Overview

Teachers Insurance and Annuity Association of America (TIAA) was established in 1918 as a legal reserve life insurance company under the insurance laws of the State of New York. College Retirement Equities Fund (CREF), a companion organization to TIAA established in 1952, was the first company in the United States to issue a variable annuity. Launched in 1918, TIAA Traditional Annuity has helped millions of plan participants save for retirement and remains a core holding in many of their retirement portfolios. Considering TIAA Traditional Annuity’s attractive combination of features, it’s not surprising that more participant dollars remain allocated to it than to any other TIAA-CREF product.¹

Key benefits

- **Safety and stability.** Contributions are backed by the claims-paying ability of TIAA, which has been placed among the highest rated insurance companies in the U.S. by three of four leading insurance company rating agencies.²

- **Competitive interest rates.** Interest crediting rates for TIAA Traditional have generally been highly competitive, compared with many other fixed annuities, and include a guaranteed minimum rate and the potential to earn more.³

- **Option to receive guaranteed income for life.** Participants can choose a lifetime-income option.

In addition, TIAA Traditional Annuity has no hidden fees or teaser rates, can help offset the effects of market fluctuations on other assets held in a diversified portfolio, and offers many other benefits.

What’s inside

This paper explains how TIAA Traditional Annuity works, what makes it uniquely attractive as part of a diversified retirement strategy, and examines the composition of the investments held in TIAA’s General Account—the source of the earnings, financial strength and stability that back the guarantees and additional amounts under the TIAA Traditional Annuity.⁴
TIAA Traditional Annuity

This guaranteed fixed annuity is offered to participants in employer-sponsored retirement plans and Individual Retirement Accounts (IRAs) through a contract(s) with TIAA. Participants who choose to allocate a portion of their retirement savings to TIAA Traditional Annuity make contributions that purchase a specific amount of lifetime income based on the contractual rate schedule in effect at the time the premium is paid.

The participant’s principal, plus a specified rate of interest, are guaranteed by TIAA’s claims-paying ability. The TIAA Traditional Annuity also provides an opportunity for participants to receive additional amounts, which the TIAA Board of Trustees (the Board) may declare on a year-by-year basis. These additional amounts, when declared, remain in effect for the 12-month “declaration year” that begins each March 1 for accumulating annuities, and January 1 for lifetime-payout annuities; they are not guaranteed for future years.

How TIAA Traditional Annuity is offered

TIAA Traditional Annuity is offered through a variety of contracts, including Retirement Annuities (RAs), Group Retirement Annuities (GRAs), Supplemental Retirement Annuities (SRAs), Group Supplemental Retirement Annuities (GSRAs), Retirement Choice (RC) and Retirement Choice Plus (RCP) annuities, IRAs and Keogs.

The type of contract through which a participant allocates to the TIAA Traditional Annuity determines the applicability of certain account features, such as the guaranteed minimum interest rate, additional amounts paid, the degree of liquidity of the participant’s accumulation, and the options for receiving income upon retirement.

This paper focuses primarily on RA contracts, although other types of contracts are referenced where appropriate. It summarizes TIAA Traditional Annuity’s features, discusses valuation, and explains other important information.

Key features of TIAA Traditional Annuity

There are four primary characteristics of return that are key to understanding and evaluating TIAA Traditional Annuity:

1. **Guaranteed principal and minimum interest rate**
   TIAA Traditional Annuity guarantees principal and credits contracts a guaranteed minimum interest rate during the accumulation phase—generally 3%, but between 1% and 3% for some contracts. (Because TIAA’s contractual rates guarantee lifetime benefits that will not be paid out until many years in the future, these rates are based on conservative assumptions that are intended to make the annuities fully self-supporting.) These guarantees of principal and minimum interest rates ensure that each participant’s accumulation is protected from loss and will always increase in value.  

2. **Opportunity to receive additional amounts**
   As described earlier, additional amounts above the guaranteed minimum interest rate may be declared at the discretion of the Board on a year-by-year basis. Such additional amounts have been paid on in-plan annuities every year since 1948. When declared, additional amounts remain in effect for the “declaration year” that begins each March 1 and are not guaranteed for future years. Together, the guaranteed minimum and additional amounts make up the “crediting rate” in the accumulation phase of the account.

Because the yields available on bonds and other fixed income investments tend to change over time, TIAA groups the premium dollars it receives over defined time periods into vintages—typically composed of one or more contiguous calendar months—for the purpose of determining the crediting rate for the applicable declaration year during the accumulation phase. The crediting rate for each vintage is determined, in part, by the net investment earnings rate of the TIAA assets supporting that vintage, minus a charge for administrative expenses and an amount set aside for contingency reserves.

The net investment earnings rate associated with each vintage reflects both the yields at which premiums are invested and the rates at which subsequent cash flows are reinvested. This approach enables TIAA to distribute excess earnings to participants on a more equitable basis, so that each generation will ultimately receive benefit payments that reflect, in part, the prevailing interest-rate environment at the time the crediting rates were applied.
Exhibit 1 shows the crediting rate for RA and GRA contracts for the years 1987 through 2014. Over that period, the crediting rate averaged 6.70% and ranged from a high of 10.18% in 1987 to a low of 3.94% in 2010. The declining rate in more recent years is reflective of general interest rate trends. Due to the minimum guarantee, there have been no years in which the crediting rate fell below 3%.

The TIAA Traditional Annuity crediting rate represents the average rate applied to all accumulations in force under RA and GRA contracts each year. The 10-year U.S. Treasury rate represents the annual average of each of the 12 monthly spot rates. Sources: TIAA/Bureau of Labor Statistics (as of the end of 12/31/2014).

The graph above is not intended to compare the TIAA Traditional Annuity to 10-year U.S. Treasury securities. Rather, the graph merely shows the TIAA Traditional Annuity’s crediting rate alongside general long-term interest rates (for which the 10-year U.S. Treasury yield is a common barometer) during the time period shown. It is important to note, however, that there are significant differences between a guaranteed insurance product and U.S. Treasuries, and each has its place with regard to addressing an individual investor’s needs. Therefore, an investor should not decide between the two based on return alone. There are a number of other factors that must be considered, including the following: (1) different charges and expenses applicable to each, including the mortality and expense charges carried by annuities; (2) liquidity issues (Treasuries are fully liquid while TIAA Traditional is generally not); (3) the manner in which each is taxed, including capital gains implications; (4) the manner in which interest accrues, including the impact of the vintage system on TIAA Traditional returns; and (5) the fact that TIAA Traditional additional amounts are not ensured for future years and may be discontinued, which could significantly diminish the return potential when compared to U.S. Treasuries. The TIAA Traditional guarantee is backed by the claims-paying ability of Teachers Insurance and Annuity Association of America (TIAA), and the U.S. Treasuries are backed by the full faith and credit of the U.S. Treasury. TIAA Traditional is a guaranteed annuity contract.

Exhibit 1


<table>
<thead>
<tr>
<th>Year</th>
<th>TIAA crediting rate</th>
<th>10-year Treasury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>1990</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>1992</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>1994</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

The third notable feature related to the TIAA Traditional Annuity Account’s returns is that each participant dollar applied to the accumulation purchases a guaranteed amount of lifetime annuity income, paid to participants when they annuitize. Within TIAA Traditional Annuity contracts, the minimum guaranteed interest rate during the payout phase is at least 2%. As in the accumulation phase, this guaranteed minimum rate may be supplemented by additional amounts declared by the Board on a year-by-year basis.

These additional amounts reflect earnings in excess of the guaranteed minimum rate, as well as a payout of unneeded contingency reserves. As an insurance company, TIAA is required to maintain contingency reserves to ensure that it will be able to fulfill its contractual obligations to policyholders, even in the face of unexpected adverse circumstances. However, to the extent that these reserves prove to be unneeded, they are gradually distributed to participants in the form of additional annuity income during the payout phase. (It is important to note that if TIAA were a typical stock insurance company, unneeded reserves could be used for the benefit of its stockholders rather than its participants.)

The fourth important characteristic related to the TIAA Traditional Annuity’s return is related to the level of liquidity provided for under each contract. For example, under RA contracts, participants may only make withdrawals in the form of a life annuity or in 10 installments, with the first installment paid immediately so that the “10-year” withdrawal period actually occurs over a period of nine years and one day.

This restricted liquidity provides TIAA with the flexibility to invest its General Account assets, which back up the Traditional Annuity, in a wider range of investments than would be possible with liabilities having a shorter time horizon. This flexibility, combined with deep investment expertise and the economies of scale offered by a large asset base, has helped generate steady returns for the TIAA General Account portfolio—contributing to the portfolio’s growth and to the financial strength and stability that back the TIAA Traditional Annuity’s guaranteed returns.
Financial strength and liquidity restrictions provide safety and stability.

The safety and stability of the TIAA Traditional Annuity is made possible, first and foremost, by TIAA's financial strength—its ability to pay its claims and deliver on the guarantees it makes to its participants. TIAA has been placed among the highest rated insurance companies in the U.S. by three of four leading insurance company rating agencies. These agencies monitor multiple aspects of life insurance company business, including the quality of the investment portfolio, the soundness and competitiveness of the overall business, and the structure and risks associated with individual products. In addition, each agency monitors capital adequacy using its own capital model or standards.

TIAA's high ratings do not mean that its General Account investments are restricted to securities that carry equally high ratings. Rather, the quality of the investment portfolio is evaluated in relation to the other characteristics of TIAA's business and against TIAA's capital reserves. In effect, the rating process aims to ensure that investment and other risks are balanced by the capital TIAA has available to absorb investment volatility or losses and its ongoing ability to maintain capital at appropriate levels.

Also supporting the safety and stability of the TIAA Traditional Annuity are the liquidity restrictions included in RA and certain other contracts. As described earlier, this helps facilitate TIAA's ability to invest a portion of its General Account portfolio in long-term assets that have the potential to contribute to the General Account's growth and to the financial strength and stability that back the TIAA Traditional Annuity's guaranteed returns.

The TIAA General Account: a sound, diversified portfolio

A look at TIAA's General Account investments sheds light on the strength and stability that back the TIAA Traditional Annuity's guarantees. Although participants in the TIAA Traditional Annuity do not invest in the General Account portfolio, the investment performance of that portfolio supports the contract's minimum guaranteed returns, additional amounts and payout obligations.

As an insurance company, TIAA is governed by New York State insurance regulations that limit the General Account's exposure to higher-risk asset types. In particular, insurance regulations limit the proportion of investments that can be allocated to certain asset classes. Specifically, regulations limit holdings of below-investment-grade bonds to 10% of the portfolio; emerging market debt to 4%; U.S. common stock and other nonpreferred equity securities to 20%; and U.S. real estate to 20%.

Regulations also require TIAA to maintain certain minimum amounts of capital. These capital requirements vary by the amount and type of risk. For instance, emerging market bonds, equities and real estate require significantly higher capital than investment-grade bonds.

In general, regulatory constraints and capital requirements dictate that life insurance company general accounts focus largely on investment-grade fixed-income assets. The challenge is to construct a portfolio that optimizes return within these constraints.

Key advantages

TIAA has three valuable competitive advantages that enable it to meet this challenge:

1. TIAA is a capital-rich insurance company.
2. Although TIAA Traditional Annuity participants do not invest in the TIAA General Account portfolio, the characteristics of the contract help make it possible for the General Account to invest in long-duration and less-liquid alternative assets, including higher-yielding alternatives to the "plain vanilla" corporate bonds that have historically dominated life insurance company portfolios.
3. The TIAA General Account has invested $27.3 billion per year on average since 2000, making TIAA one of the world's largest institutional investors. The size and constancy of these investment flows provide TIAA with the asset base and stability to take advantage of investment opportunities in asset classes that might not be available to investors with smaller or less constant flows. In addition, the breadth and stability of TIAA's asset base have allowed it to nurture in-house expertise and accumulate experience in these asset types. And because of its scale, TIAA can execute transactions more efficiently and cost-effectively, an advantage that smaller investors do not enjoy.

In combination, these three advantages have made it possible to build TIAA's General Account portfolio using a variety of asset types.
The role of the TIAA Traditional Annuity in a diversified retirement portfolio

The key attributes of the TIAA General Account—its financial strength, highly diversified portfolio, long-term investment time horizon and economies of scale—make it possible for the TIAA Traditional Annuity to offer important advantages to its contract holders:

- Guaranteed principal and a guaranteed rate of interest, plus additional amounts, as declared annually by the Board.
- A guaranteed rate, plus the potential for additional amounts paid from excess capital reserves, during the payout phase.

In addition to being a source of safety and stability in its own right, the TIAA Traditional Annuity can help offset the effects of market fluctuations on other assets held in a diversified retirement portfolio. Classified as a “guaranteed” asset, TIAA Traditional Annuity returns historically have had little or no correlation to returns from other types of assets, such as stocks and bonds. (Correlation measures the relationship among returns of different asset classes, showing how similarly or differently they tend to perform.) This low or negative correlation can help minimize volatility and improve overall portfolio returns over time, making the TIAA Traditional Annuity a valuable component of a well-diversified retirement portfolio.

How fair value pricing of the TIAA Traditional Annuity is determined

Financial Accounting Standards Board (“FASB”) Codification (“ASC”) 962-325 requires defined contribution plans to report all investments at amounts meaningful to plan participants or at amounts at which they transact with the plan, which is generally fair value, in their financial statements prepared in accordance with generally accepted accounting principles (“GAAP”). Additionally, ASC 820 provides guidelines for applying the fair value framework outlined in that guidance and related footnote disclosures. (See Appendix A for an example of a component of related footnote disclosure for TIAA Traditional outlined in Accounting Standards Update 2011-4 effective for plan years beginning on and after December 31, 2012.) The TIAA Traditional Annuity is reported at contract value and segregated into nonbenefit and fully benefit responsive categories. Fair value approximates contract value for non-benefit responsive versions of TIAA Traditional (RA, GRA, RC). (Contract value is the relevant measurement attribute for that portion of net assets that are considered to be fully benefit responsive.)

The contract value of the TIAA Traditional Annuity equals the accumulated cash contributions, interest credited to the plan’s contracts, and transfers in (if any) less any withdrawals and transfers out (if any).

Based on its assumptions and analysis, TIAA has concluded that contract value approximates fair value. To aid plan sponsors in beginning an analysis to determine fair value of the TIAA Traditional Annuity, TIAA offers two approaches. It is important to note that changes in assumptions as well as plan demographics could result in a different conclusion.

The following is a discussion regarding the fair value of the TIAA Traditional Annuity, according to the principles outlined in ASC 820. The conclusion is that the fair value of such contracts does not differ significantly from the contract value. This conclusion is supported by the following two lines of reasoning:

1. Theoretical transfer of an asset owned by a pension plan, and
2. A quantitative model based on assumptions of future interest rates and related discounted cash flows.

Theoretical transfer of an asset owned by a pension plan

According to ASC 820, fair value is generally defined as the exchange price based on an exit (not entry) of the position in its principal market. Because of the nature of the TIAA Traditional Annuity contract during the accumulation stage, there is no principal market where such contracts are traded. Therefore, we considered a theoretical marketplace where the TIAA Traditional Annuity contract’s fair value would be considered to be approximately the same value as the contract value based on the following considerations:

- Contributions represent current transactions between willing buyers (the participant) and sellers (TIAA) as prescribed in the relevant GAAP accounting guidance. Participants have the option to allocate their contributions between the TIAA Traditional Annuity and a number of investment choices, such as mutual funds and the CREF Accounts, whose fair values are readily observable. Because participants typically allocate contributions among several choices, including the TIAA Traditional Annuity, and all transactions are at current contract value, the assumption is that each investment purchase is being made at fair value since these purchases are not distressed and are made between willing buyers and sellers in open market conditions where a participant has a variety of investment choices.
- When benefit plan participants in higher education or other similar industries with a pension/employee benefit plan change employers, they often enroll in new plans with
very similar TIAA investment options, including the TIAA Traditional Annuity. Because these transactions continue to occur along with continued participant contributions at current stated contract values, the market observable presumption is that the contract value of current funding represents a good approximation of fair value based on the willingness of the participant to continue to contribute. For each contribution, TIAA continues to record a contractual liability for the current contribution and does not consider such liability to have any embedded gain or loss.

- Upon death or any other condition where the contract is settled with the participant, as prescribed within the applicable plan documents, the participant surrenders the future accumulation benefits in exchange for a cash payout based on the contract value. This example demonstrates that the contract value can be monetized when a distributable event occurs.

**Quantitative model based on discounted cash flows**

We used 25 years of data (1990–2014), the “measurement period,” to determine the blended return on TIAA Traditional Annuity contracts for the participant population and compared that to the standard 10-year risk-free rate derived from the available “on the run” 10-year Treasury yield.

Summary statistics show the following results for the measurement period:

- Correlation of 92% between the 10-year Treasury and TIAA Traditional Annuity average return
- Given a Pearson correlation table, the correlation appears to be statistically significant (one can reject the null hypothesis that the correlation is happenstance). The mean spread over 10-year Treasuries for the observed measurement period is 136 basis points.
- Standard deviation of the spread is 69 basis points.

Average AAA corporate credit spreads for the same period, derived from Moody’s data in all months where such data is provided, is 87 basis points with a 37 basis-point standard deviation and a correlation of 97%. The 136 basis-point TIAA Traditional Annuity spread over 10-year Treasuries seems reasonable given the 87 basis-point AAA corporate spread derived from the Moody’s AAA corporate bonds over the same time frame. In other words, TIAA Traditional Annuity, on average, yields about 49 basis points above the typical AAA corporate credit spread. One can interpret the additional spread relative to the AAA corporate bond rate as a premium attributable to the overall illiquidity of the TIAA Traditional Annuity relative to a similarly rated corporate bond.

A 10-year risk-free rate seems appropriate to use as a benchmark for the TIAA Traditional Annuity during the accumulation stage (for purposes of the above spread calculation) given the average participant’s age is 55 years, implying that the average participant is 10 plus years away from a typical retirement age. Thus, contracts will not typically be monetized for several years.

The spread is assumed to represent the TIAA credit spread for long-term obligations of a highly rated insurance company. Thus, an anticipated crediting rate is considered to be a fair approximation of the discount rate used for an owner of the contract based on his or her expectation of future cash flows. All expected future cash flows would thus be discounted at TIAA's expected yield, and thus the present value of future accumulations would reasonably approximate current contract values (i.e., valuation is akin to a floating-rate bond, which regularly resets to a “market” crediting rate for a highly rated insurance company with relevant liquidity restrictions). TIAA contract holders are expected to receive accumulating annuity rates based on a risk-free rate plus the TIAA credit spread over the life of an accumulating annuity which, over a long-term cycle of the annuity contract, will revert back to a mean (historically 136 basis points over 10-year Treasuries for the measurement period).

**Impact of interest rate fluctuations**

Even with interest rates hovering near current lows, we believe that the long-term risk-free rate would have to remain well below 2.0% or less for a significant amount of time for the value of the guaranteed rates on typical retirement annuity contracts to be worth more than the risk-free rate plus the TIAA credit spread. During periods of low interest rates, we have observed a significant increase in the credit spread. As a result, the potential impact of the prolonged low interest rates has not impacted the valuation of the TIAA Traditional Annuity. As of December 31, 2014, 10-year Treasuries were yielding 2.17%. While the 3% guarantee rate exists as a term within the TIAA Traditional Annuity contract, the term does not appear to provide any meaningful value to owners of the contract given the term structure of interest rates and the nature of the yield curve.

The primary assumption is that the long-term rate of the TIAA Traditional Annuity during the accumulating stage will be, on average, 136 basis points above 10-year Treasuries with the spread above Treasuries representing the TIAA credit spread. While there is no guarantee what future crediting rates will be available to plan participants, past returns have been normally distributed over the measurement period relative to other observable risk-free or “low-risk” investments and market inputs.
TIAA Traditional Annuity crediting rates

The following example uses discounted cash flow to determine the crediting rate:

- $1,000 TIAA Traditional Annuity balance earning an average annual rate of 4.41% during 2014 (average crediting rate for the year ending December 31, 2014).
- In one year, the value would be $1,044.
- If the $1,044 amount is discounted back at 4.41%, the original value of the accumulation at the beginning of the year would be $1,000.
- The discount rate is reasonable because, over the measurement period, the TIAA Traditional Annuity has, on average, yielded 136 basis points over 10-year Treasuries (standard deviation of 69 basis points) and the 2014 Treasury yield averaged 2.54%.
- Thus, for 2014, the average TIAA Traditional Annuity was accumulating at 10-year Treasury plus 187 basis points; well within one standard deviation.
- This hypothesis can be continuously back-tested to see if correlations and spreads can be maintained over long periods of time.

The observation period was chosen to represent the start of increased transparency within the modern capital markets. Therefore, it represents a period where investors can more readily achieve transparent pricing and lower switching costs than may have existed in earlier periods. This period was represented by such factors as:

- Increased widespread use of the Internet and personal media and thus, increased transparency of financial products and rates available to TIAA participants
- Usage of modern portfolio-management techniques, including increased duration matching used by general account portfolio managers
- Competitive pressures derived from additional financial services providers and other financial services networks, such as retail brokerage and wealth management/financial counseling, as they became available to core participants.

Experience and stability

- TIAA-CREF is a leading private provider of retirement benefits nationwide with $851 billion in total assets under management for more than 15,000 clients and their four million participants.6
- We pay over $13 billion in annuity payments and other disbursements per year to participants. Since 1918 a total of $400 billion in cumulative benefits and dividends have been paid.7
- TIAA-CREF is ranked as one of Fortune magazine’s 100 largest U.S. companies.8

Questions?

To learn more about the TIAA Traditional Annuity and TIAA-CREF’s full menu of products and services, visit tiaa-cref.org.
Appendix A – Expanded ASC 820 Disclosure

Accounting Standards Update (ASU) 2011-4 expanded the disclosure required under Accounting Standards Codification (ASC) 820 related to the fair valuation of assets for which valuation inputs are not observable (Level 3). The level in which an asset falls is not indicative of its quality but simply an indication of the source of valuation inputs. Valuation techniques and ascertainment of significant unobservable inputs may vary from plan to plan.

The following information is provided as an example of the expanded disclosure requirement for a plan’s investment in TIAA Traditional Annuity to aid plan sponsors. Plan management is responsible for the value at which plan assets are reported, preparation of the plan’s financial statements, including required disclosure, and the establishment of related internal controls. See the Plan Advisory, Valuing and Reporting Plan Investments issued by the Employee Benefit Plan Audit Quality Center of the American Institute of Certified Public Accountants for more information.

Quantitative information regarding Level 3 Fair Value Measurements

The following table, using a hypothetical example of the XYZ group, presents information about significant unobservable inputs related to the Plan’s investment in assets categorized as Level 3 in the ASC 820 fair value hierarchy at December 31, 2014:

<table>
<thead>
<tr>
<th>Type</th>
<th>Fair value</th>
<th>Valuation technique</th>
<th>Significant unobservable inputs</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIAA Traditional Annuity</td>
<td>$19,311,571</td>
<td>Discounted cash flow</td>
<td>Risk-adjusted discount rate applied*</td>
<td>RA – 3.25% – 5.00%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theoretical transfer (exit value)</td>
<td>SRA – 3.00% – 4.25%</td>
<td>GRA – 3.25% – 5.00%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>GSRA – 3.00% – 4.25%</td>
<td>RC – 3.60% – 5.35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RCP – 2.85% – 4.60%</td>
<td></td>
</tr>
</tbody>
</table>

TIAA Traditional Annuity account balances are reported at contract value. Contract value is the aggregation of contributions, plus interest, less withdrawals, if any. Crediting rates are a combination of a guaranteed rate and an annually established discretionary rate. Additionally, the discretionary rate applied to contributions received during a reporting period may vary from the discretionary rate applied to account balances at the end of the prior reporting period. Contract value approximates a discounted cash flow value calculated using an appropriate risk-adjusted market discount rate which correlates closely with TIAA Traditional Annuity’s historical crediting rates.

Additional qualitative information on fair valuation process

The Company has various processes and controls in place to ensure that fair value is reasonably estimated. The XYZ group, which reports to the Vice President of Risk Management, sets the valuation policies for plan assets and is responsible for the determination of fair value.

XYZ (1) compares price changes between periods to current market conditions, (2) compares trade prices of securities to fair value estimates, (3) compares prices from multiple pricing sources, and (4) performs ongoing due diligence to confirm that independent pricing services use market-based parameters for valuation. Valuation approaches are reviewed on an ongoing basis and revised as necessary based on changing market conditions to ensure values represent a reasonable exit price.

* Unobservable inputs include discount rate applied.
Appendix B - Additional Crediting Rate Considerations

As stated on page 5 of this White Paper, TIAA has concluded that contract value of TIAA Traditional Annuity approximates fair value. Given the nature of TIAA Traditional Annuity, the contract value equals the accumulated cash contributions, credited interest, and transfers in (if any) less withdrawals and transfers out (if any). Hence the guaranteed interest and additional amounts credited to the contracts is a key portion of fair value.

On the right hand side of page 2 of this White Paper, there is some information on the crediting rate process utilized by TIAA. At a high level, TIAA’s crediting rate process has two distinct segments:

- For funds that are already invested in the TIAA Traditional Annuity, credited rates are declared annually and are in effect from March 1 of one year until the end of February of the following year during the accumulation phase; and
- For new contributions coming into TIAA Traditional Annuity in the accumulation phase, crediting rates are set monthly throughout the year and are in effect until the end of February of the following year, at which point the crediting rates are reset as described in the first bullet above.

Additionally, as described on page 2, because the yields on bonds and other fixed income investments tend to vary over time, TIAA tracks the timing of receipt of all contributions invested in TIAA Traditional Annuity. In this way TIAA can set crediting rates that reflect, among other factors, the economic environment at the time contributions are received.

TIAA’s management and Board approve the crediting rates for the existing balances prior to the rates going into effect on March 1. Additionally, management and the Board approve ranges for the crediting rates for new contributions for the upcoming year. Furthermore, to the extent the economic environment or other circumstances significantly change subsequent to the Board approval date, the Board may be asked to expand the crediting rate range for new contributions.

In determining crediting rates for both existing balances and new contributions, TIAA considers a variety of factors, such as:

- The net investment earnings rate associated with each grouping of contributions received;
- Financial strength of TIAA and its current capital and surplus level;
- The competitive environment, i.e., rates that other companies are crediting on similar products; and
- Amounts to retain as a risk provision to ensure that contract guarantees will be met; primary risks in TIAA Traditional Annuity include the interest guarantee and the mortality guarantee when annuities eventually enter the payout phase.

TIAA’s experience suggests that participants’ contribution patterns are not materially impacted by changes in crediting rates. Several factors contribute to this, as follows:

- The portion of retirement plan contributions that are allocated to TIAA Traditional Annuity are typically the result of participant level risk-based asset allocation decisions, where the TIAA Traditional Annuity portion represents a more static and risk-averse guaranteed option relative to other plan investments which have greater levels of investment risk and whose principal balances are not guaranteed. The guarantee is the primary driver of the allocation decision to TIAA Traditional Annuity; crediting rate expectations are less relevant to TIAA Traditional Annuity participants.
- Since TIAA sets its crediting rates, in part, based on the economic conditions when contributions are made, credited rates on new contributions tend to keep pace with other available fixed-income investments that are similar in nature.
- In times of equity declines, TIAA has experienced greater contributions into TIAA Traditional Annuity as participants seek safe havens for their retirement contributions. This was the case in the last economic downturn even though interest rates also declined at that time.

Furthermore, when considering the approximation of fair value for TIAA Traditional Annuity, the process described above considers certain variables which may be used in a contract owner’s estimation process and reflect TIAA’s competitive position. Such variables considered when setting crediting rates may include:

- Portfolio earned rates: Given the nature of the fixed-income portfolio of TIAA’s General Account (which backs the guarantees and returns of TIAA Traditional Annuity), investment income (including capital gains and losses) is projected each year based on portfolio characteristics and the following year’s projected investment program. Portfolio earnings projections are considered in the crediting rates determined by management and approved by the Board and enable TIAA Traditional Annuity to maintain supportable annuity crediting rates.
- Financial strength: Crediting rates are established to maintain and further TIAA’s financial strength. TIAA continues to maintain the highest insurance company
financial strength in its industry based on the ratings provided by three of four of the most recognized credit rating agencies and insurance annuities are further supported by state guaranty funds. The creditworthiness of TIAA and presence of the guaranty funds further minimize any participant impact in the highly unlikely event of TIAA’s nonperformance.

- Rate guarantee: As noted herein, principal balances are credited at a guaranteed minimum interest rate, generally 3%. While this does represent a minimum crediting rate on TIAA Traditional Annuity, TIAA does consider whether such a guarantee provides any material value to contract owners. TIAA’s long duration assets and liabilities, as well as the aforementioned financial strength, enables TIAA to credit annuity contracts in excess of minimum guarantees (as noted herein, average crediting rates in 2014 were 4.41%). Given TIAA’s structural flexibility, low leverage and expense profile, TIAA does not ascribe any material fair value to the contractual rate guarantee (and, in fact, a portion of the risk charge mentioned in the crediting rate process discussion above is for the cost of such guarantees), and would continue to maintain such a posture unless a prolonged low interest rate environment (much lower than the current environment) were to occur over several years. Even in the current interest rate environment, TIAA has continued to maintain (and in many cases, increase) crediting rates and further its capital base and financial strength.

TIAA Traditional Annuity is designed as a retirement product and thus its fair value is not subject to short-term market volatility associated with other financial instruments. As noted herein, TIAA Traditional Annuity has yielded a return in excess of the typical AAA corporate spread to account for the product’s illiquidity, a feature which is inherent in its design and suitability as a retirement product. Furthermore, continued participant behavior indicates that the contract value of TIAA Traditional Annuity approximates its fair value. Benefit plan participants continue to contribute to TIAA Traditional Annuity as part of their contribution allocation together with other non-annuity financial products such as mutual funds. Furthermore, this White Paper uses a ten-year risk-free rate as a benchmark return given the broad observability of ten-year on-the-run U.S. Treasury securities.

Giving consideration to the impact of the variables noted above and the observed participant and plan sponsor actions in a variety of market environments over several years, TIAA has concluded that TIAA Traditional Annuity’s contract value reasonably approximates fair value.

1 Assets held in the TIAA General Account, which backs TIAA Traditional across all retirement plans and accounts, totaled $236 billion as of December 31, 2014.

2 For its stability, claims-paying ability and overall financial strength, TIAA is one of only three insurance groups in the United States to currently hold the highest possible rating from three of the four leading insurance company rating agencies: A.M. Best (A++ as of 9/14), Fitch (AAA as of 10/14) and Standard & Poor’s (AA+ as of 10/14). It currently holds the second highest possible rating from Moody’s Investors Service (Aa1 as of 10/14). Per S&P criteria, the downgrade of U.S. long-term government debt limits the highest rating of U.S. insurers to AA+ (the second-highest rating available). There is no guarantee that current ratings will be maintained. Ratings represent a company’s ability to meet policyholders’ obligations and do not apply to variable annuities, mutual funds or any other product or service not fully backed by TIAA’s claims-paying ability.

3 All guarantees are based upon TIAA’s claims-paying ability.

4 Participants do not invest in the TIAA General Account portfolio, which supports the minimum guaranteed returns, additional amounts, and payout obligations under the TIAA Traditional Annuity.

5 The example is based on a 30-year Treasury and “AAA” corporate rate using bonds of 20–30 years until maturity. Source: www.research.stlouisfed.org/fred2.

6 As of 12/31/14.

7 From 1918-12/31/14. Benefits include annuity payments from TIAA and CREF, additional amounts paid on TIAA Traditional above the guaranteed rate, surrender benefits and other withdrawals, death benefits, health insurance and disability insurance benefits, and all other policy proceeds paid.

8 Fortune 6/14.

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