Indian legal system trials, are not expected to begin for as long as 15 to 20 years or more after the dates on which charges are filed.

Mr. Joglekar asserts that his role in the alleged transactions was limited to being an authorized signatory within a closely-held group of Indian companies established to trade steel and other physical commodities. He explains that during the relevant period (1995 to 1997), he was fully engaged in different businesses, first as trader of Indian equity securities for a private investment fund, and later as a sell-side equity trader for a broker-dealer, and that he was not part of, and was not aware of, any conspiracy or other criminal activity involving the two steel and commodity trading companies. TCIM's affiliate, Teachers Advisors, LLC (TAL) believes Mr. Joglekar's claims of innocence are credible and continues to employ him as the Head of Global Equity Trading. As a reasonable precaution under the circumstances, however, TAL and TCIM will continue to maintain heightened supervision and compliance surveillance over Mr. Joglekar during his employment until such time as these matters are definitely and favorably resolved.

Details of the formal charges are: Charge Sheet No. 123/CP of 2001, CBI Case No. RC 6(E)/99 – CBI/BS&FC/MUM, Court of Additional Chief Metropolitan Magistrate, Esplanade, Mumbai, India (DTD 12/28/2001) and Charge Sheet No. 19/2007, CBI Special Case No. 59 of 2007, RC. BD 1/2005/E/0007, City Civil and Sessions Court, Mumbai, India (DTD 12/31/2007).

Teachers Insurance and Annuity Association of America (TIAA)

The allegations related to this regulatory action are violations of replacement, illustration and disclosure requirements. The regulatory action was initiated by The New York

Department of Financial Services (NYDFS) which fined TCIM's affiliate, TIAA \$350,000 which amount was paid on June 4, 2007. The other sanction ordered by NYDFS was that TIAA implement a remediation plan providing relief to clients who did not receive appropriate replacement procedure disclosures pursuant to Insurance Department Regulation 60. The matter was resolved through stipulation on June 4, 2007 covering exam period of January 2000 through December 2004 (Docket Case Number: State of NY Stipulation No. 2007-0180-S).

This settlement does not involve TCIM; however, TCIM is an indirect wholly-owned subsidiary of TIAA.

Teachers Insurance and Annuity Association of America (TIAA)

On March 17, 2016, TIAA entered into a stipulation with the New York Department of Financial Services ("NYDFS") to, among other things, findings by NYDFS that TIAA violated various provisions of New York Insurance Law. The stipulation cited violations of NYDFS Regulations 60 and 152 related to replacement and recordkeeping requirements. In connection with the stipulation, TIAA paid a civil penalty in the amount of \$18,112. The stipulation covered the exam period 01/2005 through 12/2008. NYDFS has assessed the remediation plan during the subsequent examination in 2013 with no findings or violations identified related to replacement, illustration, disclosure and recordkeeping requirements. (Docket Case Numbers: State of New York Stipulation No. 2016-0045-S).

This settlement does not involve TCIM; however, TCIM is an indirect wholly-owned subsidiary of TIAA.

Item 10 Other Financial Industry Activities and Affiliations

TCIM has arrangements that are material to its advisory business or its clients with related persons. Also, certain supervised persons of TCIM 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, LLC (“Nuveen”). Nuveen is a subsidiary, and represents the Asset 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.

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, the 1940 Act and the Employee Retirement Income Security Act of 1974 (“ERISA”).

Neither TIAA nor its other affiliates have material involvement in TCIM’s day-to-day investment determinations on behalf of clients. TCIM exercises its own independent investment discretion in accordance with its investment philosophy, fiduciary duties and client guidelines, and TCIM maintains certain information barriers designed generally to provide for such independent exercise of investment power.

TCIM is committed to putting the interests of its clients first and seeks to act in a manner consistent with its fiduciary and contractual obligations to its clients 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 clients, 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 activities of TCIM on behalf of its clients. For example, TCIM’s investment 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.

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.

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

TCIM has adopted a Code of Ethics (the “Code”) under Rule 17j-1 of the Investment Company Act of 1940 as amended (the “Investment Company Act”) and Rule 204A-1 of the Investment Advisers Act of 1940, as amended (the “Advisers Act”). The Code governs, among other things, the personal trading activities of certain employees or “Access Persons” and members of their households. Access Persons must place the interests of TIAA and its affiliates and clients above their own. In addition, Access Persons:

- May not attempt to profit personally from their knowledge of recent or contemplated transactions in clients’ accounts including any mutual funds affiliated with TCIM.
- Must act in a manner consistent with that of a fiduciary with respect to client accounts.
- Must conduct personal securities transactions consistent with the Code and in such a manner as to avoid any actual or potential conflict of interest or any abuse of a position of trust and responsibility.
- May not purchase or sell a security when they have actual knowledge that a mutual fund or other client account will be trading in that security (or a related security).

Access Persons are required to maintain their brokerage accounts at a limited number of brokerage firms approved by Compliance. While Access Persons and their household members may invest in securities that may also be purchased or held by client accounts, they must pre-clear and report all covered securities transactions as required by the Code. In addition, Access Persons must disclose household members, personal security transactions and holdings information. The Code is designed to ensure that the personal securities transactions, activities and interests of the Access Persons will not interfere with making decisions that are in the best interest of advisory clients. The Code therefore restricts trading in close proximity to client trading activity and restricts personal trading for securities for which the firm is in possession of Material Nonpublic Information. Under the Code, certain classes of securities have been designated as exempt transactions in conjunction with the associated rules. Access Persons trading is continually monitored under the Code to reasonably prevent conflicts of interest between TCIM and its clients. All Access Persons must annually acknowledge their understanding of the terms of the

Code. TCIM will provide a summary copy of the Code to any client or prospective client upon request.

TCIM and its affiliates must also adhere to the restrictions contained in TIAA's Code of Business Conduct, which articulates general standards of ethical conduct for employees, the TIAA-CREF Material Nonpublic Information Policy, the Rumor Policy and the TIAA-CREF Gifts and Entertainment Policy.

Transactions Among Clients

TCIM may periodically recommend securities to its clients that are also recommended by one or more of its affiliated 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 the accounts of its clients 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 its clients. 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. Pursuant to these policies, any principal or cross transaction must be fair and equitable and executed in accordance with Section 206(3) of the Advisers Act. In addition, the sale price and purchase price in principal transactions and cross transactions will be the market value of the securities.

TCIM may execute transactions between CREF 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 clients' Boards of Trustees (as applicable). The procedures provide among other things that (1) the transaction was a purchase or sale, for no consideration other than cash payment against prompt delivery of the security for which market quotations were readily available, (2) the transaction was effected at the independent current market price of the security determined as specified in the procedures, (3) the transaction is consistent with the policy of each fund participating in the transaction, as recited in its registration statement, and (4) no brokerage commission, fee (except for customary transfer fees) or other remuneration was paid in connection with the transaction.

TCIM has adopted a policy on Principal Transactions and Cross Transactions. Under the policy, the sale price in Principal Transactions and in Cross Transactions will be the fair market value of the securities purchased or sold. TCIM may not directly or indirectly earn any compensation other than its usual advisory fee for affecting a Cross Transaction between its clients without the authorization of CREF's Investment Committee and CREF's Operations Committee. If such compensation is earned, the Cross Transaction

must comply with the notice and consent requirements of Section 206(3) of the Advisers Act. Furthermore, all Cross Transactions between CREF and an investment company client of TAL must comply with TCIM's Rule 17a-7 procedures.

Agency Cross Trades

Rule 206(3)-2 under the Advisers Act prohibits advisers (or their affiliates) from acting as brokers for their advisory clients and for parties on the other side of the transactions, unless the following requirements are met:

- The client must prospectively authorize agency cross transactions in writing
- The adviser must disclose to the client in writing the capacities in which it will act and the possibly conflicting division of loyalty and responsibility it may face in an agency cross transaction
- Each agency cross transaction must be confirmed in writing
- The adviser must provide the client with an annual summary of all agency cross transactions
- Client statements must disclose that the client may terminate the agency cross transaction authority at any time by written notice to the adviser

TCIM's investment decisions are limited by the investment criteria established for each CREF Account and TCIM's own internal guidelines. In making any investment decision concerning the amount of securities to buy or sell, TCIM will consider many factors, including but not limited to, the client's policies and restrictions, investment objectives, issuer, industry and sector concentration, tax implications, and the size of the investment in relation to the account.

TCIM, when appropriate, will advise its clients 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.

Capital Structure

Conflicts will also arise in cases where different Funds or clients of TCIM or affiliates of the TCIM invest in different parts of an issuer's capital structure, including circumstances in which one or more clients or accounts may own private securities or obligations of an issuer and other clients or accounts may own public securities of the same issuer. For example, an 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 clients or 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, the interests of clients or 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 clients and accounts, the circumstances giving rise to the conflict and applicable laws.

Item 12 Brokerage Practices

Selecting Broker - Dealers

TCIM has authority to select broker-dealers with which to place its clients' portfolio transactions, unless otherwise specifically directed by a client. TCIM has no set formula for the distribution of brokerage business in connection with the placing of orders for the purchase and sale of approved investments, and TCIM places its orders with brokers with the objective of obtaining best execution. TCIM has established "best execution" committees to monitor the best execution services, including the parameters and other relevant factors in evaluating brokerage firms and broker execution capabilities. TCIM evaluates its distribution of brokerage business in connection with the placing of orders of approved investments.

In evaluating best execution, TCIM considers a number of factors, including, without limitation, the following: best price; the nature of the security being traded; the nature and character of the markets for the security to be purchased or sold; the cost of brokerage commissions; the likely market impact of the transaction based on the nature of the transaction; the skill of the executing broker; the liquidity being provided by the broker; the broker-dealer's settlement and clearance capability; the reputation and financial condition of the broker-dealer; the costs of processing information; the nature of price discovery in different markets; and the laws and regulations governing investment advisers.

Since these various factors are weighed in evaluating the abilities of broker-dealers to achieve best execution, transactions will not always be executed at the lowest available commission rate or price. For example, TCIM may place orders with brokers providing research, even if the lower commissions may be available from brokers not providing such services. When doing so, TCIM will determine in good faith that the commissions negotiated are reasonable in relation to the value of brokerage and research provided by the broker viewed in terms of either that particular transaction or of the overall responsibilities of TCIM to its clients. In reaching this determination, TCIM will not necessarily place a specific dollar value on the brokerage or research services provided to determine what portion of the broker's compensation should be related to those services. Transactions may also involve specialized services on the part of the broker-dealer and would thereby entail higher commissions or their equivalents than would be the case with other more routine transactions. For example, a broker being asked to put up its own capital to complete a trade would be expected to charge a higher commission rate.

When purchasing or selling securities traded on the over-the-counter market, TCIM may execute the transactions with a broker engaged in making a market for such securities.

There is generally no stated commission in the case of securities traded in the over-the-counter markets, but the price usually includes an undisclosed dealer mark-up.

Every broker is formally approved by the Equity Best Execution Committee, which is comprised of representatives from Trading, Portfolio Management, Compliance and Law. Risk Management also reviews the creditworthiness of all brokers. The Committee discusses various trading issues including review of policies/procedures, overall execution/trading strategies, broker activity/performance and approves the entire brokerage list. Trades are monitored for best execution purposes throughout the day by the Trading department.

TCIM may also utilize Electronic Communications Networks and Alternative Trading Systems to execute purchases and sales of securities where such networks and systems provide the best execution for TCIM given the parameters of the orders.

Transactions on equity exchanges, commodities markets and other agency transactions involve the payment of negotiated brokerage commissions. Such commissions vary among different brokers. Transactions in some foreign investments involve the payment of fixed brokerage commissions.

TCIM does not use affiliated broker-dealers to execute any trades on its behalf. Also, client referrals do not play a role in TCIM's broker selection process.

Prohibition on Directed Brokerage Arrangements for Registered Investment Company Clients

TCIM has adopted policies and procedures relating to its registered investment company clients to prohibit 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 mutual funds, their respective investment advisers, 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 funds' 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 debt securities. TCIM does not directly pay a fee or negotiate the fee.

Research and Services Provided by Broker-Dealers

TCIM may execute equity transactions with broker-dealers that provide research and other services that assist TCIM in fulfilling its investment management responsibilities. TCIM has adopted a policy not to use soft dollars to pay for the research and other services received in connection with the purchase and sale of fixed-income securities.

Consistent with best execution, TCIM may place orders with brokers providing research and statistical data services even if lower commissions may be available from brokers not providing such services. 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 a client to pay a higher commission to a broker that also provides research services than the commission another broker would charge (generally referred to as the use of "soft dollars"). To utilize soft dollars, TCIM 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 client paying soft dollars receives some benefit from the research obtained through the use of soft dollars. TCIM may make such a determination based upon either the particular transaction involved or the overall responsibilities of TCIM with respect to the client accounts over which it exercises investment discretion (and the clients of its affiliated investment adviser, TAL). Therefore, research may not necessarily benefit all accounts paying commissions to such broker. Research obtained through soft dollars may be developed by the broker or a third party, where the obligation to pay is between the broker and the third party. In such cases the research will be paid for through a Commission Sharing Arrangement (CSA) or similar arrangement.

TCIM receives an array of services, including, but not limited to, macroeconomic data and statistical data, fundamental and technical data on issuers, information on groups of securities, political developments, pricing and appraisal services, credit analysis, risk measurement analysis, performance analysis and other information which may be relevant to the economy or to a particular investment. Research services may be received in a variety of forms, including, but not limited to, written reports, periodicals, investment seminars, software and meetings with analysts, issuers, economists and government officials and quotation and news services.

When client brokerage commissions are used to obtain research or other products or services, a benefit is received by TCIM because it is not necessary for TCIM to pay cash for research, products or services. . In addition, TCIM may have an incentive to select or recommend a broker-dealer based on TCIM's interest in receiving research or other products or services, rather than on TCIM's clients' interest in receiving the most favorable execution.

To address conflicts of interests, TCIM has adopted policies and procedures for the use of soft dollars. Additionally, TCIM may develop specialized policies and procedures for the use of and payment for soft dollars with respect to particular clients.

Client-Directed Brokerage Transactions

TCIM does not generally recommend or request that a client direct TCIM to execute transactions through a specified broker-dealer. A client may occasionally direct TCIM to use a particular broker-dealer, or broker-dealers, to execute portfolio transactions for its account. Where a client directs the use of a particular broker-dealer, or broker-dealers, TCIM may not be in a position where it can freely negotiate commission rates or best price, or select broker-dealers on the basis of best price and execution. Additionally, transactions for a client that directs brokerage may not be combined or "blocked" for execution purpose with orders for the same securities or other funds or account managed by TCIM. As a result, client-directed brokerage transactions may result in higher commissions or less favorable net prices than would be the case if TCIM were empowered to select brokers and dealers to execute transactions for the client's account. In the event of a sale or purchase executed for all or most of TCIM's clients, it is the policy of TCIM to first execute transactions where TCIM is authorized to select the broker followed by client-directed brokerage arrangements.

A client may direct TCIM to direct portfolio transactions to broker-dealers that agree to pay custodial, transfer agent or other expenses which would otherwise be paid by clients of TCIM or clients of TCIM's affiliates. In such circumstances, each client's commissions are used to defray that client's expenses only and are not used for the benefit of any other client. Broker-dealers participation in these arrangements typically also provides TCIM with research and brokerage services.

Although TCIM does not recommend that clients request TCIM to direct their portfolio transactions to specific broker-dealers, clients may do so, subject to best execution and provided the broker-dealer is an approved counterparty of TCIM.

Trade Error Policy

It is the policy of the adviser to review, report, and correct trade errors that occur in connection with client public market securities transactions as soon as possible, so that clients are not disadvantaged as a result of an error. Trading-related exceptions are

escalated for review to the Trade Error Committee, a group comprised of six senior-level control partners including representatives from Law, Compliance, Risk Management, Finance and Asset Management Services. The Committee is responsible for determining which trading-related events are deemed to be trade errors and of those, which should be reimbursed. The Committee is also responsible for reviewing potential trade error details and classifying, resolving, documenting, and monitoring trade errors in client accounts managed by the adviser. In addition, the Committee oversees related client reimbursements, and provides guidance and support to business areas to amend policies and procedure in order to prevent future reoccurrences.

Policies Regarding Aggregation and Allocation of Orders

Equity Securities Policy

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 help address and mitigate conflicts of interest and ensure that accounts are being treated fairly and equitably over time. In determining whether an 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 or "bunch" orders of various accounts, including registered investment companies, unregistered investment companies, TIAA, other proprietary accounts and client accounts of TCIM's affiliates, consistent with TCIM's policy to seek best execution for its orders.

In summary, open orders for the same single security are aggregated with other orders for the same single security received at the same time as well as with open or unfilled portions of earlier orders of the same single security. If aggregated orders are fully executed, each participating account is allocated its pro-rata share on an average 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.

However, basket trades (trades in a wide variety of securities-on average approximately 100 different issuers) are not aggregated with orders for the same security in other baskets or with single security order for the same security. Because of their size, execution of the basket trades occur 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 exchange traded funds 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 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.

Basket trades, however, are not subject to the same trading priority guidelines 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), subject to rotation if basket trades for one account closely precede transactions in the same or closely related securities in a different account. In addition, TCIM does not place basket trades in a manner that it believes will materially move the market price of securities because these trades are subject to TCIM's daily internal volume limits based on percentages of daily trading and designed using historical data to minimize to the extent possible the price impact of trading volumes.

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

Fixed Income Securities Policy

The mandate of the Fixed Income Trading Desk is to operate in a fiduciary capacity on behalf of all clients and to act in their best interest when trading 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 trades do not charge explicit commissions, commission equivalent (e.g., separately identifiable mark-ups and mark-downs in such transactions) or spreads. All fixed income orders entered into Bloomberg AIM, the fixed income trading system, are aggregated to assist in the best execution of trade orders. Any original multiple account order that is not completely filled after the initial trade execution is then allocated pro-rata automatically by AIM and incorporates the firm-wide de minimis and rounding requirements. The allocation is made pro-rata by account, based upon the original trade order each account's portfolio manager entered into AIM or communicated to the trading desk using pre-established AIM rules.

Post trade allocation, should a portfolio manager notify the trading desk that they wish to transfer a portion of or an entire allocation from one account to another account, a written exception request must be submitted to Global Public Markets 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 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.

The Fixed Income industry does not engage in the use of Soft-Dollars or directed trades. Therefore, fixed income research provided by our Broker-Dealer's is not a criterion considered when executing trades. Fixed income research and related services are provided by our counterparts with a view that they are a cost of doing business and an important means of sustaining long term relationships.

The Fixed Income Trading Desk does not generally employ the use of a voting system to rate Broker-Dealers with the intent of using those rankings to direct or allocate trades. The quality of research, credit opinions or relative value trade recommendations that are provided by our counterparts are periodically evaluated but there is no connection between rankings and our selection of a particular Broker-Dealer for trade execution.

The Fixed Income Trading Desk does not execute trades for the Retail SMA Accounts.

IPO Allocation Policy

TCIM has adopted written procedures with respect to allocation of initial public offerings ("IPOs"). Allocations of IPOs by TCIM will be made in a fair and equitable manner

consistent with its 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 enters the indications into an IPO database. Portfolio managers will make the same decision for each account managed assuming cash is expected to be available for that account and subject to contingencies based on cash constraints or other suitability criteria. 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 done pro rata, based on the amount of assets of the portfolio manager manages for each portfolio participating, subject to a ceiling based on the maximum amount indicated for each portfolio to ensure that the portfolio does not receive more shares than it had indicated for.

TCIM has put procedures in place to handle 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.

Item 13 Review of Accounts

The only client for TCIM 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, Investments and Compliance Committee (the "Nuveen RICC") 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 RICC in fulfilling its risk and compliance oversight responsibilities for funds managed by portfolio managers.

It is the responsibility of the portfolio managers to manage each portfolio according to its specific investment objectives. Portfolio managers review on a continuous basis all of the CREF investment portfolios for which they are responsible and the members of the Investment Committee monitors 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; 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 ("Board") at regularly scheduled meetings.

TCIM communicates regularly with its client to discuss each aspects of the client's portfolios for which TCIM provides investment advisory services. TCIM reports to the Trustees on the investment performance at regularly scheduled Board meetings. These reports include, among other information, current value of the accounts; performance data; sales and redemptions of CREF accumulation units; and brokerage commissions paid by CREF. CREF participants are also provided with semi-annual and annual reports as required by the Investment Company Act.

Item 14 – Client Referrals and Other Compensation

TCIM does not participate in Client Referral arrangements.

Item 15 Custody

TCIM does not have custody of its clients' assets. Its clients' assets are held with qualified third party custodians. The clients receive at least quarterly statements from the custodians. TCIM urges clients to carefully review such statements and compare such official custodial records to the account statement that TCIM may provide its client. TCIM statements may vary from custodial statements based on accounting procedures, reporting dates or valuation methodologies of certain securities.

Item 16 Investment Discretion

TCIM is responsible for decisions to buy and sell securities for its clients' accounts. TCIM's authority is subject to certain limits, including the clients' 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.

Item 17 Voting Client Securities

Rule 206(4)-6 under the Advisers Act requires that investment advisers exercising voting authority on behalf of their advisory clients must adopt and implement written policies and procedures reasonably designed to ensure that proxies are voted in a manner that reflects the best interests of clients. In its capacity as fiduciary and investment manager, TCIM votes the proxies of publicly traded companies held by CREF in accordance with the guidelines established by the Committees on Corporate Governance and Social Responsibility (“CGSR Committees”).

TCIM has a dedicated team of professionals responsible for reviewing and voting proxies. In analyzing a proposal, in addition to exercising their professional judgment, these professionals utilize various sources of information to enhance their ability to evaluate the proposal. These sources may include research from third-party proxy advisory firms and other consultants, various corporate governance-focused organizations, related publications and our investment professionals. Based on their analysis of proposals and guided by the TIAA-CREF Policy Statement on Corporate Governance (“Policy Statement”), these professionals make recommendations intended solely to advance the best interests of the participants. Individuals, including portfolio managers, research analysts and/or other personnel are solely and ultimately responsible for voting proxies on portfolio securities owned or managed on behalf of clients of TCIM consistent with the best interests of the client and may override recommendations at any time. Occasionally, when a proposal relates to issues not addressed in the Policy Statement, TCIM may seek guidance from the CGSR Committees.

CREF and TCIM believe that it has implemented policies, procedures and processes designed to prevent conflicts of interest from influencing proxy voting decisions. These include: (i) oversight by the CGSR Committees; (ii) a clear separation of proxy voting functions from external client relationship and sales functions; and (iii) the active monitoring of required annual disclosures of potential conflicts of interest by individuals who have direct roles in executing or influencing CREF’s proxy voting (e.g., TCIM’s proxy voting professionals, or trustees or senior executives of CREF, TCIM or TCIM affiliates) by TCIM’s legal and compliance professionals.

There could be rare instances in which an individual who has a direct role in executing or influencing proxy voting (e.g. TCIM’s proxy voting professionals, or a trustee or senior executive of CREF, TCIM or TCIM affiliates) is either a director or executive of a portfolio company or may have some other association with a portfolio company. In such cases, this individual is required to recuse himself or herself from all decisions related to proxy voting for that portfolio company.

A report of proxies voted for the registered investment company clients is made regularly to their Boards or its Committee on Corporate Governance and Social Responsibility, noting any proxies that were voted in exception to the Policy Statement. Also, a record of the proxy votes cast over a twelve month period for TCIM's registered investment company clients can be obtained, free of charge, at www.tiaa.org or on the SEC's website at www.sec.gov. Copies of TCIM's proxy voting policy are also available to TCIM's clients upon request.

Item 18 Financial Information

TCIM does not require or solicit prepayment of investment advisory fees. TCIM has no financial commitment that impairs its ability to meet contractual and fiduciary commitments to clients.

Exhibit A
TIAA Subsidiaries

Primary Financial Industry Subsidiaries under Nuveen, LLC, the asset 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 |
| Greenwood Resources Capital Management LLC | Registered Investment Adviser |
| Gresham Investment Management LLC | Registered Investment Adviser CFTC Registered Commodity Pool Operator CFTC Registered Commodity Trading Advisor |
| Nuveen Asset Management, LLC | Registered Investment Adviser CFTC Registered Commodity Trading Advisor |
| Nuveen Fund Advisors, LLC | Registered Investment Adviser CFTC Registered Commodity Pool Operator |
| Nuveen Investments Advisers, LLC | Registered Investment Adviser |
| NWQ Investment Management Company, LLC | Registered Investment Adviser |
| Santa Barbara Asset Management, LLC | Registered Investment Adviser |
| Symphony Asset Management LLC | Registered Investment Adviser |
| Teachers Advisors, LLC | Registered Investment Adviser |
| TIAA-CREF Alternatives Advisors, LLC | Registered Investment Adviser |
| TIAA-CREF Investment Management, LLC | Registered Investment Adviser |
| Westchester Group Investment Management, Inc. | Real Estate Broker or Dealer |
| Winslow Capital Management, LLC | Registered Investment Adviser |
| Nuveen Securities, LLC | Registered Broker Dealer |
| Teachers Personal Investors Services, Inc. | Registered Broker Dealer |
| Nuveen Commodities Asset Management, LLC | CFTC Registered Commodity Pool Operator |
| Nuveen Services, LLC | Shared services entity |
| Nuveen Investments Canada Co. | Canadian marketing affiliate |
| Henderson Real Estate Asset Management Limited | UK FCA Registered Investment Adviser |
| Henderson Property UK AIFM Limited | Investment Adviser UK FCA Registered Investment Adviser |
| Nuveen Global Investments Ltd | UK FCA Registered Exempt CAD Firm |
| TIAA-CREF Asset Management UK Limited | UK FCA Registered Investment Adviser |
| TIAA Global Asset Management London Limited | UK FCA Registered Investment Adviser |

Other Primary Financial Industry Subsidiaries of TIAA

| | |
|--|--|
| TIAA-CREF Individual & Institutional Services, LLC (aka TIAA-CREF Advice and Planning Services) | Registered Investment Adviser Registered Broker Dealer |
| TIAA-CREF Tuition Financing, Inc. | Registered Investment Adviser Registered Municipal Advisor |
| Covariance Capital Management, Inc. | Registered Investment Adviser CFTC Registered Commodity Pool Operator |
| Kaspick & Company, 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-CREF Trust Company, FSB | 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. of 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).