



Employee Benefits Security Administration

**Performance Audit of Thrift Savings Plan Investment
Management Operations**

November 27, 2017

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EXECUTIVE SUMMARY

Members of the Federal Retirement Thrift Investment Board
Washington, DC

Michael Auerbach
Acting Chief Accountant
U.S. Department of Labor, Employee Benefits Security Administration
Washington, D.C.

As a part of the U.S. Department of Labor (DOL) Employee Benefits Security Administration (EBSA) Fiduciary Oversight Program, we conducted a performance audit of the Thrift Savings Plan (TSP) investment management operations related to the Fixed Income Index Investment Fund (F Fund), Common Stock Index Investment Fund (C Fund), Small Capitalization Stock Index Investment Fund (S Fund), and International Stock Index Investment Fund (I Fund). Our fieldwork was performed from March 28, 2017 through August 18, 2017, primarily at the offices of BlackRock Institutional Trust Company, N.A. (BTC) located in San Francisco, CA. Our scope period for testing was April 1, 2016 through March 31, 2017.

We conducted this performance audit in accordance with the performance audit standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States and the American Institute of Certified Public Accountants' *Standards for Consulting Services*. *Government Auditing Standards* require that we plan and perform the audit to obtain sufficient, appropriate audit evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Criteria used for this engagement are defined in EBSA's *Thrift Savings Plan Fiduciary Oversight Program*, which includes United States Code (USC) Title 5, Chapter 84, and Code of Federal Regulations (CFR) Title 29, Chapter XXV.

The objectives of our audit over the TSP investment management operations were to:

- Determine whether BTC implemented certain procedures to 1) promptly and accurately deposit TSP investments in the authorized investment funds; 2) accurately summarize and report TSP investment transactions, including management fees related to TSP investment funds, to the Federal Retirement Thrift Investment Board's (Board) Staff (the Agency); 3) accurately report the daily yield on each investment fund, less authorized management fees, to the Agency; 4) invest index investment funds in a portfolio that matched the indices selected by the Board; 5) vote proxies of the C, S, and I fund investments in accordance with BTC's stated guidelines; and 6) accurately and timely process TSP investment transactions.
- Test compliance of BTC's TSP investment management operations with 5 USC 8438(b), 5 USC 8438(c), and 5 USC 8477(c)(2) (hereinafter referred to as FERSA), 29 CFR 2509.08-2 (hereinafter referred to as Federal Regulations), Individual Prohibited Transaction Exemptions (IPTE) 2013-05 and 2012-09, and Prohibited Transaction Class Exemptions (PTCE) 2006-16 and 2002-12 (hereinafter referred to as Prohibited Transaction Exemptions).
- Review policies and procedures to determine how the TSP deals with foreign currency transaction fees (especially as they relate to the I Fund transactions).

We noted no prior recommendations, and the current engagement produced no new recommendations.

Based upon the performance audit procedures conducted and the results obtained, we have met our audit objectives. We conclude that for the period April 1, 2016 through March 31, 2017, BTC implemented certain procedures to 1) promptly and accurately deposit TSP investments in the authorized investment funds; 2) accurately summarize and report TSP investment transactions, including management fees related to TSP investment funds, to the Agency; 3) accurately report the daily yield on each investment fund, less authorized management fees, to the Agency; 4) invest index investment funds in a portfolio that matched the indices selected by the Board; 5) vote proxies of the C, S, and I fund investments in accordance with its stated guidelines; and 6) accurately and timely process TSP investment transactions. We also reviewed policies and procedures and determined how the TSP deals with foreign currency transaction fees (especially as they relate to the I Fund transactions). As a result of our compliance testing, we did not identify any instances of noncompliance with FERSA, Agency Regulations, or Prohibited Transaction Exemptions.

This performance audit did not constitute an audit of the TSP's or BTC's financial statements in accordance with *Government Auditing Standards*. KPMG was not engaged to, and did not render an opinion on BTC's internal controls over financial reporting or over financial management systems (for purposes of the Office of Management and Budget's Circular No. A-127, *Financial Management Systems*, July 23, 1993, as revised). KPMG cautions that projecting the results of this audit to future periods is subject to the risks that controls may become inadequate because of changes in conditions or because compliance with controls may deteriorate.

While we understand that this report may be used to make the results of our performance audit available to the public in accordance with *Government Auditing Standards*, this report is intended for the information and use of the U.S. Department of Labor Employee Benefit Security Administration, Members of the Federal Retirement Thrift Investment Board, and Agency management. The report is not intended to be, and should not be, used by anyone other than these specified parties.

KPMG LLP

November 27, 2017

I. BACKGROUND OF THE TSP AND BTC'S INVESTMENT MANAGEMENT OPERATIONS

A. The Thrift Savings Plan

Public Law 99-335, the Federal Employees' Retirement System Act of 1986 (FERSA), as amended, established the Thrift Savings Plan (TSP). The TSP is the basic component of the Federal Employees' Retirement System (FERS) and provides a Federal (and, in certain cases, state) income tax deferral on employee contributions and related earnings. The TSP is available to Federal and Postal employees, members of Congress and certain Congressional employees, and members of the uniformed services. The TSP began accepting contributions on April 1, 1987, and as of March 31, 2017, had approximately \$491 billion in assets and approximately 5 million participants¹.

The FERSA also established the Federal Retirement Thrift Investment Board (Board) and the position of Executive Director. The Executive Director and the members of the Board are TSP fiduciaries. The Executive Director manages the TSP for its participants and beneficiaries. The Board's Staff (Agency) is responsible for administering TSP operations.

The TSP is required to offer five investment options: the Government Securities Investment Fund (G Fund), the Fixed Income Index Investment Fund (F Fund), the Common Stock Index Investment Fund (C Fund), the Small Capitalization Stock Index Investment Fund (S Fund), and the International Stock Index Investment Fund (I Fund). FERSA requires the following²:

- G Fund contributions are to be invested in nonmarketable U.S. Treasury securities specially issued to the TSP. These securities earn interest at a rate that is equal, by law, to the average of market yields on U.S. Treasury marketable securities outstanding with 4 or more years to maturity;
- F Fund contributions are to be invested in insurance contracts, certificates of deposit, or other fixed income securities selected by a qualified professional asset manager;

¹ Source: Minutes of the April 24, 2017, Federal Retirement Thrift Investment Board meeting, posted on www.frtib.gov.

² Sources: G, F, C, S, and I Fund requirements from FERSA, United States Code Chapter 5, Sections 8438(b)(1)(A)-(E), 8438(b)(2)-(4).

- C Fund contributions are to be invested in a portfolio designed to replicate the performance of a commonly recognized index. The index should be a reasonably complete representation of the U.S. equity markets;
- S Fund contributions are to be invested in a portfolio designed to replicate the performance of a commonly recognized index. The index should be a reasonably complete representation of the U.S. equity markets excluding the common stocks included in the C Fund; and
- I Fund contributions are to be invested in a portfolio designed to replicate the performance of a commonly recognized index. The index should be a reasonably complete representation of the international equity markets excluding the U.S. equity markets.

Additionally, the TSP offers the Lifecycle Funds (L Funds), which are portfolio funds comprised of the G, F, C, S, and I Funds, using professionally determined investment mixes (allocations) that are tailored to meet investment objectives based on five different time horizons.³

B. TSP Investment Management Operations⁴

During the scope period, the Agency contracted with BlackRock Institutional Trust Company, N.A. (BTC) to manage assets for the F Fund, C Fund, S Fund, and I Fund. As investment manager, BTC is responsible for ensuring that:

- Investments and investment management operations comply with FERSA and provisions of the contract between the Agency and BTC;
- Investment management and custodian operations safeguard F, C, S, and I Fund investments;
- F, C, S and I Funds investment transactions are processed accurately and timely;
- Proxies related to the C, S, and I Funds' investments are voted in accordance with BTC's stated guidelines;

³ Source: Lifecycle Funds "Key Features" tab posted on www.tsp.gov.

⁴ Sources: TSP standard operating procedures; F, C, S, and I Fund contract requirements; TSP Investment Management Oversight Manual.

- Cross-trades, securities lending, and transactions involving minority passive shareholders (MPS) are executed in accordance with the terms of the applicable DOL exemptions; and
- The Agency receives timely transaction reports to facilitate reconciliations to the TSP general ledger.

The G Fund investments are managed by the Agency, not BTC, and were not within the scope of this performance audit.

1. The F Fund Overview⁵

F Fund assets are invested in BTC's Thrift Savings Fund (TSF) F Fund Fixed Income Index Account (F Fund Account), a daily-valued, separate account that holds only TSP assets and is designed to track the performance of the Bloomberg Barclays U.S. Aggregate Index⁶. The Bloomberg Barclays U.S. Aggregate Index was designed to provide a representative measure of the U.S. fixed income markets; it is a broad index representing U.S. Government, asset-backed, corporate, and foreign government (issued in the U.S.) sectors of the U.S. bond market.

Because the Bloomberg Barclays U.S. Aggregate Index is comprised of numerous securities, some of which are infrequently traded, it is not practical for the F Fund Account to hold every security. Consequently, BTC uses mathematical models to select a representative sample of the types of U.S. Government, foreign government, corporate, taxable municipal, mortgage-backed, commercial mortgage-backed, and asset-backed securities included in the Bloomberg Barclays U.S. Aggregate Index. As illustrated in *Exhibit I-1*, the portfolio profile of the F Fund Account (in dollar terms) closely represented the Bloomberg Barclays U.S. Aggregate Index as of December 31, 2016.

⁵ Sources: TSP publication *F Fund Information Sheet* as of December 31, 2016; BlackRock *TSF F Fund Profile* as of December 31, 2016; TSF Fund Series Audited Financial Statements as of December 31, 2016.

⁶ In August 2016, Bloomberg acquired Barclays Risk Analytics and Index Solutions Ltd., owner of the Barclays fixed income benchmark indices. Bloomberg and Barclays partnered to co-brand the indices, including the U.S. Aggregate Index, as the Bloomberg Barclays indices. Prior to August 2016, the index name was the Barclay's U.S. Aggregate Index.

Sector Breakdown	F Fund Account	Barclays U.S. Aggregate Index
U.S. Government Securities	37.47%	38.48%
Corporate Credit	26.41%	25.75%
Foreign Government Securities	4.22%	4.65%
Taxable Municipal	0.89%	0.86%
Mortgage-Backed Securities and Hybrid Adjustable-Rate Mortgages	27.91%	27.95%
Commercial Mortgage-Backed Securities	1.68%	1.69%
Asset-Backed Securities	0.67%	0.63%
Cash and Other	0.76%	0.00%

Although the investment policy related to the F Fund Account allows the use of futures to improve tracking or provide liquidity, futures were not used in the account during the period April 1, 2016 through March 31, 2017.

2. C Fund Overview⁷

C Fund assets are invested in BTC's TSF C Fund Equity Index Account (C Fund Account), a daily-valued, separate account that only holds TSP assets and is designed to track the performance of the S&P 500 Index. The S&P 500 Index was designed to provide a representative measure of U.S. stock market performance. It consists of approximately 500 common stocks, representing more than 150 separate industries, which trade primarily on the New York Stock Exchange.

A portion of the C Fund Account assets is reserved to meet the needs of daily participant activity. This liquidity reserve is invested in S&P 500 Index futures contracts, a type of derivative, to equitize cash balances⁸, reduce tracking error, and provide liquidity. For the C Fund Account,

⁷ Sources: TSP publication *C Fund Information Sheet* as of December 31, 2016; S&P 500 Fact Sheet as of March 31, 2017; TSF Fund Series Audited Financial Statements as of December 31, 2016.

⁸ To purchase an equity, forward, or options synthetic position which is generally collateralized by or maintained against a cash equivalent position.

BTC invests only in S&P 500 Index futures that are freely traded on major futures exchanges in order to minimize the counter-party credit risk with these transactions. The S&P 500 Index futures constituted 0.0004 percent of the value of the C Fund Account's net assets as of December 31, 2016.

3. S Fund Overview⁹

S Fund assets are invested in BTC's TSF S Fund Small Cap Stock Index Investment Fund Account (S Fund Account), a daily-valued separate account that only holds TSP assets and is designed to track the performance of the Dow Jones U.S. Completion Total Stock Market Index. The Dow Jones U.S. Completion Total Stock Market Index is an index of all actively traded U.S. common stocks that are not included in the S&P 500 Index. As of March 31, 2017, the Dow Jones U.S. Completion Total Stock Market Index was comprised of approximately 3,300 common stocks included in the U.S. stock market, excluding the 500 issues that are represented in the S&P 500 Index. The S Fund Account holds a majority of these non-S&P 500 stocks; however, it is not practicable to hold all such stocks. Therefore, the S Fund Account is managed as a model-driven fund with the objective of replicating the returns of the Dow Jones U.S. Completion Total Stock Market Index. The S Fund Account also invests in related index futures to improve tracking and liquidity. The index futures constituted 0.03 percent of the value of the S Fund Account's net assets as of December 31, 2016.

4. I Fund Overview¹⁰

I Fund assets are invested in BTC's TSF I Fund International Stock Index Investment Fund Account (I Fund Account), a daily-valued separate account that only holds TSP assets and is designed to track the MSCI EAFE (Europe, Australasia, Far East) Index (MSCI EAFE Index). The MSCI EAFE Index is an index of the equity markets of the developed world outside of the United States and Canada. As of March 31, 2017, the MSCI EAFE Index consisted of the stocks of over 900 companies in 21 countries. The I Fund also invests in selected futures that have been approved by U.S. regulators for investment by U.S. persons, and that have substantial liquidity, to improve tracking (i.e., SPI 200 Index, DJ Euro Stoxx 50 Index, NIKKEI 225 Index, and FTSE 100

⁹ Sources: TSP publication *S Fund Information Sheet* as of December 31, 2016; Dow Jones publication *Dow Jones U.S. Completion Total Stock Market Index* as of March 31, 2017; TSF Fund Series Audited Financial Statements as of December 31, 2016.

¹⁰ Sources: TSP publication *I Fund Information Sheet* as of December 31, 2016; MSCI publication *MSCI EAFE Indexes(USD)* and constituent listing as of March 31, 2017; TSF Fund Series Audited Financial Statements as of December 31, 2016.

Index futures). The index futures and forwards constituted 0.028 percent of the value of the I Fund Account's net assets as of December 31, 2016.

The I Fund Account holds securities from all 21 countries included in the EAFE Index. The primary source of earnings for the I Fund is the net changes in the prices of securities in BTC's I Fund Account, although at times, net foreign currency changes relative to the U.S. dollar can be a greater component of earnings than stock price gains or losses. Dividend income and securities lending income are also important sources of earnings.

5. BTC Investment Management Process Overview¹¹

By 2:00 p.m. Eastern time on each trade date, the Agency notifies BTC of its investment order for the TSP Fund Accounts. BTC's Client Order Management Group (COM) is responsible for the investment order process, which is facilitated through BTC's Order Management System. The Agency typically submits its investment orders electronically for each of the four TSP Fund Accounts. Once the Agency determines the investment amounts for each of the TSP funds, the Agency enters the order into its Asset Manager System (AMS) which transmits the information via electronic order interface to BTC's Order Management System. Upon receipt of the electronic order, an automated electronic confirmation is generated and sent back to AMS for review by the Agency.

Once the order has been received and confirmed, the Order Management System produces the "Core Funds Report," which lists all the contributions and withdrawals requested by BTC's clients. The Order Management System transmits the data to Aladdin, BTC's enterprise investment system. Aladdin consists of risk analytics, portfolio management, and trading operations tools to support the investment process. Portfolio Managers review the order in Aladdin and determine the security level trades for each TSP Fund Account. The trades are then routed to the traders within Aladdin for crossing or external trading.

Authorized cross-trades are executed through the Aladdin Crossing Engine, a crossing application that resides on the Aladdin platform. The Aladdin Crossing Engine identifies cross-trading opportunities among eligible funds and accounts. Cross-trades for the C Fund Account, S Fund Account, and I Fund Account occur when another fund or account managed by BTC or one of its affiliates is a buyer or a seller of an equity security or securities for which one of these three TSP

¹¹ Source: TSP Operating Procedures.

Fund Accounts is a seller or a buyer, respectively. (See Trading Costs in Section D). The Aladdin Crossing Engine is designed to only authorize cross-trades qualified under class prohibited transaction exemption (PTE) 2002-12 (See Section E). Traders execute remaining trades with external brokers. The Trading Operations group confirms the trades with executing brokers and uses the Aladdin system to transmit the information electronically to State Street Bank and Trust Company¹² to record the accounting and custodial information.

TSP trades settle one business day after the trade date. The Agency's accounting staff authorizes the wire transfer of the F, C, S, and I Fund net contributions to BTC on the settlement date for purchases. (In the case of a redemption, the money is wire transferred from BTC to the TSP's account with the U.S. Department of the Treasury). The BTC Client Reporting Group sends the Agency transaction reports confirming the trades. These reports include the Agency's trading costs, if any (See Trading Costs in Section D).

The BTC Client Reporting Group also sends monthly transaction reports for the TSP investments in the various TSP Fund Accounts to the Agency's Office of Investments. These reports list the details of all TSP transactions during the month as well as the market and book values of the funds at the end of the month.

6. Management Fees¹³

On a monthly basis, the BTC Financial Reporting Group reports its management fees to the Agency. Management fees are based on rates established in the investment management contracts between the Agency and BTC.

C. Securities Lending¹⁴

Brokers occasionally borrow specified securities to complete a trade that would otherwise fail or to short sell (i.e., sell with the expectation of buying the securities to settle the trade at a later time at a lower price). BTC is responsible for negotiating securities lending transactions for its funds

¹² BTC outsources its custodial and fund accounting processes to State Street Bank and Trust Company (State Street). State Street is an independent company that specializes in investment custodial services and offers integrated accounting and custodial management systems to its customers that provide for fund accounting in a daily valuation environment.

¹³ Sources: BTC Operating Procedures; Contracts with the Board and Invoices to the Board during the scope period.

¹⁴ Sources: Various BlackRock Risk and Quantitative Analysis group standard operating procedures documents.

and accounts within its established guidelines, which include any requirements set forth in PTE 2006-16 and PTE 2013-05.

BTC has implemented procedures to limit the risk of default on securities loaned. Potential borrowers undergo a credit screening process and, if approved, must provide collateral equal to at least 102 percent of the market value of the U.S. securities loaned and 105 percent of the market value of international securities loaned. The collateral is marked-to-market daily so that it is maintained at the levels described above. U.S. collateral may be in the form of cash, U.S. government obligations, bank certificates of deposit, bankers' acceptance, certain mortgage-backed securities or irrevocable letters of credit from BTC-approved institutions that are not affiliated with the borrower. Non-U.S. collateral may be in the form of cash denominated in certain non-U.S. currencies, securities issued or guaranteed by certain multilateral development banks, highly rated sovereign debt, and letters of credit issued by certain non-U.S. banks. During the scope period of this performance audit, the TSF Fund Accounts only accepted cash collateral. Cash collateral is segregated from other assets of the lending TSP Fund Account by identification on the books and records of the lender, and is invested in cash collateral funds.

BTC invests securities lending collateral in various investments in accordance with the investment guidelines for the collateral investment vehicle. To limit the risk involved with these transactions, BTC subjects potential counterparties to the same credit screening process to which BTC subjects its security lending borrowers. BTC has set limits on the amount of securities lending and collateral investments that it has with any one entity. Exhibit I-2 shows the percent of the value of securities in each of the TSF Fund Accounts that were on loan to approved brokers as of December 31, 2016 and 2015.¹⁵

Exhibit I-2

TSF Account	As of December 31, 2016	As of December 31, 2015
F Fund Account	33.47%	28.87%
C Fund Account	4.29%	7.75%
S Fund Account	19.47%	27.12%
I Fund Account	2.65%	3.00%

¹⁵ Sources: TSF Fund Series audited financial statements as of December 31, 2016 and December 31, 2015

Lending opportunities are allocated to a particular BTC managed fund or account via an algorithm in BTC’s Global Loan Manager system that seeks to allocate loan opportunities among funds and accounts in a manner that, over time, seeks to approximate the outcome of a pro-rata allocation. The algorithm takes into account factors such as whether a lending fund or account has been passed over for previous loan opportunities; availability of the security sought by the borrower; applicable legal, tax and credit restrictions for each lending fund or account; any restrictions imposed by the borrower; and constraints imposed by the lending fund’s or account’s custodian or relevant sub-custodian(s) or the relevant securities market.

Throughout the scope period, the TSF F Fund Account received 100 percent of the net income earned from securities lending transactions (net of accrued borrower rebate fees). The F Fund account paid a securities lending fee of 5.2 basis points (bps) on the on-loan value of securities. The C Fund Account received 67 percent of the liability spread on any lending transactions (i.e. the difference between the negotiated rebate rate on the on-loan securities and the federal funds open rate), and 100 percent of the asset spread of any lending transactions (i.e. any amounts earned through cash collateral reinvestment above the federal funds open rate). The TSF I and S Fund Accounts received 72 percent and 83 percent, respectively, of the liability spread on any lending transactions and 100 percent of the asset spread of any lending transactions during the scope period. BTC bears all operational costs directly related to securities lending. The chart below (Exhibit I-3) presents the effect (i.e., percent increase) of securities lending, and the income generated therefrom, on fund returns for the TSF Fund Accounts for the 12-month period ended December 31, 2016, and the proportion of securities lending income to net investment income for the fiscal years ended December 31, 2016 and 2015, respectively.¹⁶

Exhibit I-3

TSF Account	Securities Lending Income as of December 31, 2016	Securities Lending Income to Net Investment Income	
		2016	2015
F Fund Account	\$124.3 million	18.57%	19.08%
C Fund Account	\$143.3 million	4.22%	4.92%
S Fund Account	\$281.1 million	28.26%	30.42%
I Fund Account	\$35.1 million	2.98%	3.07%

¹⁶ Sources: TSF Fund Series audited financial statements as of December 31, 2016 and December 31, 2015

D. Trading Costs¹⁷

Trading costs associated with client transactions in the C Fund Account, S Fund Account, and I Fund Account generally consist of negotiated commissions on common stock purchases and sales or the buying and selling of futures contracts. Trading costs in the F Fund Account consist of the spreads between a dealer's bid price and ask price on debt securities purchased and sold. Trading costs associated with client transactions are borne by the TSP as the sole participant in the respective accounts. Trading costs do not contribute significantly to the tracking error of the TSP's accounts.

The costs associated with index rebalancing in the F Fund Account, C Fund Account, S Fund Account, and I Fund Account are borne by the TSP as the sole participant in the account.

To minimize trading costs, BTC cross-trades, in the case of equities only, among eligible BTC managed funds and accounts before trading in the external market. Transaction costs are also decreased to the extent that cash from client contributions are available for cash redemptions on a fund opening day (i.e., a "unit exchange").

1. Cross-Trades¹⁸

A cross-trade is the purchase or sale of securities between two accounts or funds managed by, but not necessarily under the custody of, BTC or one of its affiliates. BTC uses cross-trades among eligible funds and accounts, where appropriate, to reduce transaction costs and facilitate achieving client or fund investment objectives. BTC is obligated by its fiduciary responsibilities to ensure that no cross-trading activity has created an advantage to any client or fund relative to any other client or fund. By internally matching BTC's sell orders for a particular day with its buy orders for the same day, both funds and/or accounts save by avoiding transaction costs.

For BTC, as a manager of index and model-driven funds and accounts, cross-trading is a method of executing a securities transaction that the portfolio manager has already included on a trade list and that would occur even if cross-trades were not permitted. After a separate decision has been made that the fund or account will buy or sell the security, BTC will trade that security through a

¹⁷ Source for Trading Costs and H.1 Unit Exchanges: BTC operating procedures.

¹⁸ Sources: BTC cross-trade transaction records from April 1, 2016 through March 31, 2017; DOL's Office of Exemptions; BlackRock publication *Managing ERISA Assets*; PTE 2002-12.

cross-trade if crossing opportunities are available. Therefore, cross-trading is a cost-efficient mechanism for implementing prior decisions to buy or sell.

DOL's position is that, without an applicable exemption, cross-trading transactions result in violations of one or more provisions of Part 4 of Title I of the Employee Retirement Income Security Act of 1974 (ERISA). FERSA contains similar restrictions in section 8477(c)(2)(B). The basis for this position is that by representing the buyer on one side and the seller on the other in a cross-trade, a fiduciary acts on behalf of parties that have adverse interests to each other.¹⁹ DOL has issued PTE 2002-12 allowing certain passive investment managers of plans to cross-trade securities. BTC may use PTE 2002-12 for cross-trades of equity securities. Cross-trading is available and was used in TSP's C Fund Account, S Fund Account, and I Fund Account. PTE 2002-12, allows, among other provisions, the cross-trading of fixed income securities; however, BTC did not engage in cross-trades of fixed income securities in the F Fund Account during our scope period.

E. Exemptions²⁰

DOL grants certain class and individual exemptions for transactions prohibited by ERISA and FERSA. BTC utilizes the following exemptions from DOL related to the TSP investment activities:

- PTE 2002-12 permitted the cross-trading of index and model-driven accounts and funds and certain client restructure accounts.
- PTE 2006-16 permitted entities to lend securities to various banks and broker-dealers under certain conditions. These banks and broker-dealers are typically "parties in interest" under the Employee Retirement Income Security Act of 1974 (ERISA). This exemption also permitted the entity to receive compensation with respect to securities lending services.
- IPTE 2013-05 permitted BTC, as an affiliate of an equity owner of EquiLend, to use the EquiLend platform to sell or license products/services of EquiLend to plans, and includes a provision for the use of off-platform security lending data. The EquiLend platform is a

¹⁹ Federal Register, Volume 63, Number 64, *Notices – Department of Labor – Pension and Welfare Benefits Administration, Cross-Trades of Securities by Investment Managers*, 63 FR 13696.

²⁰ Sources: DOL's Office of Exemptions; BlackRock publication *Managing ERISA Assets*; IPTE 2013-05, 2012-09 and PTE 2002-12 and 2006-16.

common electronic platform provided by EquiLend Holdings LLC for negotiating securities lending transactions, identifying borrowing opportunities with pre-approved borrowers, negotiating specific loans, maintaining appropriate records, marking to market all outstanding loans, ensuring collateral maintenance, and monitoring delivery and control of collateral.

- IPTE 2012-09 permitted BTC to enter into certain transactions with, or involving, BlackRock stock or its minority passive shareholder.

F. Tracking Error²¹

As previously described, the F Fund Account, C Fund Account, S Fund Account, and I Fund Account were designed to replicate the performance of the Bloomberg Barclays U.S. Aggregate Index, S&P 500 Index, Dow Jones U.S. Completion Total Stock Market Index, and the MSCI EAFE Index, respectively. The difference between the performance of each of the TSP’s Fund Accounts and the performance of the index it is designed to replicate is known as “tracking error.” BTC’s established procedures over tracking error enable it to monitor the TSP portfolios against the investment indices selected by the Board. On a monthly basis, BTC reports monthly tracking error, as well as cumulative tracking error over periods of three, six and twelve months, to the Agency for each TSP Account. Exhibit I-4 presents the TSP Fund Account performance compared to the benchmark index performance and calculated the tracking error for the 12 months ended March 31, 2017.

Exhibit I-4

TSP Account	TSP Fund Account Performance²²	Benchmark Index Fund	Tracking Error
F Fund Account	0.75%	0.44%	0.31%
C Fund Account	17.24%	17.17%	0.07%
S Fund Account	22.55%	22.19%	0.36%
I Fund Account	12.19%	11.67%	0.52%

²¹ Sources: F Fund Fixed Income Index Account Historical Performance Analysis 2007-2017 (Q1); I Fund International Stock Index Account Historical Performance Analysis 2001-2017 (Q1); S Fund Small Cap Stock Index Investment Fund Account Historical Performance Analysis 2007-2017 (Q1); C Fund Unitized Account Historical Performance Analysis 1988-2017 (Q1).

²² This column reflects the performance of the “TSP Fund Accounts” residing at BTC, and is reported to the Agency prior to any deductions of TSP administrative costs and certain transaction costs. The Agency separately reports performance for the individual TSP Funds net of the aforementioned costs.

G. Proxy Voting²³

In accordance with FERSA Section 8438 (g),

The Board, other Government agencies, the Executive Director, an employee, a Member, a former employee and a former Member may not exercise voting rights associated with the ownership of securities by the Thrift Savings Fund.

The contracts between the Agency and BTC delegate the authority to vote the Thrift Savings Fund's proxies to BTC. BTC is required to vote the C Fund Account, S Fund Account, and I Fund Account proxies in the best interests of the TSP participants and beneficiaries.

Although the Board does not vote proxies directly, its fiduciary responsibilities include monitoring BTC's voting of the C Fund Account, S Fund Account, and I Fund Account proxies. The Agency has reviewed BTC's written guidelines for adherence to appropriate fiduciary standards. To facilitate the Agency's monitoring of BTC's proxy voting, BTC provides the Agency with (1) its written proxy voting guidelines when they are revised or updated, and (2) monthly reports of how it has voted each proxy issue for the applicable TSP Fund Account. The Agency reviews the proxy voting policy and the quarterly independent reports by Institutional Shareholder Services (ISS), a proxy voting analysis firm, to ensure that BTC has voted the proxies according to BTC's written guidelines, and reports results quarterly at a regularly scheduled meeting for Board members.

BTC uses the proxy voting clearinghouse services of Automatic Data Processing (ADP)²⁴ to collect various domestic company proxy voting materials. To facilitate the proxy voting process, BTC downloads its securities holdings to ADP daily to create ballots for U.S. entities. ADP creates the proxy ballots that BTC votes via ADP's online system, ProxyEdge. For non-U.S. securities (e.g., I Fund Account), BTC relies upon interfaces between State Street and ISS to create ballots. BTC reconciles position holdings against the ballots received on behalf of BTC to ensure all of the account/funds' shares are voted. Shareholder meetings are then sorted and assigned to the relevant

²³ Sources: 5 USC 8438(g); BTC Operating Procedures; BTC proxy voting guidelines; BTC proxy voting reports during the period April 2016 through March 2017, TSP monthly Board minutes throughout the period April 2016 through March 2017 available at www.FRTIB.gov, ISS monthly proxy voting reports during the period April 2016 through March 2017.

²⁴ Automatic Data Processing (ADP) spun off its Brokerage Services unit, which provides its proxy voting clearinghouse services, into an independent company called Broadridge Financial Solutions, Inc., effective March 30, 2017.

proxy analyst for review. The proxy analyst votes all matters with consideration for the economic benefit to account/fund participants.

H. Audits and Regulatory Reviews

BlackRock, its subsidiaries, and joint venture operations are subject to examinations and audits by government regulatory agencies and independent public accountants. From April 2016 through March 2017, examinations and audits related to BTC included the following.

- PricewaterhouseCoopers LLP -- Financial Statement and Internal Control Audits of BlackRock's TSF Fund Series and Collective Trust Funds for the Years Ended December 31, 2016 and 2015;
- Deloitte & Touche LLP -- Financial Statement Audit of BlackRock Institutional Trust Company, N.A. for the Years Ended December 31, 2016 and 2015;
- Deloitte & Touche – Report on Controls at BlackRock Placed in Operation and Tests of Operating Effectiveness for Asset Management Services for the period October 1, 2015 – September 30, 2016;
- Deloitte & Touche – Financial Statement Audit of BlackRock, Inc. for the Years Ended December 31, 2016 and 2015;
- The Office of the Comptroller of the Currency, examination cycle ending December 31, 2016

We reviewed the reports related to the examinations and audits listed above. No matters were noted during our review of these reports that would impact our conclusions on the performance audit objectives listed in Section I.A of this report.

I. TSP Investment Statistics²⁵

TSP Fund Balances and Returns

As of December 31, 2016 and 2015, the largest portion of TSP investments was held in the G Fund. The chart below (Exhibit I-5) presents a summary of TSP investments held by the G, F, C, S, and I Funds as of December 31, 2016 and 2015. The data in this table is unaudited.

Exhibit I-5

TSP Fund	Fund Balances December 31, 2016 (in millions)	% of Total December 31, 2016	Fund Balances December 31, 2015 (in millions)	% of Total December 31, 2015
G	\$222,305	44.88%	\$206,930	45.15%
F	26,162	5.28%	24,789	5.41%
C	156,379	31.57%	142,406	31.07%
S	55,581	11.22%	50,162	10.95%
I	34,926	7.05%	33,985	7.42%
Total	\$495,353	100.00%	\$458,272	100.00%

The table below (Exhibit I-6) compares the TSP Fund returns for the G, F, C, S, and I Funds for the 12-month periods ending December 31, 2016, 2015 and 2014.

Exhibit I-6

Rates of Return on TSP Investment Funds (unaudited)			
TSP Fund	12 Months Ended December 31, 2016	12 Months Ended December 31, 2015	12 Months Ended December 31, 2014
G Fund	1.82%	2.04%	2.31%
F Fund	2.91%	0.91%	6.73%
C Fund	12.01%	1.46%	13.78%
S Fund	16.35%	(2.92%)	7.80%
I Fund	2.10%	(0.51%)	(5.27%)

²⁵ Sources for the statistics on the following pages: FRTIB Meeting Minutes and Audited Thrift Savings Fund Financial Statements, December 31, 2016 and 2015; Sources available at www.FRTIB.gov.

II. OBJECTIVE, SCOPE AND METHODOLOGY

A. Objective

The U.S. Department of Labor (DOL), Employee Benefits Security Administration (EBSA) engaged KPMG LLP (KPMG) to conduct a performance audit of the Thrift Savings Plan (TSP) investment management operations related to the Fixed Income Index Investment Fund (F Fund), Common Stock Index Investment Fund (C Fund), Small Capitalization Stock Index Investment Fund (S Fund), and International Stock Index Investment Fund (I Fund).

The objectives of our performance audit were to:

- Determine whether BTC implemented certain procedures to 1) promptly and accurately deposit TSP investments in the authorized investment funds; 2) accurately summarize and report TSP investment transactions, including management fees related to TSP investment funds, to the Federal Retirement Thrift Investment Board's Staff (the Agency); 3) accurately report the daily yield on each investment fund, less authorized management fees, to the Agency; 4) invest index investment funds in a portfolio that matched the indices selected by the Board; 5) vote proxies of the C, S, and I fund investments in accordance with BTC's stated guidelines; and 6) accurately and timely process TSP investment transactions.
- Test compliance of BTC's TSP investment management operations with United States Code Chapter 5, Sections 8438(b), 8438(c), and 8477(c)(2), Code of Federal Regulations Title 29, Part 2509.08-2, Individual Prohibited Transaction Exemptions 2013-05 and 2012-09, and Prohibited Transaction Class Exemptions 2006-16 and 2002-12.
- Review policies and procedures to determine how the TSP deals with foreign currency transaction fees (especially as they relate to the I Fund transactions).

B. Scope and Methodology

We conducted this performance audit in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and the American Institute of Certified Public Accountants' *Standards for Consulting Services*, using EBSA's *Thrift Savings Plan Fiduciary Oversight Program*. Our scope period for testing was April 1, 2016 through March 31, 2017. We

performed the audit in four phases: (1) planning, (2) arranging for the engagement with BTC and the Agency, (3) testing and interviewing, and (4) report writing.

The planning phase was designed to assist team members to develop a collective understanding of the activities and controls associated with the applications, processes and personnel involved with BTC investment management operations. Arranging the engagement included contacting the Agency and BTC and agreeing on the timing of detailed testing procedures.

During the testing and interviewing phase, we conducted interviews, collected and inspected auditee-provided documentation and evidence, participated in process walkthroughs, and designed and performed tests of controls and compliance. We conducted these test procedures primarily at BTC's headquarters in San Francisco, CA. In Appendix B, we identify the key documentation provided by BTC and Agency personnel that we reviewed during our performance audit.

Our performance audit procedures included using random attribute sampling to select specific samples related to TSP investment transactions, which we used to determine if BTC timely and accurately processed, deposited, and managed TSP investments, summarized and reported TSP investment transactions to the Board, and voted proxies of the C, S, and I fund investments in a manner that complied with FERSA, Federal Regulations, and Prohibited Transaction Exemptions. We selected the following samples in this manner:

- Daily TSP investment transactions during April 1, 2016 – March 31, 2017;
- Cross-trades involving TSP investments during April 1, 2016 – March 31, 2017;
- Securities lending transactions during April 1, 2016 – March 31, 2017;
- Securities comprising the TSF C, S, F, and I Funds, per the TSF Fund Series Financial Statements, as of December 31, 2016;
- Daily reports submitted to the Agency during April 1, 2016 – March 31, 2017; and
- Proxy votes during April 1, 2016 – March 31, 2017.

Additionally, our performance audit procedures included testing non-statistical samples of the following information obtained from BTC:

- BTC Internal Audit Reports issued during April 1, 2016 – March 31, 2017;
- Monthly legal and compliance reports issued during April 1, 2016 – March 31, 2017; and
- Monthly BTC reports remitted to the Agency during April 1, 2016 – March 31, 2017.

For the non-statistically determined sample sizes in our sampling procedures, our results are applicable to the sample we tested and were not extrapolated to the population.

The report writing phase entailed drafting a preliminary report, conducting an exit conference, providing a formal draft report to the Agency and BTC for comment, and preparing and issuing the final report.

III. FINDINGS AND RECOMMENDATIONS

A. Introduction

We performed procedures related to the Thrift Savings Plan (TSP) investment management operations for the Fixed Income Index Investment Fund (F Fund), Common Stock Index Investment Fund (C Fund), Small Capitalization Stock Index Investment Fund (S Fund), and International Stock Index Investment Fund (I Fund) while conducting a performance audit primarily at the BlackRock Institutional Trust Company, N.A. (BTC) in San Francisco. Our scope period for testing was April 1, 2016 through March 31, 2017. This performance audit consisted of reviewing applicable policies and procedures and testing manual and automated processes and controls, which included interviewing key personnel, reviewing key reports and documentation (Appendix B), and observing selected procedures.

Based upon the performance audit procedures conducted and the results obtained, we have met our audit objectives. We conclude that for the period April 1, 2016 through March 31, 2017, BTC implemented certain procedures to 1) promptly and accurately deposit TSP investments in the authorized investment funds; 2) accurately summarize and report TSP investment transactions, including management fees related to TSP investment funds, to the Federal Retirement Thrift Investment Board's Staff (the Agency); 3) accurately report the daily yield on each investment fund, less authorized management fees, to the Agency; 4) invest index investment funds in a portfolio that matched the indices selected by the Board; 5) vote proxies of the C, S, and I fund investments in accordance with its stated guidelines; and 6) accurately and timely process TSP investment transactions. We also reviewed policies and procedures and determined how the TSP deals with foreign currency transaction fees (especially as they relate to the I Fund transactions). As a result of our compliance testing, we did not identify any instances of noncompliance with United States Code Chapter 5, Sections 8438(b), 8438(c), and 8477(c)(2), Code of Federal Regulations Title 29, Part 2509.08-2, Individual Prohibited Transaction Exemptions 2013-05 and 2012-09, or Prohibited Transaction Class Exemptions 2006-16 and 2002-12 in the TSP F, C, S, and I Funds investment management operations.

We noted no prior recommendations, and the current engagement produced no new recommendations.

AGENCY RESPONSE



FEDERAL RETIREMENT THRIFT INVESTMENT BOARD
77K Street, NE Washington, DC 20002

November 27, 2017

Mr. Michael Auerbach
Chief Accountant
Employee Benefits Security Administration
United States Department of Labor
Suite 400
122 C Street, N.W.
Washington, D.C. 20001-2109

Dear Michael:

This is in response to KPMG's email dated October 20, 2017, transmitting the KPMG LLP report entitled Employee Benefits Security Administration Performance Audit of Investment Management Operations, dated November 2017.

We are pleased to note during the FY 2017 audit that the auditors did not identify any instances where TSP investment management operations did not comply with FERSA and with applicable Board regulations and bulletins for the period of April 1, 2016 through March 31, 2017. We are very pleased to note there are no audit recommendations.

Thank you once again for the constructive approach that the Department of Labor and its contractors are taking in conducting the various audits of the TSP. The information and recommendations that are developed as a result of your reviews are useful to the continued improvement of the Thrift Savings Plan.

Very truly yours,

A handwritten signature in blue ink that reads "Ravindra Deo".

Ravindra Deo

KEY DOCUMENTATION AND REPORTS REVIEWED

Audit, Compliance, and Other Reports

- BlackRock Institutional Trust Company, N.A. (BTC) Consolidated Financial Statements for the year ended December 31, 2016
- BTC, TSF Fund Series, Audited Financial Statements, December 31, 2016 and 2015
- BTC, Cash Equivalent Fund A3 Financial Statements, December 31, 2016
- BTC, Short-Term Investment Fund Financial Statements, December 31, 2016
- Thrift Savings Fund Financial Statements, December 31, 2016 and 2015
- BlackRock Asset Management Services SSAE16 Report for the period ending September 30, 2016
- State Street Bank & Trust SSAE16 Reports for the period ending September 30, 2016
 - Global Fund Accounting and Custody
 - Information Technology General Controls
 - U.S. Investment Services
- Review by Institutional Shareholder Services (ISS) of BTC's Proxy Votes for the quarters ending June 30, 2016, September 30, 2016, December 31, 2016, and March 31, 2017
- BTC Exemption Compliance Officer's Report for the quarters ending June 30, 2016, September 30, 2016, and December 31, 2016
- OCC Examination Reports for the three examination cycles covering December 31, 2014 through December 31, 2016
- S&P 500 Index Composition as of December 31, 2016
- Bloomberg Barclays U.S. Aggregate Index Composition as of December 31, 2016
- Dow Jones U.S. Completion Total Stock Market Index Composition as of December 31, 2016
- MSCI EAFE Index Composition at December 31, 2016
- Listing of BlackRock Internal Audit Reports issued from April 1, 2016 through March 31, 2017
- BTC Internal Audit Policies and Procedures Manual
- BTC 2016 Internal Audit Reports:
 - Technology Risk Management
 - Global Securities Lending and Finance
 - Core Compliance – Personal Trading Activities
 - U.S. Defined Contribution
 - Portfolio Compliance Group – Thresholds
 - Regulation 9

KEY DOCUMENTATION AND REPORTS REVIEWED, CONTINUED

- BTC 2017 Internal Audit Reports:
 - Trade Operations
 - Information Protection

BTC Publications and Internal Documents and Records

- BTC Publication – *Managing ERISA Assets*
- BTC Publication – *Information about BTC: 16 Things You Should Know*
- Organizational Chart
- BTC Code of Business Conduct and Ethics
- Applicable amendments to Limited Liability Company Agreement of Equilend Holdings LLC
- Employee Benefits Security Administration Compliance Program
- Electronic Listing of Cross-Trade transactions (at security level) from April 1, 2016 through March 31, 2017 (for all accounts/funds applicable to TSP)
- Electronic Listing of Security Lending transactions from April 1, 2016 through March 31, 2017 (for all accounts/funds applicable to TSP)
- Counterparties Approved for Securities Lending Trading
- Global Credit and Market Risk Group, Risk Principles
- Global Credit and Market Risk Group, Counterparties Credit Exposure
- Global Credit and Market Risk Group, Counterparties Approved for Securities Lending Letters of Credit
- BTC Securities Lending Procedures for Lending to Affiliates
- BTC Securities Lending Exposure Borrower Reports
- Proxy Voting Guidelines issued April 1, 2016 through March 31, 2017
- BTC Proxy Voting Reports issued by ISS from April 1, 2016 through March 31, 2017
- BTC, Federal Employees Thrift Savings Plan - F Fund Transaction Summary Reports, April 1, 2016 through March 31, 2017
- BTC, Federal Employees Thrift Savings Plan - C Fund Transaction Summary Reports, April 1, 2016 through March 31, 2017
- BTC, Federal Employees Thrift Savings Plan - S Fund Transaction Summary Reports, April 1, 2016 through March 31, 2017
- BTC, Federal Employees Thrift Savings Plan - I Fund Transaction Summary Reports, April 1, 2016 through March 31, 2017
- Historical Performance Analysis, (Summary of Results and Month-to-Month Results) - F Fund, through March 31, 2017

KEY DOCUMENTATION AND REPORTS REVIEWED, CONTINUED

- Historical Performance Analysis, (Summary of Results and Month-to-Month Results) - C Fund, through March 31, 2017
- Historical Performance Analysis, (Summary of Results and Month-to-Month Results) - S Fund, through March 31, 2017
- Historical Performance Analysis, (Summary of Results and Month-to-Month Results) - I Fund, through March 31, 2017
- Composition of BTC's Equity Index Account as of December 31, 2016
- Composition of BTC's Small Cap Stock Index Investment Fund Account as of December 31, 2016
- Composition of BTC's International Stock Index Investment Fund Account as of December 31, 2016
- Composition of BTC's Fixed Income Index Account as of December 31, 2016
- TSF F Fund Profile as of December 31, 2016
- BTC Annual Compliance Acknowledgement

Contracts and Other External Fund Information Documents

- Master Loan Services Agreements
- Contracts and related modifications, statements of work, and other documents comprising BTC's contract to manage the TSP's C fund investments
- Contracts and related modifications, statements of work, and other documents comprising BTC's contract to manage the TSP's F fund investments
- Contracts and related modifications, statements of work, and other documents comprising BTC's contract to manage the TSP's S fund investments
- Contracts and related modifications, statements of work, and other documents comprising BTC's contract to manage the TSP's I fund investments
- Composition of the MSCI EAFE Index as of December 31, 2016
- Composition of the S&P 500 Index as of December 31, 2016
- Composition of the Dow Jones U.S. Completion Total Stock Market Index as of December 31, 2016
- Composition of the Bloomberg Barclays U.S. Aggregate Bond Index as of December 31, 2016
- TSP F Fund Information Sheet as of December 31, 2016
- TSP C Fund Information Sheet as of December 31, 2016
- TSP S Fund Information Sheet as of December 31, 2016
- TSP I Fund Information Sheet as of December 31, 2016
- Dow Jones Indices Rebalancing Calendars, 2017 and 2016