SBCERS

August 28, 2024

Investment Operations: Vehicles and Securities Lending

Santa Barbara County Employees' Retirement System

SBCERS

Speakers

Name	Firm	Title	Background
Jonathan Kowolik	RVK, Inc	Senior Consultant, Principal	Mr. Kowolik is the Practice Leader for providing project consulting and research including search and evaluation projects for trust/custody providers, recordkeepers, Securities Lending programs, transition management, and other operational consulting projects.
Gene Meshechek	BlackRock	Global Head of Clients, BlackRock's Securities Lending Business	Prior to moving to current role, Mr. Meshechek held various leadership positions in Securities Lending, including as the Head of the North American Institutional Product Strategy team and the Global Head of Fixed Income Securities Lending Trading, based in New York.
Micheal McInnes	Bank of New York Mellon	Vice President, Securities Finance	Mr. McInnes is a Relationship Manager in BNY Mellon's Securities Finance group supporting the strategic goals of a diverse mix of asset managers and beneficial owners. In this role, he partners with institutional investors to tailor solutions that that will generate additional portfolio yield, finance trading activity, and efficiently manage collateral.
Special Support: Andrew Minc	BNY Investments, Mellon	Vice President, Relationship Manager	Mr. Minc is responsible for managing client relationships, specifically corporate and government pension plans, foundations, endowments, BNY Mellon channel sales relationships, and sovereign wealth clients.

Investment Vehicles – Key Considerations for Institutional Portfolios

- **Investment Vehicle type is an important consideration within institutional investment portfolio implementation.**

- **Common Investment Vehicle options include:**
  - Mutual Funds (MF)
  - Exchange Trade Funds (ETF)
  - Commingled Fund (CF) / Collective Investment Trusts (CITs)
  - Limited Partnerships (LP)
  - Domestic (US) Separate Accounts (SA) holding individual securities
  - Global (US and Non-US) Separate Accounts (SA) holding individual securities

- **Common Considerations:**
  - Asset Owner Type and Investment Asset Class
  - Investment Mandate Size
  - Asset Owner Staffing, Operational Resources and Related Factors
  - Asset Owner Customization and Investment Policy Restrictions
  - Total Cost and Investment Management Fee Objectives
  - Investment Operations Factors such as Liquidity, Reporting, Trading and Investment Considerations like Securities Lending

Investment Vehicles – Type Considerations

Mutual Funds (MF)
Retail or institutional investment vehicle regulated by the SEC – Daily Trading at Market Close with Fund Company by prospectus; Units of Ownership Held in Custody. MF may lend securities pursuant to prospectus.

Exchange Trade Funds (ETF)
Retail or institutional investment vehicle regulated by the SEC – Intraday / Daily Trading through Brokerage Counterparty; Shares Held in Custody. ETF may lend underlying securities pursuant to prospectus and the ETF security itself may be lent by the Asset Owner.

Commingled Fund (CF) / Collective Investment Trusts (CITs)
Public or Private pooled investment vehicle (potentially with limited access by type of investor) which may offer daily or monthly liquidity and trading with Fund Company or Administrator by Participation Agreement; Units of Ownership Reflected in Custody as a line-item. CF or CIT may lend underlying securities pursuant to offering materials.

Limited Partnerships (LP)
Private pooled investment vehicle (potentially with limited access by number and type of investor) which generally offers limited liquidity (or none) with draw-down and distribution features. Capital Account Statement Values Reflected in Custody as a line-item. LP may lend underlying securities pursuant to offering materials.

Domestic (US) Separate Accounts (SA) holding individual securities
An invested portfolio of Domestic (US) securities overseen by an investment manager, held in domestic (US) custody for the asset owner client with a custodian at the US Depository Trust Company (DTC) or Federal Reserve (Fed) under a streamlined framework of legal and tax documentation. Assets managed pursuant to an investment management agreement, which may include customized investment guidelines. Asset owner may elect to lend securities held in custody through a lending agent.

Global (US and Non-US) Separate Accounts (SA) holding individual securities
An invested portfolio of global securities overseen by an investment manager, held in both domestic (US) custody and global (non-US) custody for the asset owner client with US and non-US Depositories and Sub-Custodians under a diverse (and potentially very complex) framework of legal and tax documentation. Assets managed pursuant to an investment management agreement, which may include customized investment guidelines. Asset owner may elect to lend securities held in custody through a lending agent.

Investment Vehicles – Asset Owner Type Factors

Consideration	Large Defined Benefit (DB) Plans	Smaller Defined Benefit (DB) Plans	Defined Contribution (DC) Plans	Endowments / Foundations	Insurance	Taxable Clients
Common Implementation Vehicles	MF / ETF / CIT / LP / Domestic SA / Global SA	**MF / ETF / CIT / LP / Domestic SA / Global SA less frequent**	MF / CIT / Domestic SA / Global SA (at large size/scale)	MF / ETF / CF / LP / Domestic SA / Global SA (at large size/scale)	MF / ETF / CF / LP / Domestic SA / Global SA (at large size/scale)	MF / ETF / CF / LP / Domestic SA / Global SA (at size/scale)
Operational Considerations	More likely to have additional staffing and operational platform support for SA (particularly global). Pooled structures such as CIT also efficiently used in lieu of MF due to large placement buying power. ETFs and CITs may represent exposure vehicles. LPs common in private markets and may include custom vehicles.	**Internal operational resources may be limited; mandate size may make SA (particularly global) less attractive.** **Pooled structures such as CIT and MF common.** **ETFs and CITs may represent exposure vehicle.** **LPs common in private markets.**	Daily liquidity required – within vehicle or investment option structure. Many recordkeeping platforms support CITs. SA of varying sizes and sophistication requirements may be implemented with unitization, based on scale. ETFs discussed, but infrequently implemented.	Depending on size, scale and resources, may use a wide range of vehicles. Non-traditional market asset allocations lead to frequent deployment with LPs. ETFs and CFs may represent exposure vehicles. SA may offer additional flexibility with investment guidelines and objectives.	Taxable and non-taxable portfolios may present diverse vehicle needs. Insurance regulations, reporting requirements, impairments, and other factors may drive vehicle decisions.	Taxable portfolios may benefit from tax-aware / tax-sensitive direct ownership through customized separate accounts. Use of various investment vehicles with tax sensitive distribution considerations common and varies by size.

Investment Vehicles – Vehicle Type Considerations

Mutual Funds (MF) vs. Commingled Funds (CF) / Collective Investment Trusts (CIT)

- MFs are available in various share classes and may generally be used by all retail and institutional investors. Institutional MF share classes may exist with higher minimum investments and lower investment and operating expenses.
- MFs offer standard investor disclosures, daily valuation, and reporting in alignment with Investment Company Act.
- CFs and CITs may limit investor eligibility and have higher minimum investment thresholds.
- Depending on fund documentation a CF or CIT may be open to investment from employer-sponsored qualified retirement plans only or permit investment by a wider range of potential investor entities
- CFs and CITs are often not registered with the SEC (although the Investment Adviser typically is a Registered Investment Adviser). These vehicles are commonly regulated by the Office of the Comptroller of the Currency (OCC), State Regulators, and typically not subject to the Investment Company Act of 1940.
- CFs and CITs may have valuation; purchase / redemption frequency less frequently than daily.
- CFs and CITs offer investor disclosures, valuation and reporting in alignment with offering and operating documents - which may be (and often is) more limited than that required by the Investment Company Act. Such reporting may be appropriate given presumption of increased investor sophistication and acknowledgments.
- CFs and CITs may offer lower fees and operating expenses, in part due to less frequent valuation, lower distribution costs, lower regulatory reporting burden, and competitively negotiated fees and expenses (which may be more flexible to individual agreements on fee classes and terms).
- Both MFs and CFs/CITs invest according to stated investment guidelines which are not subject to customization. Customization of investment guidelines generally requires identification and retention of a MF/CF/CIT with a perfectly matching investment guidelines or the use of a separately managed account.

Investment Vehicles – Vehicle Type Considerations, continued

Limited Partnerships:

- Although most familiar within the context of non-traditional market / alternative investments such as Private Equity, LP vehicle structure is common structure for both traditional market investments and non-traditional market investments.
- Non-affiliated investor entities are typically "limited partners" within a private partnership structured to pool and invest pooled assets under the terms of a limited partnership agreement and as described within offering documents.
- Investment manager and/or general partner of these private partnerships may be a registered investment adviser. The investment fund / limited partnership vehicle is commonly excluded from the definition of an Investment Company and thus not registered under the US Investment Company Act of 1940 under one of several exemptions.
- Investor eligibility may be limited by vehicle type, structure, and offering – generally available to "Accredited Investors" and "Qualified Purchasers" under regulatory definition.
- Capital call and distribution activity and timing is controlled by the general partner under the terms of the limited partnership agreement.
- Limited partnership capital account statement (commonly issued quarterly, with a delay) represents the LP's valuation per the limited partnership agreement. Depending on valuation policies, procedures, and internal management by investor entities, this capital account statement may be subject to invested entity fair value considerations.

Investment Vehicles – Vehicle Type Considerations, continued

Separate Accounts:

- Separate accounts offer the ability for an asset owner to retain an investment manager to oversee a directly owned / segregated portfolio of individual securities held in custody with a custodian, commonly retained by the asset owner directly at an additional cost.
- Asset owner client is the owner of account assets (which are typically held in the custodian's name for the benefit of the asset owner domestically and globally) and may direct specific restrictions and preferences which are documented in the Investment Management Agreement (IMA).
- Separate accounts generally carry a higher minimum investment size due to portfolio diversification requirements with individual securities, infrastructure costs for investment managers, and pragmatic considerations associated with the cost of an asset owner's retention of a qualified custodian to hold, service, and value the assets of a separate account.
- Separate accounts may have a lower investment management fee than a similarly sized deployment within a mutual fund, commingled fund, or LP, due to the fact that vehicle costs for items such as custody and valuation are borne by the asset owner separately. Total all-in costs, which may also reflect custody, valuation, audit, segregated/complete ownership of servicing and trading costs may vary depending on asset size and complexity.
- Global market access, market documentation, global tax documentation, and other factors are significant and can vary widely by market of investment and asset type. These responsibilities can be significant particularly in emerging markets and have been exhibiting trends towards greater complexity.
- Additional responsibilities may accrue directly to an asset owner investing and holding securities directly in a separate account – Although some may present opportunities, others are complications to address and may include trading/transaction cost and foreign exchange execution considerations; direct proxy voting rights; securities litigation opportunities and fiduciary responsibilities; and global tax withholding/exemption/relief at source/reclaim filing.
- **Although smaller mandates may be possible, RVK observes a direct correlation between client asset size and the prevalence of separate account usage with it being common for portfolios in the $1-5 Billion asset size level to limit or avoid globally deployed separate accounts.**

Background on Securities Lending

- Securities Lending is a commonly-used investment strategy in which institutional investors make short-term loans of their otherwise idle securities to earn incremental revenue from their portfolios.

- Securities Lending, while frequently viewed as an operational matter, can involve significant amounts of investment risk.

- Material amounts of income can be generated, but associated risk-factors (from program administration to cash collateral re-investment) must be monitored closely.

Securities Lending Exposures can be found in two areas:

Direct Lending Exposure	• Generated via the retention of an agent (frequently the custodian) to perform Securities Lending activities on behalf of certain portfolios
Indirect Lending Exposure	• Generated via the investment in the commingled product or vehicle of a designated investment manager which has the contractual ability to enter into Securities Lending agreements on behalf of the pooled investment vehicle. • Non-lending commingled products may be available, but fees may be higher and performance may be less attractive over the long-term.

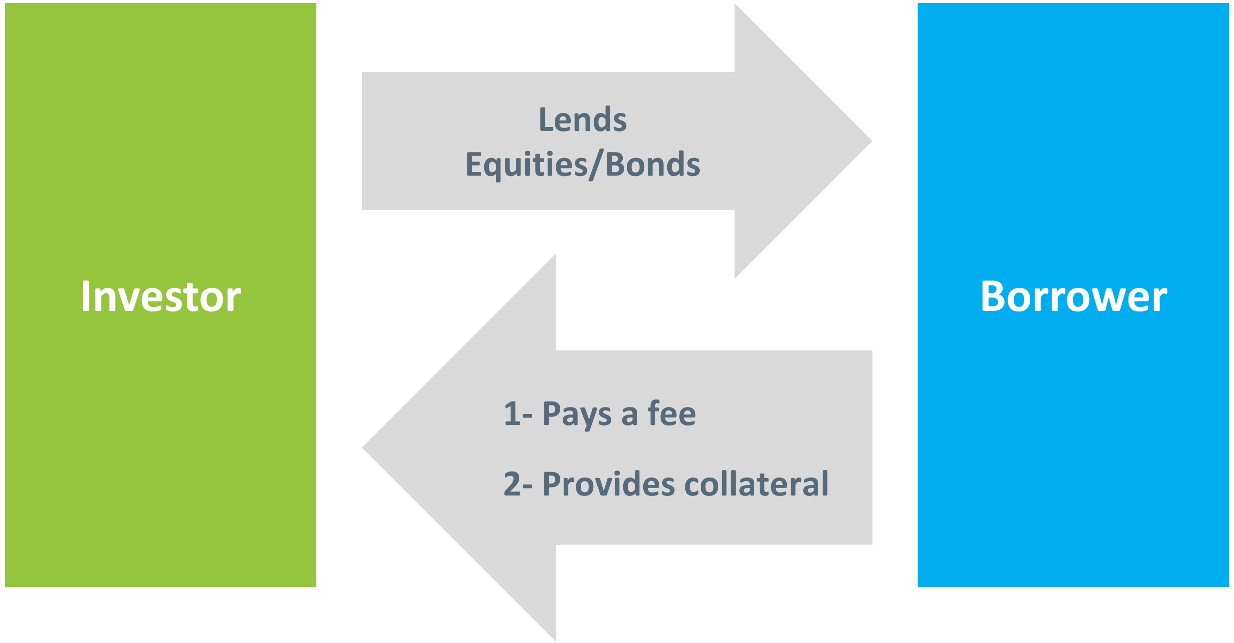
Gene Meshechek, CFA
Managing Director
August 2024

BlackRock

Understanding Securities Lending

Source: BlackRock, 6/30/2024 For illustrative purposes only

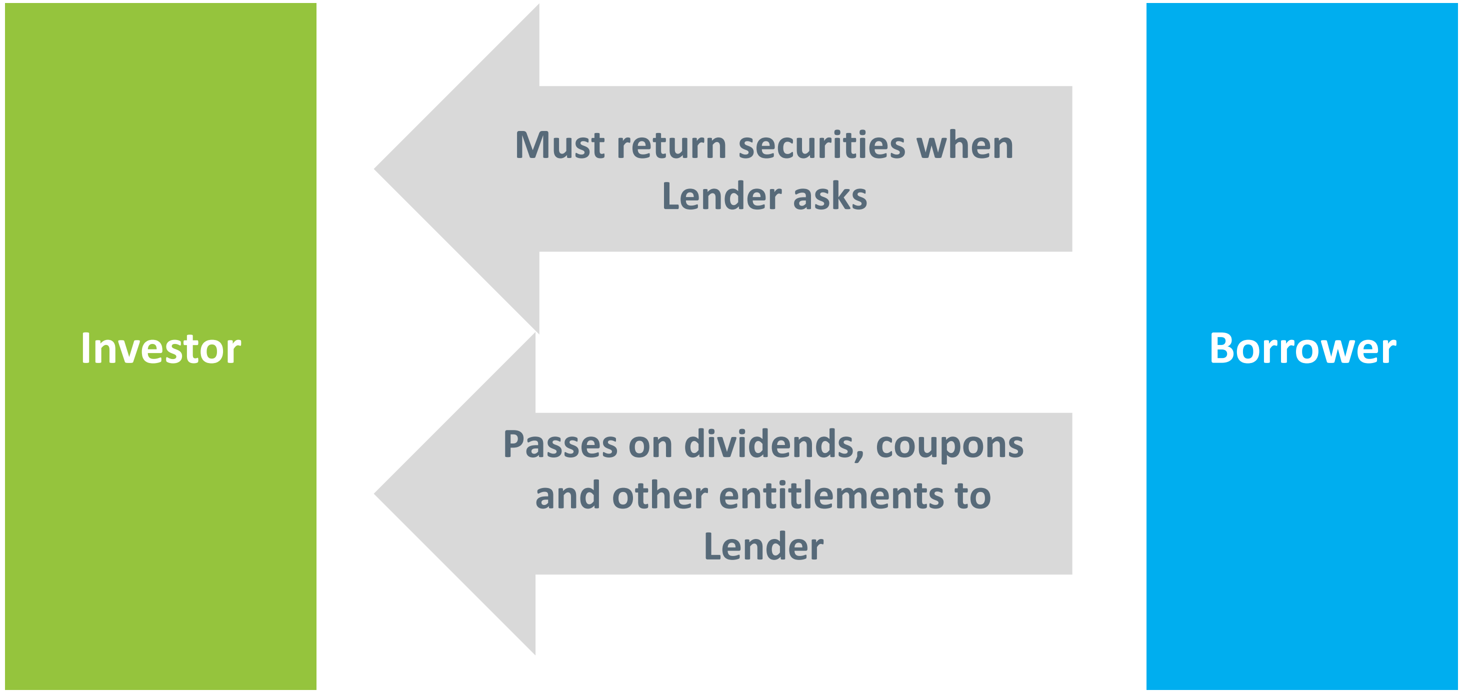
What is Securities Lending?



Borrower becomes temporary owner	**Borrower can sell borrowed securities (“short sale”)**	**Often used for hedging and relative-value strategies**	**Large and well-regulated market**

Source: BlackRock, 6/30/2024 For illustrative purposes only

What is Securities Lending?



Little to no impact on portfolio management

Portfolio Managers can sell securities at any point and participate in corporate actions freely

Increasingly automated market, mitigating operational risk

Source: BlackRock, 6/30/2024 For illustrative purposes only

BlackRock

Securities Lending: Benefits & Drivers

- Securities Lending is an Over-the-Counter market and estimates suggest there is approximately **$34.6 trillion** available for lending globally and approximately **$2.3 trillion** on loan on a daily basis.[1]
- Securities Lending provides liquidity in financial markets, accelerates price discovery and can reduce the cost of investing.

DRIVERS OF Securities Lending DEMAND

- Hedging
- Risk Management
- Active Portfolio Management Strategy

BENEFITS OF Securities Lending

- Revenue Generation
- Improve Liquidity & Efficient Pricing In Financial Markets[2]
- Reduce Trading Cost For All Market Participants

With Securities Lending there is a risk of loss should the borrower default before the securities are returned, and due to market movements, the value of collateral held has fallen and/or the value of the securities on loan has risen.

[1] Source: S&P Global Market Intelligence, 03/31/2024. All figures in USD.

[2] Source: Dreff, N, 2010. The Role of Securities Lending in Market Liquidity. Bank of Canada: Financial System Review, June 2010, pp 41-45.

Source: BlackRock, 6/30/2024 For illustrative purposes only

Risks in Securities Lending

Borrower Default Risk	The main risk of the Securities Lending transaction is the **borrower defaulting** on obligation to return securities. To mitigate this risk, the investor can typically rely on **three lines of defence**: 1. Lending to **diversified set of highly creditworthy borrowers.** 2. **Terminating loans** when the borrower's credit quality deteriorates significantly. 3. **Taking collateral** from the borrower, which can be sold in the market (during a default) to buy back lost securities.
Collateral and Reinvestment Risk	Market movements after a borrower default could make **collateral insufficient** to buy back lost securities, or, cash collateral could have **a reduction in principal value**. Investors can mitigate this risk by: 1. Taking **collateral in excess** of the loan value 2. **Marking loans and collateral to market** daily 3. In some cases a borrower default indemnity could be provided by a lending agent but becoming less frequent 4. Investing in **conservative cash collateral** pools with ample liquidity

The level of risk in a lending program highly depends on how well these risks are managed.

Risk management cannot fully eliminate the risk of investment loss. With Securities Lending there is a risk of loss should the borrower default before the securities are returned, and due to market movements, the value of collateral held has fallen and/or the value of the securities on loan has risen.

Source: BlackRock, 6/30/2024 For illustrative purposes only

BlackRock

Regulatory Change

Regulators' focus on Securities Lending following the Global Financial Crisis has primarily sought to **enhance transparency** and disclosure, **while mitigating risk**

Increased Transparency & Disclosures

- The requirements of the **Securities Financing Transaction Reporting (SFTR)** to **the European Securities and Markets Authority (ESMA)** went live in January 2016.
- The **Securities and Exchange Commission's (SEC) Investment Company Reporting Modernization** rule was adopted in October 2016 and requires new rules, forms, and amendments that will modernize reporting and disclosure of information for registered investment companies.
- In October 2023, The SEC adopted the final **Exchange Rule 10C-1**. The goal of this rule is to increase Securities Lending reporting transparency, by requiring the reporting of certain material terms of lending transactions, including security name/ticker, loan quantity, rate/fee and collateral type. Implementation for the final rule is expected in 2026.

Investor Risk

Counterparty Risk
Basel III and **Dodd Frank** generally require borrowers to hold more capital, maintain greater liquidity and reduce leverage.
These changes are intended to reduce borrower default risk, but we also anticipate these changes will impact the balance sheets of our borrowers, leading to further evolution of the Securities Lending market

Cash Collateral
As part of their recommendations released in August 2013, the **FSB** endorsed conservative guidelines for cash collateral from Securities Lending
OCC implemented more conservative limits for STIF fund management in 2013
SEC implemented more conservative limits in 2010 and adopted further changes for 2a-7 Money Market Funds (MMF) which occurred in October 2016 and July 2023.

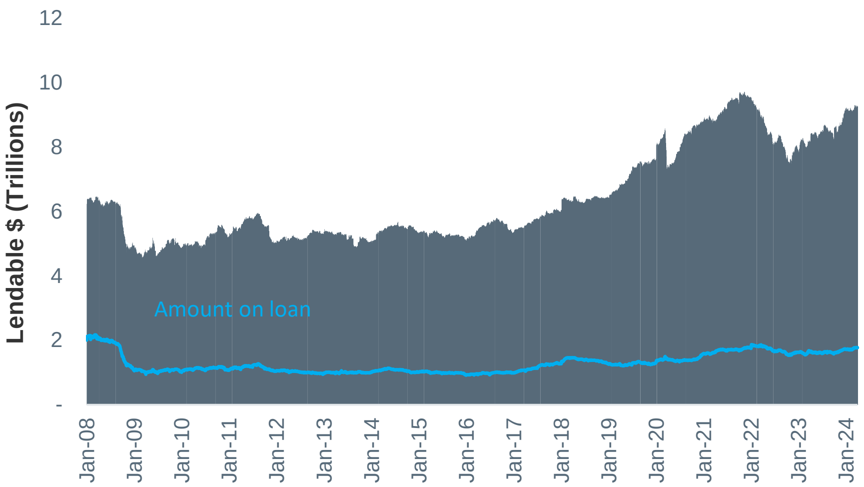
Source: BlackRock, 3/31/2024 For illustrative purposes only

BlackRock

Global market update:

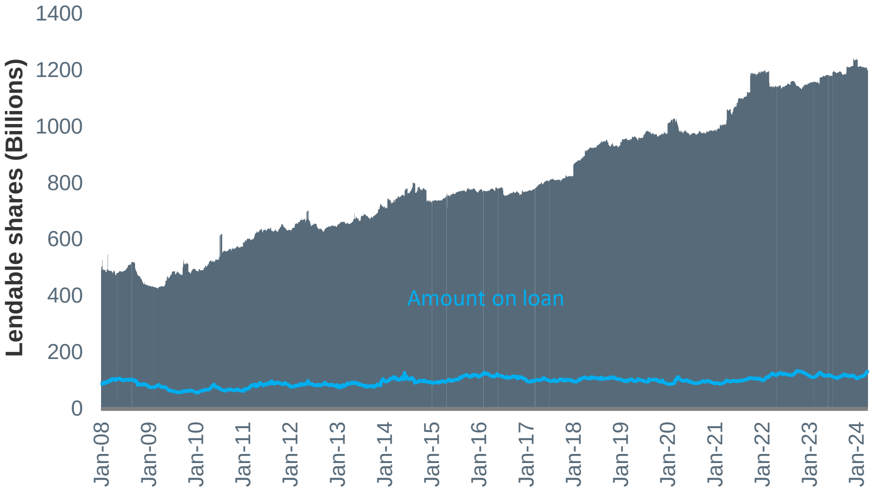
Trends in equity and fixed income supply

Global Fixed Income Market Lendable ($)



- Fixed Income supply trends:
  - Significant increase in lendable assets in recent years
  - Opportunities to lend fixed income securities has increased with higher interest rates and increased demand for high quality liquid assets

Global Equity Market Lendable (shares)



- Equity supply trends:
  - Equity lenders exited the market in Q4 2008, but lendable assets returned to pre-crisis levels shortly thereafter
  - Lendable shares have continued to see consistent growth in recent years as demand for lending has increased

Source: S&P Global Securities Finance (formerly Markit), 1 January 2008 — 31 March 2024. Global markets as defined by S&P Global Securities Finance. For illustrative purposes only

Securities Lending Considerations

Within Securities Lending, there are many different type of things to consider. The first is what type of program the lender offers. BlackRock participates in a **standard lending program** where we lend across most asset classes and have conservative cash collateral parameters and specific risk adjusted return requirements. Others include **limited lending programs**, that lend limited asset classes due to insufficient lending capabilities, and **aggressive lending programs** which take increased risk within the collateral reinvestment to ensure sufficient spreads. Other considerations to think of when comparing different programs include:

Type of Agent
Custodian Bank, Asset Manager – Integrated Model, Third Party

Counterparties
Who are the approved counterparties? Does lending agent conduct credit reviews of the borrowers in the program?

Return Expectations
Different asset classes generally have different return profiles, where emerging market equities and small cap names have more demand than domestic equities and large cap names

Reporting
Due diligence updates with lending agent to understand performance and any changes in the market

Collateral/Cash Collateral Management
Appropriate reinvestment guidelines where collateral should be marked-to-market daily with appropriate over-collateralization

Source: BlackRock, 3/31/2024 For illustrative purposes only

SBCERS

Agency Securities Lending Experience

August 28, 2024

SBCERS Annual Securities Lending Revenue

The Securities Lending program has generated SBCERS a total of $6,590,497 from July 2005 to June 2024

Revenue by Manager

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total	Average
ALL BERNST	14.8	15.27	57.71	.	19.46	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**107.23**	**26.81**
ALL CAPIT	27.7	49.15	116.69	150.11	59.84	60.13	41.17	.	.	.	.	.	.	.	.	.	.	.	.	**504.78**	**72.11**
ANALYTIC	.	.	.	.	.	.	.	.	.	.61	55.31	.	.	.	.	.	.	.	.	**55.92**	**27.96**
ARTISANMCG	.	.	.	.	.	.	.	34.2	23.06	13.74	9.7	5.96	.	.	.	.	.	.	.	**86.66**	**17.33**
ARTSN INTL	.	.	.	.	.	.	.	.	3.77	11.73	39.92	24.36	18.29	23.89	33.69	12.54	13.35	28.	8.58	**218.12**	**19.83**
EAGLASSMAN	.	.	.	.	.	63.4	64.	22.77	14.35	1.	.	.	.	.	.	.	.	.	.	**165.52**	**33.1**
FIRSTEAGLE	.	.	.	.	.	.	.	.	3.85	23.78	20.56	17.46	37.73	27.41	13.46	20.38	24.22	16.8	.	**205.65**	**20.56**
GARCIA HAM	.	.	.	.	.	.	.	.	.	.	.	.	4.94	6.52	8.94	9.27	9.28	6.48	11.36	**56.8**	**8.11**
HARRISREIT	.	.	.	.	.	.	.62	1.86	1.12	3.62	4.37	4.65	1.1	.	.	.	.	.	.	**17.34**	**2.48**
HTCKS&WLY	.	.	.	.	.	.	.	.	22.6	29.51	20.45	59.06	84.29	56.77	21.56	3.56	.	.	.	**297.82**	**37.23**
INVESCO	4.74	9.88	23.76	42.07	20.92	20.73	24.43	.	.	.	.	.	.	.	.	.	.	.	.	**146.55**	**20.94**
LINCOLN	61.7	13.26	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**74.96**	**37.48**
LONDON CO	.	.	.	.	.	.	.	.	.	.09	4.3	12.63	.	.	.	.	.	.	.	**17.01**	**5.67**
LOOM SAYLE	.	.	.	.	.	23.54	17.28	1.48	.	.	.	.	.	.	.	.	.	.	.	**42.3**	**14.1**
LRD ABBETT	.	.	.	8.5	61.	51.04	45.28	49.63	-.03	.	.	.	.	.	.	.	.	.	.	**215.42**	**35.9**
NEUBERBRMN	.	.	.	.	.	35.51	23.36	.87	.	.	.	.	.	.	.	.	.	.	.	**59.74**	**19.91**
NEW STAR	66.65	86.59	139.6	33.92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**326.76**	**81.69**
NICHOLSSCG	.	.	.	.	.	.	.	.	.	31.43	17.31	.	.	.	.	.	.	.	.	**48.74**	**24.37**
PANAGORA	.	.	.	9.23	45.78	56.84	46.32	41.16	34.11	33.61	22.06	26.9	25.1	28.66	15.58	18.18	38.52	29.31	44.65	**516.01**	**32.25**
QSB GUGGEN	.	.	.	.	.	.	.	.	.	.	.	.	2.79	.	.	.	.	.	.	**2.79**	**2.79**
R H JAMES	.	.	.	.	.	.	.	.	.	.	4.41	30.6	29.14	15.33	14.16	11.97	3.06	3.61	2.	**114.27**	**12.7**
REAMS	108.99	58.39	72.09	20.32	57.94	55.64	29.76	15.33	16.04	28.4	40.66	59.71	1.61	.	.	.	.	.	.	**564.87**	**43.45**
RHUMBLINE	.	.	.	.	.	.	.	.	.	.01	3.87	11.07	18.77	58.43	.	.	.	.	.	**92.14**	**18.43**
RREEF	.14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**.14**	**.14**
SBCERS HED	.	.	.	.	.	.	.	.	.	.	.	.	.	5.02	27.35	18.76	27.64	216.66	642.52	**937.95**	**156.32**
SBCERS NUV	.	.	.	.	.	.	.	.	.	.	.	.	185.4	124.09	60.15	76.64	58.11	89.85	58.57	**652.79**	**93.26**
STAR TISDL	7.21	29.04	82.88	61.34	27.26	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**207.73**	**41.55**
STW	113.83	108.43	68.15	11.43	8.16	16.21	10.45	4.32	.68	11.2	15.06	22.39	1.31	.	.	.	.	.	.	**391.62**	**30.12**
WELL TIPS	.	.	.	.	.	.	37.15	17.31	.	.	.	.	.	.	.	.	.	.	.	**54.47**	**27.23**

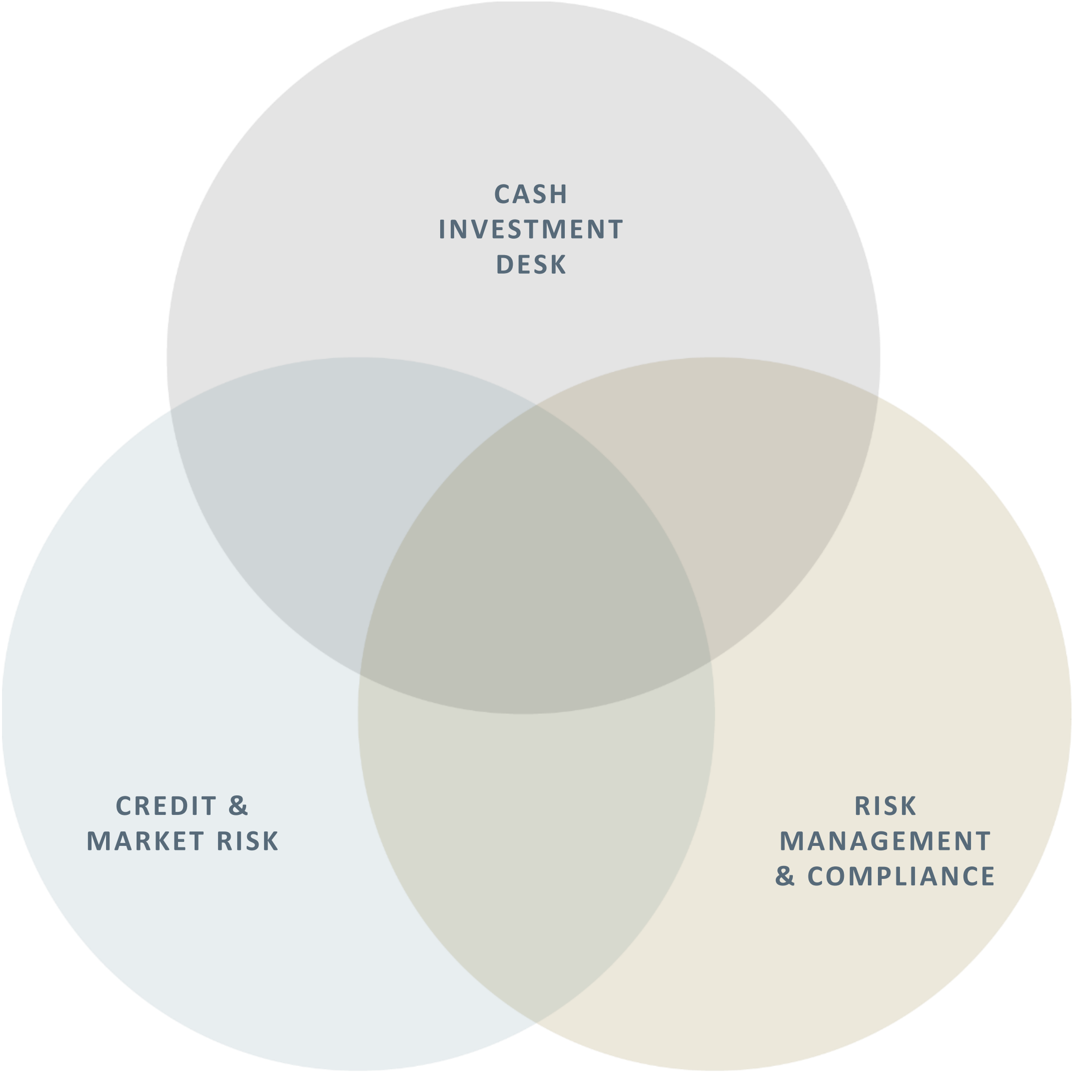
Revenue figures displayed in thousands

Comprehensive Cash Collateral Investment Management Capabilities

All data as of June 30, 2024, and includes both BNY Agency Lending and Agency Investment Product (AIP) programs.
1 - Includes assets invested in funds directed by clients or released to clients to manage themselves.
2 - Includes tenure at all BNY affiliates.

INVESTMENT MANAGEMENT

- Total of US$203 billion (USD equivalent) in total assets under management[1]
- Managed in the following four different currencies:
  - US$179 billion
  - CAD$10 billion
  - EUR€12 billion
  - GBP£2 billion
- 12 investment professionals dedicated to cash collateral investment strategies
- Investment professionals average 16 years at BNY and 21 years in the industry[2]
- Cash collateral investment professionals are specialized by currency with cross-regional trading backup



Comprehensive Cash Collateral Investment Management Capabilities

SEPARATELY MANAGED ACCOUNTS[1]

- Investments governed by the client's own, specific investment guidelines
- All strategies may be tailored to match the client's own, individual risk parameters
- Modifications to a client's investment guidelines may be made only by the client and can be changed at any time[2]
- Client collateral investment guidelines can have a material impact on revenue potential. The table below provides summary details on BNY's standard strategies:

USD STRATEGIES	WEIGHTED AVERAGE MATURITY	MAXIMUM SECURITY MATURITY	APPROXIMATE YIELD[3] (VERSUS OBFR)
Overnight - Government - Credit	next day	next day	-4 to 0 (flat) bps +1 to +6 bps
Ultra Short	45 days	190 days[4]	+10 to +20 bps
Core	60 days	397 days[4]	+15 to +25 bps
Term	90 days	3 years[4]	+25 to +40 bps

EXTERNAL ASSET MANAGER / CLIENT MANAGED CASH[5]

- Client manages their own cash collateral
- Increases client's assets under management
- Client executes investment decisions
- Client may direct investment into an external registered money market mutual fund

1 - Subject to BNY input and approval. 2 - A change in guidelines by a client that required selling of assets could result in a loss, which would be the client's responsibility. 3 - Yield information is for illustrative purposes only and not a performance guarantee. Yield information will vary depending on a number of variables, including investment guidelines and market conditions. OBFR is the Federal Reserve Bank of New York's Overnight Bank Funding Rate 4 - This is only one example. A client can increase or decrease the number of days. 5 - Subject to BNY credit, risk and other necessary approvals.

Risk Controls for Cash Collateral Investment Management

01.

Liquidity Risk

Insufficient cash available within investment portfolio to repay borrower

RISK CONTROLS

- Managed by client's investment guidelines
- Target 10% overnight liquidity
- Laddered maturities
- Raise liquidity through lending

02.

Credit Risk

Principal or interest payments not received as expected

RISK CONTROLS

- Managed by client's investment guidelines
- Minimum credit ratings
- Issuer concentration limits
- Maximum final maturities

03.

Interest Rate Risk

Yield on asset (investment) is lower than yield on liability (rebate)

RISK CONTROLS

- Managed by client's investment guidelines
- Asset/liability management
- Automated rate threshold (set maximum rebate)
- Short weighted average days to reset
- Limits on fixed rate maturities

04.

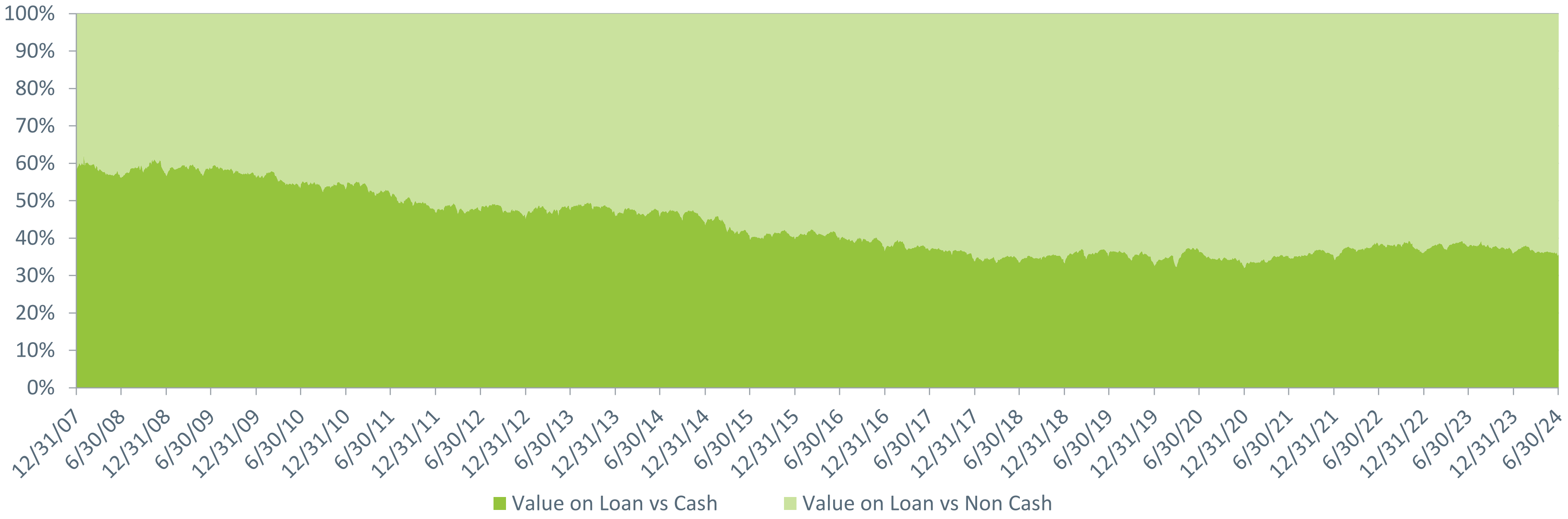
Market Risk

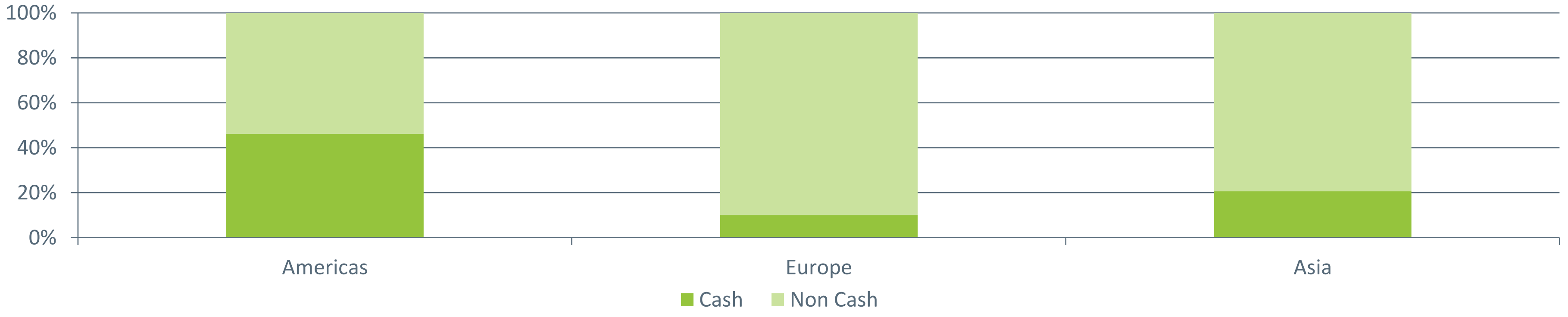
Cash collateral investments sold below par

RISK CONTROLS

- Measure daily unrealized gains/losses
- Indicative market value NAV
- Typically, buy-and-hold strategy

Cash vs. Non-cash – Loan Volume





Data provided by S&P Global Market Intelligence. Data as of January 1, 2008, through June 28, 2024.

YOUR NON-CASH OPTIONS

Client flexibility to accept numerous forms of non-cash collateral allows clients to take advantage of evolving borrower demand and premium returns.

Reduces risk via diversification benefits from adding more asset classes from a portfolio perspective given low correlation between equities and traditional non-cash collateral.

Concentration limits, securities limited to certain indices, certain minimum average trading volumes and higher margins apply.

DEBT SECURITIES

- U.S. Government
- Sovereigns
- G10
- Superannuation
- IG Corporates
- Convertibles

EQUITY SECURITIES

- U.S.
- EMEA
- APAC
- ETFs

Agency Securities Lending Overview

- Strong, Tenured Industry Leader Committed to the Business

FOOTPRINT

- Industry's largest program, with **$5.1 trillion** in lendable assets and **$550 billion** on loan[1,2]
- With **20.7%** of the industry on loan volume and **11.3%** of the industry lendable, BNY captures more than its share of the market[1,2]
- **374** global client relationships[2]
- Active lending in **34** local markets[3]
- **6** global trading desks (New York, Pittsburgh, Toronto, London, Hong Kong and Singapore)
- Providing Securities Lending services **since 1977**

VALUE PROPOSITION

DEPTH OF RESOURCES	Unique industry position as the largest agent lender leads to ongoing capital investment in technology and resiliency
SAFETY AND STABILITY	The Federal Reserve's 2024 bank stress tests once again show the resiliency of our business model and strength of our balance sheet
CLIENT RETURNS	We focus on generating strong performance for our clients through the combination of spread, utilization and duration of loans
TRANSPARENCY	Detailed client reporting accessible 24/7

1 - Largest program as measured by on-loan assets according to S&P Global Market Intelligence as of 2Q 2024.
2 – June 30, 2024.
3 - Lendable securities include all DTC eligible securities, American Depositary Receipts (ADR), Global Depositary Receipts (GDR) and fixed income securities held in Euroclear and Clearstream.

Securities Lending Program Monitoring

Prudent monitoring should include periodic review of the Securities Lending program with the lending agent:

- Documented Presence of Lending Exposures / Program Size
- Cash & Non-Cash Collateral Usage
- Collateralization Policies and Sufficiency
- Counterparty (Borrower) Exposures and Indemnifications
- Cash Reinvestment Portfolio Investment Guidelines
  - Liquidity, Duration and Credit Spread, and Issuer Concentration
- Earnings, Earnings Attribution, Fees, and Revenue Split
- Operational Considerations (income posting and trade settlement results)
- Tax Considerations (the tax treatment of substitute income for some lent securities may generate undesirable taxation implications)
- Market/Regulatory/Program Changes

SBCERS Investment Considerations

SBCERS Separate Account (including Global) Experience and General Comments

- Current investments in Separate Accounts are associated with higher costs associated with custody and asset servicing from BNY, including the additional costs associated with direct security custody and settlement in global markets.

- Additional complexity has been observed with account and market documentation including documentation of the tax status and KYC/AML matters associated with the Trust Funds direct investments

- Additional complexity associated with the prudent coverage of security-related matters such as domestic and global securities litigation on individual security holdings; sanctioned markets; direct ownership of sanctioned or trading-restricted securities (such as Russia) and other tax and valuation matters associated with securities valuation are notable.

- **The Securities Lending opportunity with directly held securities in separate account format has been associated with incremental earnings to the Trust, but also introduces additional complexity.**

SBCERS Investment Considerations, continued

- RVK observes limited investment and investment operations staffing at SBCERS.

- While staffing levels are not uncommon related to similarly sized funds, they may limit the ability to effectively and comprehensively address the increasingly complex matters that accompany investment implementation – particularly in global separate accounts.

- The opportunity to make a focused shift in investment vehicle deployment from Separate Accounts (particularly global) to emphasize or prioritize the efficient usage of commingled vehicles such as CITs is notable.

- Additional modifications to Securities Lending program parameters are possible – current program guidelines and participating accounts are conservative and could be revisited in conjunction with overall portfolio considerations.

- **<u>Due consideration of total net cost and value trade-offs are appropriate:</u>**
    - Although Securities Lending opportunity from direct holding of lendable securities in global separate accounts participating in the custodial Securities Lending program may be impacted by a vehicle shift, operating cost efficiency, investment program complexity, and other factors are notable.
    - Shifts to add Securities Lending to non-participating separate account assets and to consider the use of commingled funds offering a vehicle option that participates indirectly in lending activity is a viable and reasonable alternative.
    - A shift to consider some expansion of guidelines for eligible collateral type and investment to increase utilization and return on invested cash collateral assets is reasonable and can also be a prudent method to limit the impact on total net lending income.

SBCERS Recommendations – Artisan

RVK recommends that the SBCERS Board approve the change of Artisan global equity separate accounts to commingled vehicle format with corresponding adjustment to custody cost drivers with BNY and prospective impact to Securities Lending earnings.

- **The reduction in custodial cost complexity to BNYM, and to the operational complexity for SBCERS, is not estimated to directly lead to lower contractual custody cost, although it is expected to provide additional latitude for other complexity drivers to change over time during the custody contract with BNY**
- **The reduction is Fiscal 2024 lending earnings would be approximately $8,580 or -1.1% based on data provided by BNYM**

SBCERS Recommendations - OPEB

RVK recommends that the SBCERS Board consider the presentation and approach outlined by BlackRock related to their investment vehicles and Securities Lending program and to approve the transition of current OPEB and other BlackRock vehicles to corresponding investment vehicles that participate in Securities Lending. RVK notes that additional Securities Lending utilization and earnings are expected to be generated and that incremental associated risk factors are reasonable.

BlackRock – Funds Lending and Non-Lending Comparison

BlackRock Russell 3000® Index Fund Performance

	2Q2024	YTD*	1 year	3 year	5 year	10 year
Fund (lending)	3.23	13.58	23.19	8.1	14.19	12.22
Fund (non-lending)***	3.21	13.56	23.18	8.08	14.16	12.17
Benchmark	3.22	13.56	23.13	8.05	14.14	12.15
Lending Outperformance	0.02	0.02	0.01	0.02	0.03	0.05

BlackRock US Debt Index Fund Performance

	2Q2024	YTD*	1 year	3 year	5 year	10 year
Fund (lending)	0.14	-0.59	2.69	-2.94	-0.15	1.44
Fund (non-lending)***	0.13	-0.61	2.66	-2.97	-0.20	1.39
Benchmark	0.07	-0.71	2.63	-3.02	-0.23	1.35
Lending outperformance	0.01	0.02	0.03	0.03	0.05	0.05

Period returns for less than a year are cumulative
As of June 30, 2024.
*** What SBCERS is currently invested in through their OPEB.
Russell 1000 Index Fund (lending) inception date as of 30 June 1999; non-lending Fund inception date 28 February 2009, Benchmark is the Russell 1000.
U.S. Debt Fund inception Fund inception date 30 June 1986, non-lending Fund inception date 18 September 2009. Benchmark is the Bloomberg U.S. Aggregate Bond Index.
,
This information is unaudited, subject to change and intended for analytical purposes only. The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. **Past performance is not necessarily an indicator of future performance.** Indexes are unmanaged. It is not possible to invest directly in an index.
Sources: BlackRock, FTSE Russell

SBCERS Recommendations – Russell 1000

RVK recommends that the Board approves the additional eligible collateral types and program guidelines associated with the custodial Securities Lending program and to transition to the lending vehicle offered by BNY tracking the Russell 1000 Index. RVK notes that additional Securities Lending utilization and earnings are expected to be generated and that incremental associated risk factors are reasonable.

BNYM Mellon Fund Performance Comparison

As of July 31, 2024

BNYM Mellon DB SL Large Cap Stock Index Fund vs. Russell 1000 Index
Inception: 12/16/1986

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	Since Inception	Std. Dev. Since Inception	Tracking Error Since Inception
Fund	21.55	17.18	8.56	15.26	14.61	13.49	13.88	14.14	13.07	12.89	10.98	15.38	0.13
Benchmark	21.50	17.15	8.52	15.23	14.59	13.46	13.85	14.11	13.04	12.86	10.94	15.43	
Difference	0.05	0.03	0.04	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.04		

BNYM Mellon DB NSL Large Cap Stock Index Fund vs. Russell 1000 Index
Inception: 3/13/2009

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	Since Inception	Std. Dev. Since Inception	Tracking Error Since Inception
Fund	21.54	17.16	8.53	15.24	14.58	13.46	13.84	14.10	13.03	12.85	15.98	14.99	0.02
Benchmark	21.50	17.15	8.52	15.23	14.59	13.46	13.85	14.11	13.04	12.86	15.98	15.00	
Difference	0.04	0.01	0.01	0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.00		

SBCERS Recommendations – Expanded Securities Lending Collateral

RVK recommends that the SBCERS Board consider the presentation and approach outlined by BNY, RVK notes that additional Securities Lending utilization and earnings are expected to be generated and that incremental associated risk factors are reasonable.

- Noncash collateral has a balance sheet benefit to borrowers and is generally their preferred form of collateral to post. Expanding the acceptable forms of collateral will allow SBCERS to participate in these additional trades that are being allocated to other beneficial owners.

- Expanding the cash collateral reinvestment guidelines has two benefits. The greater yield generated from the new guidelines could potentially increase performance to all the existing activity. The higher yields will also support a broader range of trading activity, allowing SBCERS to participate in trades that are being allocated to other beneficial owners today.

SBCERS Recommendations – Commingled Fund Preference for Non-U.S.

RVK notes a net decrease in portfolio complexity that will accrue over time due to the reduction in global separate account complexity (which we expect to be increasingly observable over time), and that such decrease is expected to be material.

In connection with the changes to Securities Lending participation and program configuration, RVK recommends and will support continued and ongoing monitoring of such additional investment risk components.

The tangible and intangible benefits of the reduced separate account complexity are significant and that while some incremental lending income may be foregone with a shift to non-lending CF vehicles. However, the moderate and reasonable increase to lending participation (BlackRock OPEB funds, Mellon R1000, and incremental utilization and earnings in BNY custodial lending program due to prudent guideline expansion) is expected to more than offset such global separate account lending income reduction. Ongoing consideration of lending program parameters by the Board is reasonable and continues to be merited and will be supported by RVK.

Appendix

Securities Lending Education

Common Questions and Answers about Securities Lending

Securities Lending Q&A

Why Do Beneficial Owners* Lend?

- Securities Lending is used to increase the total return or yield of the portfolio.
    - It can be used to generate incremental revenue or yield to the investment program. Although not required to be used for such payments, some programs use Securities Lending income to pay operational expenses such as custodial banking fees.

- Securities Lending can increase overall performance.
    - Our client experience has been generally three-five basis points annually, depending on portfolio composition.

* **“Beneficial Owner”** is a technical term for the entity that is lending securities within a Securities Lending program (i.e. typically the client organization). The term references the fact that many of the attributes of ownership continue to be retained (i.e. they are “beneficially” retained) such as the receipt of dividend or interest payments and the ability to sell the security (which produces a request to the borrower to return the security that has been lent).

Securities Lending Q&A

Why Are Securities Borrowed?

- Borrowers borrow securities to facilitate settlement, create short positions, or obtain title and temporary ownership for market purposes, including to vote proxies.
- Common borrowers (and borrowing rationale) include:
  - Market makers needing inventory of securities for settlement and to facilitate short sales or shortened settlement.

    Examples:

    - Fixed Income Securities: Short settlement windows may require borrowing to facilitate timely settlement and avoid regulatory penalty fees as well as to create Treasury Strips and Zero Coupon Bonds.
    - Fixed Income and Equity Securities: “Selling short” mechanically requires the borrow of a security which is sold with a forward obligation to repurchase/return the borrowed security.
  - Prime brokers that need to provide inventory to arbitrageurs seeking to exploit differential tax treatment on dividends and some interest payments on global securities.

    Examples:

    - **French National** would receive full Dividend from French company with no withholding (100% received)
    - **US Government Entity** receives Dividend net of 30% withholding from French company and must file tax reclaim to receive treaty rate of 15% dividend expense (i.e., 15% is reclaimable).
    - **Process may allow for quicker payment & higher net rate to be received by the US entity**:
      - Lend to French National (who receives 100% and passes back 85% net entitlement)
      - Lending rates / spread is competitively set to split the 15% net expense between the lender (who owns the shares) and the borrower (who doesn’t own the shares but has title and thus economic benefits over record date).

Securities Lending Q&A

Who Provides Securities Lending Services?

Custodial Bank Agent Lenders	Division of custodial banks that provide security lending services to custody clients. **Examples: BNY Mellon, J.P. Morgan, Northern Trust, State Street**
Third Party Lending Agents	Firms (including divisions of some custodial agent lenders) not generally holding custody of assets who arrange loan of securities and coordinate securities movements with custodian to client. **Examples: Citi, eSeclending**
Principal Borrowers, including Auctions	Brokerage firms and other market participants who “buy the rights” to borrow a portfolio of one or more securities in exchange for a negotiated fee, frequently (but not required to be) via an auction process (coordinated by an agent offering indemnification). **Examples: Goldman Sachs, Morgan Stanley**

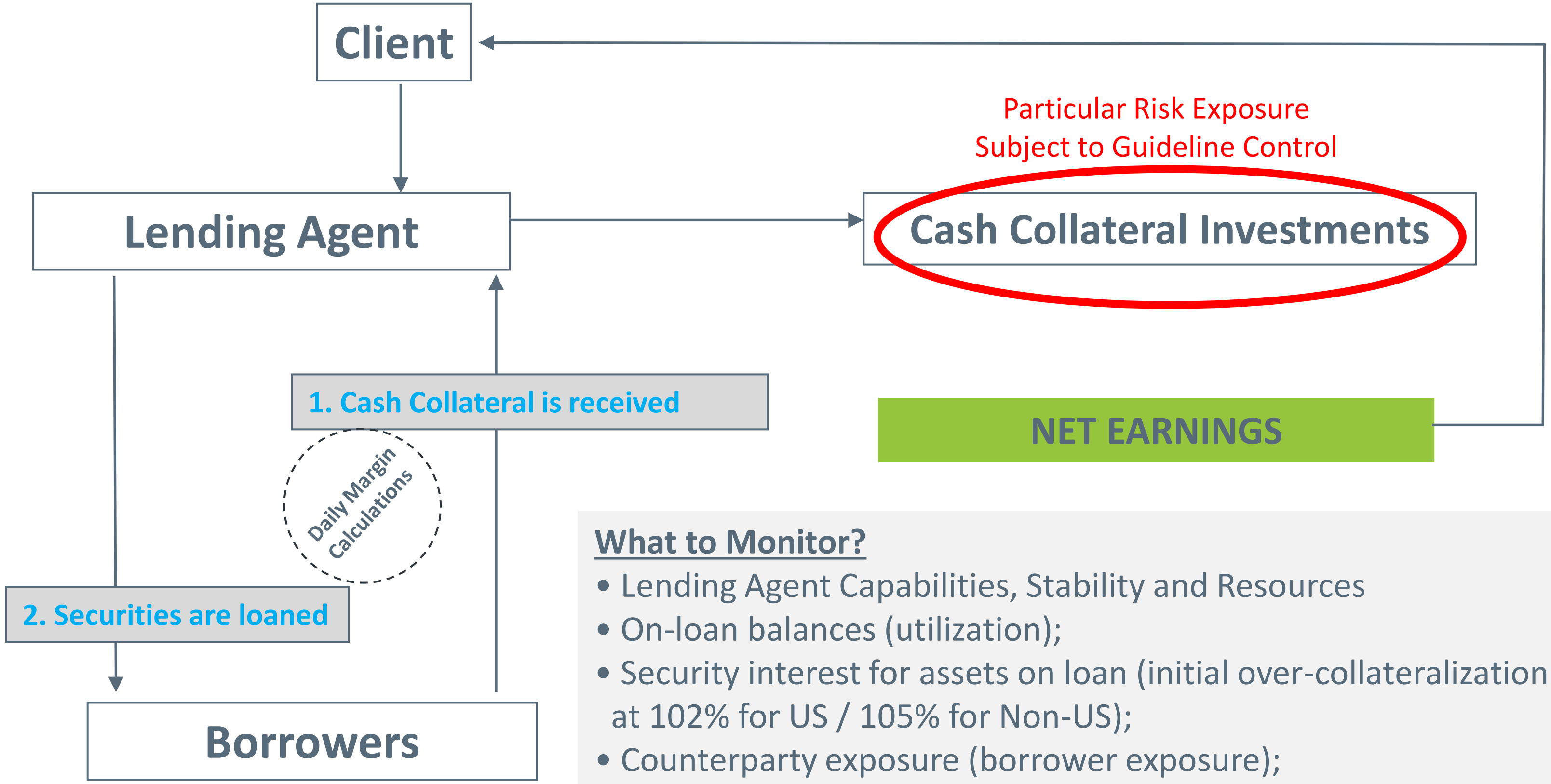
Securities Lending Q&A

How Does Lending Work?

- Participants in Securities Lending programs temporarily lend their securities to borrowers such as market-makers, hedge funds, and other financial institutions through a lending agent.
- Borrowers deliver temporary collateral to lender (or agent) for securities borrowed in exchange for a negotiated rebate – generally a rate equal to a negative spread to a risk-free rate, such as Fed Funds. Positions are over-collateralized (typically 102% for US & 105% for Non-US).
- Lenders invest the cash proceeds according to investment guidelines to earn a yield that will exceed both the risk-free and the negotiated rebate paid to the borrower.
- The total return to Securities Lending programs is based on achieving a positive differential on a daily basis between the rate earned on collateral investments and the required payment of the negotiated rebate.

Securities Lending Q&A

How a Cash* Loan Works and What to Monitor



What to Monitor?

- Lending Agent Capabilities, Stability and Resources
- On-loan balances (utilization);
- Security interest for assets on loan (initial over-collateralization at 102% for US / 105% for Non-US);
- Counterparty exposure (borrower exposure);
- Earnings and Earnings attribution.
- Investment Exposures within Cash Collateral
  - Asset Class & Maturity Exposure
  - Liquidity & Fundamental Risk
  - Mark-to-Market NAV

*Non-cash loans are made as permitted by lending agents who take a non-cash security interest and a negotiated fee from the borrower of securities. It is important to note and be aware of the types of non-cash collateral accepted.

Securities Lending Q&A

What are the Components of Earnings?

- Cash Loans (most common):
  - The **Yield** received on the investment of cash collateral
    - **Minus**
  - The **Negotiated Rebate** paid out of the borrower
    - **Multiplied by**
  - The **Dollar Amount of the Loan**
    - **Equals**
  - **Gross Revenue (split with lending agent)**

- Non-Cash Loans (less common):
  - A **Fee** is received from the borrower in the form of a flat basis point payment
    - **Multiplied by**
  - The **Dollar Value of the Securities Borrowed**
    - **Equals**
  - **Gross Revenue (split with lending agent)**

RVK

Securities Lending Q&A

What are the Risks of Securities Lending and How Can Such Risks be Mitigated?

Borrower Default through Insolvency	Borrower fails to return securities due to bankruptcy/insolvency. **Mitigation Strategies:** • Strict borrower eligibility, client limitations possible, daily marks-to-market. • The client is generally indemnified by the lending agent for borrower default.
Financial Transaction Errors	Interest/Dividends are not posted accurately, delivery fails, failure to adequately mark to market occurs. **Mitigation Strategies:** • Automated processes and risk management processes are in place. • The client is generally made whole by responsible party.
Collateral Investment Losses	Cash investment yield underperforms current rebate yield or principal loss occurs. The client is generally **NOT** indemnified against losses on cash collateral investments. **Mitigation Strategies:** • Such investments should be governed by policies designed to ensure that they are conservatively managed and monitored.

PORTLAND BOISE CHICAGO NEW YORK

RVK

Important notes

- **THE INFORMATION CONTAINED HEREIN MAY BE PROPRIETARY IN NATURE AND HAS BEEN PROVIDED TO YOU ON A CONFIDENTIAL BASIS, AND MAY NOT BE REPRODUCED, COPIED OR DISTRIBUTED WITHOUT THE PRIOR CONSENT OF BLACKROCK, INC. ("BLACKROCK").**
- These materials are not an advertisement and are not intended for public use or dissemination. Any investments named within this material may not necessarily be held in any accounts managed by BlackRock. Reliance upon information in this material is at the sole discretion of the reader. Past performance is no guarantee of future results.
- This material is for distribution only to those types of recipients as provided below and should not be relied upon by any other persons. This material is provided for informational purposes only and does not constitute a solicitation in any jurisdiction in which such solicitation is unlawful or to any person to whom it is unlawful. Moreover, it neither constitutes an offer to enter into an investment agreement with the recipient of this document nor an invitation to respond to it by making an offer to enter into an investment agreement.
- **Securities Lending Returns**
- BlackRock retains a portion of Securities Lending returns in exchange for managing the program. This fee reflects risk management, as well as the technology and personnel costs of maintaining the lending platform. In addition, BlackRock receives a fee for the management of cash collateral. Actual lending yields and fees for strategies represented may vary. Please note, other administrative costs, including but not limited to, accounting, custody and audit fees, may vary. Investors may receive 50% of Securities Lending returns and BlackRock retains 50%, except in cases where a client may negotiate a different compensation arrangement. BlackRock may negotiate different Securities Lending compensation arrangements with our clients depending on a variety of factors, including, but not limited to, the nature and size of the investment and the overall relationship with, and services delivered to, a particular client. Asset spread income is defined as the interest income earned in cash reinvestment funds on collateral balances less the Federal Funds Open Rate until September 14, 2016 and the Overnight Bank Funding Rate beginning September 15, 2016. Liability spread income is defined as the difference between the Federal Funds Open Rate until September 14, 2016 and the Overnight Bank Funding Rate beginning September 15, 2016, versus the rebate rate negotiated with the borrower.
- **Forward Looking Information**
- This material may contain "forward-looking" information that is not purely historical in nature. Such information may include, among other things, projections, forecasts, estimates of yields or returns, and proposed or expected portfolio composition. Moreover, where certain historical performance information of other investment vehicles or composite accounts managed by BlackRock, Inc. and/or its subsidiaries (together, "BlackRock") has been included in this material and such performance information is presented by way of example only. No representation is made that the performance presented will be achieved, or that every assumption made in achieving, calculating or presenting either the forward-looking information or the historical performance information herein has been considered or stated in preparing this material. Any changes to assumptions that may have been made in preparing this material could have a material impact on the investment returns that are presented herein by way of example.
- **Forecast**
- This material is not intended to be relied upon as a forecast, research or investment advice, and is not a recommendation, offer or solicitation to buy or sell any securities or to adopt any investment strategy. The opinions expressed may change as subsequent conditions vary. The information and opinions contained in this material are derived from proprietary and nonproprietary sources deemed by BlackRock to be reliable, are not necessarily all inclusive and are not guaranteed as to accuracy. There is no guarantee that any of these views will come to pass.
- **Hypothetical Example**
- Hypothetical example for illustrative purposes only. No representation is being made that any account, product, or strategy will or is likely to achieve profits, losses, or results similar to those shown. Hypothetical or simulated performance results have several inherent limitations. Unlike an actual performance record, simulated results do not represent actual performance and are generally prepared with the benefit of hindsight. There are frequently sharp differences between simulated performance results and the actual results subsequently achieved by any particular account, product, or strategy. In addition, since trades have not actually been executed, simulated results cannot account for the impact of certain market risks such as lack of liquidity. There are numerous other factors related to the markets in general or the implementation of any specific investment strategy, which cannot be fully accounted for in the preparation of simulated results and all of which can adversely affect actual results.
- **No Recommendation**
- These materials are neither an offer to sell nor a solicitation of any offer to buy shares in any fund. You may not rely upon these materials in evaluating the merits of investing in any fund that employs any of the strategies referred to herein. Any reference herein to any security and/or a particular issuer shall not constitute a recommendation to buy or sell, offer to buy, offer to sell, or a solicitation of an offer to buy or sell any such securities issued by such issuer.

Important notes (cont.)

- **Risk**
- Securities Lending involves exposure to certain risks, including cash collateral investment risk (i.e., risk that cash collateral investments, whether in Cash Collateral Funds or otherwise, may not achieve their investment objective, including suffering realized or unrealized loss due to investment performance), “gap” risk (i.e., risk that the return on cash collateral investments is insufficient to pay the rebate fees the Lending Fund or Lending Account has committed to pay to borrowers), liquidity risk (i.e., risk that the cash collateral is invested, directly or through the Cash Collateral Funds, in securities and other instruments that are less liquid than the Lending Fund or Lending Account, which could limit the liquidity available to the Lending Fund or Lending Account for ordinary course transactions), operational risk (i.e., risk of losses resulting from problems in the settlement and accounting process), foreign exchange risk (i.e., risk of a shortfall at default when a cash collateral investment is denominated in a currency other than the currency of the assets being loaned due to movements in foreign exchange rates), and credit, legal, counterparty and market risks. At any particular point in time, investments in the Cash Collateral Funds could comprise a material portion of a Lending Fund’s assets.
- Investing involves risk, including possible loss of principal. Asset allocation and diversification strategies do not assure a profit and may not protect against loss or effects of market or other economic conditions on asset classes. Diversification among investment options and asset classes may help to reduce overall volatility.
- BlackRock makes no representations or warranties as to the accuracy or completeness of the information contained herein, and further nothing contained herein shall be relied upon as a promise by, or representation by, BlackRock whether as to past or future performance results. Past performance is not indicative or predictive of future performance.
- These materials are being provided for informational purposes only and are not intended to constitute tax, legal or accounting advice. You should consult your own advisers on such matters. Additional information is available on request. Information contained herein is believed to be reliable but BlackRock does not warrant its accuracy or completeness. Information contained herein represents BlackRock’s own opinions. There can be no assurance that the investment objectives of any strategy referred to herein will be achieved. An investment in any strategy referred to herein involves a high degree of risk, including the risk that the entire amount invested may be lost.
- For ease of reference, “BlackRock” may be used to refer to BlackRock, Inc. and its affiliates, including BlackRock Institutional Trust Company, N.A. BlackRock Institutional Trust Company, N.A., a national banking association operating as a limited purpose trust company, manages the collective investment products and services discussed in this publication and provides fiduciary and custody services to various institutional investors.
- Collective investment funds maintained and managed by BlackRock Institutional Trust Company, N.A. are available only to certain qualified employee benefit plans and governmental plans and not offered or available to the general public. Accordingly, prospectuses are not required and prices are not available in local publications. To obtain pricing information, please contact your local service representative. Strategies maintained by BlackRock are not insured by the Federal Deposit Insurance Corporation and are not an obligation or deposit of, or guaranteed by, BlackRock or its affiliates. There are structural and regulatory differences between collective funds and mutual funds that may affect their respective fees and performance.
- THIS MATERIAL IS HIGHLY CONFIDENTIAL AND IS NOT TO BE REPRODUCED OR DISTRIBUTED TO PERSONS OTHER THAN THE RECIPIENT.
- The information contained in this presentation is proprietary and confidential and may contain commercial or financial information, trade secrets and/or intellectual property of BlackRock. If this information if provided to an entity or agency that has, or is subject to, open records, open meetings, “freedom of information”, “sunshine” laws, rules, regulations or policies or similar related laws, rules, regulations or policies that require, do or may permit disclosure of any portion of this information to any other person or entity to which it was provided by BlackRock (collectively, “Disclosure Laws”), BlackRock hereby asserts any and all available exemption, exception, procedures, rights to prior consultation or other protection from disclosure which may be available to it under applicable Disclosure Laws.
-

BlackRock

Important notes

- **Important Notes**
- BlackRock Institutional Trust Company, N.A. (“BTC”) is a wholly-owned subsidiary of BlackRock, Inc. For ease of reference, “BlackRock” may be used to refer to BlackRock, Inc. and its affiliates, including BTC. Any strategy referred to herein does not give rise to a deposit or other obligation of BlackRock, Inc. or its subsidiaries and affiliates, is not guaranteed by BlackRock, Inc. or its subsidiaries and affiliates, is not insured by the United States Federal Deposit Insurance Corporation or any other governmental agency, and may involve investment risks, including possible loss of principal invested.
- The Fund is also subject to other key risks, as described in the Fund’s Collective Investment Fund Profile. Some or all of those risks may adversely affect the value of units in the Fund, yield, total return and the Fund’s ability to meet its investment objective. See the Collective Investment Fund Profile for additional information.
- **Past performance does not guarantee future results.** Investment return and principal value of an investment will fluctuate so that an investor’s units, when redeemed, may be worth more or less than the original cost. Any opinions expressed in this publication reflect our judgment at this date and are subject to change. No part of this publication may be reproduced in any manner without the prior written permission of BTC. The Fund’s net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund’s net asset value did include an accrual for the investment management fee, the Fund’s returns would be lower. Risk controls, asset allocation models and proprietary technology do not promise any level of performance or guarantee against loss of principal.
- The Fund, a collective investment trust maintained and managed by BTC, is available only to certain eligible investors and not offered or available to the general public. In the event of a conflict between this summary description of the Fund and the trust document under which the Fund was established, the trust document will govern. For more information related to the Fund, please see the Fund's trust document, Collective Investment Fund Profile and most recent audited financial statements. BTC, a national banking association operating as a limited purpose trust company, manages the collective investment products and services discussed in this publication and provides fiduciary and custody services to various institutional investors. A collective investment fund is privately offered. Accordingly, prospectuses are not required and prices are not available in local publications. To obtain pricing information, please contact your local service representative.
- None of the information constitutes a recommendation by BTC or a solicitation of any offer to buy or sell any securities. The information is not intended to provide be relied upon as a forecast, research or investment advice. Neither BTC nor BlackRock, Inc. guarantees the suitability or potential value of any particular investment. The information contained herein may not be relied upon by you in evaluating the merits of investing in any investment.
- **THIS MATERIAL IS HIGHLY CONFIDENTIAL AND IS NOT TO BE REPRODUCED OR DISTRIBUTED TO PERSONS OTHER THAN THE RECIPIENT .**
-
- **NOT FDIC INSURED. MAY LOSE VALUE. NO BANK GUARANTEE.**

Disclaimers & Disclosures

BNY Mellon is the corporate brand of The Bank of New York Mellon Corporation and may be used as a generic term to reference the corporation as a whole and/or its various group entities. This material and any products and services may be issued or provided under various brand names of BNY Mellon in various countries by duly authorized and regulated subsidiaries, affiliates, and joint ventures of BNY Mellon, which may include any of those listed below:

The Bank of New York Mellon, a banking corporation organized pursuant to the laws of the State of New York, whose registered office is at 240 Greenwich St, NY, NY 10286, USA. The Bank of New York Mellon is supervised and regulated by the New York State Department of Financial Services and the US Federal Reserve and is authorized by the Prudential Regulation Authority (“PRA”) (Firm Reference Number: 122467).

The Bank of New York Mellon operates in the UK through its London branch (UK companies house numbers FC005522 and BR000818) at 160 Queen Victoria Street, London, EC4V 4LA and is subject to regulation by the Financial Conduct Authority (“FCA”) at 12 Endeavour Square, London, E20 1JN and limited regulation by the PRA at Bank of England, Threadneedle St, London, EC2R 8AH. Details about the extent of our regulation by the PRA are available from us on request.

The Bank of New York Mellon operates in Germany through its Frankfurt am Main branch (registered in Germany with Registration No. HRB 12731) at Friedrich-Ebert-Anlage 49, 60327 Frankfurt am Main, Germany. It is under the supervision of the German Central Bank and the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany) under registration number 10100253.

The Bank of New York Mellon SA/NV, a Belgian limited liability company, registered in the RPM Brussels with company number 0806.743.159, whose registered office is at Boulevard Anspachlaan 1, B-1000 Brussels, Belgium, authorized and regulated as a significant credit institution by the European Central Bank (“ECB”) at Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany, and the National Bank of Belgium (“NBB”) at Boulevard de Berlaimont/de Berlaimontlaan 14, 1000 Brussels, Belgium, under the Single Supervisory Mechanism and by the Belgian Financial Services and Markets Authority (“FSMA”) at Rue du Congrès/Congresstraat 12-14, 1000 Brussels, Belgium for conduct of business rules, and is a subsidiary of The Bank of New York Mellon.

The Bank of New York Mellon SA/NV operates in Ireland through its Dublin branch at Riverside II, Sir John Rogerson's Quay Grand Canal Dock, Dublin 2, D02KV60, Ireland and is registered with the Companies Registration Office in Ireland No. 907126 & with VAT No. IE 9578054E. The Bank of New York Mellon SA/NV, Dublin Branch is subject to limited additional regulation by the Central Bank of Ireland at New Wapping Street, North Wall Quay, Dublin 1, D01 F7X3, Ireland for conduct of business rules and registered with the Companies Registration Office in Ireland No. 907126 & with VAT No. IE 9578054E.

The Bank of New York Mellon SA/NV operates in Germany through its Frankfurt branch “The Bank of New York Mellon SA/NV, Asset Servicing, Niederlassung Frankfurt am Main”, and has its registered office at MesseTurm, Friedrich-Ebert-Anlage 49, 60327 Frankfurt am Main, Germany. It is subject to limited additional supervision by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany) under registration number 122721.

The Bank of New York Mellon SA/NV operates in the Netherlands through its Amsterdam branch at Claude Debussylaan 7, 1082 MC Amsterdam, the Netherlands. The Bank of New York Mellon SA/NV, Amsterdam Branch is subject to limited additional supervision by the Dutch Central Bank (“De Nederlandsche Bank” or “DNB”) on integrity issues only (registration number 34363596). DNB holds office at Westeinde 1, 1017 ZN Amsterdam, the Netherlands.

The Bank of New York Mellon SA/NV operates in Luxembourg through its Luxembourg branch at 2-4 rue Eugene Ruppert, Vertigo Building – Polaris, L- 2453, Luxembourg. The Bank of New York Mellon SA/NV, Luxembourg Branch is subject to limited additional regulation by the Commission de Surveillance du Secteur Financier at 283, route d’Arlon, L-1150 Luxembourg for conduct of business rules, and in its role as UCITS/AIF depositary and central administration agent.

The Bank of New York Mellon SA/NV operates in France through its Paris branch at 7 Rue Scribe, Paris, Paris 75009, France. The Bank of New York Mellon SA/NV, Paris Branch is subject to limited additional regulation by Secrétariat Général de l’Autorité de Contrôle Prudentiel at Première Direction du Contrôle de Banques (DCB 1), Service 2, 61, Rue Taitbout, 75436 Paris Cedex 09, France (registration number (SIREN) Nr. 538 228 420 RCS Paris - CIB 13733).

The Bank of New York Mellon SA/NV operates in Italy through its Milan branch at Via Mike Bongiorno no. 13, Diamantino building, 5th floor, Milan, 20124, Italy. The Bank of New York Mellon SA/NV, Milan Branch is subject to limited additional regulation by Banca d’Italia - Sede di Milano at Divisione Supervisione Banche, Via Cordusio no. 5, 20123 Milano, Italy (registration number 03351).

The Bank of New York Mellon SA/NV operates in Denmark as The Bank of New York Mellon SA/NV, Copenhagen Branch, filial af The Bank of New York Mellon SA/NV, Belgien, and has its registered office at Tuborg Boulevard 12, 3. DK-2900Hellerup, Denmark. It is subject to limited additional regulation by the Danish Financial Supervisory Authority (Finanstilsynet, Århusgade 110, 2100 København Ø).

The Bank of New York Mellon SA/NV operates in Spain through its Madrid branch with registered office at Calle José Abascal 45, Planta 4ª, 28003, Madrid, and enrolled on the Reg. Mercantil de Madrid, Tomo 41019, folio 185 (M-727448). The Bank of New York Mellon, Sucursal en España is registered with Banco de España (registration number 1573).

Regulatory information in relation to the above BNY Mellon entities operating out of Europe can be accessed at the following website: https://www.bnymellon.com/RID.

UK Financial Promotion Disclosure: This communication is being issued by [insert Offshore Non-Licensed Entity Name] to, and/or is directed at, persons to whom it may lawfully be issued or directed at under the United Kingdom (“UK”) Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the “FPO”) including persons who are authorised (“authorised persons”) under the UK Financial Services and Markets Act 2000 Act (the “Act”) and certain persons having professional experience in matters relating to investments. The products/services referenced in this communication are only available to such persons in the UK and this communication must not be relied or acted upon by any other persons in the UK.

[insert Offshore Non-Licensed Entity Name] is not an “authorised person” in the UK under the Act.] Please note that the individual with whom you are communicating, has the authority to issue communications in relation to more than one entity within The Bank of New York Mellon Corporation group of entities, and may not be employed by [insert Offshore Non-Licensed Entity Name]. The communication is not covered by UK regulatory regime protections.

[This communication is exempt from the general restriction in Section 21 of the Act on the communication of invitations or inducements to engage in investment activity on the grounds that it is being issued to and/or directed at only the types of person referred to above.]

[The content of this communication has not been approved by an authorised person and such approval is, save where this communication is directed at or issued to the types of person referred to above, required by Section 21 of the Act.]

Disclaimers & Disclosures

The Bank of New York Mellon, Singapore Branch, is subject to regulation by the Monetary Authority of Singapore. The Bank of New York Mellon, Hong Kong Branch (a branch of a banking corporation organized and existing under the laws of the State of New York with limited liability), is subject to regulation by the Hong Kong Monetary Authority and the Securities & Futures Commission of Hong Kong.

For recipients of this information located in Singapore: This material has not been reviewed by the Monetary Authority of Singapore.

The Bank of New York Mellon is regulated by the Australian Prudential Regulation Authority and also holds an Australian Financial Services Licence No. 527917 issued by the Australian Securities and Investments Commission to provide financial services to wholesale clients in Australia.

The Bank of New York Mellon has various other subsidiaries, affiliates, branches and representative office in the Asia-Pacific Region which are subject to regulation by the relevant local regulator in that jurisdiction.

The Bank of New York Mellon, Tokyo Branch, is a licensed foreign bank branch in Japan and regulated by the Financial Services Agency of Japan. The Bank of New York Mellon Securities Company Japan Ltd. is a registered type 1 financial instruments business operator in Japan and regulated by the Financial Services Agency of Japan.

The Bank of New York Mellon, DIFC Branch, regulated by the Dubai Financial Services Authority (“DFSA”) and located at DIFC, The Exchange Building 5 North, Level 6, Room 601, P.O. Box 506723, Dubai, UAE, on behalf of The Bank of New York Mellon, which is a wholly-owned subsidiary of The Bank of New York Mellon Corporation.

Past performance is not a guide to future performance of any instrument, transaction or financial structure and a loss of original capital may occur. Calls and communications with BNY Mellon may be recorded, for regulatory and other reasons.

Disclosures in relation to certain other BNY Mellon group entities can be accessed at the following website: http://disclaimer.bnymellon.com/eu.html.

This material is intended for wholesale/professional clients (or the equivalent only), and is not intended for use by retail clients and no other person should act upon it. Persons who do not have professional experience in matters relating to investments should not rely on this material. BNY Mellon will only provide the relevant investment services, and this material is only being distributed, to investment professionals.

Not all products and services are offered in all countries.

If distributed in the UK, this material is a financial promotion.] If distributed in the EU, this material is a marketing communication.

This material, which may be considered advertising (but shall not be considered advertising under the laws and regulations of Brunei, Malaysia or Singapore), is for general information purposes only and is not intended to provide legal, tax, accounting, investment, financial or other professional advice on any matter. This material does not constitute a recommendation or advice by BNY Mellon of any kind. Use of our products and services is subject to various regulations and regulatory oversight. You should discuss this material with appropriate advisors in the context of your circumstances before acting in any manner on this material or agreeing to use any of the referenced products or services and make your own independent assessment (based on such advice) as to whether the referenced products or services are appropriate or suitable for you.

This material may not be comprehensive or up to date and there is no undertaking as to the accuracy, timeliness, completeness or fitness for a particular purpose of information given. BNY Mellon will not be responsible for updating any information contained within this material and opinions and information contained herein are subject to change without notice. BNY Mellon assumes no direct or consequential liability for any errors in or reliance upon this material.

This material may not be distributed or used for the purpose of providing any referenced products or services or making any offers or solicitations in any jurisdiction or in any circumstances in which such products, services, offers or solicitations are unlawful or not authorized, or where there would be, by virtue of such distribution, new or additional registration requirements.

Any references to dollars are to US dollars unless specified otherwise.

This material may not be reproduced or disseminated in any form without the prior written permission of BNY Mellon. Trademarks, logos and other intellectual property marks belong to their respective owners.

Neither BNY Mellon nor any of its respective officers, employees or agents are, by virtue of providing the materials or information contained herein, acting as an adviser to any recipient (including a “municipal advisor” within the meaning of Section 15B of the Securities Exchange Act of 1934, as amended, “Section 15B”), do not owe a fiduciary duty to the recipient hereof pursuant to Section 15B or otherwise, and are acting only for their own interests.

The Bank of New York Mellon, member of the Federal Deposit Insurance Corporation (“FDIC”).

Disclosure

The Bank of New York Mellon (the Bank), a New York state chartered banking institution, is the discretionary trustee for its bank-maintained collective investment funds which include any Funds presented. The Bank is responsible for the management of the Funds, including the custody of Fund assets. Employees of Mellon Investments Corporation (MIC) manage the assets of the Funds in their capacity as dual officers of the Bank and MIC, which are subsidiaries of The Bank of New York Mellon Corporation (BNY). Please refer to the Schedule A for the Funds (and for each other fund that such Funds invests in) for important additional information.

As bank-maintained pooled investment vehicles, the Funds and their units are not registered under federal and state securities laws in reliance upon applicable exemptions. Because the Funds are not mutual funds, they are governed by different regulations, restrictions and disclosure requirements. For example, the Funds are subject to banking, securities and tax regulations which, among other things, limit participation to certain eligible qualified plans where The Bank of New York Mellon or an affiliate is a trustee, investment manager, custodian or directed agent. Units of the Funds may only be sold to eligible plans that have executed a trust, custody, agency, participation or investment management agreement with The Bank of New York Mellon that, among other things, subjects the plans to the terms and conditions of the Funds' Declarations of Trust, as amended from time to time.

Performance is calculated gross of each Fund participants' negotiated investment management fee unless noted otherwise. Actual fee schedules may vary depending on account size and other factors. Performance results for collective investment funds (Funds) have been reduced by each Fund's administrative expenses. Administrative expenses may be comprised of related party and third party expenses which will not exceed a certain percentage of the Fund's AUM in any given fiscal year of the Fund (as stated on each Fund's Schedule A) and may be charged directly to the Fund. Related party expenses may include annual custody, accounting, and transfer agent fees paid to The Bank of New York Mellon. Third party expenses may include audit, third party facilitation, vendor, and other similar expenses. In accordance with bank regulatory guidance and the Schedule A for each Fund, excluding funds designed for defined contribution plans, please note that transaction costs, if any, associated with client-specific contributions to and/or withdrawals from certain index and model driven Funds will not be deducted from each Fund's returns, but rather will reduce those clients' returns.

Any collective investment funds presented are not deposits of, and are not insured or guaranteed by, any bank, the FDIC or any other government agency.

Mellon Investments Corporation reports its Collective Fund Assets Under Management after net unit activity on period end date.

Please note that this presentation does not comply with all of the disclosure requirements for an ERISA "section 404(c) plan," nor does it contain all of the disclosure required by Rule 404a-5 as described in the Department of Labor regulations under section 404(c). Plan sponsors intending to comply with those regulations will need to provide the plan participants with additional information. The information provided in this presentation does not constitute individual investment advice for a participant or investor, is only informational in nature and should not be used by a participant or investor as a primary basis for making an investment decision.

Fees and expenses are only one of several factors that participants and beneficiaries should consider when making investment decisions. The cumulative effect of fees and expenses can substantially reduce the growth of a participant's retirement account; participants can visit the Department of Labor's Employee Benefit Security Administration's Web site @ www.dol.gov/ebsa for an example demonstrating the long term effect of fees and expenses.

Mellon Investments Corporation (MIC) is a registered investment adviser and subsidiary of The Bank of New York Mellon Corporation. MIC is composed of two divisions: Mellon, which specializes in index management, and Dreyfus, which specializes in cash management and short duration strategies. Where applicable, assets include discretionary and non-discretionary assets, and assets managed by investment personnel acting in their capacity as officers of affiliated entities. ESG assets include assets managed in custom ESG strategies and assets managed in accordance with client directed SRI guidelines. BNY Investments is one of the world's leading investment management organizations, encompassing BNY's affiliated investment management firms and global distribution companies. BNY, BNY Mellon and Bank of New York Mellon are the corporate brands of The Bank of New York Mellon Corporation and may be used to reference the corporation as a whole and/or its various subsidiaries generally.

Personnel of certain of our BNY affiliates may act as: (i) registered representatives of BNY Mellon Securities Corporation (in its capacity as a registered broker-dealer) to offer securities and certain bank-maintained collective investment funds, (ii) officers of The Bank of New York Mellon (a New York chartered bank) to offer bank-maintained collective investment funds and (iii) associated persons of BNY Mellon Securities Corporation (in its capacity as a registered investment adviser) to offer separately managed accounts managed by BNY Investments affiliated asset managers..

This document may not be used for the purpose of an offer or solicitation in any jurisdiction or in any circumstances in which such offer or solicitation is unlawful or not authorized. This material (or any portion thereof) may not be copied or distributed without MIC's prior written approval.

Statements and views are current as of the date of the material only and subject to change. Views expressed are those of the author stated and do not reflect views of other managers or the firm overall.

The following provides a simplified example of the cumulative effect of management fees on investment performance: An annual management fee of 0.80% applied over a five-year period to a $100 million portfolio with an annualized gross return of 10% would reduce the value of the portfolio from $161,051,000 to $154,783,041. The actual investment advisory fees incurred by clients may vary depending on account size, structure, cash flow and other account-specific factors.

No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment. Past results are not indicative of future performance and are no guarantee that losses will not occur in the future. Future returns are not guaranteed and a loss of principal may occur.

Performance is expressed in U.S. dollars unless noted otherwise. Performance results for one year and less are not annualized. Many factors affect performance including changes in market conditions and interest rates and in response to other economic, political, or financial developments.

This material has been provided for informational purposes only and should not be construed as investment advice or a recommendation of any particular investment product, strategy, investment manager or account arrangement, and should not serve as a primary basis for investment decisions. This information may contain projections or other forward-looking statements regarding future events, targets or expectations, and is only current as of the date indicated. There is no assurance that such events or expectations will be achieved, and actual results may be significantly different from that shown here.

Continued on next page

Mellon - Disclosure *continued*

The information provided in this document should not be considered a recommendation to purchase or sell any particular security. There is no assurance that any securities discussed herein will remain in an account's portfolio at the time you receive this report or that securities sold have not been repurchased. The securities discussed do not represent an account's entire portfolio and in the aggregate may represent only a small percentage of an account's portfolio holdings. It should not be assumed that any of the securities transactions or holdings discussed were or will prove to be profitable, or that the investment recommendations or decisions we make in the future will be profitable or will equal the investment performance of the securities discussed herein.

Some information contained herein has been obtained from third-party sources that are believed to be reliable, but the information has not been independently verified by MIC. MIC makes no representations as to the accuracy or the completeness of such information and has no obligation to revise or update any statement herein for any reason.

Charts and graphs herein are provided as illustrations only and are not meant to be guarantees of any return. The illustrations are based upon certain assumptions that may or may not turn out to be true.

The use of corporate names or logos in this presentation, other than those of MIC or its affiliates, is for illustrative purposes only and rights to any logos, trademarks or servicemarks are owned by their respective entities. It is not known whether the listed companies endorse or disapprove of MIC or any advisory services provided.

MIC claims compliance with the CFA Institute Asset Manager Code of Professional Conduct. This claim has not been verified by CFA Institute.

The indices referred to herein are used for comparative and informational purposes only and have been selected because they are generally considered to be representative of certain markets. Comparisons to indices as benchmarks have limitations because indices have volatility and other material characteristics that may differ from the portfolio, investment or hedge to which they are compared. The providers of the indices referred to herein are not affiliated with MIC, do not endorse, sponsor, sell or promote the investment strategies or products mentioned herein and they make no representation regarding the advisability of investing in the products and strategies described herein. Investors cannot invest directly in an index. Please see Mellon.com for important index licensing information.