



Investment Committee Agenda

SPECIAL MEETING

THURSDAY, JULY 14, 2022

TIME: 9:00 A.M.

MEETING LOCATION:

In accordance with Government Code Section 54953, subsections (e)(1) and (e)(3), and in light of the State of Emergency proclaimed by the Governor on March 4, 2020 relating to COVID-19 and ongoing concerns that meeting in person would present imminent risks to the health or safety of attendees and/or that the State of Emergency continues to directly impact the ability of members to meet safely in person, the LACERS Investment Committee's July 14, 2022 meeting will be conducted via telephone and/or videoconferencing.

Important Message to the Public
Information to call-in to listen and/or participate:
Dial: (669) 254-5252 or (669) 216-1590
Meeting ID# 161 887 4226

Instructions for call-in participants:

- 1- Dial in and enter Meeting ID
- 2- Automatically enter virtual "Waiting Room"
- 3- Automatically enter Meeting
- 4- During Public Comment, **press *9** to raise hand
- 5- Staff will call out the last 3-digits of your phone number to make your comment

Chair: Sung Won Sohn

Committee Members: Elizabeth Lee
Nilza R. Serrano

Manager-Secretary: Neil M. Guglielmo

Executive Assistant: Ani Ghokassian

Legal Counselor: City Attorney's Office
Public Pensions General
Counsel Division

Notice to Paid Representatives

If you are compensated to monitor, attend, or speak at this meeting, City law may require you to register as a lobbyist and report your activity. See Los Angeles Municipal Code §§ 48.01 *et seq.* More information is available at ethics.lacity.org/lobbying. For assistance, please contact the Ethics Commission at (213) 978-1960 or ethics.commission@lacity.org.

Request for Services

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Sign Language Interpreters, Communication Access Real-Time Transcription, Assistive Listening Devices, Telecommunication Relay Services (TRS), or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. Due to difficulties in securing Sign Language Interpreters, five or more business days' notice is strongly recommended. For additional information, please contact: Board of Administration Office at **(213) 855-9348** and/or email at ani.ghokassian@lacers.org.

Disclaimer to Participants

Please be advised that all LACERS Board and Committee Meeting proceedings are audio recorded.

Information to listen only: Live Committee Meetings can be heard at: (213) 621-CITY (Metro), (818) 904-9450 (Valley), (310) 471-CITY (Westside), and (310) 547-CITY (San Pedro Area).

[**CLICK HERE TO ACCESS BOARD REPORTS**](#)

- I. PUBLIC COMMENTS AND GENERAL PUBLIC COMMENTS ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION AND COMMENTS ON ANY SPECIFIC MATTERS ON THE AGENDA – *THIS WILL BE THE ONLY OPPORTUNITY FOR PUBLIC COMMENT - PRESS *9 TO RAISE HAND DURING PUBLIC COMMENT PERIOD*
- II. [PASSIVE U.S., NON-U.S., AND GLOBAL INDEX STRATEGIES SEMI-FINALIST INTERVIEWS AND POSSIBLE COMMITTEE ACTION](#)
- III. OTHER BUSINESS
- IV. NEXT MEETING: The next Regular meeting of the Investment Committee is scheduled for Tuesday, August 9, 2022, at 10:30 a.m., or immediately following the Board Meeting, at LACERS, 202 West 1st Street, Suite 500, Los Angeles, CA 90012 and/or via telephone and/or videoconferencing. Please continue to view the LACERS website for updated information on public access to Board/Committee meetings while response to public health concerns relating to the novel coronavirus continue.
- V. ADJOURNMENT



Board of Administration Agenda

SPECIAL MEETING

THURSDAY, JULY 14, 2022

TIME: 9:00 A.M.

MEETING LOCATION:

In accordance with Government Code Section 54953, subsections (e)(1) and (e)(3), and in light of the State of Emergency proclaimed by the Governor on March 4, 2020 relating to COVID-19 and ongoing concerns that meeting in person would present imminent risks to the health or safety of attendees and/or that the State of Emergency continues to directly impact the ability of members to meet safely in person, the LACERS Investment Committee's July 14, 2022 meeting will be conducted via telephone and/or videoconferencing.

Important Message to the Public

Information to call-in to listen and/or participate:

Dial: (669) 254-5252 or (669) 216-1590

Meeting ID# 161 887 4226

Instructions for call-in participants:

- 1- Dial in and enter Meeting ID
- 2- Automatically enter virtual "Waiting Room"
- 3- Automatically enter Meeting
- 4- During Public Comment, press *9 to raise hand
- 5- Staff will call out the last 3-digits of your phone number to make your comment

Information to listen only: Live Board Meetings can be heard at: (213) 621-CITY (Metro), (818) 904-9450 (Valley), (310) 471-CITY (Westside), and (310) 547-CITY (San Pedro Area).

President: Vacant
Vice President: Sung Won Sohn

Commissioners: Annie Chao
Elizabeth Lee
Sandra Lee
Nilza R. Serrano
Michael R. Wilkinson

Manager-Secretary: Neil M. Guglielmo

Executive Assistant: Ani Ghoukassian

Legal Counsel: City Attorney's Office
Public Pensions General
Counsel Division

Notice to Paid Representatives

If you are compensated to monitor, attend, or speak at this meeting, City law may require you to register as a lobbyist and report your activity. See Los Angeles Municipal Code §§ 48.01 *et seq.* More information is available at ethics.lacity.org/lobbying. For assistance, please contact the Ethics Commission at (213) 978-1960 or ethics.commission@lacity.org.

Request for Services

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Sign Language Interpreters, Communication Access Real-Time Transcription, Assistive Listening Devices, Telecommunication Relay Services (TRS), or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. Due to difficulties in securing Sign Language Interpreters, **five** or more business days' notice is strongly recommended. For additional information, please contact: Board of Administration Office at **(213) 855-9348** and/or email at ani.ghoukassian@lacers.org.

Disclaimer to Participants

Please be advised that all LACERS Board and Committee Meeting proceedings are audio recorded.

[**CLICK HERE TO ACCESS BOARD REPORTS**](#)

- I. PUBLIC COMMENTS AND GENERAL PUBLIC COMMENTS ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION AND COMMENTS ON ANY SPECIFIC MATTERS ON THE AGENDA – *THIS WILL BE THE ONLY OPPORTUNITY FOR PUBLIC COMMENT* - **PRESS *9 TO RAISE HAND DURING PUBLIC COMMENT PERIOD**
- II. PASSIVE U.S., NON-U.S., AND GLOBAL INDEX STRATEGIES SEMI-FINALIST INTERVIEWS AND POSSIBLE COMMITTEE ACTION
- III. OTHER BUSINESS
- IV. NEXT MEETING: The next Regular meeting of the Investment Committee is scheduled for Tuesday, August 9, 2022, at 10:30 a.m., or immediately following the Board Meeting, at LACERS, 202 West 1st Street, Suite 500, Los Angeles, CA 90012 and/or via telephone and/or videoconferencing. Please continue to view the LACERS website for updated information on public access to Board/Committee meetings while response to public health concerns relating to the novel coronavirus continue.
- V. ADJOURNMENT



REPORT TO INVESTMENT COMMITTEE
From: Neil M. Guglielmo, General Manager

MEETING: JULY 14, 2022
ITEM: II

Neil M. Guglielmo

SUBJECT: PASSIVE U.S., NON-U.S., AND GLOBAL INDEX STRATEGIES SEMI-FINALIST INTERVIEWS AND POSSIBLE COMMITTEE ACTION

ACTION: CLOSED: CONSENT: RECEIVE & FILE:

Recommendation

That the Committee:

1. Interview three firms as the qualified semi-finalists for the Passive U.S., Non-U.S., and Global Index Strategies investment manager search: BlackRock Institutional Trust Company, N.A.; RhumbLine Advisers Limited Partnership; and State Street Global Advisors Trust Company.
2. Recommend all three firms as finalists to the Board for five-year contract awards.

Executive Summary

The Board-approved request for proposal (RFP) for the Passive U.S., Non-U.S., and Global Index Strategies investment manager search opened on September 9, 2021, and closed on November 9, 2021. A total of six proposals were received; no proposals were received from emerging investment manager firms. Following review, five firms met the minimum qualifications and were evaluated by staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant; all five firms were recommended to proceed as semi-finalists. Staff and NEPC conducted further due diligence on each semi-finalist and have advanced the following three firms as the qualified semi-finalists for interviews by the Investment Committee: BlackRock Institutional Trust Company, N.A. (incumbent manager), RhumbLine Advisers Limited Partnership (incumbent manager), and State Street Global Advisors Trust Company (incumbent manager).

Background

The Board approved a request for proposal (RFP) process to evaluate the current marketplace for passive U.S., non-U.S., and global index strategies investment managers on August 24, 2021. LACERS is seeking one or more investment managers to manage LACERS' current portfolio of passive strategies and provide additional passive strategy options on an as-needed basis for potential portfolio restructurings.

The search opened on September 9, 2021, and closed on November 9, 2021. The RFP was published on LACERS' website and NEPC's website. The RFP was advertised in the Pensions and Investments and Emerging Manager Monthly publications and was also advertised online through the following organizations: Association of Asian American Investment Managers, Accelerate Investors, National Association of Securities Professionals, and the New America Alliance. Further, the RFP was emailed to all contacts within the LACERS Investment RFP/RFI Subscription Service database.

Search Results

LACERS received a total of six proposals, each of which included multiple proposed passive strategies. None of the firms that submitted proposals qualified as an emerging investment manager pursuant to the LACERS Emerging Investment Manager Policy. Following a review of the minimum qualifications (MQs) required to participate in the search, five firms met the MQs and were further evaluated by NEPC with input from staff.

On February 8, 2022, the Committee reviewed NEPC's candidate evaluation report and concurred with the staff recommendation to advance five firms as semi-finalists in the search for further due diligence: BlackRock Institutional Trust Company, N.A. (BlackRock); Mellon Investments Corporation; Northern Trust Investments, Inc.; RhumbLine Advisers Limited Partnership (RhumbLine); and State Street Global Advisors Trust Company (State Street).

Additional Due Diligence Activities

Staff and NEPC conducted on-site due diligence meetings with all five firms to assess passive management capabilities and potential investment and organizational risks. Staff and NEPC interviewed the key professionals on topics including, but not limited to, overall business strategy and growth, organization and reporting structure, staffing and compensation, investment approach and process, trading, risk management, compliance and controls, and technology. Staff also conducted reference checks.

Based upon these due diligence activities, staff and NEPC recommend the following three firms as the qualified semi-finalists for interviews by the Investment Committee:

- BlackRock (incumbent manager)
- RhumbLine (incumbent manager)
- State Street (incumbent manager)

Each proposed semi-finalist demonstrates a strong organization and management team, breadth of passive strategies to meet LACERS' needs, and well-defined risk management and compliance practices. Staff also received positive feedback from references for these firms. Staff and NEPC recommend advancing all three firms as finalists for five-year contract awards by the Board and contracting for all strategies listed in Table 1 to provide a comprehensive array of passive investment options for potential portfolio needs in the future.

Table 1. Proposed Passive Strategies Evaluated During Semi-finalist Due Diligence

BlackRock	RhumbLine	State Street
<ul style="list-style-type: none"> • <u>Domestic Equity</u> • S&P 500 • Russell 1000 • Russell 1000 Growth • Russell 1000 Value • Russell 2000 • Russell 2000 Growth • Russell 2000 Value • <u>Non-US Equity</u> • MSCI World ex-U.S. IMI • MSCI EAFE • MSCI EAFE Growth • MSCI EAFE Value • MSCI EAFE Small Cap • MSCI Emerging Markets • <i>MSCI Emerging Markets Small Cap</i> • <u>Fixed Income</u> • Bloomberg U.S. Aggregate Bond • <u>Real Assets</u> • Bloomberg U.S. TIPS 	<ul style="list-style-type: none"> • <u>Domestic Equity</u> • S&P 500 • Russell 1000 • Russell 1000 Growth • Russell 1000 Value • Russell MidCap • Russell MidCap Growth • Russell MidCap Value • S&P Mid Cap 400 • S&P Mid Cap 400 Growth • Russell 2000 • Russell 2000 Growth • Russell 2000 Value • <u>Non-US Equity</u> • MSCI EAFE • MSCI Emerging Markets • <u>Fixed Income</u> • Bloomberg U.S. Aggregate Bond 	<ul style="list-style-type: none"> • <u>Domestic Equity</u> • S&P 500 • Russell 1000 • Russell 1000 Growth • Russell 1000 Value • Russell MidCap • S&P MidCap 400 • Russell 2000 • Russell 2000 Growth • Russell 2000 Value • <u>Non-US Equity</u> • MSCI World ex-U.S. IMI • MSCI EAFE • MSCI EAFE Small Cap • MSCI Emerging Markets • MSCI Emerging Markets Small Cap • <u>Fixed Income</u> • Bloomberg U.S. Aggregate Bond • <u>Real Assets</u> • Bloomberg U.S. TIPS

Note: Strategies in bolded black font indicate strategies LACERS is currently invested in. Strategies in bolded, italicized, and green font indicate new strategies that LACERS currently does not have access to via existing contracts.

Proposed Investment Vehicles and Fee Structures

The proposed fee structures for each strategy listed in Table 1 vary based upon the investment vehicle used to manage the strategy. As presented in Attachment 2, BlackRock has proposed managing its strategies via commingled fund vehicles only; RhumbLine has proposed managing its strategies via separately managed accounts only; and State Street has proposed managing its strategies via commingled fund vehicles or separate accounts, depending on unique circumstances of the specific investment assignment. For most of their proposed strategies, BlackRock and State Street have also provided options to invest in commingled fund vehicles that engage in securities lending, the revenue from which would partially offset fund fees, and non-lending commingled fund vehicles.

Based upon the analysis presented in Attachment 3, the proposed fees from the three firms provide equivalent or more favorable fee structures compared with existing contract terms for the strategies that LACERS is currently invested in. Staff and NEPC recommend maintaining LACERS' current passive allocations in the current investment vehicles managed by RhumbLine and State Street; this would result in slight fee reductions across all strategies, as highlighted in Attachment 3. While fees could be further reduced by investing in State Street's securities lending commingled fund vehicles for the MSCI EAFE Small Cap Equities, MSCI Emerging Markets Equities, and Bloomberg U.S. Aggregate Bond strategies, staff and NEPC recommend not moving assets to these vehicles to avoid potential transaction costs of a transition (which may more than offset the benefit of slightly lower fees) and to limit securities lending risk as LACERS would have no control over these funds' securities lending programs. However, staff is seeking the flexibility to contract for all proposed investment vehicles as some of the proposed strategies are only offered via securities lending commingled fund vehicles.

Strategic Plan Impact Statement

The Request for Proposal (RFP) for investment management services will allow the fund to maintain investment options in passive strategies which is expected to optimize long-term risk adjusted investment returns (Goal IV). Implementing a competitive bidding process by issuing an RFP is in line with Goal V (uphold good governance practices which affirm transparency, accountability, and fiduciary duty).

Prepared By: Bryan Fujita, Chief Investment Officer, Investment Division
Barbara Sandoval, Investment Officer II, Investment Division
Ellen Chen, Investment Officer II, Investment Division
Jeremiah Paras, Investment Officer I, Investment Division
Clark Hoover, Investment Officer I, Investment Division

NMG/RJ/BF/BS/EC/JP/CH:rm

Attachments: 1. Qualified Semi-finalist Information Matrix
2. Proposed Investment Vehicles and Fee Structures
3. Contracted Versus Proposed Effective Fees for Current Passive Investments
4. Presentation by BlackRock Institutional Trust Company, N.A.
5. Presentation by RhumbLine Advisers Limited Partnership
6. Presentation by State Street Global Advisors Trust Company

SEMI-FINALISTS OF THE PASSIVE U.S., NON-U.S., AND GLOBAL INDEX STRATEGIES INVESTMENT MANAGER SEARCH
SEMI- FINALIST INFORMATION MATRIX AS OF MAY 31, 2022

Firm Name	BlackRock	RhumbLine Advisers	State Street Global Advisors
Main Office	New York City, New York	Boston, MA	Boston, MA
Ownership Structure	Publicly traded on the New York Stock Exchange	100% employee-owned	Subsidiary of State Street Bank and Trust Company, a publicly traded firm on the New York Stock Exchange
Year Founded	1988	1990	1978
Emerging Manager	No	No	No
Firm Assets	\$9,569,512 million (as of 3/31/2022)	\$86,350,905,242 (as of 5/31/22)	\$4,021,919.95 million (as of 3/31/22)
Number of Firm Employees	18,682 (as of 3/31/22)	27 (as of 5/31/22)	2,322 (as of 3/31/22)
Number of Professionals on Index Strategies	183	5	250
Proposed Strategies for Consideration (bold and italic font indicate managers/strategies LACERS is currently invested in)	<u>Domestic Equity</u> S&P 500 Russell 1000 Russell 1000 Growth Russell 1000 Value Russell 2000 Russell 2000 Growth Russell 2000 Value	<u>Domestic Equity</u> S&P 500 Russell 1000 Russell 1000 Growth Russell 1000 Value Russell MidCap Russell MidCap Growth Russell MidCap Value S&P Mid Cap 400 S&P Mid Cap 400 Growth Russell 2000 Russell 2000 Growth Russell 2000 Value	<u>Domestic Equity</u> S&P 500 Russell 1000 Russell 1000 Growth Russell 1000 Value Russell MidCap S&P MidCap 400 Russell 2000 Russell 2000 Growth Russell 2000 Value
	<u>Non-US Equity</u> MSCI World ex-U.S. IMI MSCI EAFE MSCI EAFE Growth MSCI EAFE Value MSCI EAFE Small Cap MSCI Emerging Markets MSCI Emerging Markets Small Cap	<u>Non-US Equity</u> MSCI EAFE MSCI Emerging Markets	<u>Non-US Equity</u> MSCI World ex-U.S. IMI MSCI EAFE MSCI EAFE Small Cap MSCI Emerging Markets MSCI Emerging Markets Small Cap
	<u>Fixed Income</u> Bloomberg U.S. Aggregate Bond	<u>Fixed Income</u> Bloomberg U.S. Aggregate Bond	<u>Fixed Income</u> Bloomberg U.S. Aggregate Bond
	<u>Real Assets</u> Bloomberg U.S. TIPS	<u>Real Assets</u> N/A	<u>Real Assets</u> Bloomberg U.S. TIPS
Investment Vehicles Offered	Commingled Fund - Lendable (engages in securities lending) Commingled Fund - Non-lendable (no securities lending)	Separately Managed Accounts	Separately Managed Accounts Commingled Fund - Lendable (engages in securities lending) Commingled Fund - Non-lendable (no securities lending)

State Street notes: * This figure is presented as of March 31, 2022 and includes approximately \$73,351.22 million USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated.

**SEMI-FINALISTS OF THE PASSIVE U.S., NON-U.S., AND GLOBAL INDEX STRATEGIES INVESTMENT MANAGER SEARCH
PROPOSED INVESTMENT VEHICLES AND FEE STRUCTURES**

LACERS Current Passive Strategies	Proposed Fees					
	BlackRock		RhumbLine Advisers	State Street Global Advisors		
	CIT Non-Lending	CIT Lending		SMA	CIT Non-Lending	CIT Lending
S&P 500	1.75	1.50	0.50	1.00	0.75	0.50
Russell 2000	6.00	3.00	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	1.00	0.75
Russell 2000 Value	N/A	3.00	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	1.00	0.75
MSCI World ex US IMI	5.00	4.00	N/A	First \$500mm - 3.00; Balance - 2.00	2.00	1.75
MSCI EAFE Small Cap	10.00	7.00	N/A	First \$50mm - 12.00; Next \$50mm - 10.00; Balance - 9.00	4.00	3.75
MSCI Emerging Markets	11.00	9.00	4.00	First \$50mm - 20.00; Next \$50mm - 18.00; Balance - 10.00	4.00	3.75
Bloomberg US Aggregate Bond	First \$100mm - 3.75; Next \$400mm - 3.00; Balance - 2.25	First \$100mm - 3.00; Next \$400mm - 2.25; Balance - 1.50	1.00	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	2.00	1.75

Additional Proposed Passive Strategies	Proposed Fees					
	BlackRock		RhumbLine Advisers	State Street Global Advisors		
	CIT Non-Lending	CIT Lending		SMA	CIT Non-Lending	CIT Lending
Russell 1000	2.25	2.00	0.50	First \$50mm - 6.00; Next \$50mm - 4.00; Balance - 3.00	First \$50mm - 4.00; Balance - 3.00	
Russell 1000 Growth	2.25	2.00	0.50	First \$50mm - 6.00; Next \$50mm - 4.00; Balance - 3.00	First \$50mm - 4.00; Balance - 3.00	
Russell 1000 Value	2.25	2.00	0.50	First \$50mm - 6.00; Next \$50mm - 4.00; Balance - 3.00	First \$50mm - 4.00; Balance - 3.00	
Russell Mid Cap	N/A	2.50	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	N/A	N/A
Russell Mid Cap Growth	N/A	N/A	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	N/A	N/A
Russell Mid Cap Value	N/A	N/A	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	N/A	N/A
S&P Mid Cap 400	4.00	2.50	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	First \$50mm - 5.00; Next \$50mm - 4.00; Balance - 3.50	
S&P Mid Cap 400 Growth	N/A	N/A	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	N/A	N/A
Russell 2000 Growth	N/A	3.00	0.50	First \$50mm - 7.00; Next \$50mm - 5.00; Balance - 3.50	First \$50mm - 5.00; Next \$50mm - 4.00; Balance - 3.50	
MSCI EAFE	5.00	4.00	4.00	First \$50mm - 8.00; Next \$50mm - 6.00; Balance - 5.00	First \$50mm - 6.00; Next \$50mm - 5.00; Balance - 4.00	
MSCI EAFE Growth	N/A	5.00	N/A	First \$50mm - 8.00; Next \$50mm - 6.00; Balance - 5.00	N/A	N/A
MSCI EAFE Value	N/A	5.00	N/A	First \$50mm - 8.00; Next \$50mm - 6.00; Balance - 5.00	N/A	N/A
MSCI Emerging Markets Small Cap	16.00	12.50	N/A	First \$50mm - 23.00; Next \$50mm - 21.00; Balance - 13.00	First \$50mm - 20.00; Next \$50mm - 18.00; Balance - 12.00	
Bloomberg U.S. TIPS	First \$100mm - 3.75; Next \$400mm - 3.00; Balance - 2.25	First \$100mm - 2.25; Next \$400mm - 1.50; Balance - 0.75	1.00	First \$50mm - 5.00; Next \$50mm - 4.00; Balance - 2.50	First \$50mm - 4.00; Next \$50mm - 3.00; Balance - 2.5	

Note: N/A indicates that (1) a strategy was not proposed by the firm; or (2) the strategy was proposed but not advanced for further due diligence.

SMA = Separately Managed Account
CIT Non-Lending = Collective Investment Trust (no securities lending)
CIT Lending = Collective Investment Trust (engages in securities lending)

**SEMI-FINALISTS OF THE PASSIVE U.S., NON-U.S., AND GLOBAL INDEX STRATEGIES INVESTMENT MANAGER SEARCH
CONTRACTED VERSUS PROPOSED EFFECTIVE FEES**

Contracted Effective Fees for LACERS Current Passive Strategies					Proposed Effective Fees for Proposed Investment Vehicles					
Manager	Index	Vehicle	Market Value as of 6/30/2022	Current Fees	BlackRock		RhumbLine Advisers	State Street Global Advisors		
					CIT Non- Lending	CIT Lending	SMA	SMA	CIT Non- Lending	CIT Lending
RhumbLine Advisers	S&P 500	SMA	\$ 3,146,092,263	0.57	1.75	1.50	0.50	1.00	0.75	0.50
	Russell 2000	SMA	\$ 274,871,257	0.57	6.00	3.00	0.50	4.30	1.00	0.75
	Russell 2000 Value	SMA	\$ 131,863,949	0.57	N/A	3.00	0.50	5.20	1.00	0.75
State Street Global Advisors	MSCI World ex US IMI	SMA	\$ 1,737,704,882	2.29	5.00	4.00	N/A	2.29	2.00	1.75
	MSCI EAFE Small Cap	CIT Non-Lending	\$ 291,236,507	4.00	10.00	7.00	N/A	9.70	4.00	3.75
	MSCI Emerging Markets	CIT Non-Lending	\$ 324,255,282	4.00	11.00	9.00	4.00	12.80	4.00	3.75
	Bloomberg US Aggregate Bond	CIT Non-Lending	\$ 796,359,814	2.63	2.82	2.07	1.00	3.80	2.00	1.75

Notes: The proposed fees for CITs exclude administrative fees charged directly to the fund and securities lending revenue if the CIT engages in securities lending.
Highlighted cells indicate new effective fees should LACERS maintain the current allocations to managers and investment vehicles.

SMA = Separately Managed Account
CIT Non-Lending = Collective Investment Trust (no securities lending)
CIT Lending = Collective Investment Trust (engages in securities lending)

14 July 2022

BlackRock®

Los Angeles City Employees' Retirement System

Equity and Fixed Income Index Semi Finals

Presenter Biographies *(in alphabetical order)*



Victoria Choi, Director, is a member of the US and Canada Institutional team within BlackRock's Institutional Client Business. She is responsible for developing and maintaining relationships with institutional investors, specifically public and private pension plans.

In her previous role, Victoria was a Relationship Manager within BlackRock's Retirement Insurance Group where she was responsible for business development and building relationships with Life and Annuity Insurance companies. She also held a similar role within the iShares Institutional Sales team. Prior to joining BlackRock in 2014, Victoria worked at Dimensional Fund Advisors within the Institutional Sales and Client Service team covering Life and Annuity Insurance companies.

Victoria graduated from the University of California, Irvine with BA degree in Economics and minor in Business Management.



Scott Dohemann, CFA, Managing Director, is Head of US Index Strategy within BlackRock's ETF & Index Investments Group.

Mr. Dohemann's service with the firm dates back to 1998, including his years with Barclays Global Investors (BGI), which merged with BlackRock in 2009. Prior to his current Beta Strategy role, he was part of the Transition Management team where he was responsible for advising clients on transition activity as well as further developing the transition product. At BGI, Mr. Dohemann fulfilled a similar transition management role as a senior transition manager in the group both in advising clients and in undertaking responsibilities for a team of portfolio managers and operational specialists. Prior to joining BGI, he worked for Merrill Lynch as a financial consultant in the Private Client Group.

Mr. Dohemann earned a BSc in finance from San Diego State University in 1992.

Presenter Biographies *(cont'd)*



Laura May, CFA, Director, is a member of the Systematic Fixed Income Product Strategy Team within BlackRock's Global Fixed Income Group.

Ms. May's service with the firm dates back to 2012. Prior to joining the team in San Francisco in 2015, Ms. May was based in Toronto and focused on the Product Strategy effort in Canada for both the Institutional and iShares business. She began her career at CIBC Mellon in 2010.

Ms. May earned a BComm degree in Finance from McGill University and is a CFA charterholder.



Gene Meshechek, CFA, Director, is the Head of North American Institutional Product Strategy for BlackRock's Securities Lending business within the Portfolio Management Group.

Prior to moving to his current role in 2018, Mr. Meshechek was the Global Head of Fixed Income Securities Lending Trading from 2016 to 2018 and led the Fixed Income Securities Lending Trading team in the Americas from 2013 to 2016, both in New York. Previously, Mr. Meshechek was a portfolio manager in BlackRock's Global Cash Management business, primarily responsible for managing securities lending reinvestment portfolios, as well as the primary trader for short duration fixed income instruments. Mr. Meshechek's service with the firm dates back to 2007, including his years with Barclays Global Investors (BGI), which merged with BlackRock in 2009. Prior to joining BGI, he worked in corporate finance. Mr. Meshechek is a member of the CFA Institute and the CFA Society of San Francisco, and is an advisory board member for the Master of Science in Finance program at St. Mary's College of California.

Mr. Meshechek earned a BS degree in Finance from Arizona State University and a Master's of Finance degree from St. Mary's College of California.

Table of Contents

I. Firm Overview

II. Diversity, Equity & Inclusion (DEI) and Sustainability Overview

- A. DEI
- B. Sustainability

III. Index Investing Overview

- A. Process and Philosophy

IV. Fund Performance

- A. U.S. Equities
- B. Non-U.S. Equities
- C. Fixed Income

V. Appendix

I. Firm Overview

We have a history of innovating to continually address clients' needs.

30+ years ago	20 years ago	10 years ago	Last 5 years	Today
<p>Founded as a fixed income manager and introduced the first risk-managed fixed income solutions.</p>	<p>Created the industry's first target date fund, helping millions of people prepare for their retirement.</p>	<p>Expanded our product offerings to provide clients more choice through landmark acquisitions of MLIM and BGI*.</p>	<p>Enhanced our capabilities around whole portfolio solutions by launching an OCIO platform and expanding our portfolio construction advisory services.</p>	<p>Entrusted to manage more assets than any other asset manager in the world.</p>
<p>Pioneered index and quantitative investing to help simplify investing.</p>	<p>Introduced iShares® ETFs, democratizing investing.</p>	<p>Launched Financial Markets Advisory business to help solve the complex financial challenges of governments, central banks, and financial institutions.</p>	<p>Introduced sustainability as a central part of how we invest, integrating ESG throughout our active investment platform.</p>	<p>\$9.57tn AUM</p>
<p>Developed our risk and portfolio construction technology, Aladdin®, making investing more transparent.</p>			<p>Set a new standard in transparency for alternatives through eFront acquisition, extending Aladdin's® capabilities to provide whole portfolio analysis.</p>	<p>18,000+ Employees</p>
				<p>100 Countries with BlackRock clients</p>
				<p>35 Countries with BlackRock offices</p>

Data as of 31 March 2022. All figures are represented in USD.
 Timeline includes history from predecessor entities.
 *Merrill Lynch Investment Managers and Barclays Global Investors.

We are designed to deliver: our investment platform seeks to enhance outcomes, returns, convenience, value and transparency for clients.

Investment solutions designed to meet every client need

Active Equities
\$472bn

Active Fixed Income
\$1,037bn

Cash Management
\$724bn

Multi-Asset
\$785bn

Alternatives
\$330bn¹

iShares® & Index
\$6,254bn

Financial Markets Advisory
\$9bn

Investment teams directly benefit from firm-wide resources

BlackRock Capital Markets

BlackRock Investment Institute

BlackRock Investment Stewardship

BlackRock Sustainable Investing

Data & Technology

Global Trading

Public Policy

Risk & Quantitative Analysis

Securities Lending

Transition Management

Source: BlackRock. Assets under management as of 31 March 2022. All figures are represented in USD.
¹ Alternatives AUM may include committed capital, in addition to invested capital, which remains subject to drawdown.

BlackRock organization

Investment Departments

Portfolio Management Group (Fundamental Fixed Income • Municipals & Financial Institutions • Index Fixed Income & LDI • Fundamental Equities • Systematic • Multi-Asset Strategies & Solutions • Global Lending, Liquidity & Private Investors) • ETF & Index Investments • BlackRock Alternative Investors • Global Trading • BlackRock Investment Institute & BlackRock Sustainable Investing

Investment Platform

Risk and Quantitative Analysis (RQA) • BlackRock Investment Stewardship (BIS)

Client Departments

Regions

US & Canada • Europe, Middle East & Africa (EMEA) • Asia Pacific (APAC) • Latin America

Global Segments

Official Institutions • Financial Institutions Group • Global Consultant Relations • Strategic Partner Program

Specialized Departments

BlackRock Solutions • Financial Markets Advisory (FMA)

Operating Platform

Aladdin Product Group • Technology and Operations • Global Product Group

Corporate Platform

Corporate Strategy • Global Marketing • Human Resources • External Affairs • BlackRock Platform Innovation • Finance • Corporate Communications • Legal & Compliance • Internal Audit

Firmwide AUM by Client Type

Client Type	Assets (in \$millions)
Commingled Funds	3,799,171
Corporation	1,691,882
Foundation/Endowment	34,850
Government Agency	356,018
Health Care	35,561
High Net Worth	120,497
Official Institutions	240,531
Pensions	1,939,045
Public Fund	28,092
Subadvisory	240,391
Union/Industry	26,932
Other	1,056,538
Total	9,569,512

Source: BlackRock. As of 31 March 2022

II. Diversity, Equity & Inclusion (DEI) and Sustainability Overview

DEI at BlackRock

Our Global Strategic Framework: To Advance Diversity, Equity and Inclusion Holistically

Our intent is to embed a DEI-mindset into everything we do – including how we develop our people, evolve our culture, operate our business, and engage with clients and broader communities.

Demonstrate leadership commitment and accountability

1

Our own talent & culture across the globe

Build, develop and retain a diverse talent pipeline

Foster a connected culture

2

Our role as a fiduciary on behalf of our clients

Respond to our clients' needs around DEI

Develop products that focus on the "S" in ESG

3

Policy and social impact in underserved communities

Invest in the long-term success and sustainability of underserved communities

Key enablers

DEI expertise and DEI champions & resources

Data analytics, insights and thought leadership

Strategic communication (internal and external)

Global DEI Governance and Infrastructure Model

Global DEI Steering Committee (GDSC): Accelerates the pace of progress against BlackRock's multi-year, global DEI strategy



Collectively, the 425 plus leaders of the Global DEI Teams propel the DEI strategy and initiatives through firm's businesses by way of Drivers, Enablers & Advocates

Drivers: accountable to driving the strategic vision into the business

- **Global DEI Team:** Twelve-person team at the heart of DEI lead by Michelle Gadsden-Williams, Global Head of DEI ~ **12**
- **GDSC & Regional Working Groups:** Aside from meeting bi-monthly, new in 2022 are regional GDSC working groups to successfully drive local priorities given country-specific diversity complexities and nuances ~ **26**
- **GEC DEI Sub-committee:** Composite of GDSC & GEC members that meet more regularly to initiate actions of the larger GDSC group ~ **8**
- **GEC Talent Sub-committee:** Make decisions related to firmwide people processes, focus on talent practices, manager and employee development, Future of Work, DEI, and well-being ~ **13**
- **DEI ExCo leads:** ExCo decision makers who develop, drive and are accountable to the DEI action plan for their business (with COO & HR) ~ **40**
- **DEI Business leads:** MD or Director within in the business that drives engagement focused on building the culture through DEI programs ~ **80**
- **DEI Business Sub-committees:** Organically formed groups that help to execute DEI initiatives within their business function ~ **100+**

Enablers: support the DEI strategy and action plans with drivers

- **Human Capital Committee:** Helps to shape the firm's talent, culture and employee experience while cascading key DEI messages and actions through the business ~ **33**
- **COO's or C20:** Help to scale operational execution of the action plans ~ **20**
- **HR Senior Leaders:** Ensures equitable talent practices and partners with ExCo & COO to drive DEI action plans within a business ~ **90+**

Advocates: represent the DEI strategy with employees and clients

- **Employee Networks:** Provide feedback loop on DEI on plans and actions
- **DEI Client Ambassadors:** Help scale the DEI strategy to employees & clients

2022 DEI Priorities



Representation & Advancement

- Increase representation of women, Black and Latinx professionals with equal emphasis on attraction, development, advancement and retention
- Increase focus on global dimensions of diversity by using our self-id campaign (e.g., Disability, LGBTQ+, Socio-economic status, etc.)

Inclusive & Equitable Experience

- Support an inclusive environment and reduce employee experience gaps in the context of geopolitical uncertainty, a return to office through our Future of Work pilot, and continued pandemic restrictions in some locations
- Cultivate a more inclusive and equitable work environment with a focus on people manager training and scaling tEquitable
- Continue delivering leadership development programs (BLF, LLF, PROPEL, WIN MD Summit and Sponsorship)

Accountability

- Achieve representation goals through hiring, promotion & retention
- Continue business-level DEI accountability and increase focus on people manager accountability through the performance management process

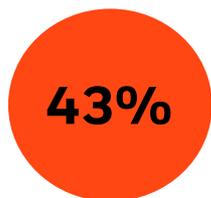
Partnerships across BlackRock

- Continue to support the growth of the Diverse Manager and Diverse Broker Programs
- Partner with client teams to respond to client requests and needs around DEI
- Conduct DEI/Racial Equity Assessment
- Increase our focus with diverse suppliers and vendors

DEI Governance Models

- Leverage the existing governance model (specifically the Global Diversity, Equity, & Inclusion Steering Committee) as a means to push more firm-wide progress and collective ownership across the firm
- Continue to invest in our employee, professional and social impact networks

Diversity in Action at BlackRock



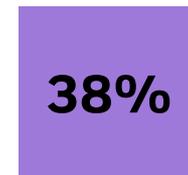
**Female
Employees**



**Female
New Hires
2021**



**Female
Senior
Leaders**



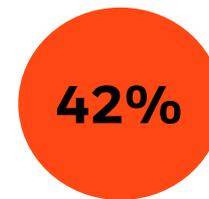
**Female
Senior Leader
New Hires 2021**



**Female
Board of
Directors**



**Ethnic Minority
New Hires
2021 US**



**Ethnic
Minority
Employees
US**

Source: BlackRock as of January 10, 2022.

Sustainability at BlackRock

Sustainable investing at BlackRock

Investment Management

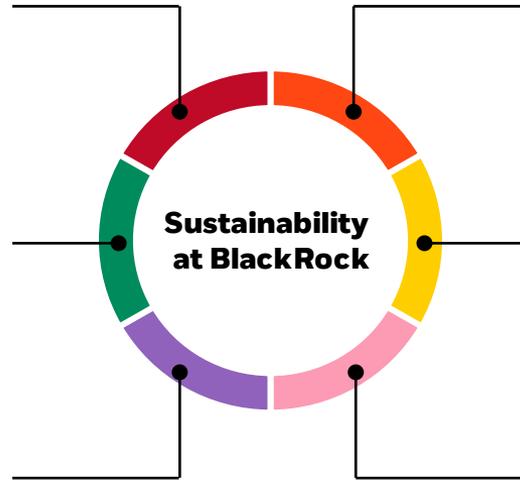
Integration of ESG insights and data into our active and advisory investment processes and portfolio construction.

Data & Technology

Aladdin® allows investors and clients to understand and manage portfolio risk.

Company Engagement

Fundamental investors and Investment Stewardship team engage with companies we invest in on behalf of our clients on sustainability-related issues that impact long-term financial performance.



Sustainable Investment Solutions

Extensive platform encompassing index and active funds across all asset classes, designed to help clients meet their sustainability and financial objectives.

ESG Research

Dedicated sustainable research team focuses on the link between ESG and financial materiality, producing insights that drive investment processes.

Transparency & Reporting

We want clients and investors to clearly see the sustainability risks of their investments. We provide this information for all of our funds, where data is available, whether or not it is a sustainable strategy.

BlackRock by the numbers

\$486 billion

Assets under management in dedicated sustainable strategies*

\$3.21 trillion

Assets incorporate ESG insights

300+

Sustainable ETF, Index Mutual Funds & Active funds

3,500+

Annual stewardship engagements

Source: BlackRock Sustainable Investing, global statistics as of March. 31, 2022. All values in \$USD. * Comprised of ESG Broad, ESG Thematic, Impact strategies and selected priority screened products.

Our sustainability leaders



Paul Bodnar,
Global Head



Stephane Lapiquonne,
EMEA



Emily Woodland & Geir Espeskog, APAC



Chris Weber & Eric van Nostrand,
Research



Jessica Huang,
Americas Solutions



Meaghan Muldoon,
Sustainable Investment Innovation



Beatriz Da Cunha,
COO

BlackRock seeks to provide ease of access and choice for every kind of sustainable portfolio

Investors now have a comprehensive range of solutions to transition their entire portfolio into sustainable investments, irrespective of a client’s sustainable and financial goals.

Motivation	Avoid	Advance		
Approach	Screened	ESG		Impact
		Broad	Thematic	
Criteria	Exclude controversial activities and companies that benefit from them, as defined by BlackRock’s Baseline Screens	Strategies with an explicit ESG objective which may include a targeted quantifiable ESG outcome. Broad strategies do not choose between E, S, or G, but rather target outcomes across all three.	Strategies that capitalize on long-term transformative industry or societal trends through pursuit of specific Environmental, Social, or Governance themes. Thematic strategies target outcomes in E, S, or G.	Strategies where investments are made with the intention to generate positive, measurable social and environmental impact alongside a financial return. Investment process must adhere to the Operating Principles for Impact Management ¹
Additional Detail	<p>Baseline screens adopted to address majority of client requests:</p> <ul style="list-style-type: none"> Controversial weapons Thermal coal and tar sands Civilian firearms Tobacco <p>Further exclusionary screens may be applied on a tactical basis.</p>	<p>Examples of Potential outcomes:</p> <ul style="list-style-type: none"> Improved ESG score² versus a benchmark Invest in issuers in the top % of ESG scores % of portfolio revenues aligned to Sustainable Development Goals (SDGs) (across E, S and G issues) Targeted E, S and G metrics/outcomes at the issuer level 	<p>Examples of Environmental focus:</p> <ul style="list-style-type: none"> Climate Transition Circular Economy Sustainable/Clean Energy <p>Examples of Social focus:</p> <ul style="list-style-type: none"> Diversity & Inclusion Human Capital 	<p>Strategy must demonstrate the investor’s contribution to the achievement impact.</p> <p>Examples of investor contribution:</p> <ul style="list-style-type: none"> Capital directly invested in capital-constrained, minority-owned enterprises Strategic engagement leading to portfolio companies’ increased impact <p>Investment strategy not only aligns with the SDGs but also seeks to <i>advance</i> the SDGs.</p>

¹The Impact Principles is a framework for portfolio managers to ensure that impact considerations are purposefully integrated throughout the investment life cycle. Source: <https://www.impactprinciples.org/9-principles>. ²Based on data provider or in-house ESG scoring methodology. Source: BlackRock Sustainable Investing, December 2021. There is no guarantee that a positive investment outcome will be achieved. The above information is for illustrative purposes only and should not be interpreted as investment advice or recommendation.

Sustainability is integrated throughout our organization

BlackRock Leadership

BlackRock Board of Directors

BlackRock Global Executive Committee (GEC)

Dedicated expertise on Sustainability

BlackRock Sustainable Investing	BlackRock Investment Stewardship	Corporate Sustainability	Sustainable Portfolio Management
Global team responsible for firmwide ESG integration, sustainable solutions, research and analytics	Fundamental investors and Investment Stewardship team engage with companies we invest in on sustainability-related issues that impact long-term financial performance	Partners with business units to integrate sustainability into our own business practices and communicate progress	Portfolio managers and researchers focused on sustainable investing within their asset class

ESG operational leads and content experts sit within each division to establish specific processes and strategies

Alternatives	Cash Management	Equities	Fixed Income	Multi-Asset	ETF & Index Investments	Advisory
--------------	-----------------	----------	--------------	-------------	-------------------------	----------



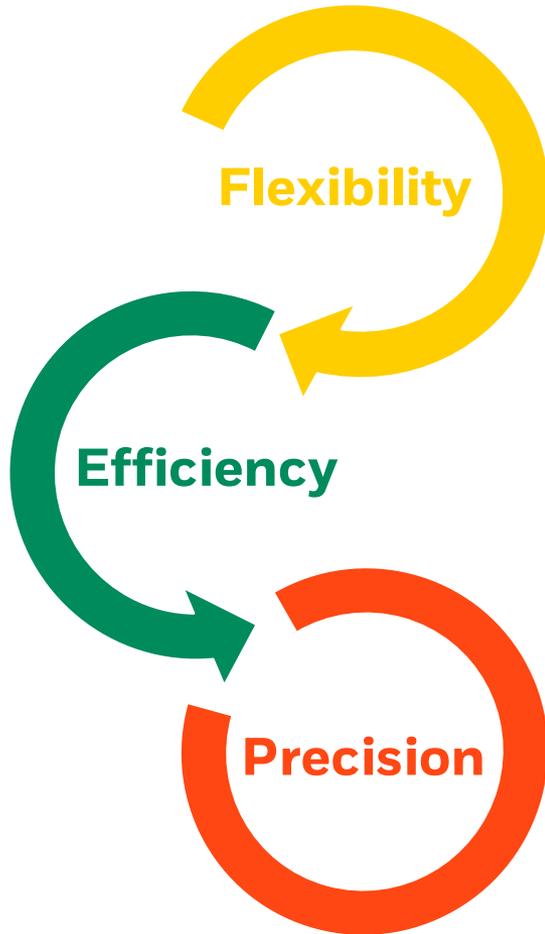
Investment teams directly benefit from firm-wide resources

Data & Technology	Risk & Quantitative Analysis	Aladdin	BlackRock Investment Institute	Trading and Liquidity Strategies	Public Policy
-------------------	------------------------------	---------	--------------------------------	----------------------------------	---------------

Source: BlackRock Sustainable Investing, December 2021. For illustrative purposes only.

III. Index Investing Overview

BlackRock's Index proposition



- ▶ Provide you with a broad range of market exposures together with a flexible range of product features
- ▶ An evolving range of products and strategies designed to help meet your needs today and in the future
- ▶ Partner with you to address your unique investment challenges through our customisation and solutions capabilities
- ▶ Disciplined investment approach focused on delivering optimal tracking, consistent returns and lowering the total cost of ownership
- ▶ Scale, breadth and diversity of our clients and strategies helps us to minimize transaction costs and seek to preserve the value of your investments
- ▶ Design products and strategies that consider the factors that impact your investment results from tax-efficiency to access and liquidity
- ▶ Our investment professionals are focused on delivering performance and efficient outcomes
- ▶ Extensive trading, risk and operational platform positioned to seek efficient tracking as well as enhanced returns
- ▶ Investment track record spanning four decades that has seen investors entrust us with \$6.37 trillion of assets under management as of 31 March 2022

Seeking to deliver high quality, cost-effective access to a broad range of market opportunities

BlackRock's Index Platform: Global leader in Index assets¹

Focus on consistent performance with efficient outcomes for clients

- Thousands of skillful and thoughtful decisions made annually in each portfolio in seeking to achieve the precise performance clients demand

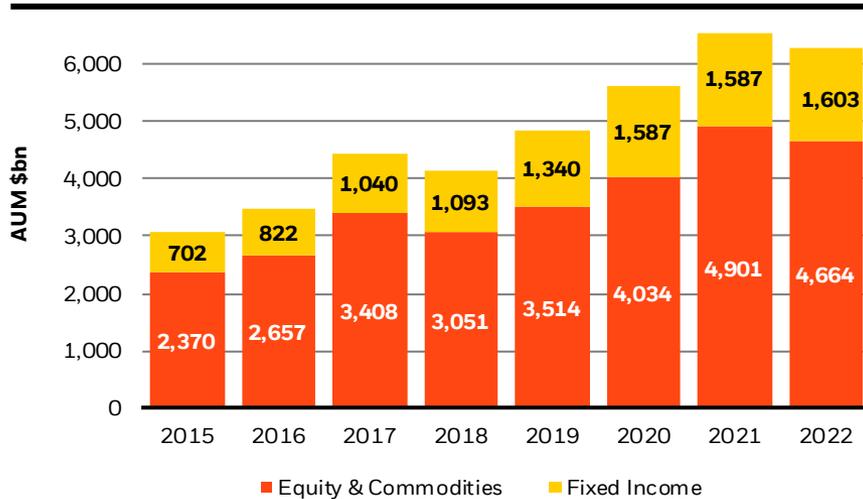
Extensive and flexible platform for index strategies

- Over 2,500 funds managed against 900+ benchmarks, including: factors, ESG, liquidity strategies and index plus

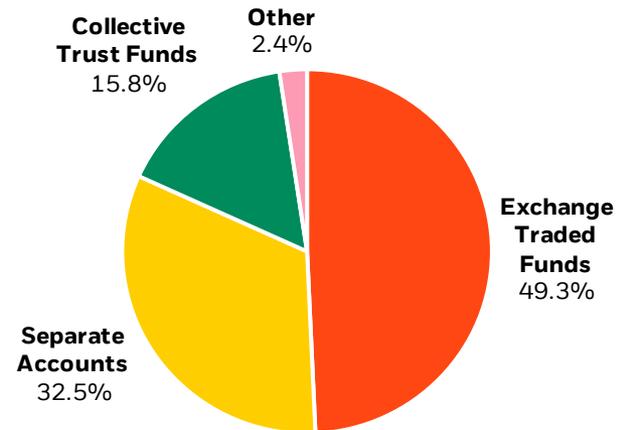
Sophisticated technology and risk management

- The Aladdin® platform seamlessly integrates the capabilities of our dedicated portfolio management, research, trading and risk management teams

**Total indexed assets of
 \$6.37 trillion 2022**



**Distribution of assets by
 vehicle type as of 2022**



Source: BlackRock as of 31 March 2022
 1 In terms of AUM. Source: Pensions & Investments
 All dollar amounts referenced in this presentation are in USD

Why BlackRock for indexing?

As a BlackRock index client, you receive an excellent indexing experience with the following:

1	Index Research Expertise	Detailed knowledge of index methodologies and experience with projecting index changes
2	Skilled Portfolio Management	Dedicated portfolio managers with deep local market and index expertise
3	Extensive Trading Capabilities & Research	Scale and breadth of our global trading platform helps minimize transaction costs
4	Sophisticated Operating Platform	Proprietary end-to-end Aladdin® platform integrates portfolio management, risk analytics, trading and operations
5	Robust Securities Lending Benefit	Global focus on extracting premiums and negotiating stock loans in order to add value to index portfolios

Leveraging the Power of the BlackRock Platform

<p>Risk & Quantitative Analysis</p> <p>Specialized Risk & Quantitative Analysis Team (RQA) monitors risk factors globally on a continuous basis</p>	<p>Fiduciary</p> <p>With no cross subsidization between business units or affiliate broker-dealers acting as principal, we have an investment-only focus</p>	<p>Proxy Voting Choice</p> <p>Eligible institutional index commingled trust fund and separate account clients can leverage BlackRock Investment Stewardship for proxy voting or choose to own their proxy voting</p>	<p>BlackRock Investment Institute</p> <p>Internal forum facilitates idea sharing, debates economic implications and publishes firm wide thought leadership</p>	<p>Index Provider Relationships</p> <p>Allows for access to a broad index data set, with the ability to customize indices as needed. BlackRock acts as a steward of the indexing ecosystem</p>
--	---	---	---	---

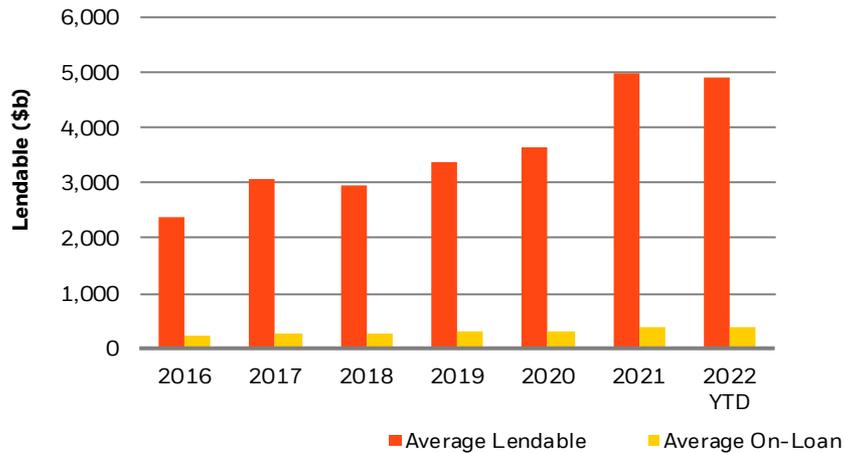
As of 31 December 2021

BlackRock's Securities Lending program

BlackRock's approach

- BlackRock brings an investment management approach to securities lending, applying risk management, proprietary technology, and the benefits of integration across BlackRock's trading and liquidity functions and affiliation with portfolio management teams

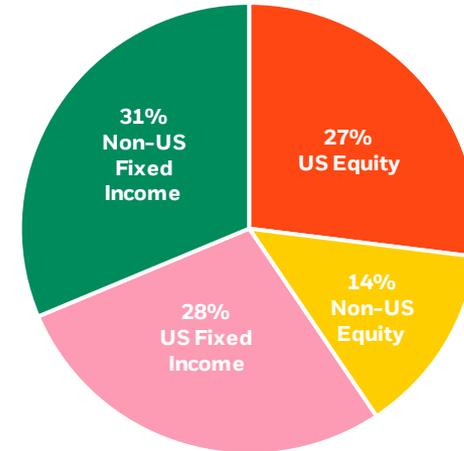
BlackRock lendable and on-loan – 7 year history



BlackRock's scale

- Lendable securities: \$4.9 trillion*
- Securities on-loan: \$389 billion or ~8% of lendable securities*
- Active in 33 lending markets around the globe*

On loan balances by asset type*



BlackRock's Securities Lending program has produced positive monthly lending income for every eligible fund and client since the inception of our lending program in 1981**

Source: BlackRock.

*Data from 1/1/2022 – 3/31/2022

** Please note, inception of our program in 1981 reflects that of our predecessor firm, Barclays Global Investors. Historical performance may be provided upon request

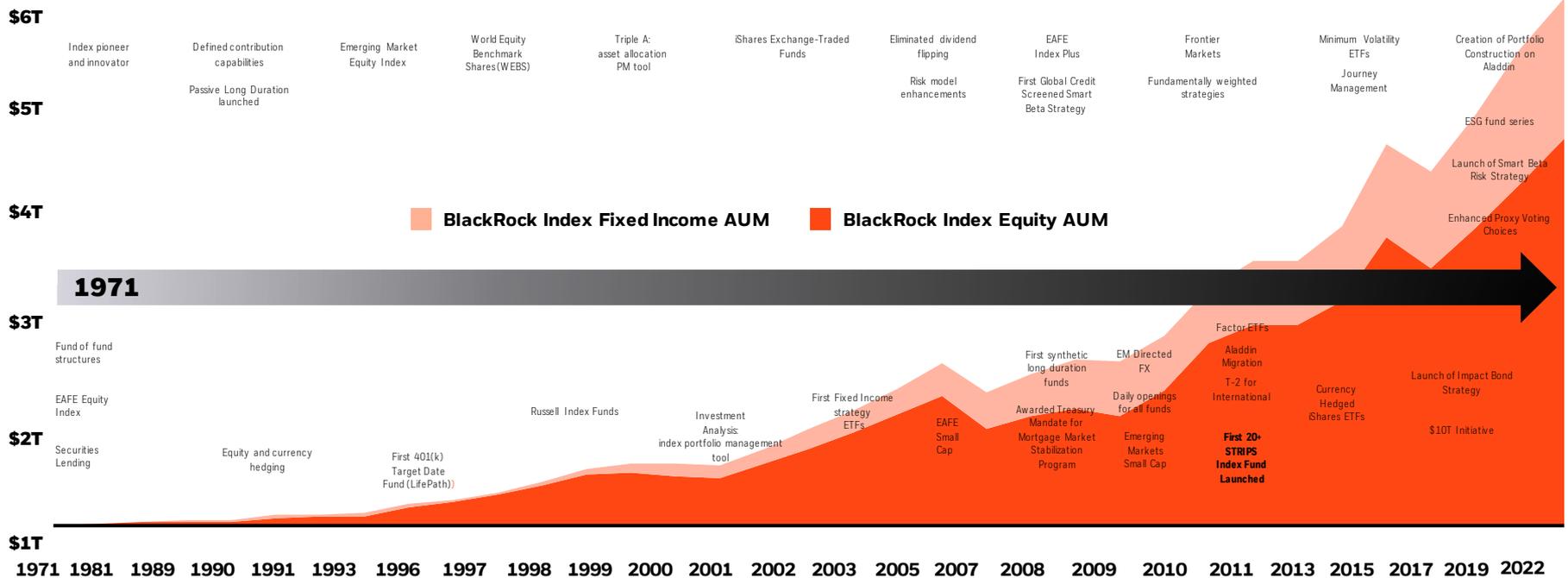
Past performance is no guarantee of future results.

50 years of experience driving index forward

Creating solutions so our clients have access to high quality index exposures

- Drive the industry forward through our ability to create specialized, innovative investments afforded by our scale & depth of expertise
- Forge new ground for clients — a history of being first to market with new investment ideas
- Evolve capabilities to continuously deliver on emerging trends — smart beta, global benchmarking, overlay strategies
- Serve as an index advocate on behalf of asset owners and act a key partner to index providers seeking our practitioner knowledge

50 years of Index Equity – Continual evolution of products, technology and capabilities



AUM as of 31 March 2022

ETFs and Index Investments (EII) Investments Pillar

Salim Ramji
 Global Head of ETFs and Index Investments

Investments Pillar

Samara Cohen
 Chief Investment Officer of ETF and Index Investments

Index Equity

Jennifer Hsui, CFA, Global CIO and Co-Head of Index Equity

Paul Whitehead, Global Co-Head of Index Equity

Global Research

Nogie Udebulu
 Global Head of
 EII Research

**Index & Quantitative
 Research**

+ 15 Researchers

Analytics Research

+ 39 Research Officers

Strategy

Scott Dohemann, CFA
 Head of
 U.S. Product Strategy
 + 7 Strategists

Office of the CIO

Tim Parsons, CFA
 Deputy CIO

+ 4 Portfolio Engineers

Jonathan Van Ginneken
 Head of Investment
 Innovation &
 Global Index Plus

+ 5 Portfolio Engineers

Steven White

Head of Performance,
 Risk & Index Advocacy

Portfolio Engineering

Americas

Amy Whitelaw
 Head of Americas
 Portfolio Engineering

Suzanne Henige, CFA*
 Head of US-listed ETF
 PE
 (US, Developed,
 Emerging)

+ 17 Portfolio Engineers

Matthew Waldron, CFA
 Head of Developed &
 Emerging Markets
 Institutional PE

+ 10 Portfolio Engineers

Peter Sietsema, CFA
 Head of Sub-Advised, US
 Institutional, and
 Canada/LatAm ETF PE

+ 17 Portfolio Engineers

**Index Asset Allocation,
 Commodities, Synthetics**

Greg Savage, CFA
 Head of Global IAA,
 Commodities & Synthetics

Peter Tsang
 Head of Americas IAA
 + 5 Portfolio Engineers

Steve Walker
 Head of EMEA IAA
 + 6 Portfolio Engineers

Elliott Char, CFA
 Head of Commodities &
 Synthetic Indexing
 + 1 Portfolio Engineers

Orlando Montalvo
 Head of FX & Synthetics
 + 3 Portfolio Engineers

Platform

Rajesh Nagella
 Global Head of EII
 Investment Process & Platform
 + 5 Platform Engineers

Transition Management

Jessica Irschick
 Global Head of
 Transition Management
 + 58 Transition Specialists

As of 31 March 2022. *Asterix indicates location in Atlanta (total EII team of sixteen investment professionals stationed in Atlanta).

Americas Fixed Income Index Team

Americas Fixed Income

Portfolio Management

Jay Mauro
Head of San Francisco PM

Karen Uyehara
Deputy Head of San Francisco PM

Multi-Sector/Rates/MBS

Jasmita Mohan
Portfolio Manager
Multi-Sector

Marcus Tom
Portfolio Manager
Multi-Sector/MBS

Joseph Maciunas
Portfolio Manager
Multi-Sector

Wes George
Portfolio Manager
Multi-Sector/MBS

Chandler Grinnell
Portfolio Manager
Multi-Sector/Rates

Yang He
Portfolio Manager
Multi-Sector/MBS

William Chen
Portfolio Manager
Multi-Sector/Rates

Htet Htet Win Pyone
Portfolio Manager
Multi-Sector/MBS

Clay Armistead
Portfolio Manager
Securitized Credit

Kent Yamane
Portfolio Manager
Securitized Credit

Mark Buell
Portfolio Manager
US Govt Bonds

Credit/Emerging Markets

Jonathan Graves
Sr. Portfolio
Manager
Corporate Credit

David Dulski
Portfolio Manager
High Yield Credit

Allen Kwong
Portfolio Manager
Corporate Credit

Aaron Aguiar
Portfolio Manager
High Yield Credit

Cole Bushman
Portfolio Manager
Corporate Credit

Ryan Connors
Portfolio Manager
High Yield Credit

Danny Ng
Portfolio Manager
Corporate Credit

Meher Habib
Portfolio Manager
High Yield Credit

Sherrie Deng
Portfolio Manager
Corporate Credit

Fan Xu
Portfolio Manager
Corporate Credit

Spencer Sheff
Portfolio Manager
Corporate Credit

Jesse Kang
Portfolio Manager
Corporate Credit

Cynthia Fan
Portfolio Manager
Corporate Credit

Guillermo Perez
Portfolio Manager
Corporate Credit

Gabe Shipley
Portfolio Manager
Emerging Markets

Emily Freeman
Portfolio Manager
Emerging Markets

Dandi Li
Portfolio Manager
Emerging Markets

Muni/Canada/ ESG

Joel Silva
Sr. Portfolio
Manager
Muni/Canada/ESG

Rena Patel
Portfolio Manager
Municipals

Jermaine Pierre
Portfolio Manager
Canada

Lip Tong
Portfolio Manager
Canada

Tao Chen
Portfolio Manager
Municipals

Brian Chi
Portfolio Manager
Municipals

Brian Venter
Portfolio Manager
ESG

Jimmy Wang
Portfolio Manager
ESG

Technology

PM Architecture

Will Flanagan
Global Head of PM
Architecture

Justin Graham
Head of Bond ETF
Architecture

Technology

+ 11 Engineers

Research

Global Research

Ignacio Blanch
Head of Systematic
Fixed Income Research

Research

+ 5 Research Analysts

Strategy

Americas

Matt Tucker

Kathryn Donovan

Alli Leiva

Gordon Readey

Laura May

Chloe Yeh

As of 31 March 2022. Subject to change.

Process and Philosophy

Focus on efficient performance outcomes

Supported by proprietary Aladdin® technology

- BlackRock's disciplined index portfolio management is focused on optimally balancing return, risk and cost in seeking to deliver effective outcomes to clients
- Our portfolio managers specialize in financial markets, supported by BlackRock's extensive global trading platform and market leading analytics, to provide a high-quality index experience



What is Aladdin®?

- A sophisticated operating system that connects information, people and technology to support the entire investment lifecycle

Aladdin® helps solve investing challenges:

- Technology does the 'heavy-lifting', enabling portfolio managers to focus on key drivers affecting portfolio return
- Offers process scalability and efficiency
- Includes consistency across product types and functions

Index Investment Management Cycle – dedicated expertise and resources

Performance & Oversight

- Review cumulative effect of investment decisions to help identify factors contributing to/detracting from portfolio performance
- Risk & Quantitative Analysis Team (RQA) monitors dozens of risk factors globally on a continuous basis
- **Aladdin Advantage:** Portfolio Management tools are integrated on the same platform as risk monitoring tools, making it easy for RQA to provide a third-party risk assessment on portfolios

Efficient Trading

- Global trading infrastructure allows for real time oversight of all trades in all regions
- Smart trading strategies are designed to access optimal liquidity
- Industry's largest internal marketplace for potential netting of client flows
- Focused trading research and systems
- **Aladdin Advantage:** Extensive global trading platform helps ensure low costs and optimal access to liquidity

Benchmark Knowledge

- Detailed knowledge of index methodologies
- Experience with predicting and projecting index changes
- Focused on optimal treatment of corporate actions
- Continual research into index events
- **Aladdin Advantage:** Proprietary Aladdin 'Index Pro' application makes analyzing benchmark changes a clean and efficient process

Portfolio Construction

- Significant investment in technology
- Market leading portfolio and risk tools provided by our Aladdin® platform
- Integrated cost, risk, and liquidity analysis
- Access to sophisticated optimization tools
- **Aladdin Advantage:** Custom 'Portfolio Construction' application built by our Portfolio Management Team designed specially for index management



Index Investment Management Cycle

Benchmark knowledge

Our index platform has a dedicated internal global index research team unique to BlackRock; they are essential to the portfolio management process



Day-to-Day Benchmark Focus

- **Team works directly with all our index vendors to:**
 - Perform the data-intensive process of combing daily index loads to provide clean fund snapshots
 - Project daily changes and rebalances
 - Field all index data requests across the firm



Long-Term Rebalance Projections

- **All index families have a different cadence of rebalance**
- **Team works to predict what will be added or deleted from various indices in advance of a rebalance**
 - This helps portfolio managers to have a thoughtful opinion about what will happen on index effective date
 - Enables portfolio managers to monitor the applicable assets and their liquidity profiles. This influences our ultimate trade strategy

Index Methodology Recommendations

The index research team coordinates across BlackRock and works closely with index providers to drive methodology improvements to the indices we utilize in our strategies

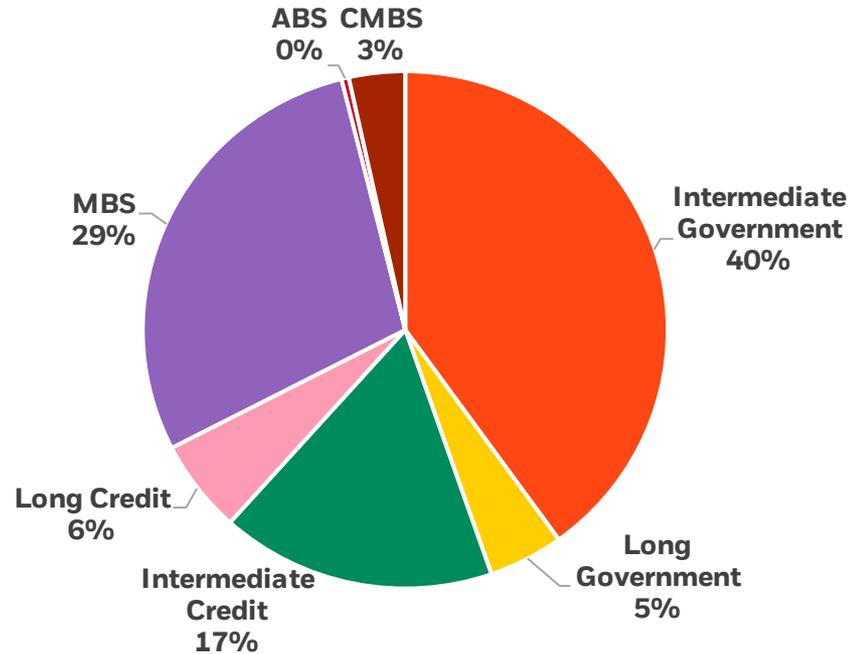
ALADDIN Tools: Index Pro

Modular Fund Design

BlackRock's modular fund design leverages scale and facilitates crossing opportunities

Barclays US Aggregate Index

Issues Fund: 9,796
Issues Benchmark: 12,538



Intermediate Government
Issues Fund: 220
Issues B'mark: 622

Long Government
Issues Fund: 100
Issues B'mark: 96

Intermediate Credit
Issues Fund: 4,525
Issues B'mark: 4,893

Long Credit
Issues Fund: 2,943
Issues B'mark: 3,087

Mortgage-Backed Securities
Issues Fund: 420
Issues B'mark: 420

Asset-Backed Securities
Issues Fund: 183
Issues B'mark: 379

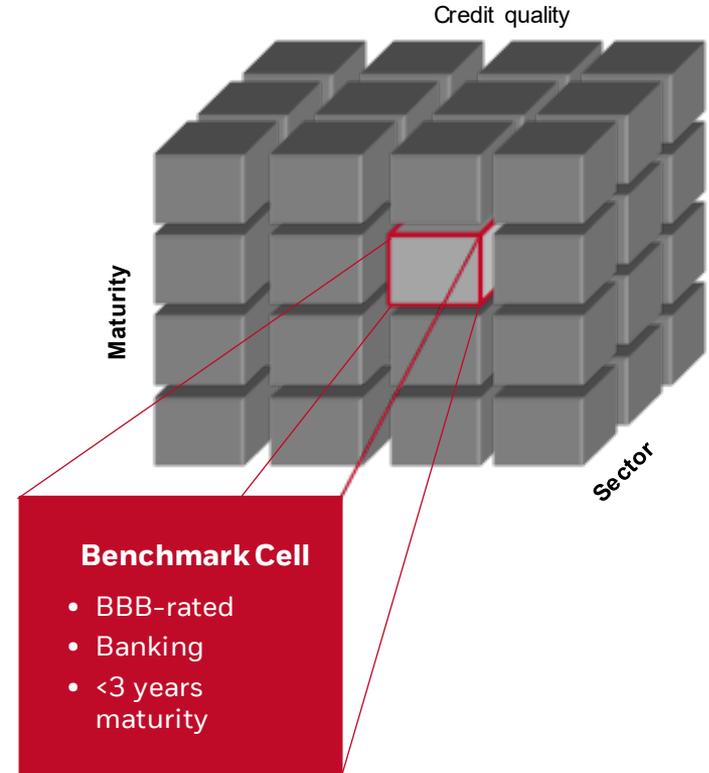
CMBS
Issues Fund: 655
Issues B'mark: 3,041

Source: Barclays and BlackRock as of March 31, 2022
Funds are BlackRock CTFs. For illustrative purposes only.

Portfolio Construction

Stratified sampling: Dividing the various indexes into subsets (cells) based upon relative parameters

Government Bonds	Mortgage-Backed Securities	Credit & Asset-Backed Securities
Sector / Issue type	Issuer (GNMA, FNMA, FHLMC)	Sector / Issue type
Maturity	Mortgage type (30 year, 15 year, balloon)	Maturity / average life
Call Features	Coupon	Credit rating
	Age (year of issuance)	Call / payment structure
	Specified Pools "Story"	



Portfolios are constructed by sampling bonds from each index cell

Source: BlackRock. For illustrative purpose only and subject to change.

Portfolio Construction

Building a corporate bond index portfolio

Construction process

Part 1

Stratify Universe by Risk Cells

- Sector
- Industry / sub-sector
- Maturity
- Credit
- Structure

Part 2

Optimize by Risk Factors

- Key Rate Duration
- Convexity
- Duration Times Spread
- T-Cost

Example: US Intermediate Investment Grade Corporate Bond Index Fund (illustrative)

Index (*Barclays Intermediate Credit Index*)

Index (4,893 bonds)

BLK(4,525 bonds)

Sector (example: *Industrials*)

Index (2,414 bonds)

BLK(2,249 bonds)

Sub-Sector (example: *Energy*)

Index (305 bonds)

BLK(280 bonds)

Maturity (example: *7-10 years*)

Index (74 bonds)

BLK(64 bonds)

Credit Rating (example: *BBB*)

Index (53 bonds)

BLK(45 bonds)

Structure (example: *Make Whole Call*)

Index (15 bonds)

BLK(7 bonds)

Source: BlackRock; data as of 31 March 2022. Example for illustrative purposes only. And does not depict actual Collective Trust Fund data. It is shown to demonstrate the investment process.

Efficient Trading:

Adding value through core activities

An Industry Leader

Tier 1 client to all major counterparties, giving us deep access to liquidity
 Trader expertise across all major asset classes with ~\$99.4T of annual volume (\$3.4T equity notional)

A Focus on Costs

Large and diverse client base results in a robust marketplace for potential netting of client flows
 Trading footprint allows us to negotiate extremely competitive commission rates

Research Driven

Comprehensive database of metrics, including a tick database and >\$185tn USD of trading history across >180mn transaction records

BlackRock's Global Coverage

24 hour a day, 5.5 days per week coverage



Color key
 Fixed Income
 Equities
 Foreign Exchange

One Order Management System platform: Aladdin Dashboard
 Regional hubs for each asset class with local market knowledge and sector expertise
 Common technology enables us to pass the book with embedded business continuity plan

All data as of September 30, 2021; Figures show in USD; Source: BlackRock. Inclusive of internal crossing opportunities. BlackRock Execution Cost is the average difference between: the actual price achieved on the trade and the benchmark price. For Equity, BlackRock calculates Market Expected Cost using an average of multiple independent broker models. There is no guarantee that a positive investment outcome will be achieved. Subject to Change.

Scalable Trading Platform

Fully-integrated trading platform and risk analytics

- Collaboration between portfolio managers and traders on execution strategy
- Straight-through processing of investments, from order entry to trade execution to settlement



Screenshots are for illustrative purposes only

RQA Tools & Process

1

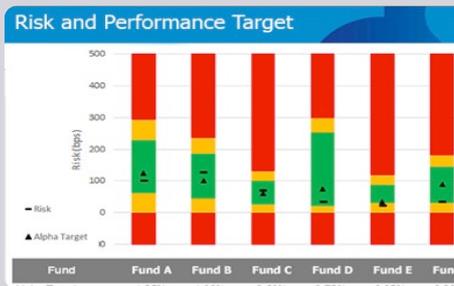


Ex-Ante Risk Measurement

Risk measurement tools

RQA seeks to provide accurate and appropriate risk measures for investment, liquidity and redemption risk

2



Risk Management

Appropriate levels of risk

RQA works with portfolio managers to achieve buy-in for risk and performance target and ensure risk taking is consistent with targets

3

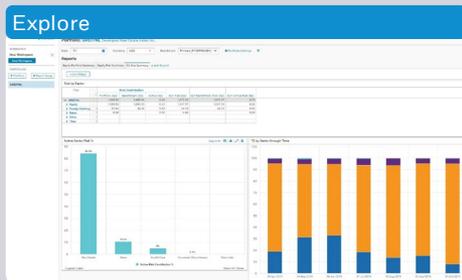
Portfolio Name	As Of Date	Benchmark	NAV US\$ (000)
Portfolio A	30-Mar-2017	JACIGNIG	79,098.00
Portfolio B	30-Mar-2017	NOBENHTWD	49,868.00
Portfolio C	30-Mar-2017	IBALCXMUS	18,123.00
Portfolio D	30-Mar-2017	JACL_XM	2,750,499.00
Portfolio E	30-Mar-2017	LEH_AGG	175,788.00
Portfolio F	30-Mar-2017	LEH_AGG	2,062,868.00
Portfolio G	30-Mar-2017	3MSTLLIBOR	1,202,910.00

Risk/Return Awareness

Enhancing and assessing

Regular meetings between portfolio managers & RQA to ensure positioning is deliberate, diversified and scaled

4



Performance Attribution

Consistency and accuracy

RQA determines the degree of consistency between pre-trade analysis and actual performance

5

Vendor (Peer Group)	As Of Date	1M	3M
Lipper (High Yield Funds)	2/28/2017	44 (314/713)	39 (214/413)
MorningStar	2/28/2017	44 (321/737)	40 (214/413)

Performance Analysis

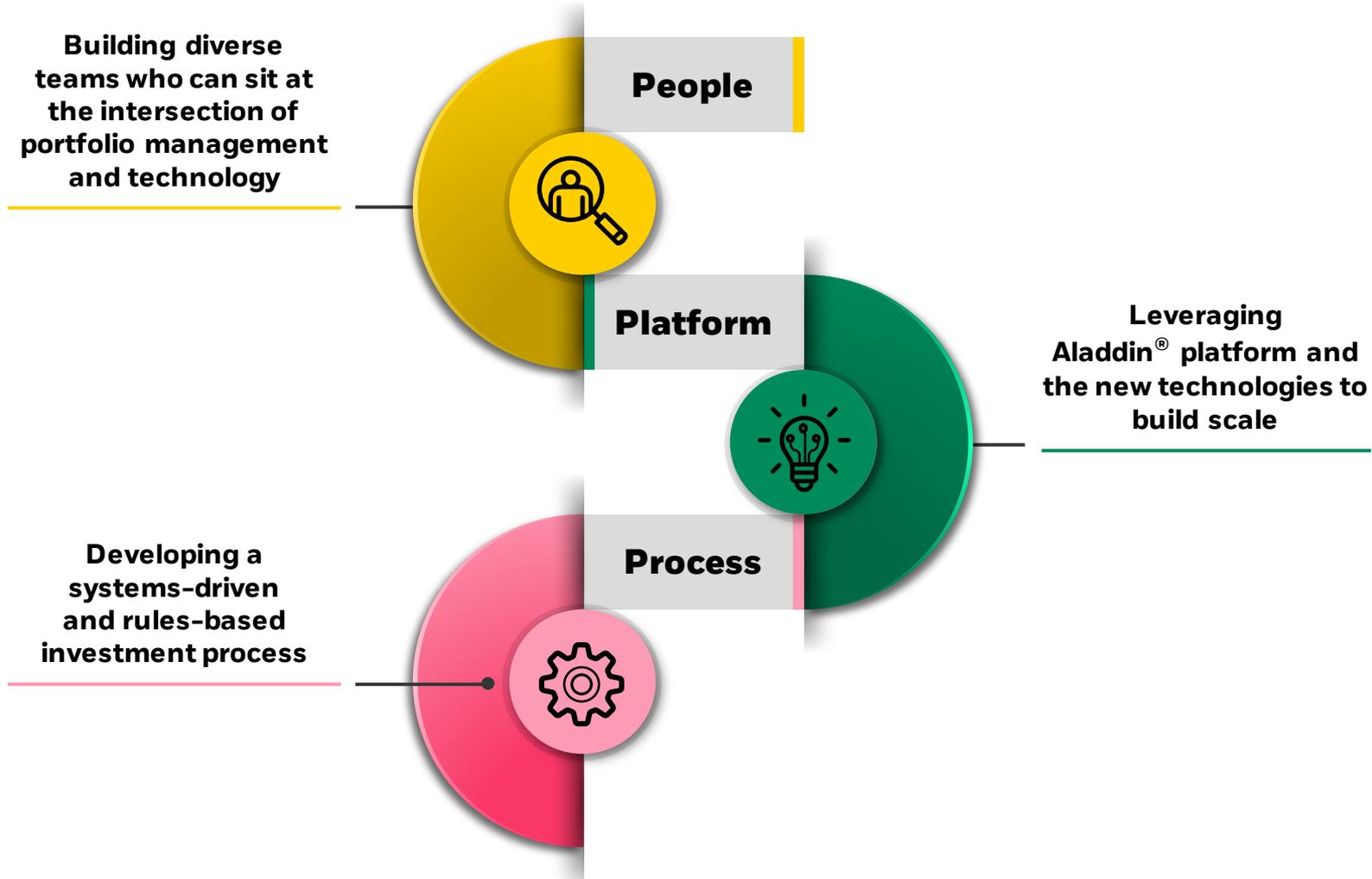
Measure of success

RQA, portfolio managers and senior leaders review performance relative to the benchmark, peers and comparable accounts in formal Investment Review Committee Meeting

Screenshots are for illustrative purposes only. Subject to change without notice

BlackRock's vision for the future of indexing

We continue to invest in a scalable investment engine through a focus on:

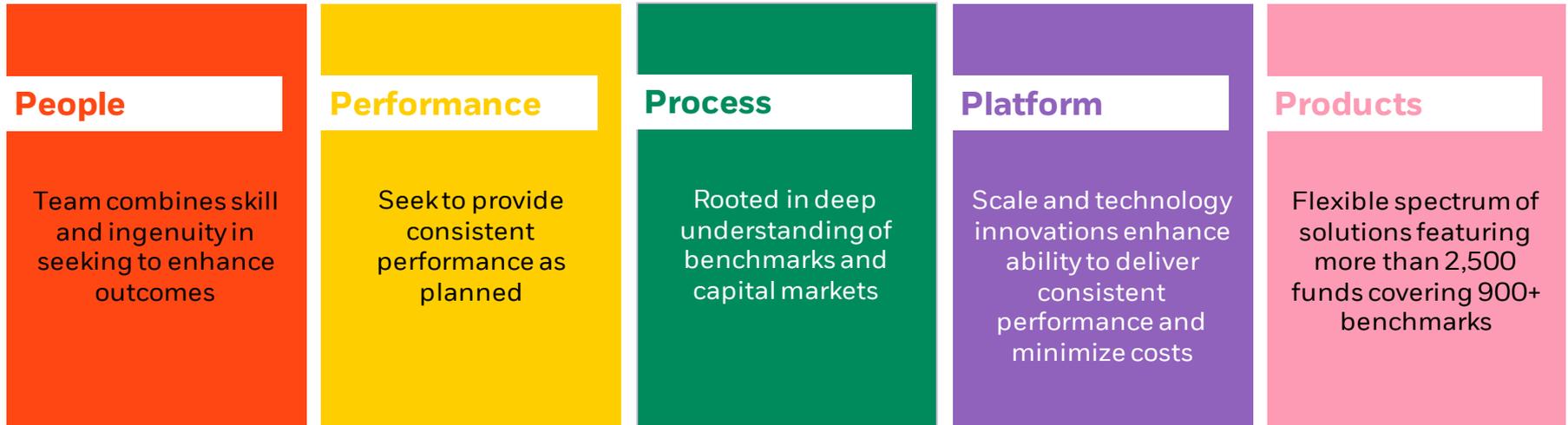


Key takeaway

Our approach to Index: anything but passive

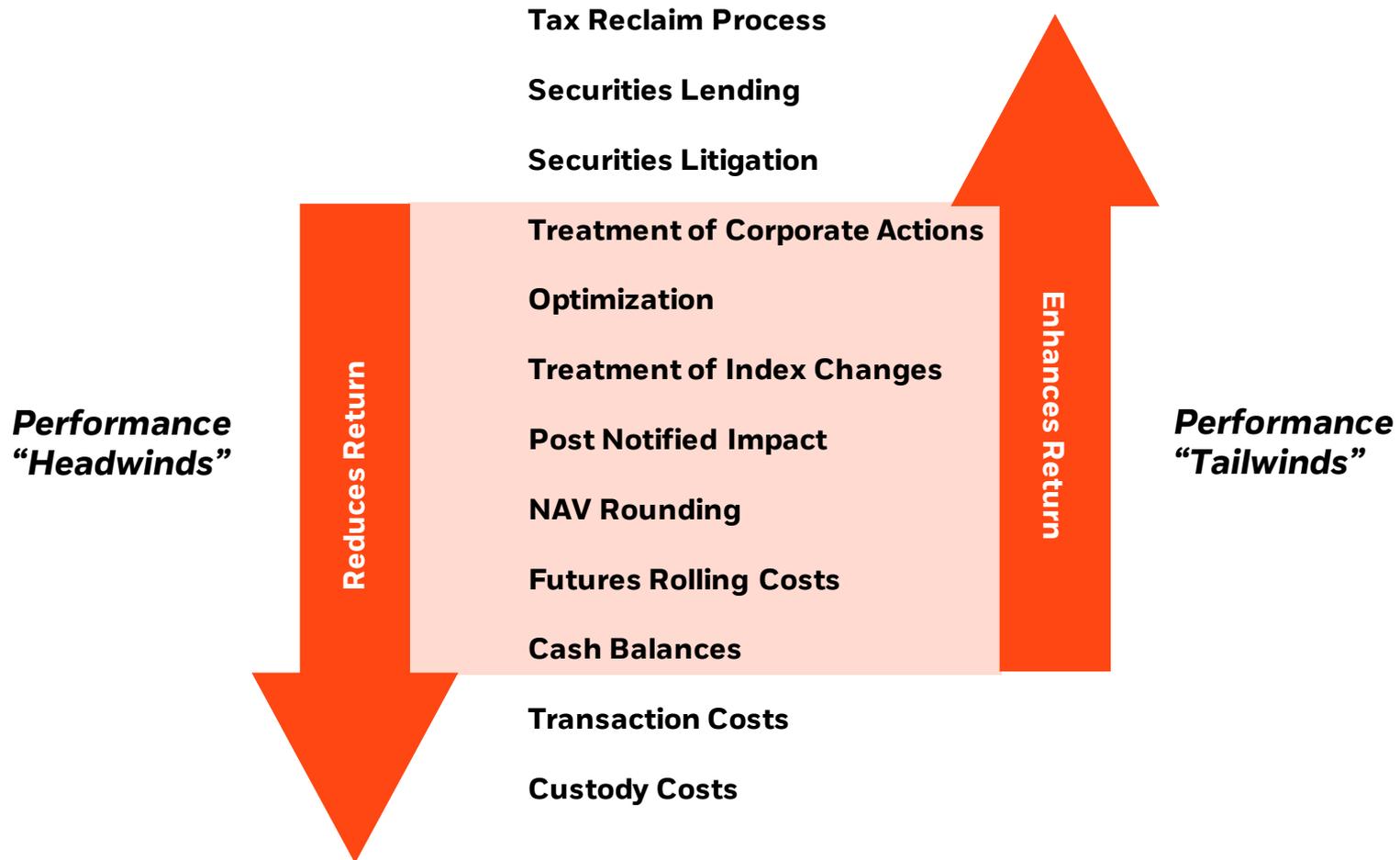
Investors today demand more efficient returns and innovative ways to use index products

BlackRock's Index approach is focused on:



IV. Fund Characteristics and Performance

Major sources of tracking error: Global & domestic index funds



U.S. Equities

Equity Index Fund

Equity Index Non-Lendable Fund

Russell 1000[®] Index Fund

Russell 1000[®] Index Non-Lendable Fund

Russell 1000[®] Growth Fund

Russell 1000[®] Growth Non-Lendable Fund

Russell 1000[®] Value Fund

Russell 1000[®] Value Non-Lendable Fund

Russell 2000[®] Fund

Russell 2000[®] Non-Lendable Fund

Russell 2000[®] Growth Fund

Russell 2000[®] Value Fund

Equity Index Fund Characteristics

Fund information

Benchmark	S&P 500® Index
Total fund assets	\$121.79B
Number of issues in fund	505
Number of issues in benchmark	504

Top 10 holdings

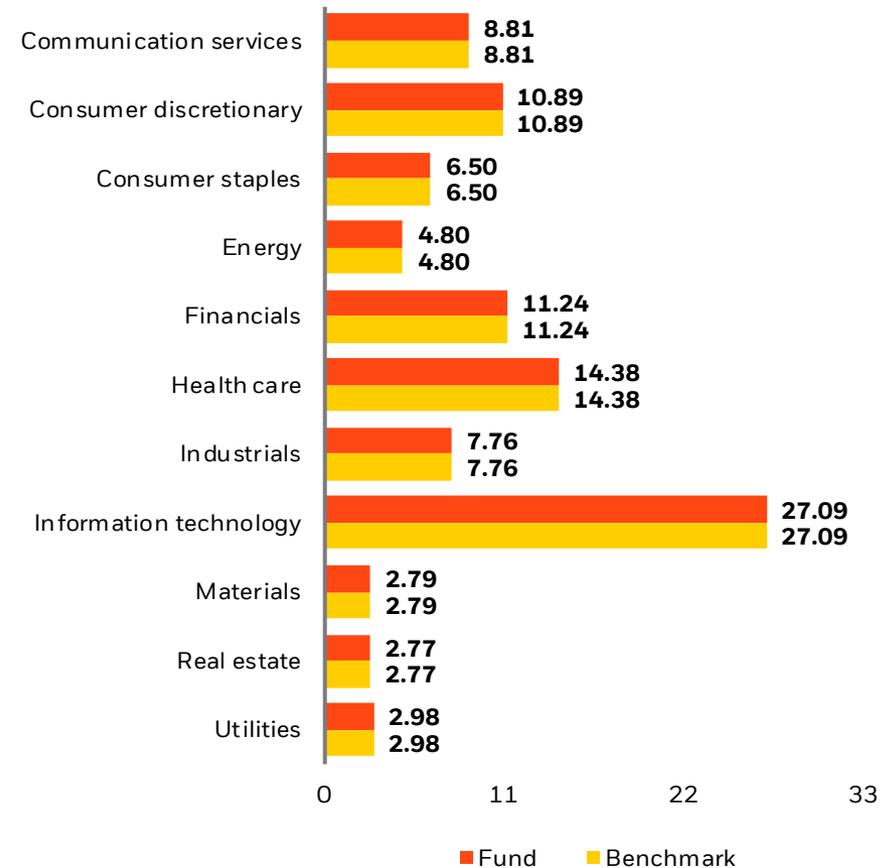
	Fund %	Index %
Apple Inc.	6.60	6.60
Microsoft Corporation	5.83	5.83
Amazon.com, Inc.	3.01	3.01
Alphabet Inc. Class A	1.96	1.96
Tesla Inc	1.82	1.82
Alphabet Inc. Class C	1.81	1.81
Berkshire Hathaway Inc. Class B	1.66	1.66
Johnson & Johnson	1.35	1.35
NVIDIA Corporation	1.34	1.34
UnitedHealth Group Incorporated	1.34	1.34

Fund inception date 31 December 1977

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

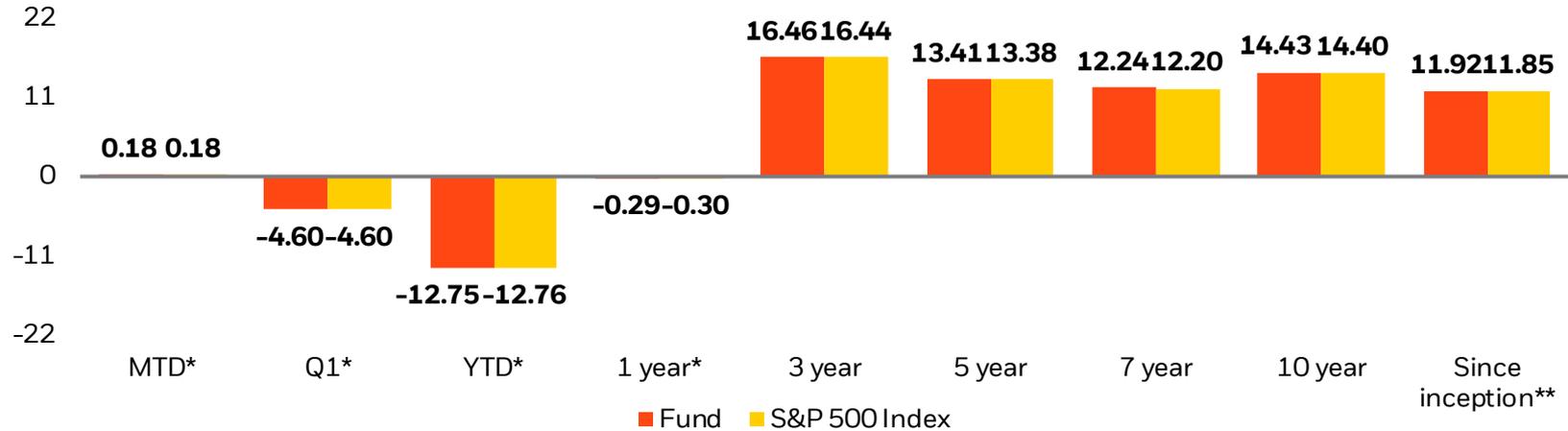
Sources: BlackRock, S&P Dow Jones Indices LLC

Sector diversification



Equity Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.00	0.02	0.02	0.03	0.02	0.07

* Period returns for less than a year are cumulative

** Fund inception date 31 December 1977

*** Value is based on trailing monthly observations

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, S&P Dow Jones Indices LLC

Equity Index Non-Lendable Fund Characteristics

Fund information

Benchmark	S&P 500® Index
Total fund assets	\$29.84B
Number of issues in fund	504
Number of issues in benchmark	504

Top 10 holdings

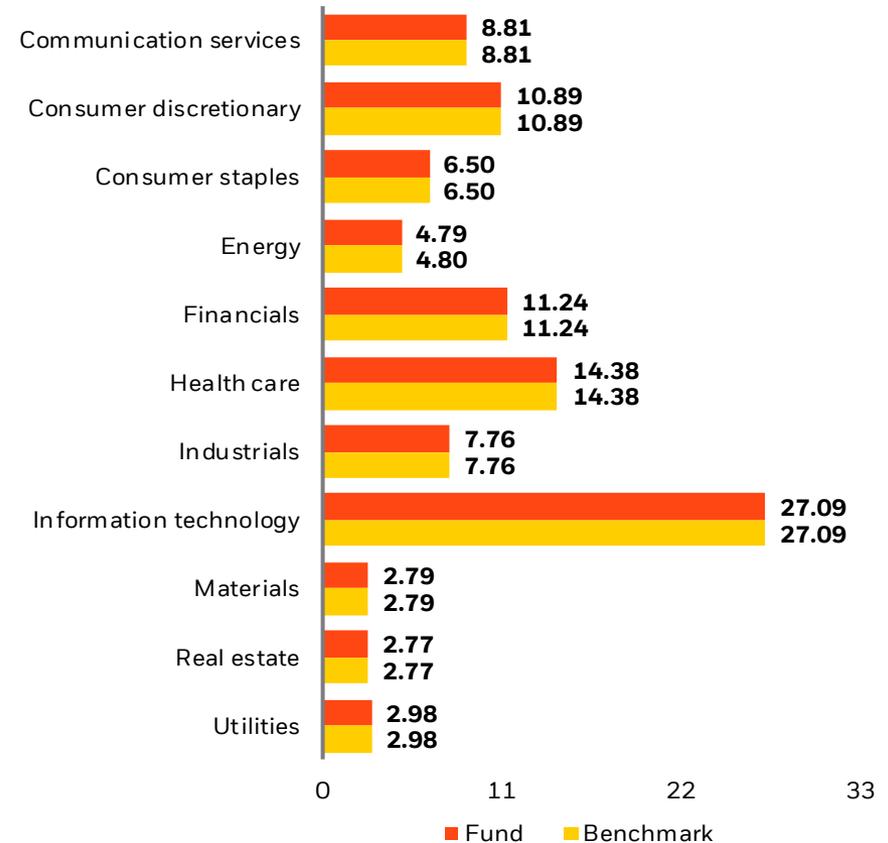
	Fund %	Index %
Apple Inc.	6.60	6.60
Microsoft Corporation	5.83	5.83
Amazon.com, Inc.	3.01	3.01
Alphabet Inc. Class A	1.96	1.96
Tesla Inc	1.82	1.82
Alphabet Inc. Class C	1.81	1.81
Berkshire Hathaway Inc. Class B	1.66	1.66
Johnson & Johnson	1.35	1.35
NVIDIA Corporation	1.34	1.34
UnitedHealth Group Incorporated	1.34	1.34

Fund inception date 23 February 2009

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

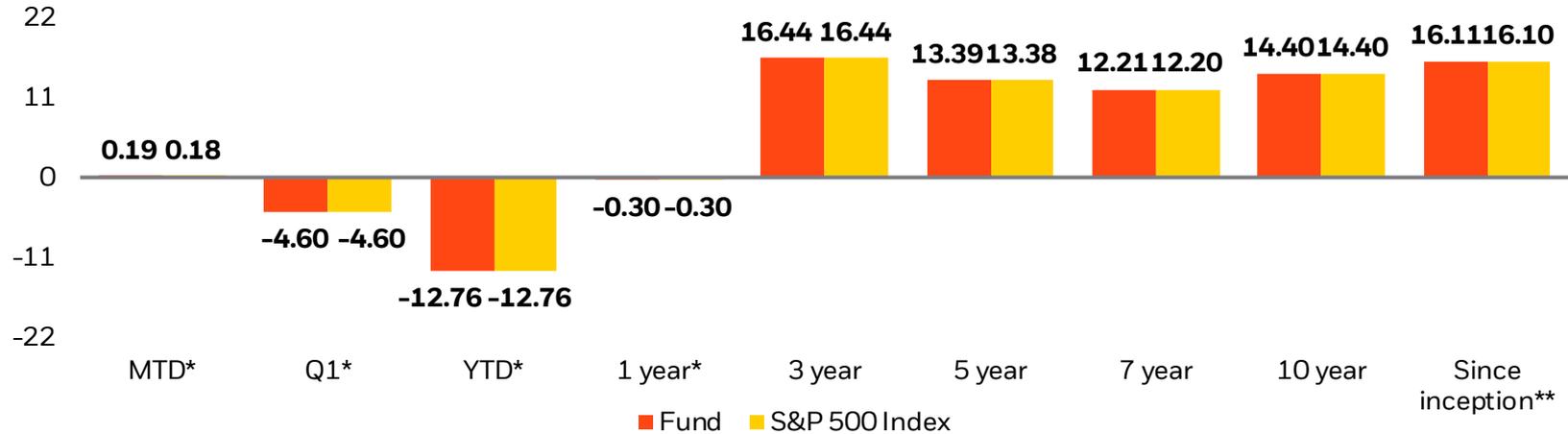
Sources: BlackRock, S&P Dow Jones Indices LLC

Sector diversification



Equity Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.00	0.01	0.01	0.01	0.01	0.01

* Period returns for less than a year are cumulative

** Fund inception date 23 February 2009

*** Value is based on trailing monthly observations

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, S&P Dow Jones Indices LLC

Russell 1000® Index Fund Characteristics

Fund information

Benchmark	Russell 1000® Index
Total fund assets	\$112.73B
Number of issues in fund	1,022
Number of issues in benchmark	1,022

Top 10 holdings

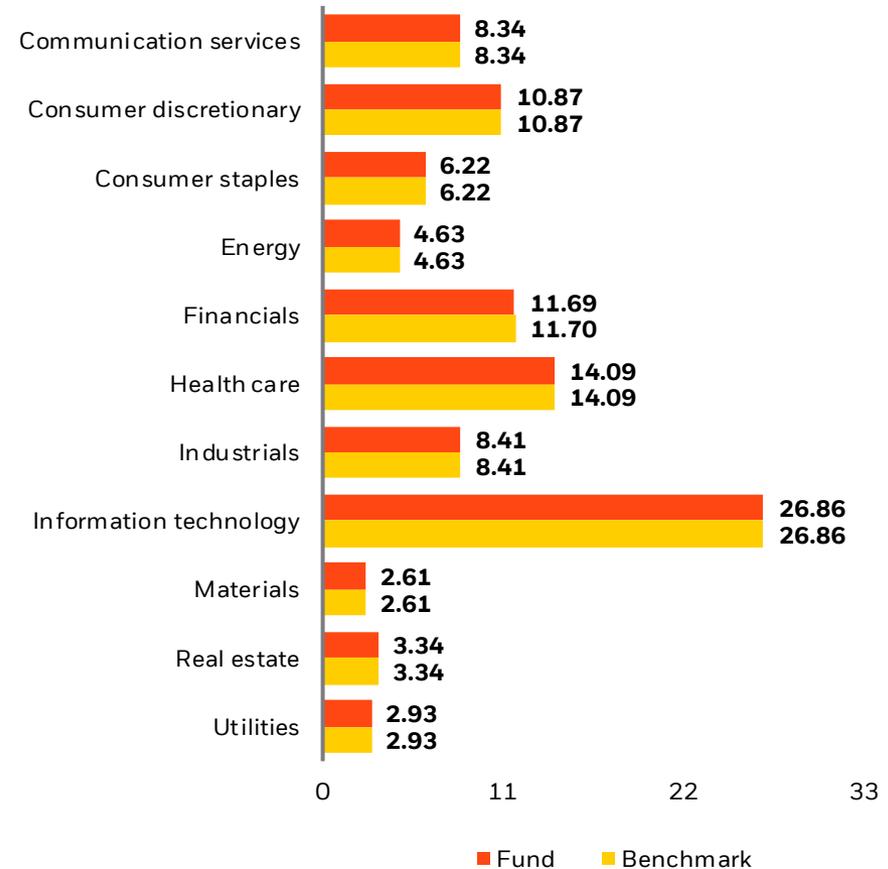
	Fund %	Index %
Apple Inc.	5.99	5.99
Microsoft Corporation	5.34	5.34
Amazon.com, Inc.	2.72	2.72
Alphabet Inc. Class A	1.78	1.78
Alphabet Inc. Class C	1.65	1.65
Tesla Inc	1.65	1.65
Berkshire Hathaway Inc. Class B	1.51	1.51
Johnson & Johnson	1.23	1.23
UnitedHealth Group Incorporated	1.22	1.22
Meta Platforms Inc. Class A	1.16	1.16

Fund inception date 31 January 1987

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

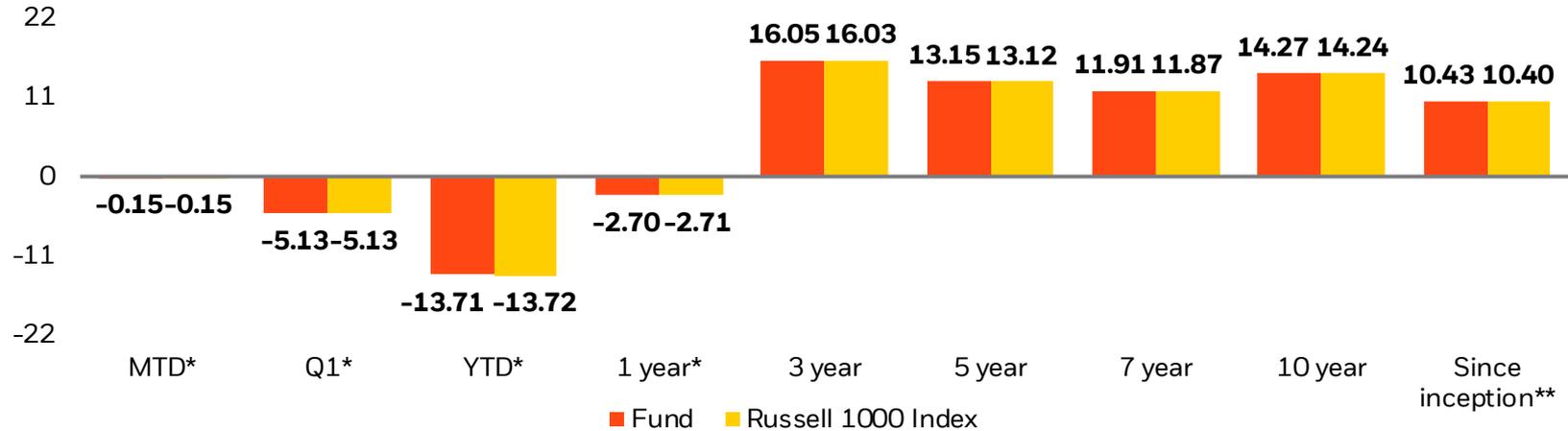
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 1000[®] Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.01	0.01	0.02	0.02	0.02	0.10

* Period returns for less than a year are cumulative

** Fund inception date 31 January 1987

*** Value is based on trailing monthly observations

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

Russell 1000® Index Non-Lendable Fund Characteristics

Fund information

Benchmark	Russell 1000® Index
Total fund assets	\$53.83B
Number of issues in fund	1,022
Number of issues in benchmark	1,022

Top 10 holdings

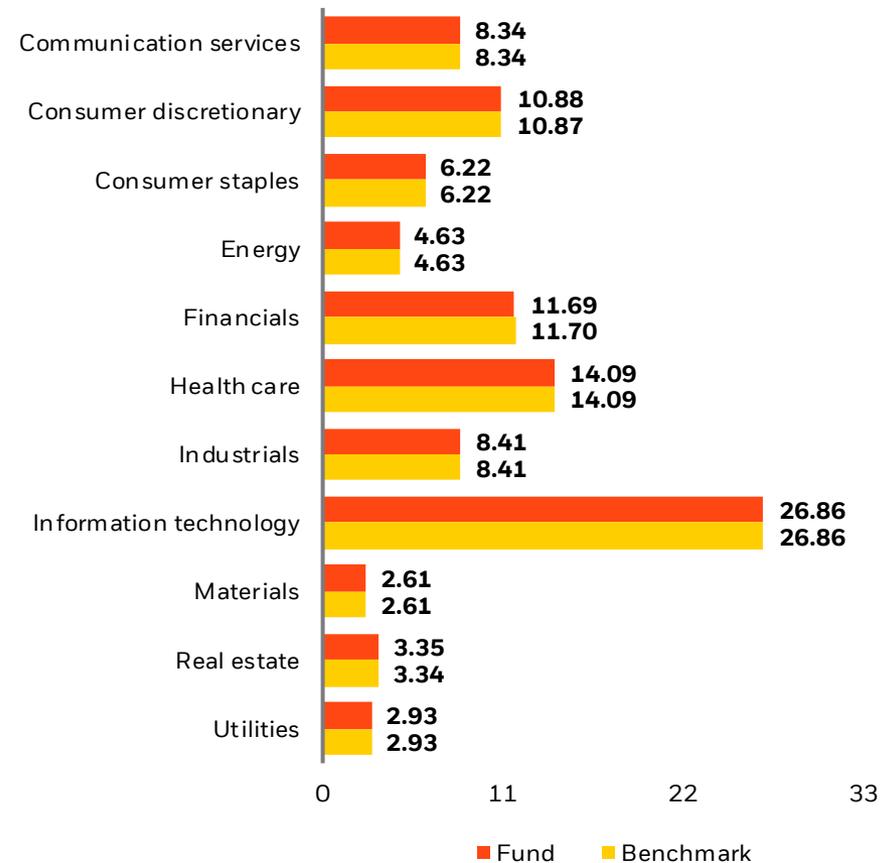
	Fund %	Index %
Apple Inc.	5.99	5.99
Microsoft Corporation	5.34	5.34
Amazon.com, Inc.	2.72	2.72
Alphabet Inc. Class A	1.78	1.78
Alphabet Inc. Class C	1.65	1.65
Tesla Inc	1.65	1.65
Berkshire Hathaway Inc. Class B	1.51	1.51
Johnson & Johnson	1.23	1.23
UnitedHealth Group Incorporated	1.22	1.22
Meta Platforms Inc. Class A	1.16	1.16

Fund inception date 23 January 2009

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

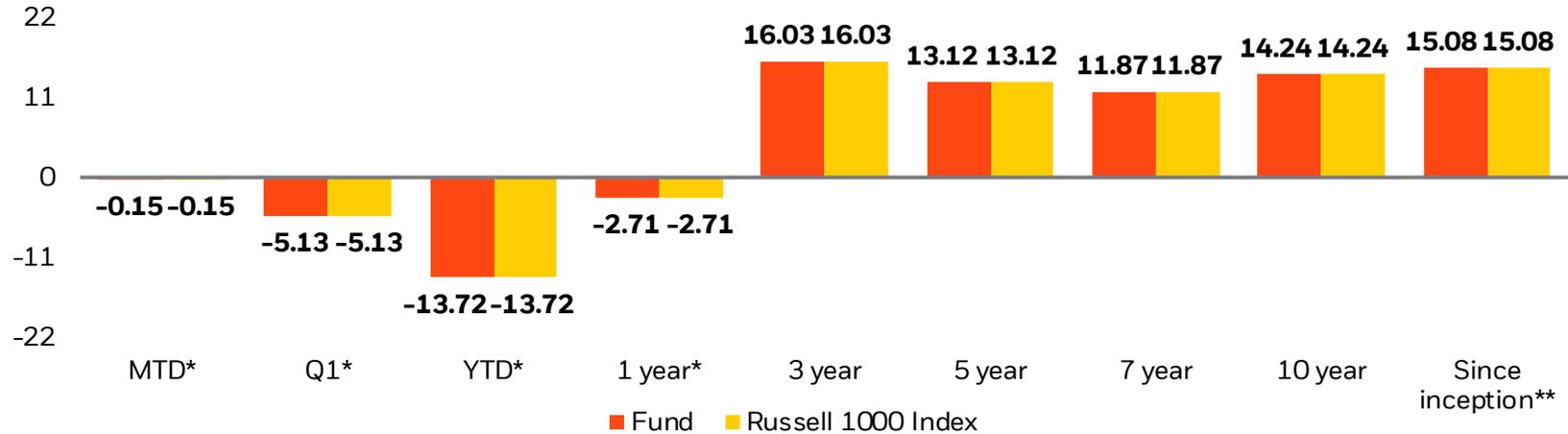
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 1000® Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.01	0.01	0.01	0.02	0.01	0.01

* Period returns for less than a year are cumulative

** Fund inception date 23 January 2009

*** Value is based on trailing monthly observations

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

Russell 1000® Growth Fund Characteristics

Fund information

Benchmark	Russell 1000® Growth Index
Total fund assets	\$8.17B
Number of issues in fund	500
Number of issues in benchmark	499

Top 10 holdings

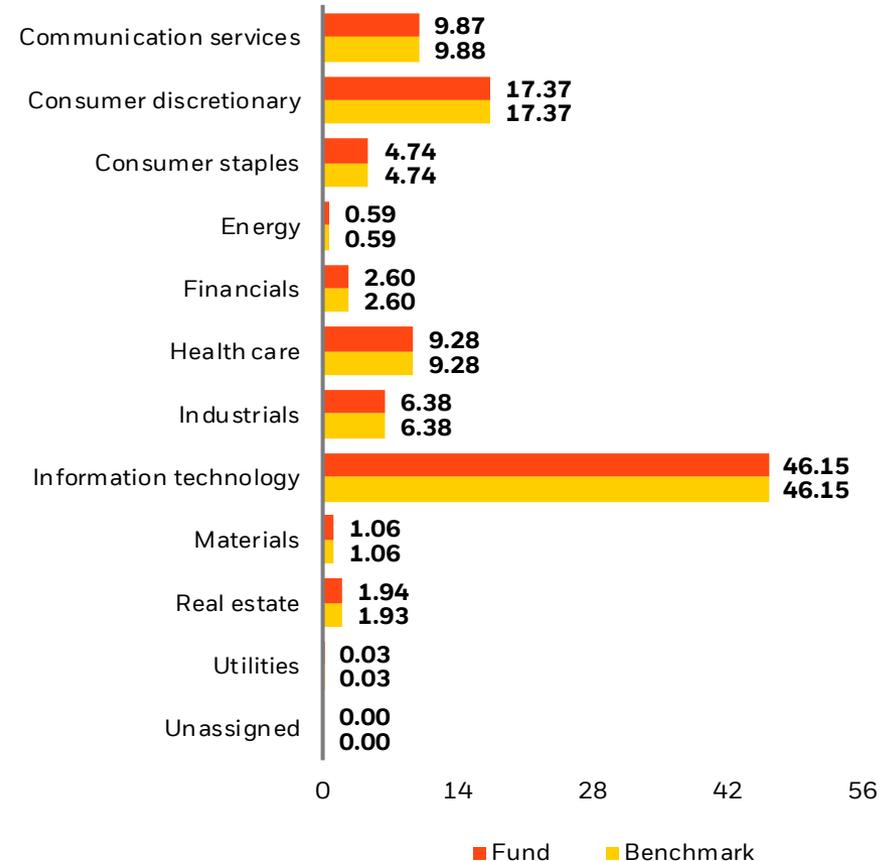
	Fund %	Index %
Apple Inc.	12.47	12.47
Microsoft Corporation	11.12	11.12
Amazon.com, Inc.	5.66	5.66
Tesla Inc	3.42	3.42
Alphabet Inc. Class A	3.20	3.20
Alphabet Inc. Class C	2.95	2.95
Meta Platforms Inc. Class A	2.42	2.42
NVIDIA Corporation	2.42	2.42
Visa Inc. Class A	1.91	1.91
Home Depot, Inc.	1.72	1.72

Fund inception date 22 July 1998

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

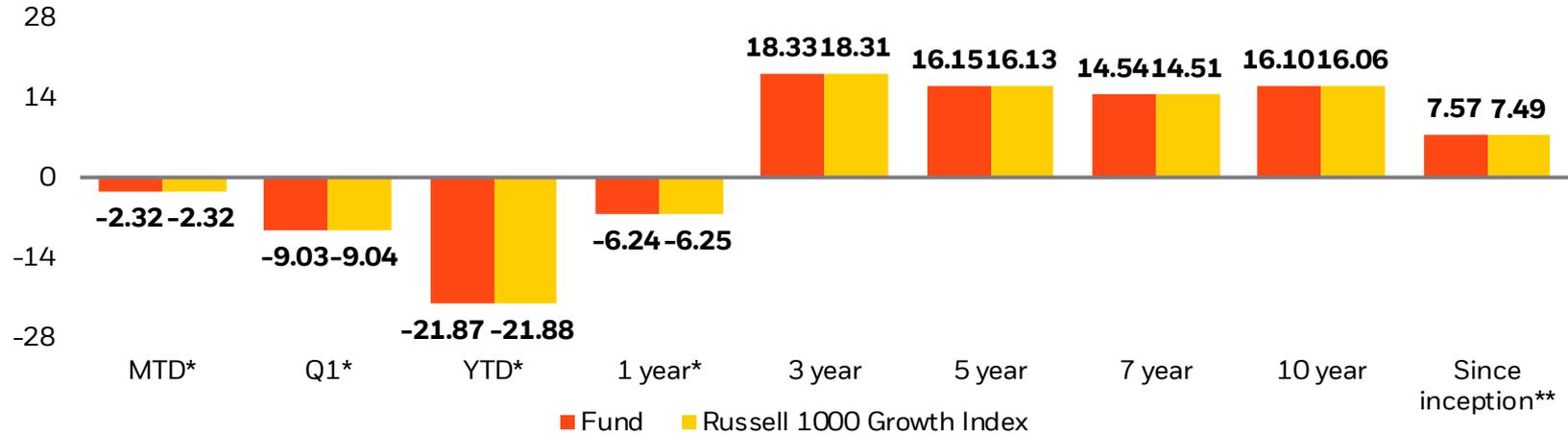
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 1000® Growth Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.01	0.02	0.03	0.03	0.04	0.12

* Period returns for less than a year are cumulative

** Fund inception date 22 July 1998

*** Value is based on trailing monthly observations

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

Russell 1000® Growth Non-Lendable Fund Characteristics

Fund information

Benchmark	Russell 1000® Growth Index
Total fund assets	\$0.63B
Number of issues in fund	497
Number of issues in benchmark	499

Top 10 holdings

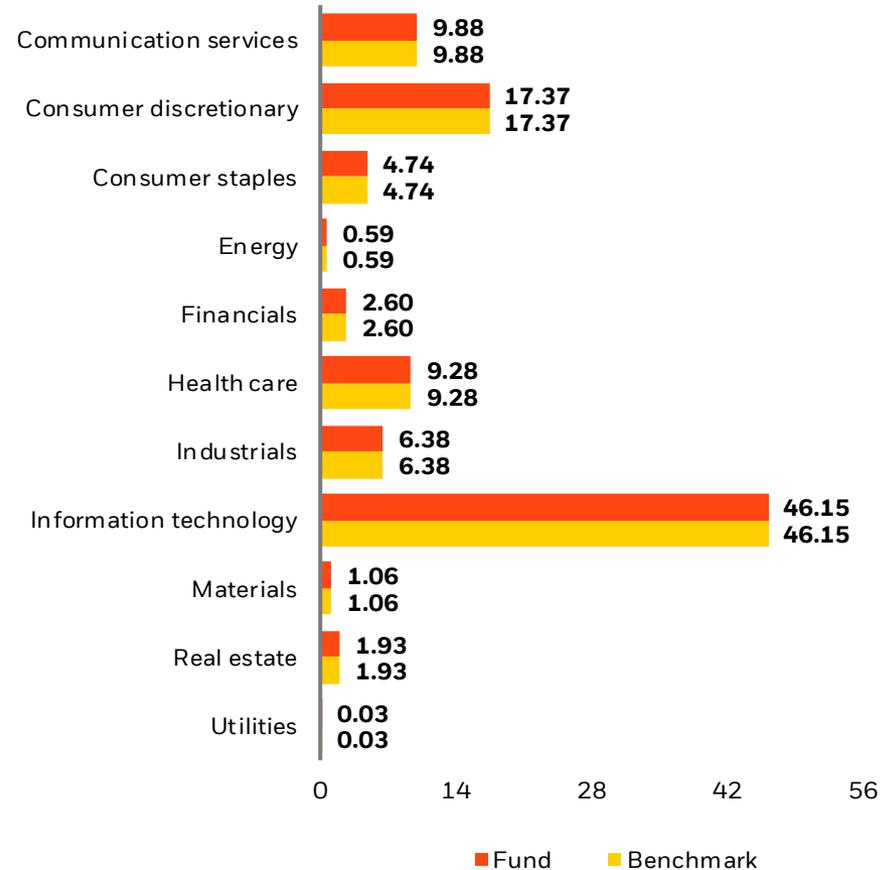
	Fund %	Index %
Apple Inc.	12.47	12.47
Microsoft Corporation	11.12	11.12
Amazon.com, Inc.	5.66	5.66
Tesla Inc	3.42	3.42
Alphabet Inc. Class A	3.20	3.20
Alphabet Inc. Class C	2.95	2.95
Meta Platforms Inc. Class A	2.42	2.42
NVIDIA Corporation	2.42	2.42
Visa Inc. Class A	1.91	1.91
Home Depot, Inc.	1.72	1.72

Fund inception date 31 July 2009

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

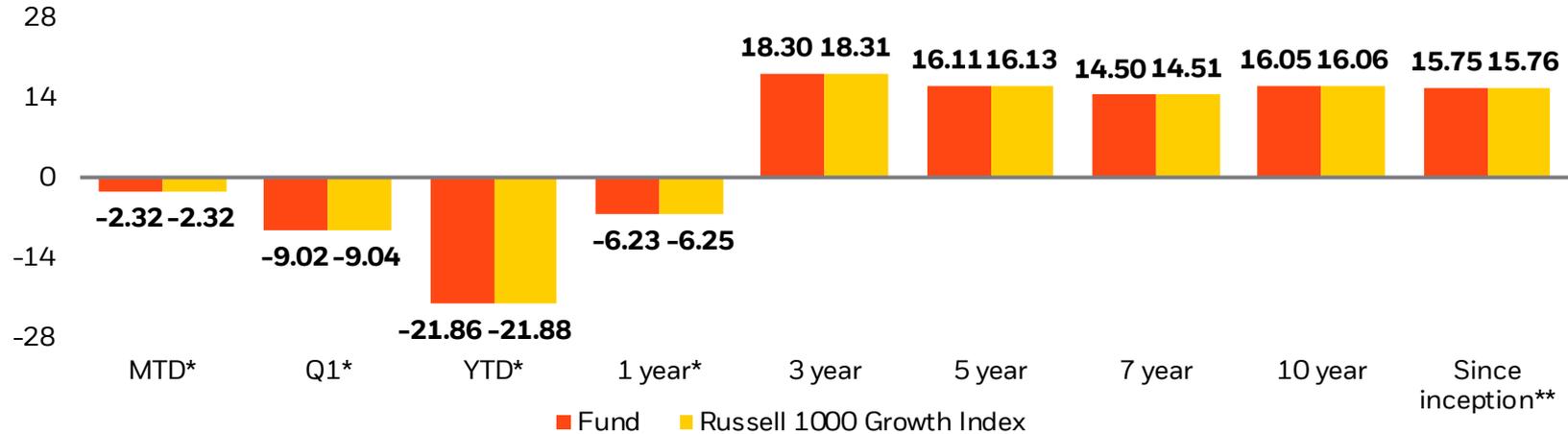
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 1000® Growth Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.02	0.03	0.03	0.03	0.03	0.03

* Period returns for less than a year are cumulative

** Fund inception date 31 July 2009

*** Value is based on trailing monthly observations

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

Russell 1000[®] Value Fund Characteristics

Fund information

Benchmark	Russell 1000 [®] Value Index
Total fund assets	\$6.02B
Number of issues in fund	847
Number of issues in benchmark	847

Top 10 holdings

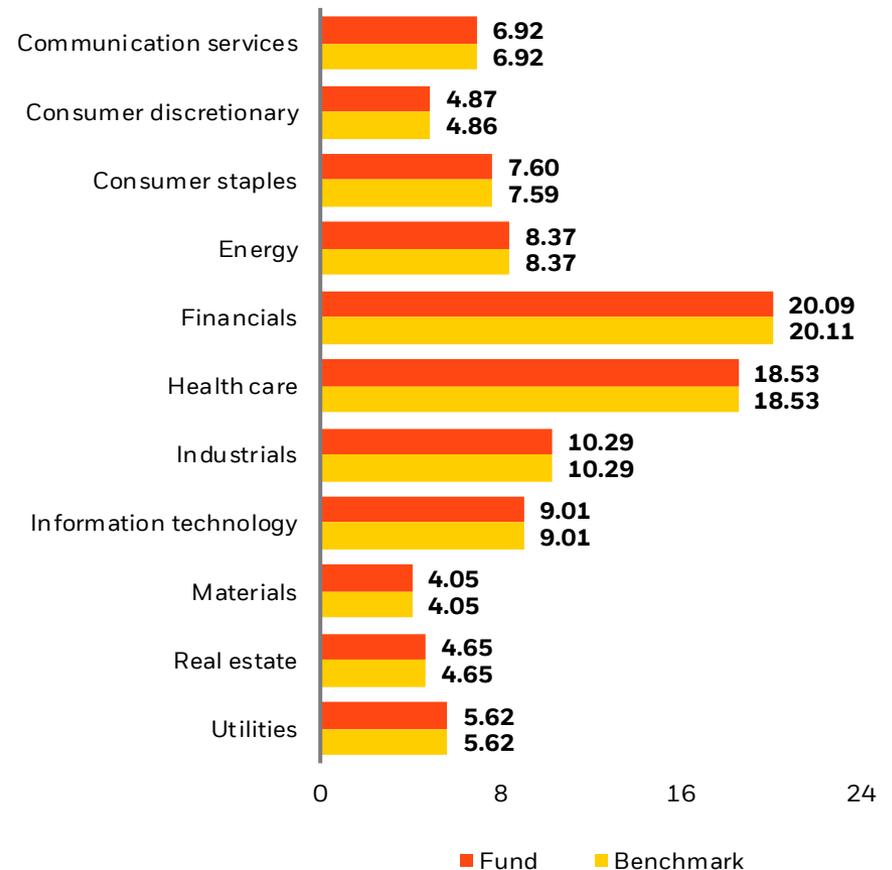
	Fund %	Index %
Berkshire Hathaway Inc. Class B	2.91	2.91
Johnson & Johnson	2.37	2.37
UnitedHealth Group Incorporated	2.18	2.18
Exxon Mobil Corporation	2.04	2.04
JPMorgan Chase & Co.	1.95	1.95
Procter & Gamble Company	1.79	1.79
Chevron Corporation	1.70	1.70
Pfizer Inc.	1.49	1.49
Bank of America Corp	1.33	1.33
Merck & Co., Inc.	1.17	1.17

Fund inception date 31 October 1991

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

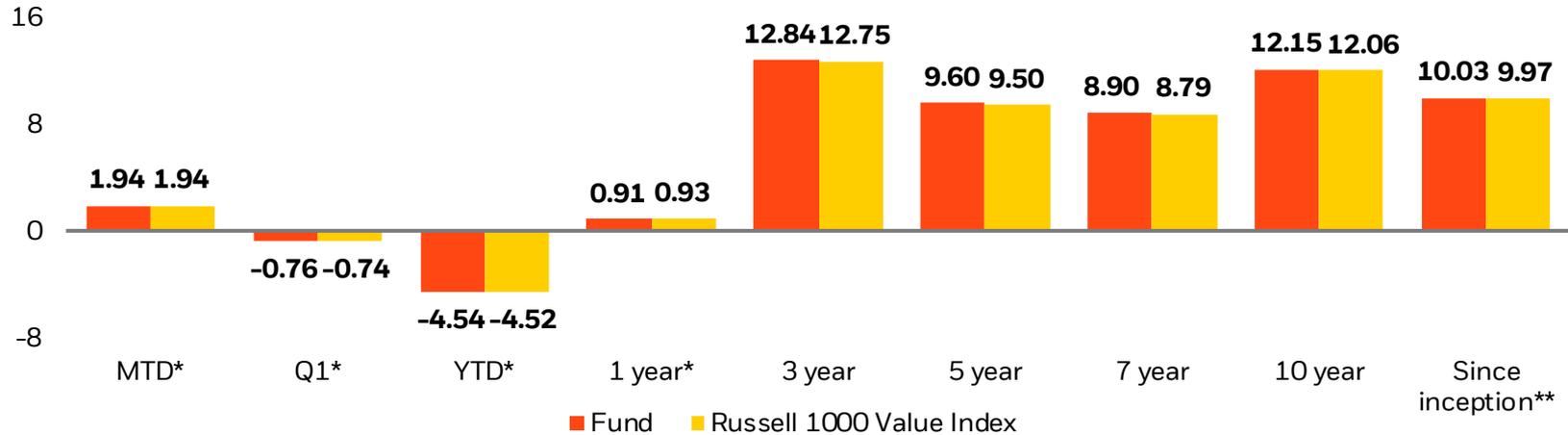
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 1000® Value Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.02	0.06	0.05	0.06	0.06	0.13

* Period returns for less than a year are cumulative

** Fund inception date 31 October 1991

*** Value is based on trailing monthly observations

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

Russell 1000[®] Value Non-Lendable Fund Characteristics

Fund information

Benchmark	Russell 1000 [®] Value Index
Total fund assets	\$0.08B
Number of issues in fund	847
Number of issues in benchmark	847

Top 10 holdings

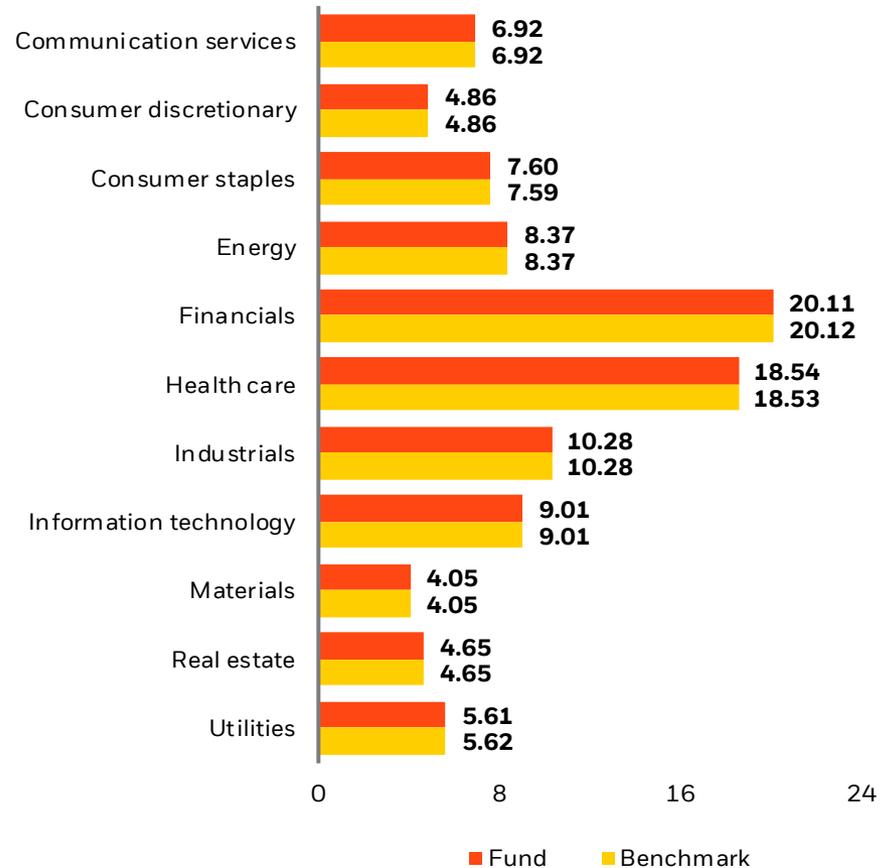
	Fund %	Index %
Berkshire Hathaway Inc Class B	2.91	2.91
Johnson & Johnson	2.37	2.37
UnitedHealth Group Inc	2.18	2.18
Exxon Mobil Corp	2.04	2.04
JPMorgan Chase & Co	1.95	1.95
Procter & Gamble	1.79	1.79
Chevron Corp	1.70	1.70
Pfizer Inc	1.49	1.49
Bank of America Corp	1.33	1.33
Merck & Co Inc	1.17	1.17

Fund inception date 31 July 2009

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

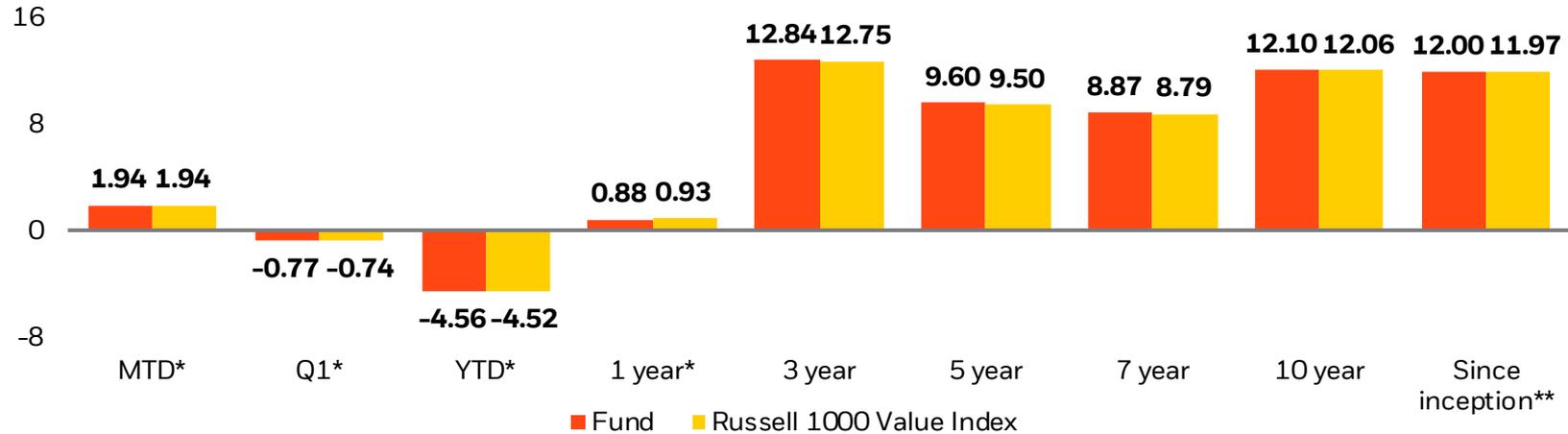
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 1000® Value Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.02	0.11	0.10	0.09	0.08	0.07

* Period returns for less than a year are cumulative

** Fund inception date 31 July 2009

*** Value is based on trailing monthly observations

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

Russell 2000® Index Fund Characteristics

Fund information

Benchmark	Russell 2000® Index
Total fund assets	\$10.21B
Number of issues in fund	1,998
Number of issues in benchmark	2,002

Top 10 holdings

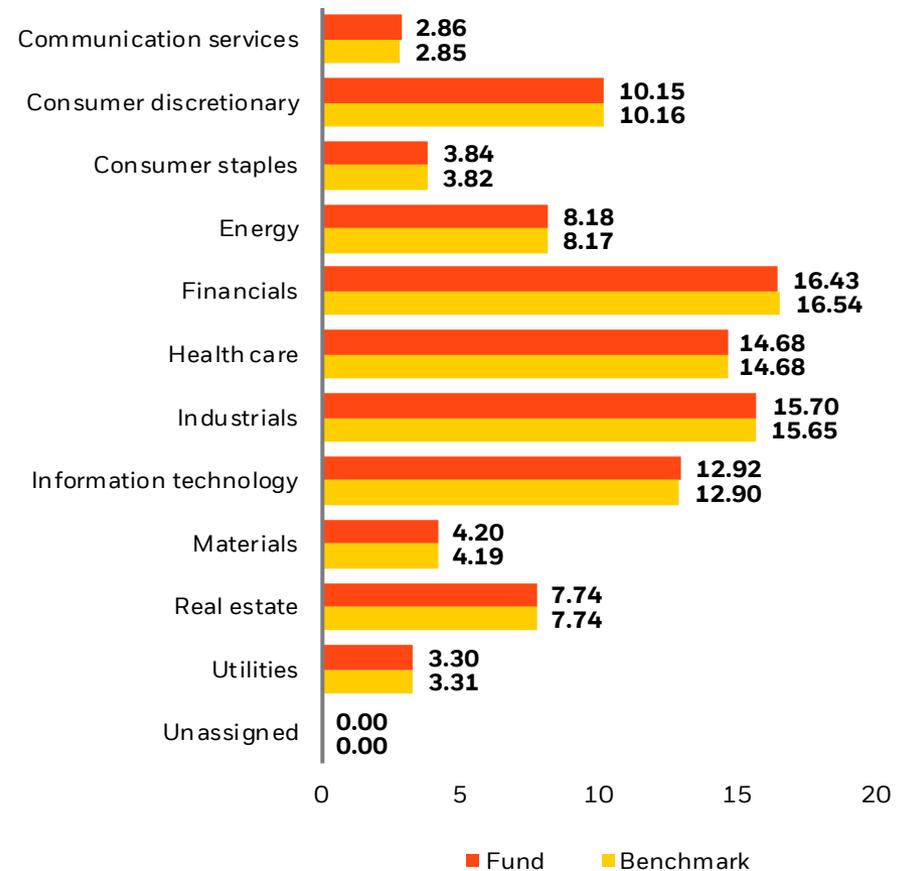
	Fund %	Index %
Ovintiv Inc	0.60	0.60
Antero Resources Corporation	0.50	0.50
Chesapeake Energy Corporation	0.42	0.42
Southwestern Energy Company	0.38	0.38
BioHaven Pharmaceutical Holding Company Ltd.	0.33	0.33
Range Resources Corporation	0.33	0.33
Avis Budget Group, Inc.	0.32	0.32
BJ's Wholesale Club Holdings, Inc.	0.32	0.33
PDC Energy, Inc.	0.32	0.32
WillScot Mobile Mini Holdings Corp. Class A	0.31	0.31

Fund inception date 30 June 1997

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

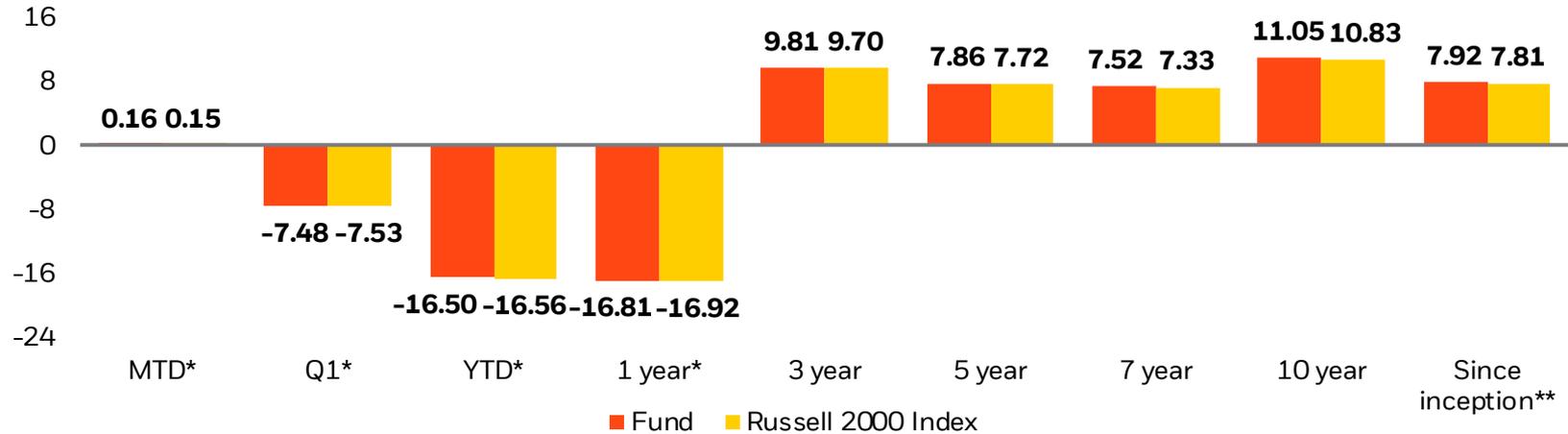
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 2000® Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.03	0.06	0.05	0.05	0.05	0.16

* Period returns for less than a year are cumulative

** Fund inception date 30 June 1997

*** Value is based on trailing monthly observations

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

Russell 2000® Index Non-Lendable Fund Characteristics

Fund information

Benchmark	Russell 2000® Index
Total fund assets	\$4.14B
Number of issues in fund	2,007
Number of issues in benchmark	2,002

Top 10 holdings

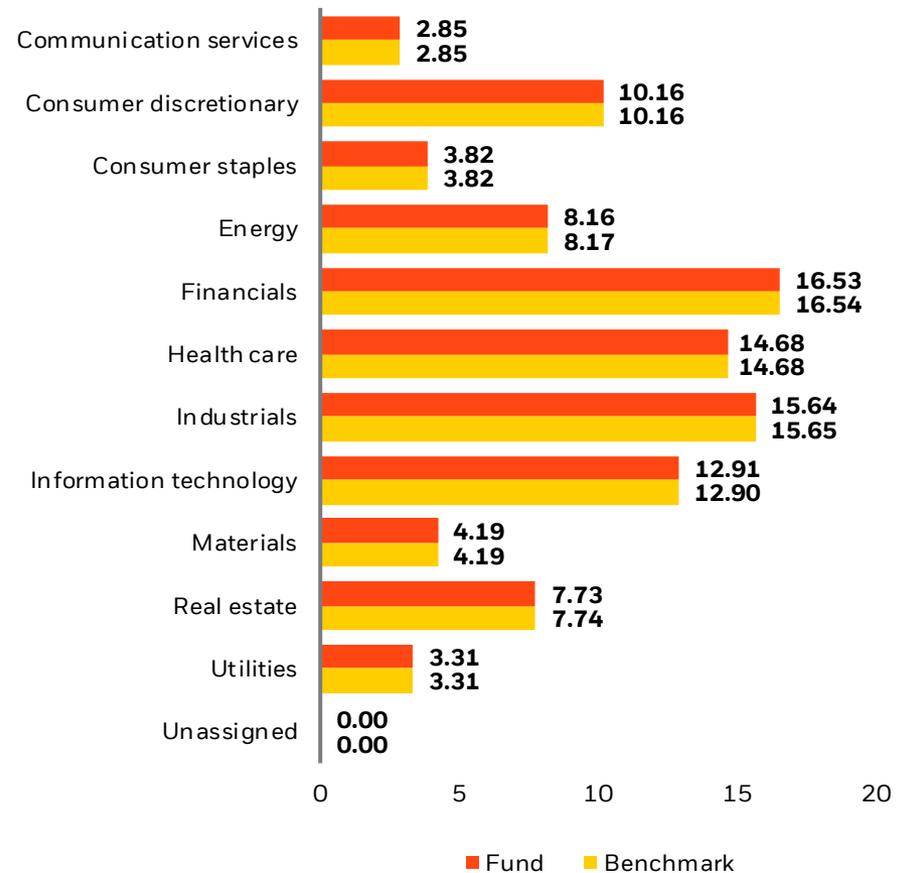
	Fund %	Index %
Ovintiv Inc	0.60	0.60
Antero Resources Corporation	0.50	0.50
Chesapeake Energy Corporation	0.42	0.42
Southwestern Energy Company	0.38	0.38
BioHaven Pharmaceutical Holding Company Ltd.	0.33	0.33
BJ's Wholesale Club Holdings, Inc.	0.33	0.33
Range Resources Corporation	0.33	0.33
Avis Budget Group, Inc.	0.32	0.32
PDC Energy, Inc.	0.32	0.32
WillScot Mobile Mini Holdings Corp. Class A	0.31	0.31

Fund inception date 23 January 2009

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

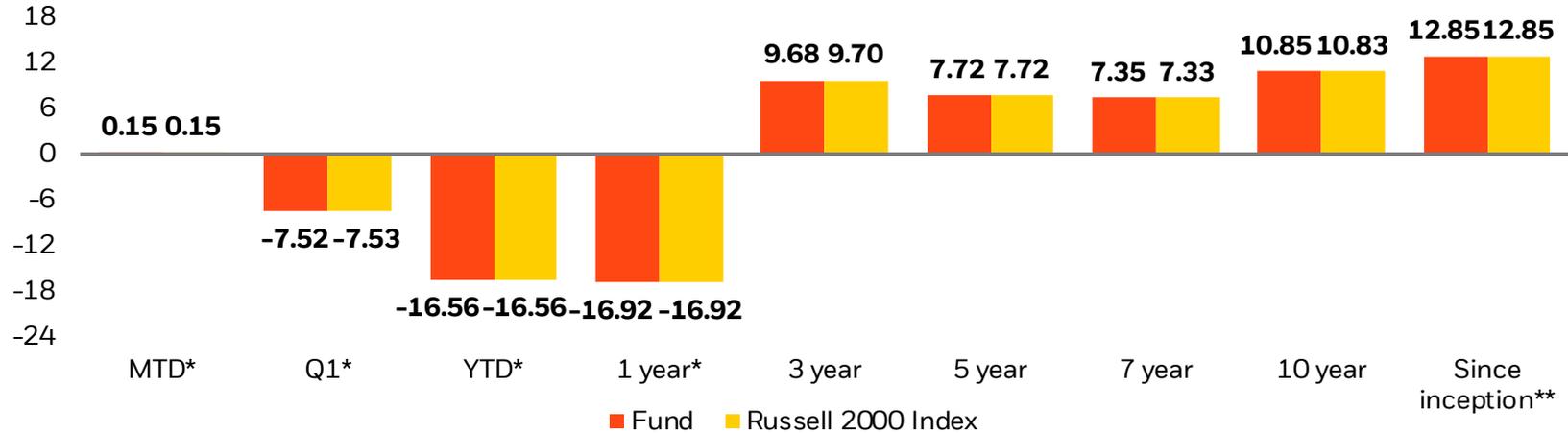
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 2000® Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.02	0.05	0.04	0.04	0.04	0.07

* Period returns for less than a year are cumulative

** Fund inception date 23 January 2009

*** Value is based on trailing monthly observations

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

Russell 2000® Growth Fund Characteristics

Fund information

Benchmark	Russell 2000® Growth Index
Total fund assets	\$0.34B
Number of issues in fund	1,229
Number of issues in benchmark	1,231

Top 10 holdings

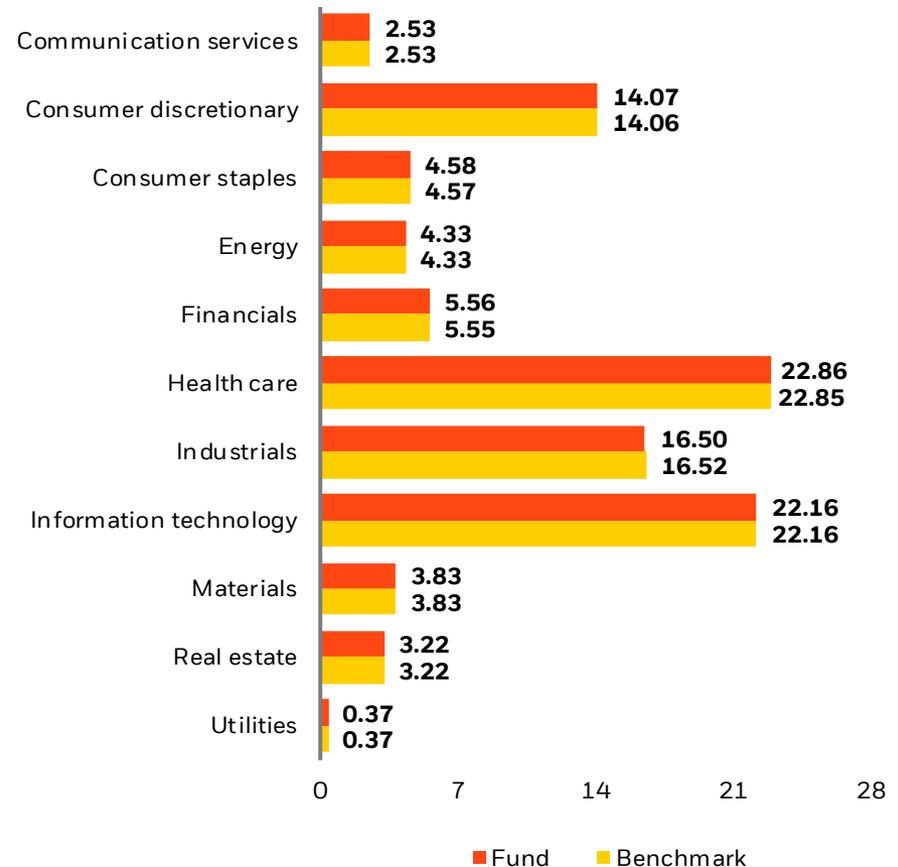
	Fund %	Index %
Southwestern Energy	0.84	0.84
WillScot Mobile Mini Holdings Corp	0.67	0.67
Tetra Tech Inc	0.66	0.66
Lattice Semiconductor Corp	0.64	0.64
Matador Resources	0.61	0.61
Eastgroup Properties REIT Inc	0.59	0.59
Halozyme Therapeutics Inc	0.58	0.58
KBR Inc	0.56	0.56
Il VI Inc	0.56	0.56
Performance Food Group	0.54	0.54

Fund inception date 31 October 1998

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

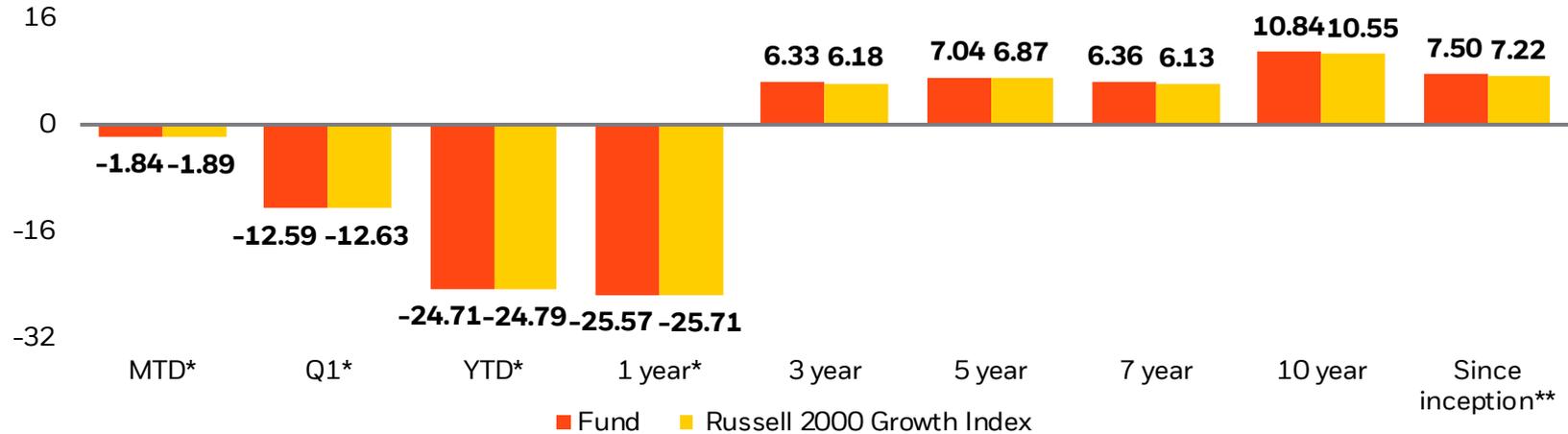
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 2000® Growth Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.05	0.04	0.05	0.07	0.10	0.24

* Period returns for less than a year are cumulative

** Fund inception date 31 October 1998

*** Value is based on trailing monthly observations

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

Russell 2000® Value Fund Characteristics

Fund information

Benchmark	Russell 2000® Value Index
Total fund assets	\$1.27B
Number of issues in fund	1,430
Number of issues in benchmark	1,425

Top 10 holdings

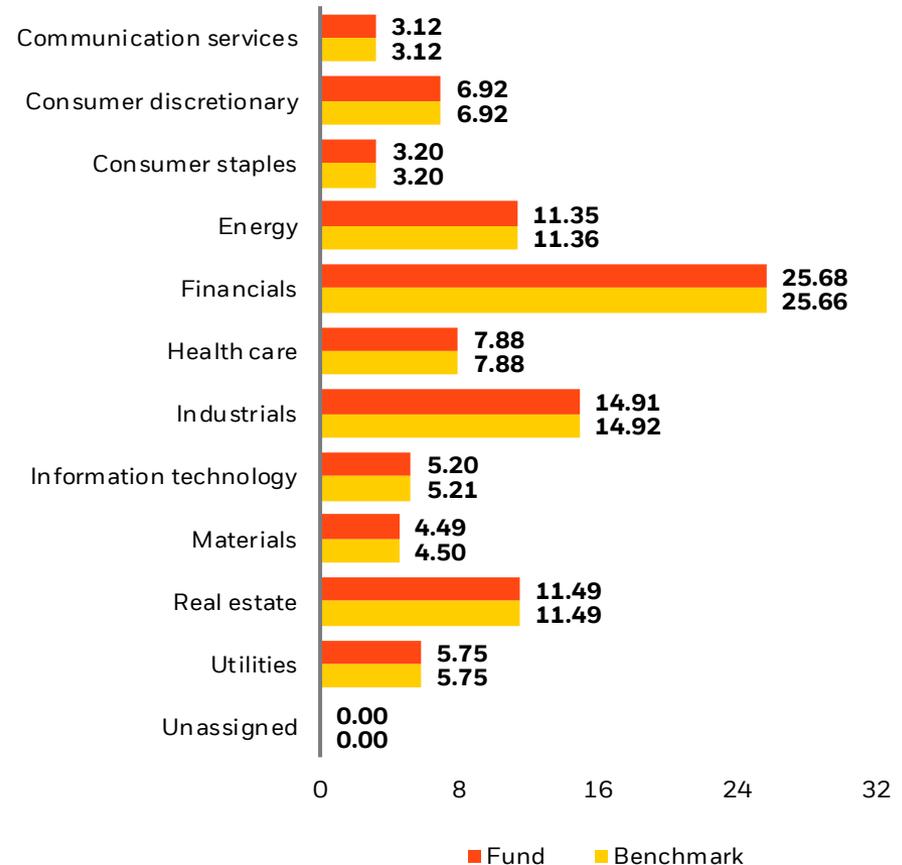
	Fund %	Index %
Ovintiv Inc	1.04	1.04
Antero Resources Corporation	0.81	0.81
Chesapeake Energy Corporation	0.72	0.72
Range Resources Corporation	0.61	0.61
Avis Budget Group, Inc.	0.59	0.59
PDC Energy, Inc.	0.58	0.58
AMC Entertainment Holdings, Inc. Class A	0.56	0.56
Macy's Inc	0.54	0.54
Murphy Oil Corporation	0.47	0.47
SouthState Corporation	0.47	0.47

Fund inception date 31 October 1998

Data is used for analytical purposes only. Index data may differ to those published by the Index due to calculation methods. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

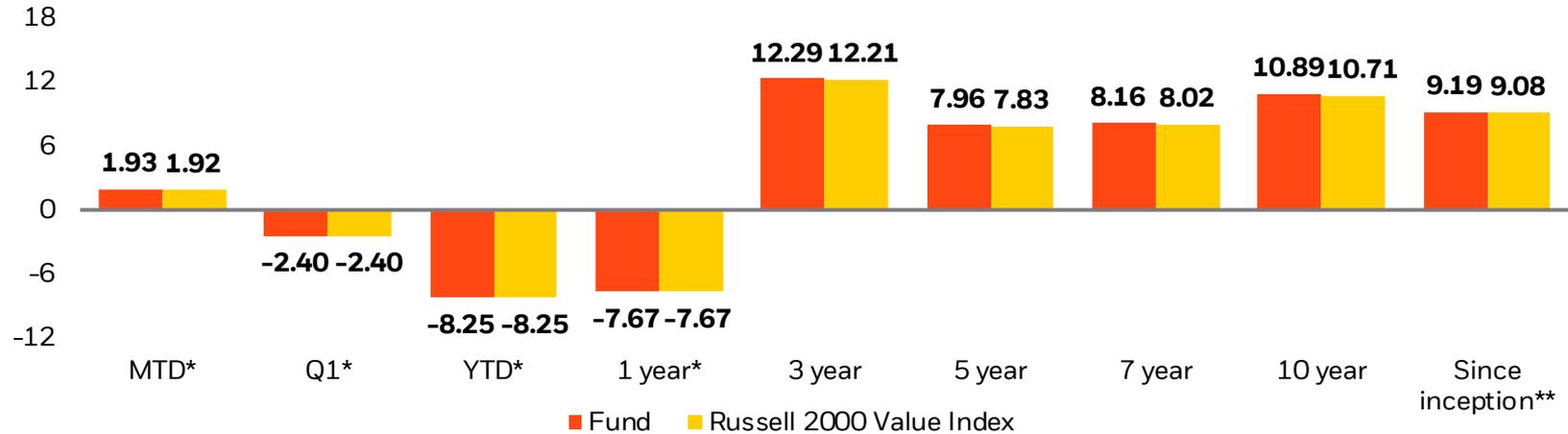
Sources: BlackRock, FTSE Russell

Sector diversification



Russell 2000® Value Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.04	0.09	0.08	0.08	0.09	0.15

* Period returns for less than a year are cumulative

** Fund inception date 31 October 1998

*** Value is based on trailing monthly observations

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

Non-U.S. Equities

BlackRock MSCI World ex-U.S. IMI Index Fund

BlackRock MSCI World ex-U.S. IMI Index Non-Lendable Fund

EAFE Equity Index Fund

BlackRock MSCI EAFE Equity Index Non-Lendable Fund

EAFE Equity Growth Index Fund

EAFE Equity Value Index Fund

BlackRock MSCI EAFE Small Cap Equity Index Fund

BlackRock MSCI EAFE Small Cap Equity Index Non-Lendable Fund

MSCI Emerging Markets Free Fund

Emerging Markets Index Non-Lendable Fund

Emerging Markets Small Capitalization Equity Index Fund

Emerging Markets Small Capitalization Equity Index Non-Lendable Fund

BlackRock MSCI World ex-U.S. IMI Index Fund Characteristics

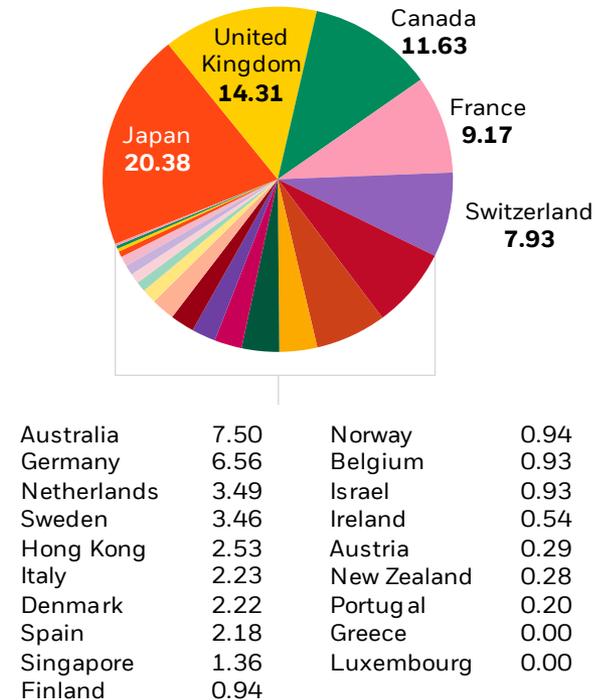
Fund information

Benchmark	MSCI World ex USA IMI Net Dividend Return Index
Total fund value	\$0.70B
Number of issues in fund	3,494
Number of issues in benchmark	3,483

Top 10 holdings

	Country	Weight (%)
Nestle SA	Switzerland	1.64
ASML Holding NV	Netherlands	1.19
Shell PLC	United Kingdom	1.16
Roche Holding Par AG	Switzerland	1.14
AstraZeneca PLC	United Kingdom	1.04
Novartis AG	Switzerland	0.95
Novo Nordisk Class B	Denmark	0.92
LVMH	France	0.90
Toyota Motor Corp	Japan	0.89
BHP Group Ltd	Australia	0.82

Country allocation (%)



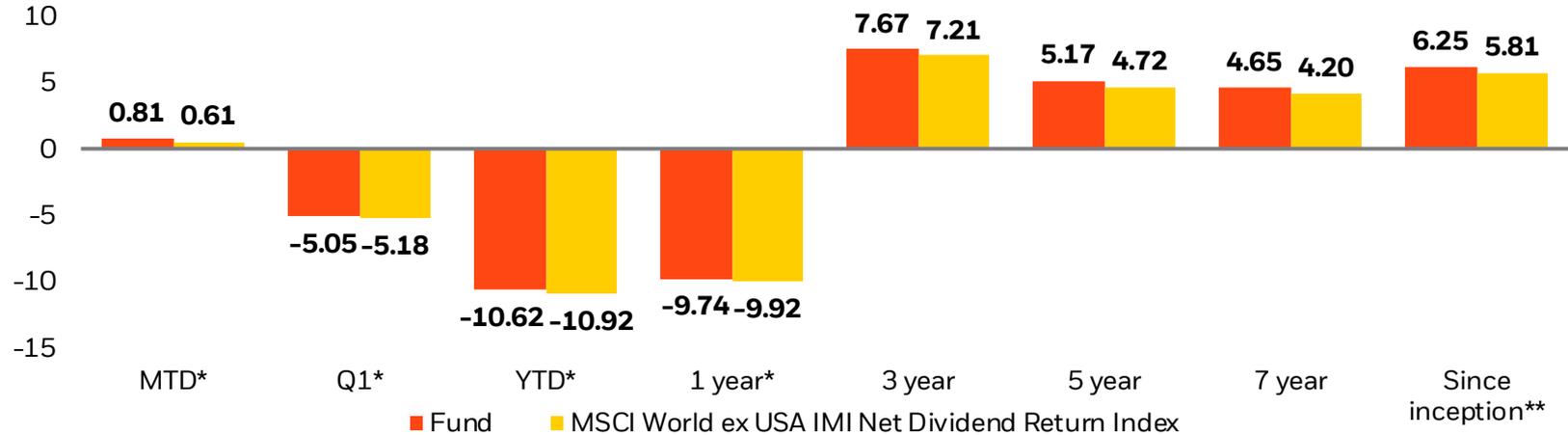
Fund inception date 25 September 2012

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

BlackRock MSCI World ex-U.S. IMI Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	Since incept %
Tracking Error***				0.38	0.30	0.27	0.24	0.21

* Period returns for less than a year are cumulative

** Fund inception date 25 September 2012

*** Value is based on trailing monthly observations

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, MSCI Inc.

BlackRock MSCI World ex-U.S. IMI Index Non-Lendable Fund Characteristics

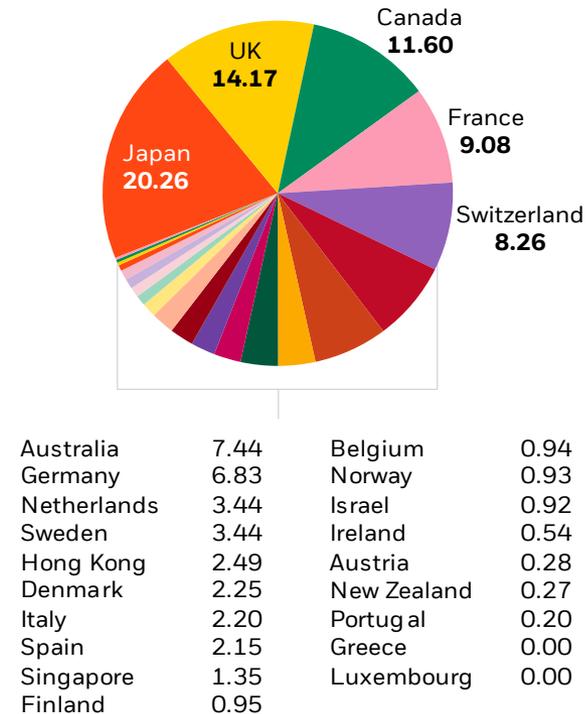
Fund information

Benchmark	MSCI World ex USA IMI Net Dividend Return Index
Total fund value	\$2.05B
Number of issues in fund	3,489
Number of issues in benchmark	3,483

Top 10 holdings

	Country	Weight (%)
Nestle SA	Switzerland	1.72
Roche Holding Par AG	Switzerland	1.20
ASML Holding NV	Netherlands	1.17
Shell PLC	United Kingdom	1.14
AstraZeneca PLC	United Kingdom	1.02
Novartis AG	Switzerland	0.99
Novo Nordisk Class B	Denmark	0.93
LVMH	France	0.89
Toyota Motor Corp	Japan	0.87
BHP Group Ltd	Australia	0.81

Country allocation (%)



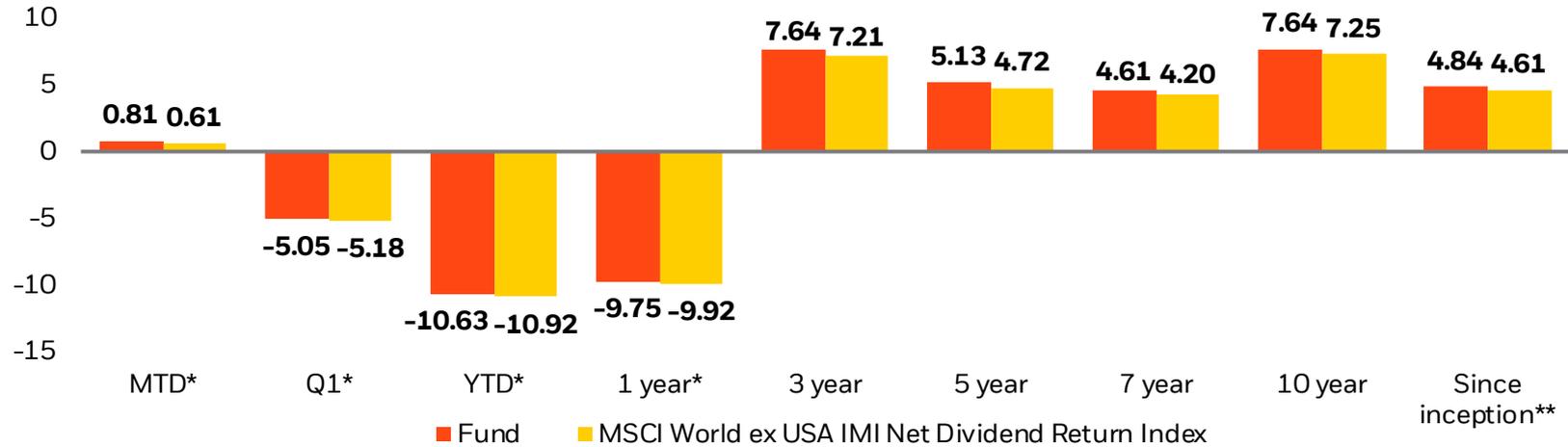
Fund inception date 01 February 2011.

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

BlackRock MSCI World ex-U.S. IMI Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.36	0.30	0.27	0.23	0.20	0.19

* Period returns for less than a year are cumulative

** Fund inception date 01 February 2011

*** Value is based on trailing monthly observations

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, MSCI Inc.

EAFE Equity Index Fund Characteristics

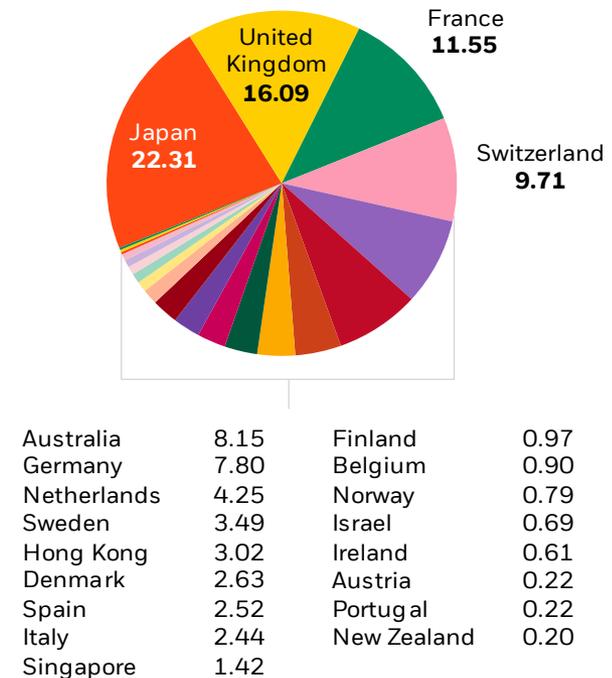
Fund information

Benchmark	MSCI EAFE Net Dividend Return Index
Total fund value	\$37.02B
Number of issues in fund	833
Number of issues in benchmark	826

Top 10 holdings

	Country	Weight (%)
Nestle SA	Switzerland	2.18
ASML Holding NV	Netherlands	1.58
Shell PLC	United Kingdom	1.54
Roche Holding Par AG	Switzerland	1.52
AstraZeneca PLC	United Kingdom	1.38
Novartis AG	Switzerland	1.26
Novo Nordisk Class B	Denmark	1.23
LVMH	France	1.20
Toyota Motor Corp	Japan	1.18
BHP Group Ltd	Australia	1.09

Country allocation (%)



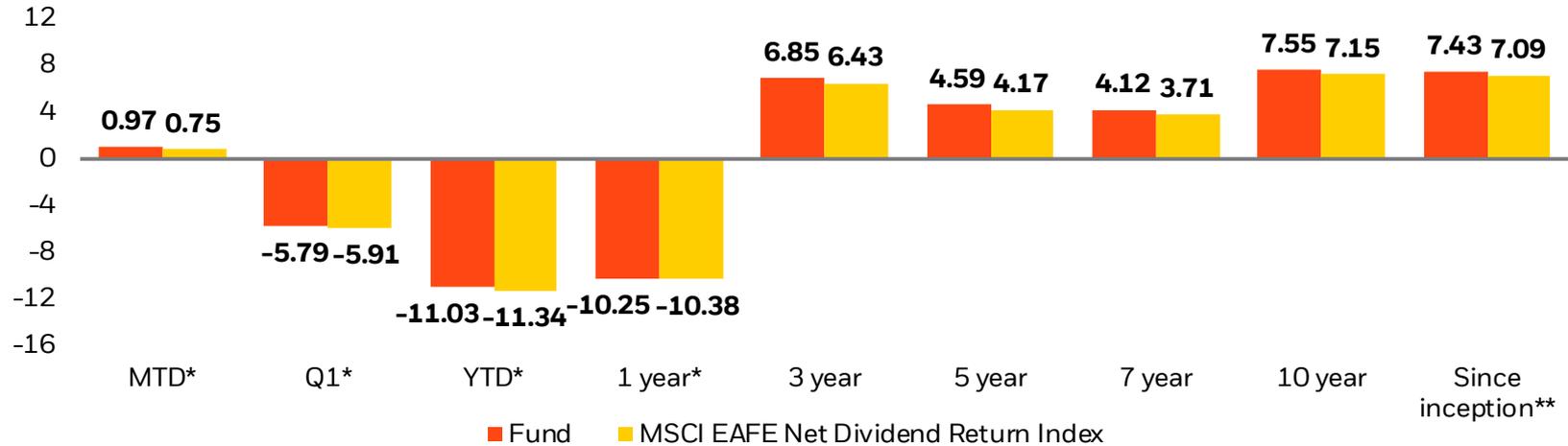
Fund inception date 31 December 1985

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

EAFE Equity Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.42	0.34	0.30	0.26	0.23	0.30

* Period returns for less than a year are cumulative

** Fund inception date 31 December 1985

*** Value is based on trailing monthly observations

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, MSCI Inc.

BlackRock MSCI EAFE Equity Index Non-Lendable Fund Characteristics

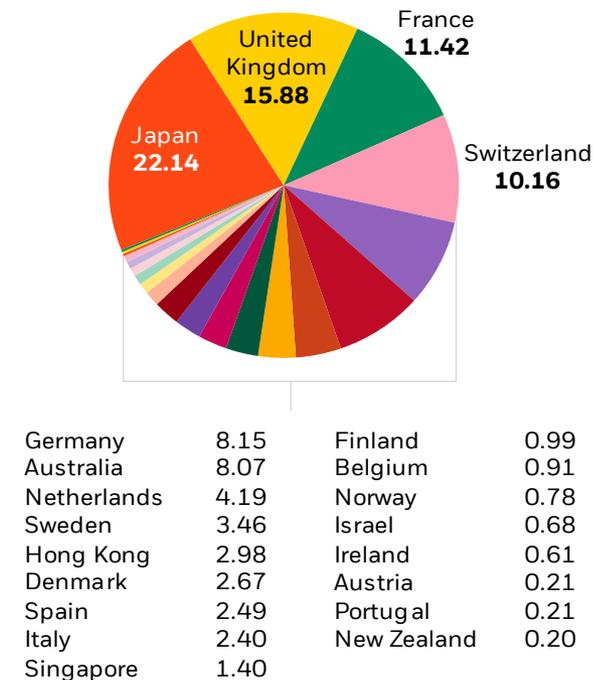
Fund information

Benchmark	MSCI EAFE Net Dividend Return Index
Total fund value	\$24.11B
Number of issues in fund	830
Number of issues in benchmark	826

Top 10 holdings

	Country	Weight (%)
Nestle SA	Switzerland	2.28
Roche Holding Par AG	Switzerland	1.59
ASML Holding NV	Netherlands	1.55
Shell PLC	United Kingdom	1.52
AstraZeneca PLC	United Kingdom	1.36
Novartis AG	Switzerland	1.32
Novo Nordisk Class B	Denmark	1.24
LVMH	France	1.18
Toyota Motor Corp	Japan	1.16
BHP Group Ltd	Australia	1.08

Country allocation (%)



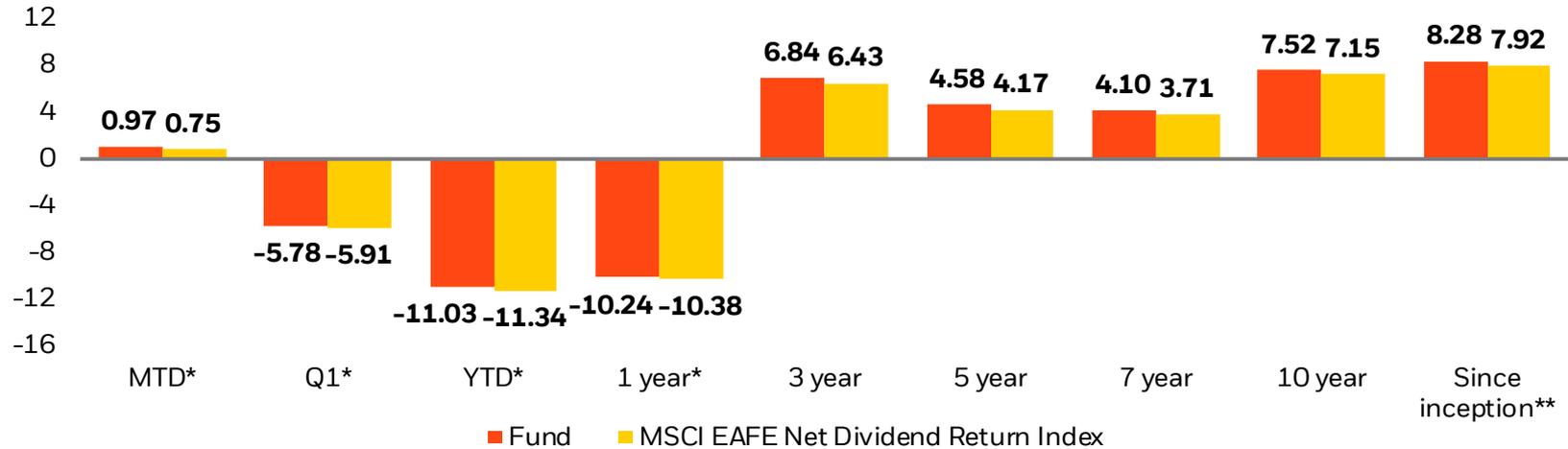
Fund inception date 23 January 2009

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

BlackRock MSCI EAFE Equity Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.41	0.33	0.30	0.26	0.22	0.22

* Period returns for less than a year are cumulative

** Fund inception date 23 January 2009

*** Value is based on trailing monthly observations

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, MSCI Inc.

EAFE Equity Growth Index Fund Characteristics

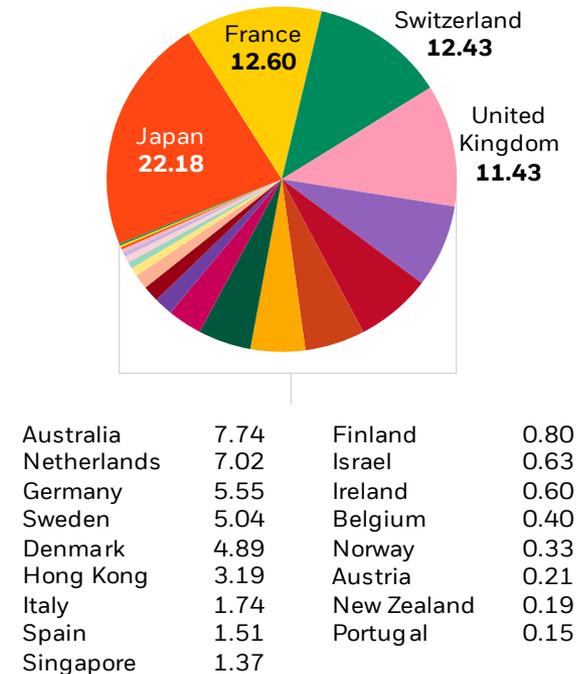
Fund information

Benchmark	MSCI EAFE Growth Net Dividend Return Index
Total fund value	\$0.24B
Number of issues in fund	442
Number of issues in benchmark	438

Top 10 holdings

	Country	Weight (%)
Nestle SA	Switzerland	4.64
Roche Holding Par AG	Switzerland	3.23
ASML Holding NV	Netherlands	3.15
Novo Nordisk Class B	Denmark	2.51
LVMH	France	2.40
AIA Group Ltd	Hong Kong	1.68
Sony Group Corp	Japan	1.60
Diageo PLC	United Kingdom	1.45
AstraZeneca PLC	United Kingdom	1.38
CSL Ltd	Australia	1.27

Country allocation (%)



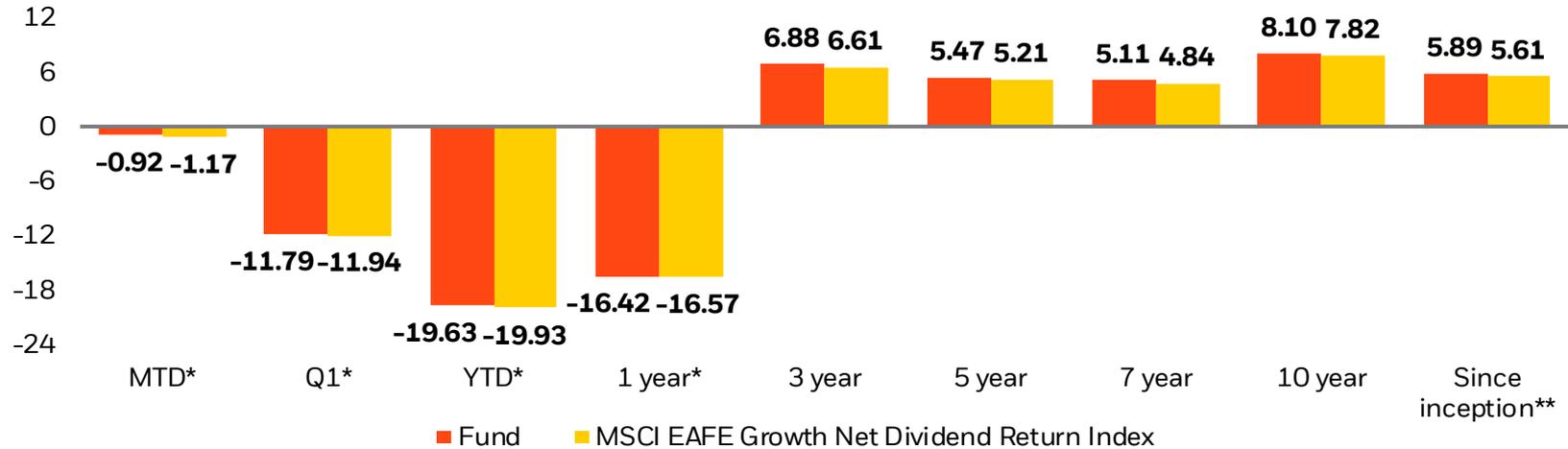
Fund inception date 31 May 2005

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

EAFE Equity Growth Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.39	0.29	0.29	0.25	0.23	0.19

* Period returns for less than a year are cumulative

** Fund inception date 31 May 2005

*** Value is based on trailing monthly observations

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, MSCI Inc.

EAFE Equity Value Index Fund Characteristics

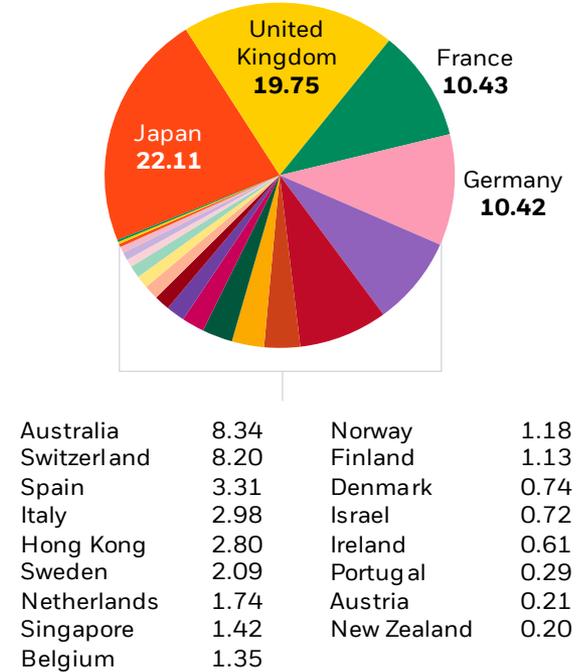
Fund information

Benchmark	MSCI EAFE Value Index
Total fund value	\$1.39B
Number of issues in fund	500
Number of issues in benchmark	498

Top 10 holdings

	Country	Weight (%)
Shell PLC	United Kingdom	3.00
Novartis AG	Switzerland	2.61
Toyota Motor Corp	Japan	2.30
BHP Group Ltd	Australia	2.13
TotalEnergies	France	1.94
HSBC Holdings PLC	United Kingdom	1.79
Unilever PLC	United Kingdom	1.62
Sanofi SA	France	1.59
GSK	United Kingdom	1.46
BP PLC	United Kingdom	1.40

Country allocation (%)



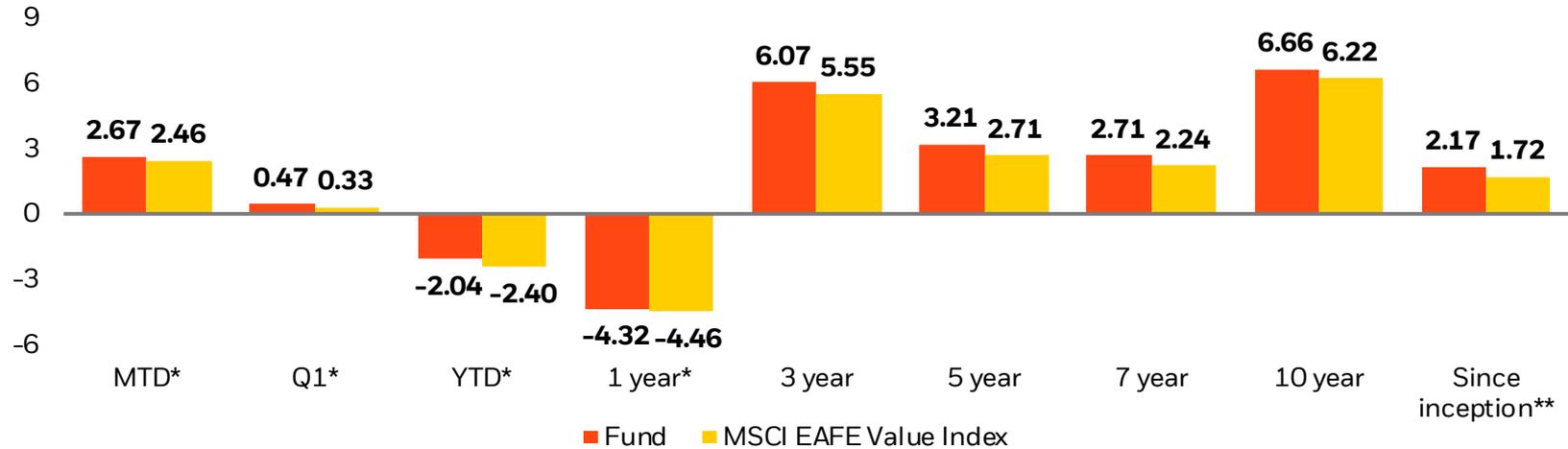
Fund inception date 08 November 2006

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

EAFE Equity Value Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.49	0.41	0.36	0.32	0.28	0.28

* Period returns for less than a year are cumulative

** Fund inception date 08 November 2006

*** Value is based on trailing monthly observations

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, MSCI Inc.

BlackRock MSCI EAFE Small Cap Equity Index Fund Characteristics

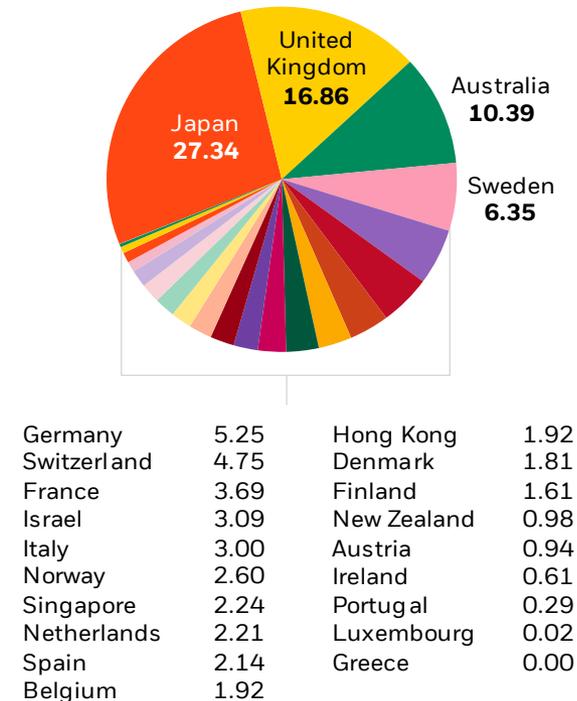
Fund information

Benchmark	MSCI EAFE Small Cap Net Dividend Return Index
Total fund value	\$10.19B
Number of issues in fund	2,363
Number of issues in benchmark	2,354

Top 10 holdings

	Country	Weight (%)
Meggitt PLC	United Kingdom	0.28
Bank of Ireland Group PLC	Ireland	0.25
Rightmove PLC	United Kingdom	0.24
Lynas Rare Earths Ltd	Australia	0.24
Sig Group N AG	Switzerland	0.24
IGO Ltd	Australia	0.23
Metso Outotec Corp	Finland	0.23
ASR Nederland NV	Netherlands	0.23
RS Group PLC	United Kingdom	0.22
Centrica PLC	United Kingdom	0.22

Country allocation (%)



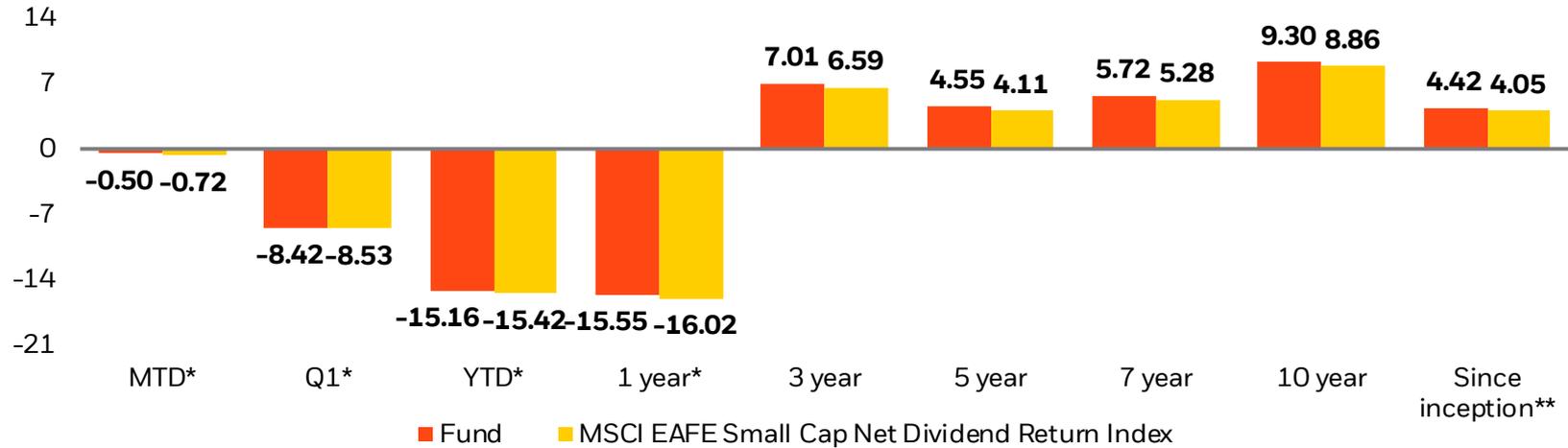
Fund inception date 30 September 2007

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

BlackRock MSCI EAFE Small Cap Equity Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.23	0.16	0.24	0.22	0.22	0.44

* Period returns for less than a year are cumulative

** Fund inception date 30 September 2007

*** Value is based on trailing monthly observations

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, MSCI Inc.

BlackRock MSCI EAFE Small Cap Equity Index Non-Lendable Fund Characteristics

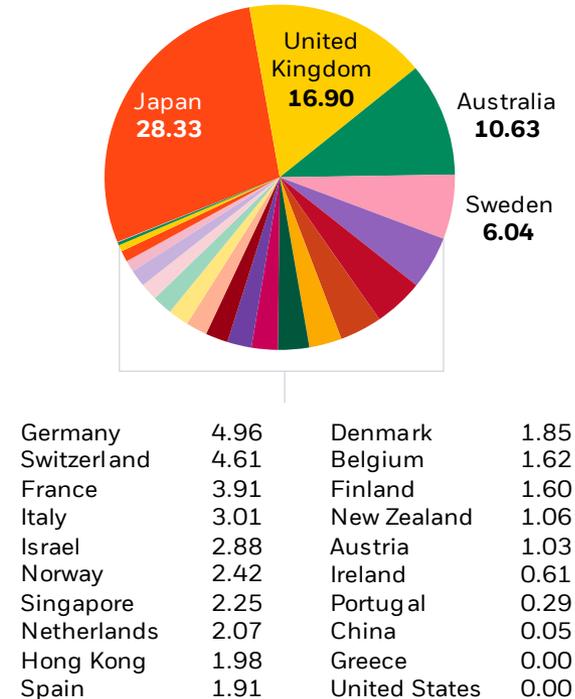
Fund information

Benchmark	MSCI EAFE Small Cap Net Return Index
Total fund value	\$3.10B
Number of issues in fund	2,358
Number of issues in benchmark	2,356

Top 10 holdings

	Fund (%)	Index (%)
Meggitt PLC	0.28	0.28
Bank of Ireland Group PLC	0.25	0.26
Rightmove PLC	0.25	0.24
Lynas Rare Earths Ltd	0.24	0.24
SIG Group N AG	0.23	0.23
ASR Nederland NV	0.23	0.23
IGO Ltd	0.23	0.23
Metso Outotec Corp	0.23	0.23
Centrica PLC	0.22	0.22
RS Group PLC	0.22	0.21

Country allocation (%)



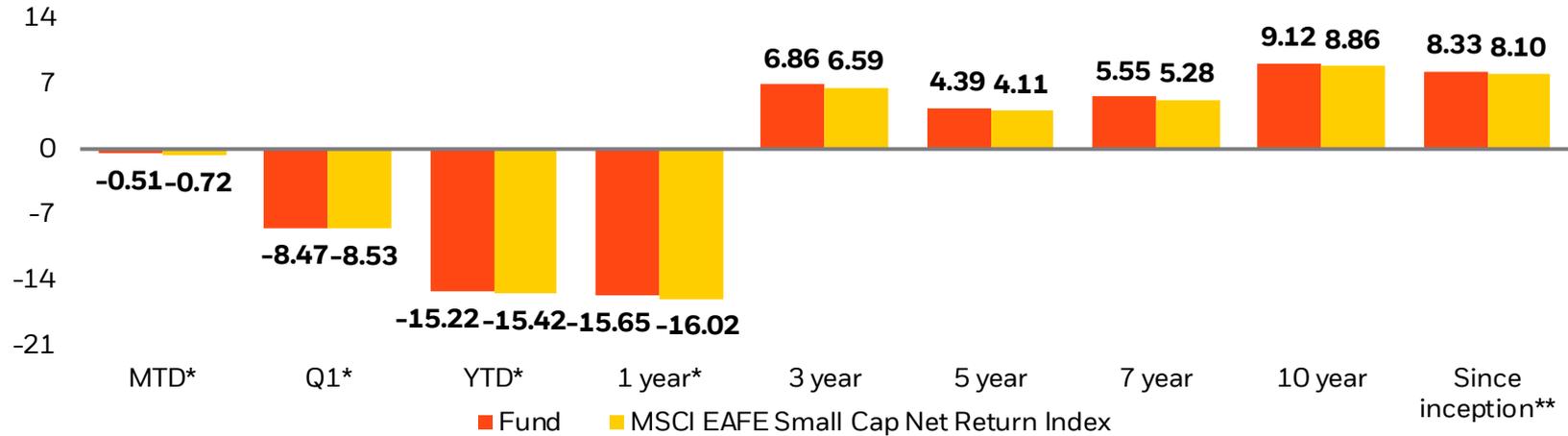
Fund inception date 31 July 2009

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

BlackRock MSCI EAFE Small Cap Equity Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.24	0.18	0.24	0.21	0.22	0.22

* Period returns for less than a year are cumulative

** Fund inception date 31 July 2009

*** Value is based on trailing monthly observations

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, MSCI Inc.

MSCI Emerging Markets Free Fund Characteristics

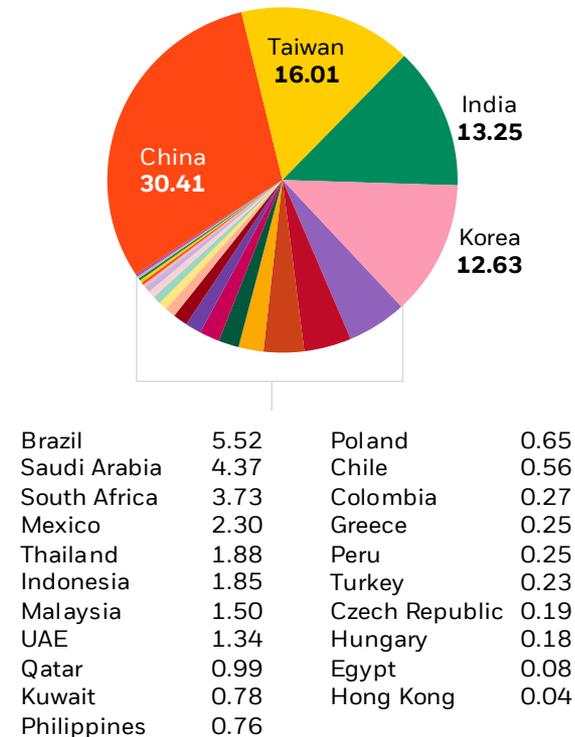
Fund information

Benchmark	MSCI Emerging Markets Net Dividend Return Index
Total fund value	\$16.72B
Number of issues in fund	1,382
Number of issues in benchmark	1,393

Top 10 holdings

	Country	Weight (%)
Taiwan Semiconductor Manufacturing	Taiwan Rep of China	6.83
Tencent Holdings Ltd	China	4.09
Samsung Electronics Ltd	South Korea	3.72
Alibaba Group Holding Ltd	China	2.64
Reliance Industries Ltd	India	1.49
Meituan	China	1.38
Cia Vale Do Rio Doce Sh	Brazil	1.04
China Construction Bank Corp H	China	1.02
Infosys Ltd	India	0.94
JD.com Class A Inc	China	0.82

Country allocation (%)



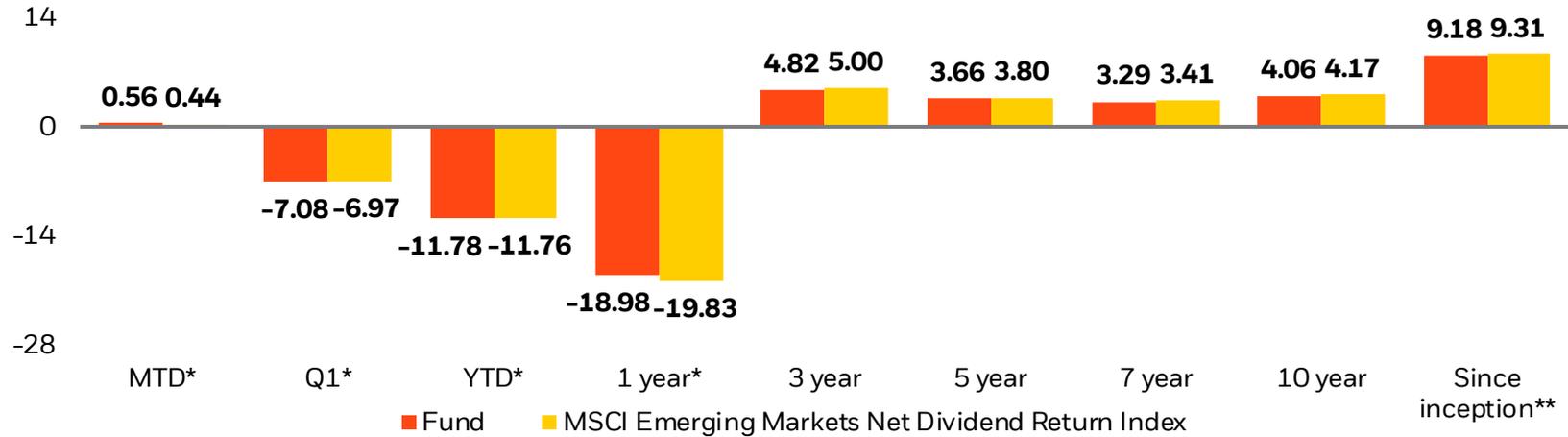
Fund inception date 30 November 2002

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

MSCI Emerging Markets Free Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				2.11	1.51	1.17	0.99	0.83	0.79

* Period returns for less than a year are cumulative

** Fund inception date 30 November 2002

*** Value is based on trailing monthly observations

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, MSCI Inc.

Emerging Markets Index Non-Lendable Fund Characteristics

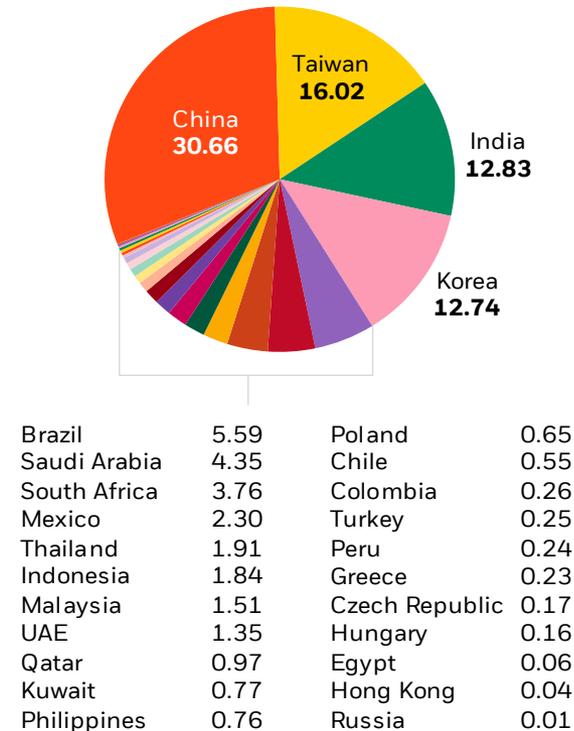
Fund information

Benchmark	MSCI Emerging Markets Net Dividend Return Index
Total fund value	\$11.72B
Number of issues in fund	1,381
Number of issues in benchmark	1,393

Top 10 holdings

	Country	Weight (%)
Taiwan Semiconductor Manufacturing	Taiwan Rep of China	6.79
Tencent Holdings Ltd	China	4.12
Samsung Electronics Ltd	South Korea	3.72
Alibaba Group Holding Ltd	China	2.66
Reliance Industries Ltd	India	1.47
Meituan	China	1.40
Cia Vale Do Rio Doce Sh	Brazil	1.04
China Construction Bank Corp H	China	1.02
Infosys Ltd	India	0.93
JD.com Class A Inc	China	0.83

Country allocation (%)



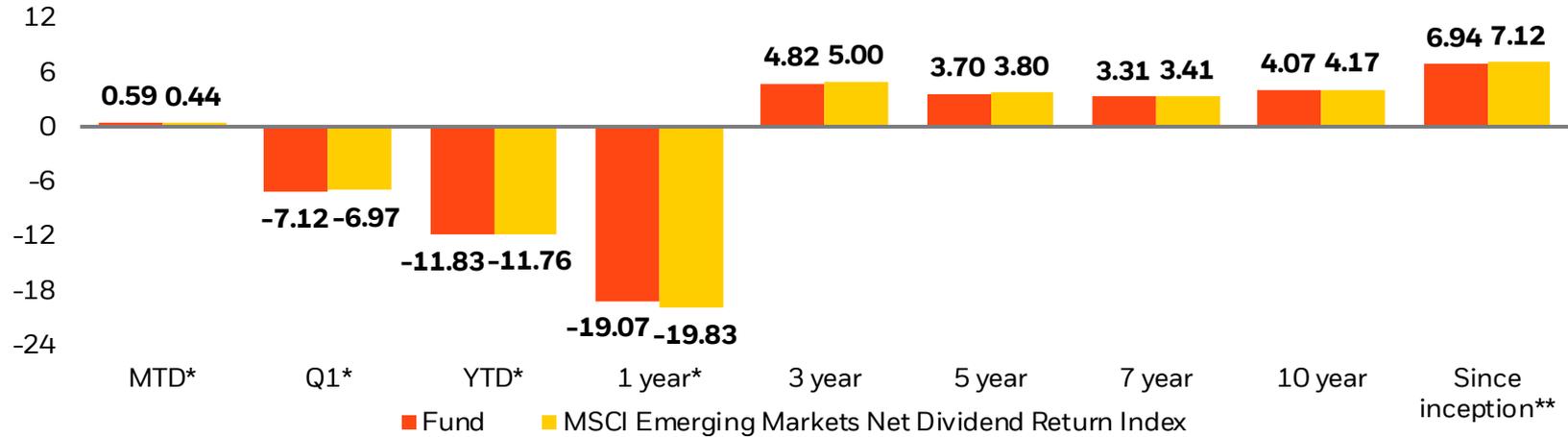
Fund inception date 17 December 2008

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

Emerging Markets Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				2.13	1.50	1.16	0.98	0.83	0.96

* Period returns for less than a year are cumulative

** Fund inception date 17 December 2008

*** Value is based on trailing monthly observations

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, MSCI Inc.

Emerging Markets Small Capitalization Equity Index Fund Characteristics

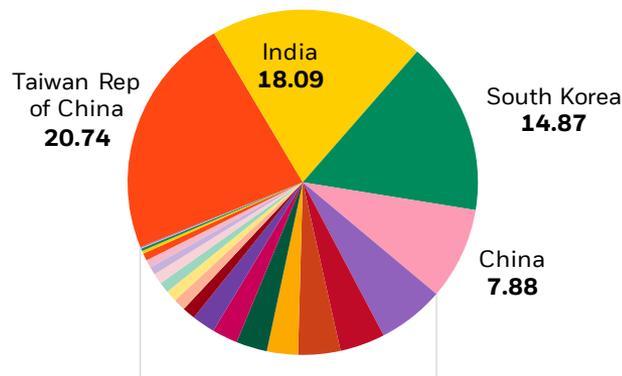
Fund information

Benchmark	MSCI Emerging Markets Small Cap Net Dividend Return Index
Total fund value	\$2.03B
Number of issues in fund	1,844
Number of issues in benchmark	1,830

Top 10 holdings

	Country	Weight (%)
Adani Power Ltd	India	0.31
Sino-American Silicon Products Inc	Taiwan Rep of China	0.28
Voltas Ltd	India	0.28
Zee Entertainment Enterprises Ltd	India	0.27
Sendas Distribuidora SA	Brazil	0.27
Ashok Leyland Ltd	India	0.26
Wistron Corp	Taiwan Rep of China	0.26
Crompton Greaves Consumer Electric	India	0.25
Taiwan Business Bank Ltd	Taiwan Rep of China	0.25
Macronix International Ltd	Taiwan Rep of China	0.25

Country allocation (%)



Brazil	5.64	Qatar	0.91
South Africa	3.82	Chile	0.68
Thailand	3.56	UAE	0.68
Malaysia	2.62	Greece	0.62
Saudi Arabia	2.62	Colombia	0.25
Indonesia	2.17	Egypt	0.21
Mexico	1.97	Hong Kong	0.09
Poland	1.11	Hungary	0.07
Kuwait	1.03	Russian Fed	0.00
Turkey	0.96	United States	0.00
Philippines	0.91	Czech Republic	0.00

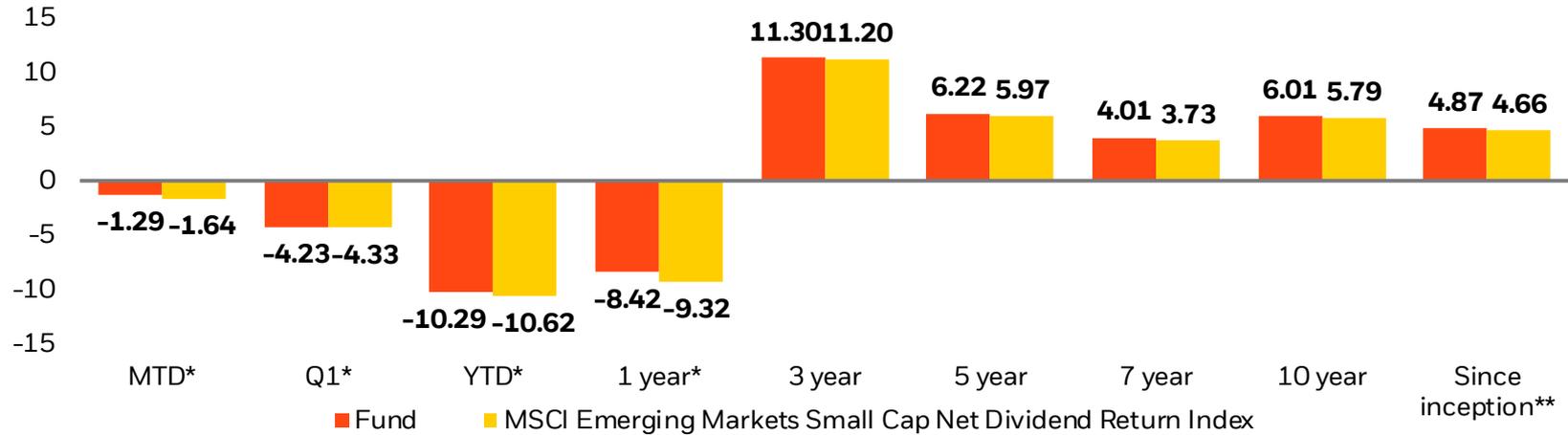
Fund inception date 02 February 2012

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

Emerging Markets Small Capitalization Equity Index Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				1.31	0.97	0.78	0.70	0.60	0.60

* Period returns for less than a year are cumulative

** Fund inception date 02 February 2012

*** Value is based on trailing monthly observations

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, MSCI Inc.

Emerging Markets Small Capitalization Equity Index Non-Lendable Fund Characteristics

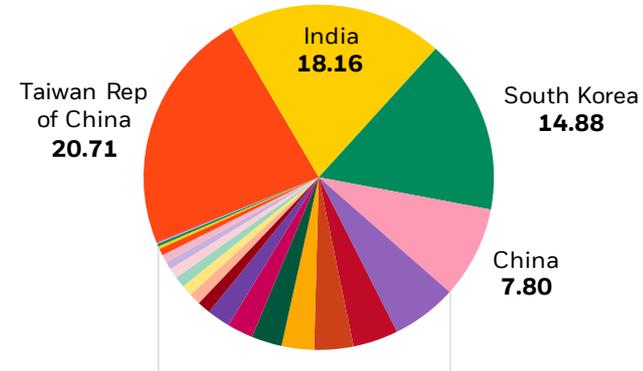
Fund information

Benchmark	MSCI Emerging Markets Small Cap Net Dividend Return Index
Total fund value	\$3.38B
Number of issues in fund	1,909
Number of issues in benchmark	1,830

Top 10 holdings

	Country	Weight (%)
Adani Power Ltd	India	0.31
Sino-American Silicon Products Inc	Taiwan Rep of China	0.29
Voltas Ltd	India	0.28
Zee Entertainment Enterprises Ltd	India	0.27
Sendas Distribuidora SA	Brazil	0.26
Ashok Leyland Ltd	India	0.26
Crompton Greaves Consumer Electric	India	0.25
Wistron Corp	Taiwan Rep of China	0.25
Laurus Labs Ltd	India	0.24
Macronix International Ltd	Taiwan Rep of China	0.24

Country allocation (%)



Brazil	5.51	Philippines	0.87
South Africa	3.79	UAE	0.67
Thailand	3.29	Chile	0.66
Malaysia	2.72	Greece	0.58
Saudi Arabia	2.55	Colombia	0.23
Indonesia	2.18	Egypt	0.23
Mexico	1.96	Hong Kong	0.09
Poland	1.12	Hungary	0.05
Kuwait	0.99	Czech Republic	0.04
Turkey	0.93	Russian Fed	0.00
Qatar	0.91	United States	0.00

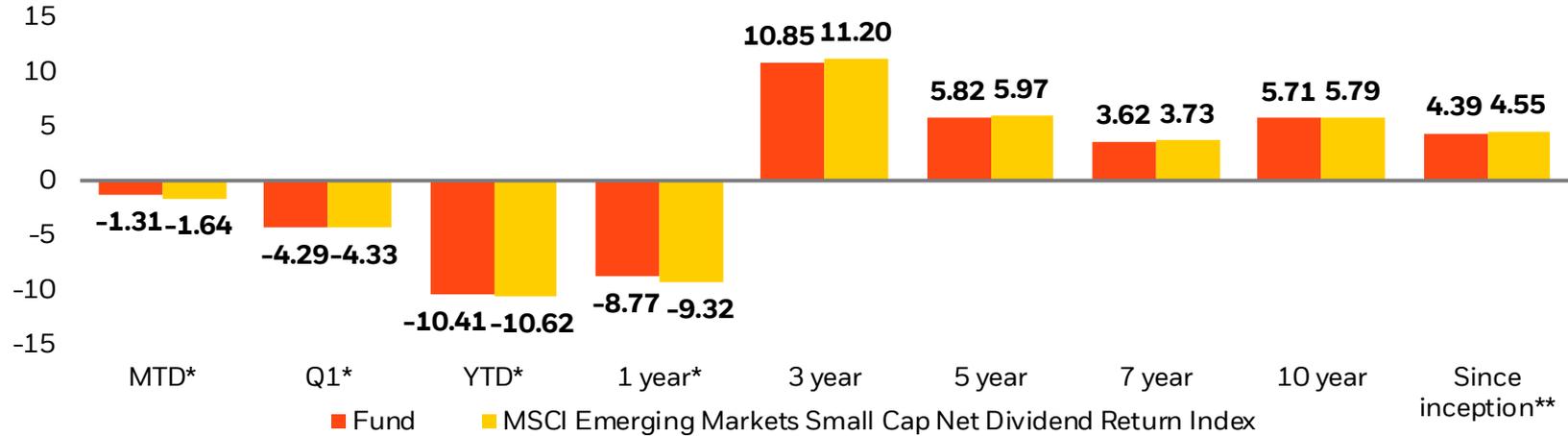
Fund inception date 11 December 2009

Data is used for analytical purposes only. Breakdowns may not sum to 100 percent due to rounding, exclusion of cash, STIF and statistically immaterial factors. Portfolio holdings are subject to change and are not intended as a recommendation of individual securities.

Sources: BlackRock, MSCI Inc.

Emerging Markets Small Capitalization Equity Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD* %	Q1* %	YTD* %	1-yr* %	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				1.32	0.95	0.76	0.66	0.58	0.61

* Period returns for less than a year are cumulative

** Fund inception date 11 December 2009

*** Value is based on trailing monthly observations

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, MSCI Inc.

Fixed Income

U.S. Debt Index Fund

U.S. Debt Index Non-Lendable Fund

U.S. Treasury Inflation Protected Securities Fund

U.S. Treasury Inflation Protected Securities Non-Lendable Fund

U.S. Debt Index Fund

Portfolio profile

	U.S. Debt Index Fund	Bloomberg U.S. Aggregate Bond Index
Market value (\$B)	8.52	25,167.35
# Issues	9,908	12,583
Characteristics		
Coupon (%)	2.62	2.47
Yield to maturity (YTM) (%)	3.34	3.36
Weighted avg life (yrs)	8.71	8.81
Effective duration (yrs)	6.52	6.59
Spread duration	4.11	4.11
Option adjusted spread (bps)	44	44
Convexity	0.61	0.62
Quality breakdown (mkt val %)		
AAA or above	73.82	73.23
AA	2.58	2.82
A	10.62	10.83
BBB	12.90	13.03
Bellow BBB	0.08	0.08
NR	0.00	0.02

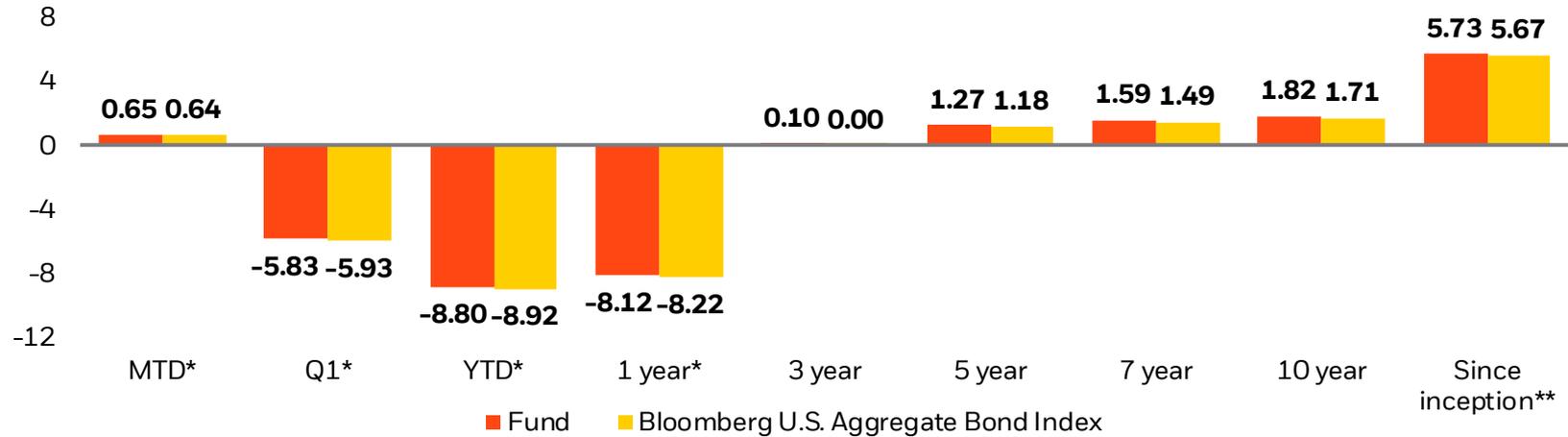
	U.S. Debt Index Fund	Bloomberg U.S. Aggregate Bond Index
Sector breakdown (mkt val %)		
Treasury	40.02	39.99
Agencies	1.01	1.32
Financials	7.99	8.04
Industrials	14.21	14.45
Utilities	1.93	2.01
Non-US credit	3.24	3.38
Taxable munis	0.60	0.66
ABS	0.31	0.32
Mortgages	27.65	27.86
Hybrid ARM	0.01	0.00
CMBS	1.96	1.96
Foreign Government	0.00	0.00
Other	0.00	0.01
Cash	1.07	0.00
Weighted avg life breakdown (mkt val %)		
0-1	2.63	0.17
1-2	8.87	10.59
2-3	7.27	10.12
3-5	19.44	15.88
5-7	15.39	15.69
7-10	21.86	25.39
10-20	12.71	10.60
20-30	10.97	10.71
30+	0.86	0.86

Fund inception date 30 June 1986

Data is for analytical purposes only. Index data points may differ to those published by the Index due to different calculation criteria. The credit quality of a particular security or group of securities may be based upon a rating from a nationally recognized statistical rating organization or, if unrated by a ratings organization, assigned an internal rating by BlackRock, neither of which ensures the stability or safety of an overall portfolio. Breakdowns may not sum to total due to rounding, exclusion of cash, STIF, and statistically immaterial factors. Sources: BlackRock, Bloomberg Finance L.P.

U.S. Debt Index Fund Performance

Gross total return in USD (annualized* %)



	MTD %*	Q1 %*	YTD %*	1-yr %*	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.11	0.07	0.06	0.06	0.09	0.15

* Period returns for less than a year are cumulative

** Fund inception date 30 June 1986

*** Value is based on trailing monthly observations

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, Bloomberg Finance L.P.

U.S. Debt Index Fund Non-Lendable Fund

Portfolio profile

	U.S. Debt Index Fund Non-Lendable Fund	Bloomberg U.S. Aggregate Bond Index
Market value (\$B)	3.57	25,167.35
# Issues	9,548	12,583
Characteristics		
Coupon (%)	2.56	2.47
Yield to maturity (YTM) (%)	3.35	3.36
Weighted avg life (yrs)	8.73	8.81
Effective duration (yrs)	6.54	6.59
Spread duration	4.13	4.11
Option adjusted spread (bps)	44	44
Convexity	0.61	0.62
Weighted avg life breakdown (mkt val %)		
<0	0.00	0.00
0-1	9.44	11.31
1-2	8.63	10.27
2-3	11.18	8.29
3-4	9.82	10.47
4-5	15.46	13.77
5-6	10.94	13.17
6-7	12.47	11.69
7-8	2.73	3.74
8-9	1.10	0.75
9-10	7.48	7.26
10-15	6.82	7.44
15-20	1.78	1.58
20-25	0.00	0.00
25+	2.15	0.25

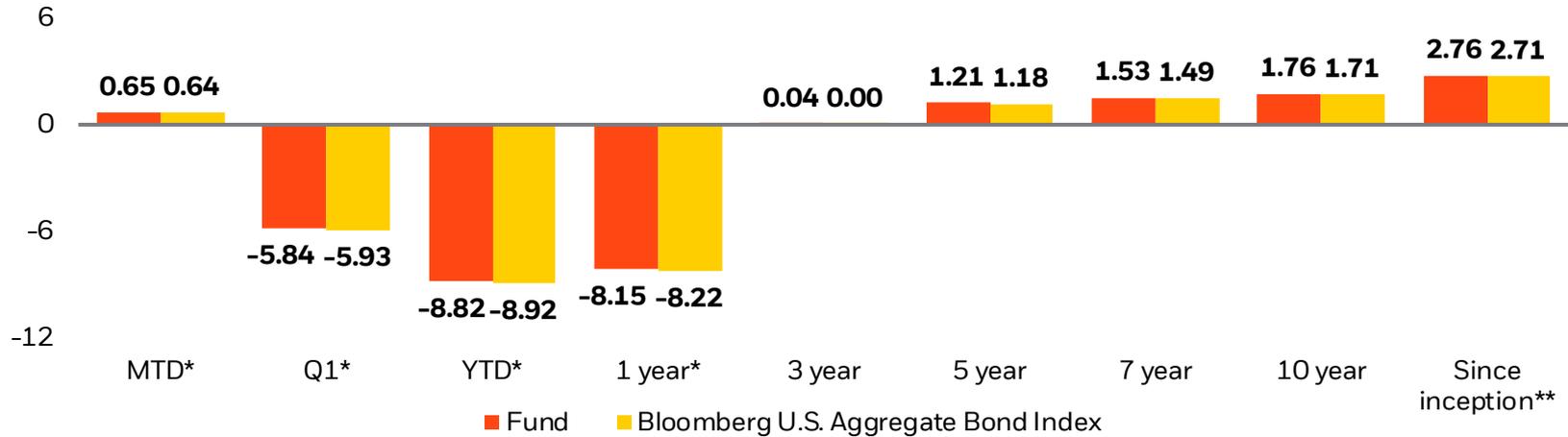
	U.S. Debt Index Fund Non-Lendable Fund	Bloomberg U.S. Aggregate Bond Index
Quality breakdown (mkt val %)		
AAA or above	73.58	73.23
AA	2.60	2.82
A	10.72	10.83
BBB	13.02	13.03
Below BBB	0.08	0.08
NR	0.00	0.02
Sector breakdown (mkt val %)		
Treasury	39.54	40.00
Agencies	1.42	1.32
Financials	8.06	8.04
Industrials	14.28	14.45
Utilities	1.96	2.01
Non-US credit	3.23	3.38
Taxable munis	0.59	0.66
ABS	0.31	0.32
Mortgages	27.65	27.86
GNMA 30 year	5.90	5.83
GNMA 15 year	0.00	0.03
FHLM gold 30 year	1.09	1.28
FHLM gold 15 year	0.23	0.24
FNMA 30	10.69	10.43
FNMA 15	1.76	1.81
Other	7.98	8.24
Hybrid ARM	0.01	0.00
CMBS	1.96	1.96
Foreign Government	0.00	0.00
Other	0.00	0.00
Cash	0.99	0.00

Fund inception date 18 September 2009

Data is for analytical purposes only. Index data points may differ to those published by the Index due to different calculation criteria. The credit quality of a particular security or group of securities may be based upon a rating from a nationally recognized statistical rating organization or, if unrated by a ratings organization, assigned an internal rating by BlackRock, neither of which ensures the stability or safety of an overall portfolio. Breakdowns may not sum to total due to rounding, exclusion of cash, STIF, and statistically immaterial factors. Sources: BlackRock, Bloomberg Finance LP.

U.S. Debt Index Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD %*	Q1 %*	YTD %*	1-yr %*	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.10	0.07	0.05	0.06	0.09	0.09

* Period returns for less than a year are cumulative

** Fund inception date 18 September 2009

*** Value is based on trailing monthly observations

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, Bloomberg Finance L.P.

U.S. Treasury Inflation Protected Securities Fund

Portfolio profile

	U.S. Treasury Inflation Protected Securities Fund	Bloomberg U.S. Treasury Inflation Protected Securities (TIPS) Index (Series L)
Market value (\$B)	3.46	1,217.33
# Issues	46	46
Characteristics		
Coupon (%)	0.63	0.64
Yield to maturity (YTM) (%)	2.77	2.78
Weighted avg life (yrs)	7.64	7.64
Effective duration (yrs)	7.14	7.14
Convexity	0.99	0.98

	U.S. Treasury Inflation Protected Securities Fund	Bloomberg U.S. Treasury Inflation Protected Securities (TIPS) Index (Series L)
Weighted avg life breakdown (mkt val %)		
0-1	0.53	0.00
1-2	9.77	9.76
2-3	11.78	14.15
3-5	27.88	24.74
5-7	14.88	16.68
7-10	19.99	19.61
10-20	3.79	3.60
20-30	11.38	11.46
30+	0.00	0.00

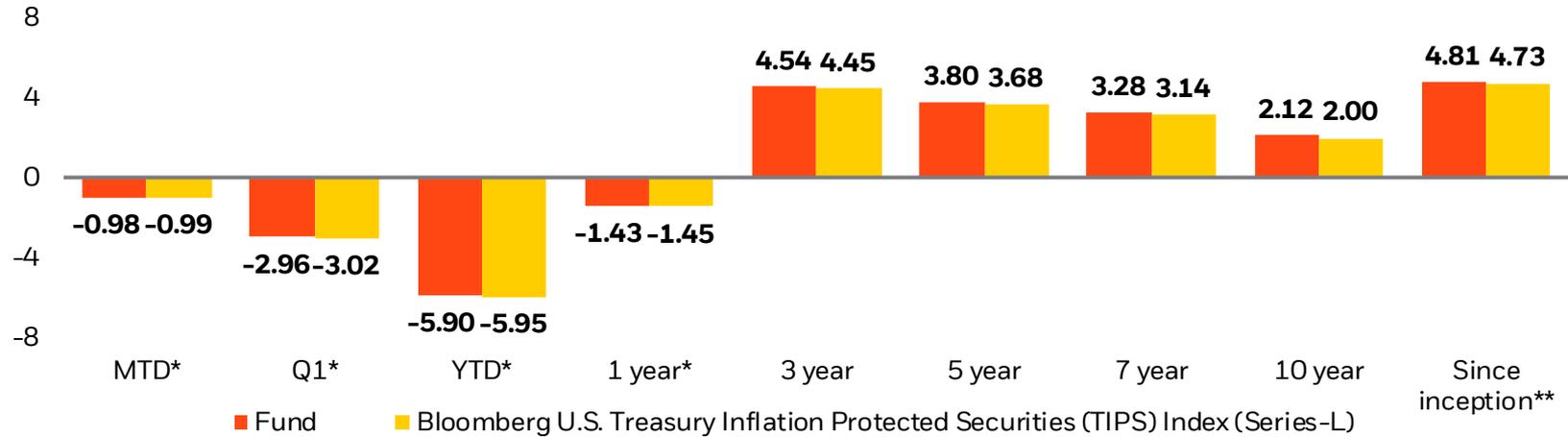
Fund inception date 15 November 2001

Data is for analytical purposes only. Index data points may differ to those published by the Index due to different calculation criteria. Breakdowns may not sum to total due to rounding, exclusion of cash, STIF, and statistically immaterial factors.

Sources: BlackRock, Bloomberg Finance L.P.

U.S. Treasury Inflation Protected Securities Fund Performance

Gross total return in USD (annualized* %)



	MTD %*	Q1 %*	YTD %*	1-yr %*	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.08	0.10	0.08	0.08	0.12	0.12

* Period returns for less than a year are cumulative

** Fund inception date 15 November 2001

*** Value is based on trailing monthly observations

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, Bloomberg Finance L.P.

U.S. Treasury Inflation Protected Securities Non-Lendable Fund Portfolio profile

	U.S. Treasury Inflation Protected Securities NL Fund	Bloomberg U.S. Treasury Inflation Protected Securities (TIPS) Index (Series L)
Market value (\$B)	6.57	1,217.33
# Issues	46	46
Characteristics		
Coupon (%)	0.61	0.64
Yield to maturity (YTM) (%)	2.78	2.78
Weighted avg life (yrs)	7.62	7.64
Effective duration (yrs)	7.14	7.14
Convexity	0.98	0.98

	U.S. Treasury Inflation Protected Securities NL Fund	Bloomberg U.S. Treasury Inflation Protected Securities (TIPS) Index (Series L)
Weighted avg life breakdown (mkt val %)		
0-1	0.20	0.00
1-2	9.49	9.76
2-3	12.97	14.15
3-5	27.38	24.74
5-7	15.03	16.68
7-10	20.01	19.61
10-20	3.10	3.60
20-30	11.81	11.46
30+	0.00	0.00

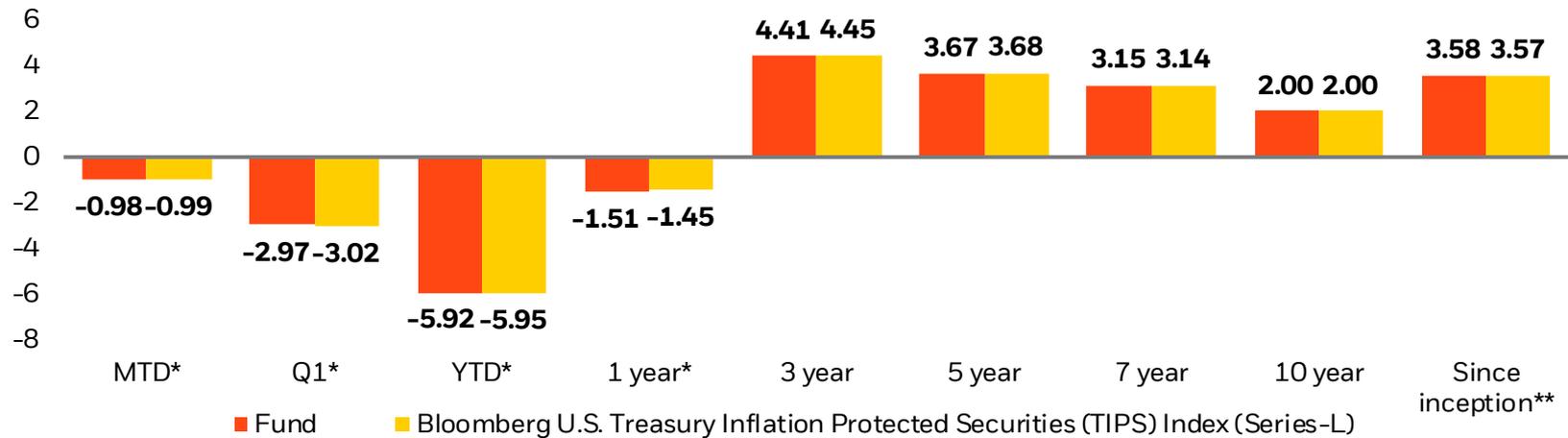
Fund inception date 01 October 2009

Data is for analytical purposes only. Index data points may differ to those published by the Index due to different calculation criteria. Breakdowns may not sum to total due to rounding, exclusion of cash, STIF, and statistically immaterial factors.

Sources: BlackRock, Bloomberg Finance L.P.

U.S. Treasury Inflation Protected Securities Non-Lendable Fund Performance

Gross total return in USD (annualized* %)



	MTD %*	Q1 %*	YTD %*	1-yr %*	3-yr %	5-yr %	7-yr %	10-yr %	Since incept %
Tracking Error***				0.09	0.09	0.07	0.08	0.12	0.11

* Period returns for less than a year are cumulative

** Fund inception date 01 October 2009

*** Value is based on trailing monthly observations

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, Bloomberg Finance L.P.

V. Appendix

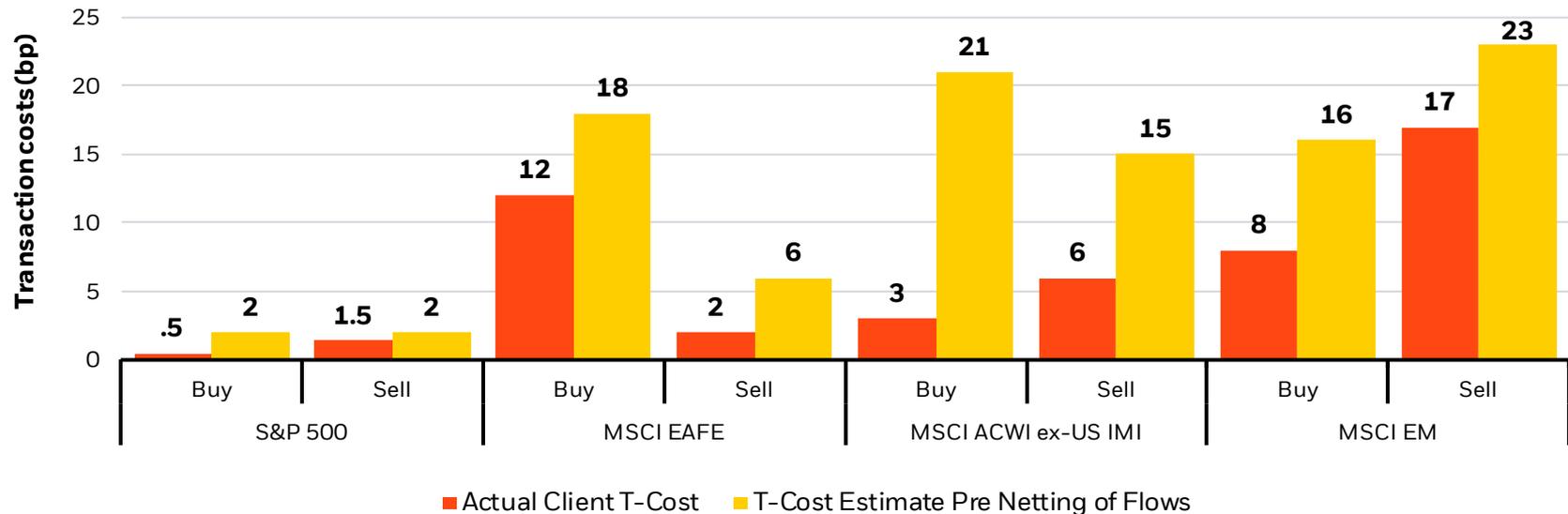
BlackRock's scale can help drive lower costs

The scale of BlackRock's index platform can help **lower transaction costs** in the following ways:

- The size of our trading footprint allows us to negotiate low commission rates
- The diversity of our client base, coupled with the range of indices we manage assets against, facilitates the industry's largest internal market place for potential netting of client flows
- Large seasoned funds may require less market trading for flows relative to small asset pools

BlackRock transaction costs vs. ex-ante estimates¹

Average client cost in 2021, as of Dec 31, 2021



¹ Estimated transaction costs includes commissions and taxes based on BlackRock's current standard negotiated rates
 Source: BlackRock. BlackRock Flagship Index Funds shown
 Historical transaction costs are not indicative of future results

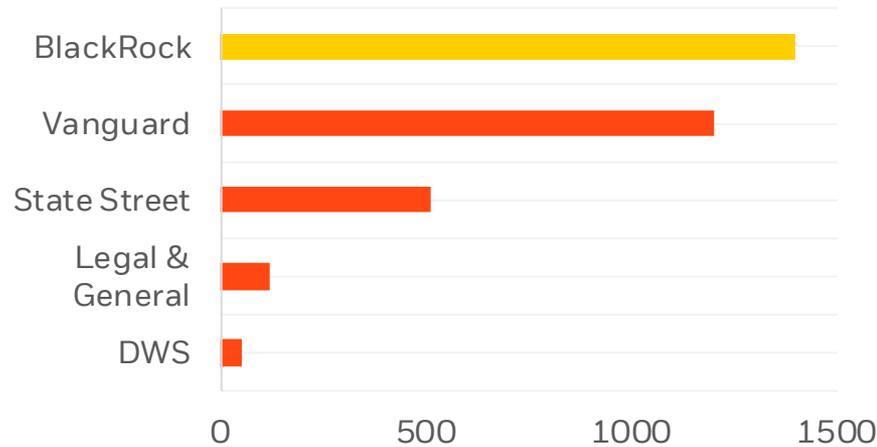
BlackRock's Fixed Income Indexing Platform

Global leader in Fixed Income Index assets

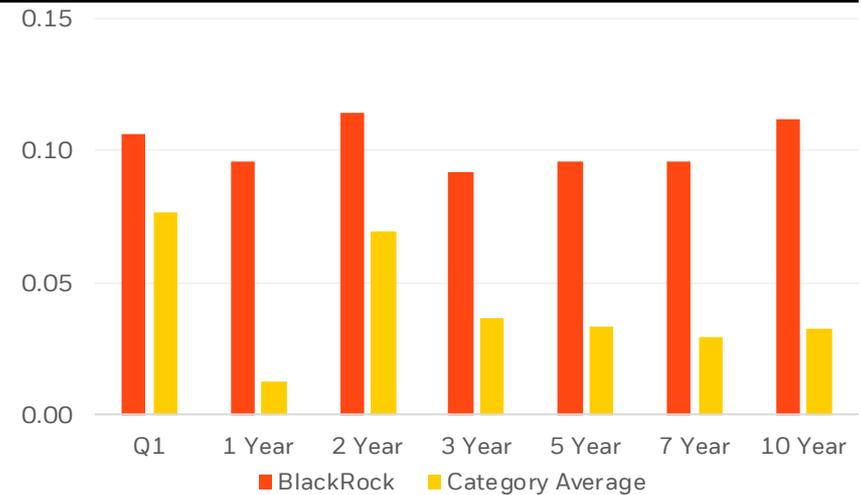
There are four key reasons to pick BlackRock over any other index provider:

- Low historical tracking error¹
- An experienced, stable team
- Potential for Low transaction costs from size and scale
- Transparent pricing and no cross subsidization as BlackRock has no custody business

Global Fixed Income Index Market AUM (\$B)²



Gross Tracking Difference vs. BBG Barclays US Aggregate Index³



1 Source: BlackRock. Realized 5-year gross tracking error as of 3/31/2022 is 6 bps for the BlackRock U.S. Debt Index Collective Trust Fund. Please see slide 20 for additional information on the Fund's tracking error.

2 Source: Pension & Investments. All dollar values are in gross \$ billions.; data as of 1 June 2021. Managers included based on largest global fixed income index market AUM per Pension & Investments.

3 Source: eVestment; data as of 31 March 2022. Periods less than a year are not annualized. Indexes are unmanaged and one cannot invest directly in an index. Managers on the right are different from those with the largest Index AUM due to product availability or missing data. The Category Average includes all index funds available on eVestment managed against the Bloomberg Barclays US Aggregate Index. Category Average depicts tracking difference, defined as risk in excess of the benchmark, vs. the Bloomberg Barclays US Aggregate Index. 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.** All periods contain 8 managers in the universe except the 7-Year and 10-Year periods, which contain 7. BlackRock is included in the universe. Please see slide 20 for the Fund's full performance track record.

Equity Trends & Interests

Investors today are enhancing their passive allocations with the below strategies:

Return Enhancement Strategies

Index Plus

Enhanced index strategy designed to actively seek alpha, by tactically employing event driven trading that focus on IPOs, index changes, and other corporate events that might cause price dislocation

Securities Lending

Return enhancement strategy designed to capture scarcity premium by lending securities

Sector/Thematic Equities

Fundamental active strategies in sectors like technology and healthcare that are designed to take advantage of structural growth trends and increased dispersion. Often implemented as a growth/innovation satellite in equity portfolios in seeking to increase risk-adjusted returns

Factors

Factor-based strategy designed to provide incremental returns over capitalization-weighted indices through a focus on broad, persistent sources of return

Scientific Active Equity

Active quantitative strategies that pursue a persistent informational advantage in seeking to generate consistent and differentiated alpha with incremental risk above the benchmark. Leverages harder to access alpha sources using alternative data and next generation tools (e.g., machine learning)

Risk Reduction Strategies

Minimum Volatility

Factor-based strategies designed to reflect the characteristics of a minimum variance portfolio focused on returns as well as minimizing absolute risk

Currency Hedging

Risk reduction strategy designed to minimize or eliminate foreign exchange risk

Alternative Index Strategies

Environmental, Social, and Governance

Market cap weighted strategies designed to incorporate ESG factors while minimizing tracking error to traditional indices

Liquidity & Completion

Provides a liquidity management solution designed to maintain beta exposure and reduce tracking error yet still allow for flexibility

Fixed Income Trends & Interests

Factor-based strategies and other systematic solutions offer alternatives to traditional index returns

U.S. Aggregate Strategies

<p>Defensive Credit</p> 	<p>▶ Defensive, systematic strategy designed to avoid issuers that are at risk of experiencing credit deterioration</p>
<p>MBS Up In Coupon</p> 	<p>▶ Factor-based strategy designed to outperform traditional mortgage-backed securities (MBS) indices by capturing attractive risk-adjusted carry</p>
<p>Curve Steepener</p> 	<p>▶ Factor-based strategy designed to outperform traditional government indices by capturing term-premia and roll down</p>
<p>Short Carry</p> 	<p>▶ Systematic strategy designed to generate carry through use of US Treasury Futures and short-dated securitized holdings</p>

Broader Strategy Options

<p>Balanced Risk "FIBR"</p> 	<p>▶ Factor-based strategy designed to balance interest rate and spread risk to improve risk adjusted returns</p>
<p>Systematic CorePlus</p> 	<p>▶ Systematic strategy designed to outperform traditional indices by tilting into sectors traditionally utilized by active managers</p>
<p>Capital Efficiency</p> 	<p>▶ Systematic strategy designed to release capital through synthetic replication of traditional fixed income indices</p>
<p>Impact Investing</p> 	<p>▶ Systematic strategy designed to incorporate ESG factors while minimizing tracking error to traditional indices</p>

Source: BlackRock. The above information is shown for illustrative purposes only and not meant to be a recommendation to buy or sell any security. Derivatives may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested.

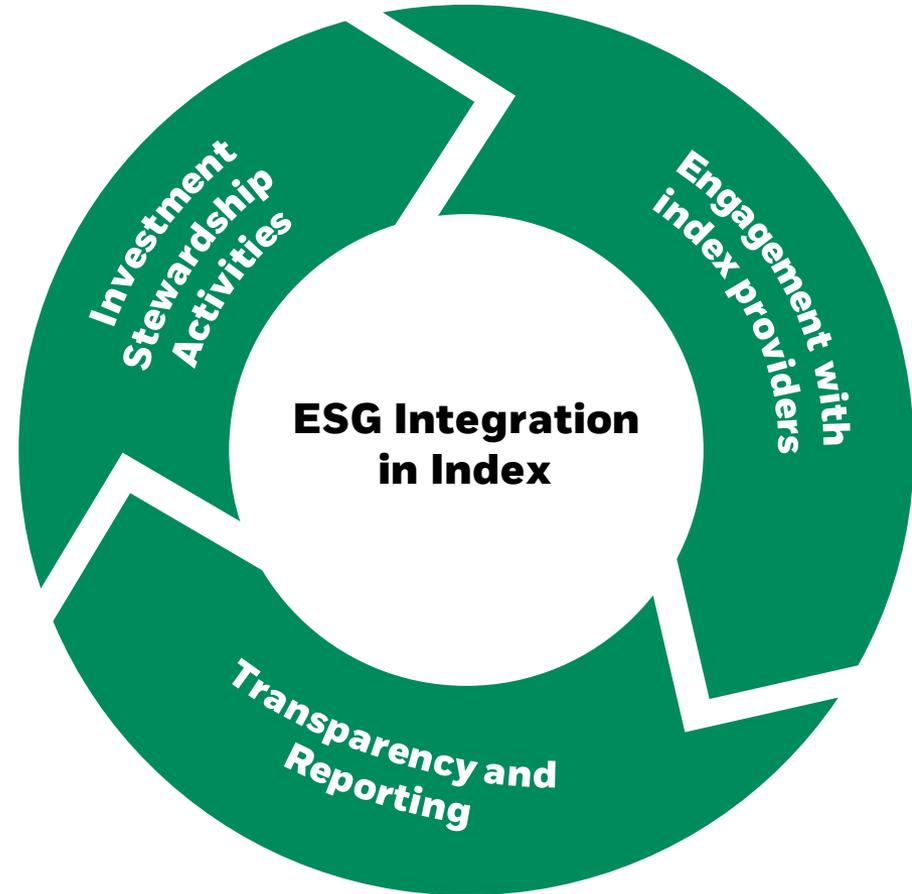
ESG integration in index strategies

ESG integration is relevant for all asset classes and styles of portfolio management, including index strategies.

Index portfolios differ from others in that they are managed with a focus on minimizing the performance tracking difference versus an underlying index.

The composition of the index is the responsibility of the index provider, and the portfolio manager seeks to provide investors with exposure to the constituents of that index.

We will continue to develop a sustainable alternative for all flagship index products where these alternatives do not already exist



Source: BlackRock Sustainable Investing, December 2021

Optimal Beta – Dynamic ETF/CTF Solution

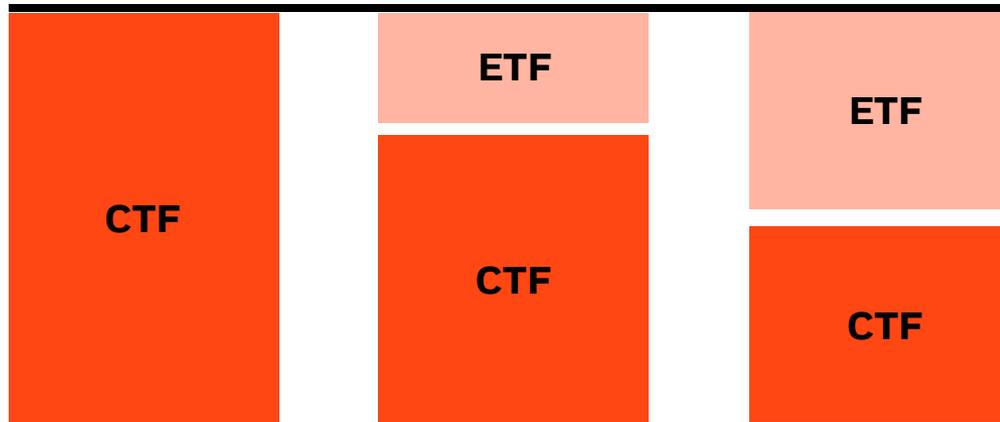
Strategy Overview

An optimized beta allocation that combines the cost-efficient access of a collective trust fund (CTF) with the trade flexibility of an exchange traded fund (ETF) within a single, unitized separately managed account

Objective

- 1) Offer a low-cost solution that can increase the liquidity profile of an index exposure
- 2) Facilitate efficient rebalance activity, capital calls, benefit payments, etc.
- 3) Reduce market entry timing risk through the option of same day trading

Dynamic ETF/CTF Solution



Shifting from a static CTF allocation to a dynamic CTF/ETF blend provides flexibility to choose the most optimal split between beta exposure vehicles, to be adjusted over time as client needs and market conditions evolve

This slide describes a proposed strategy that is subject to change. Shares of ETFs may be bought and sold at market price (not NAV) and are not individually redeemed from the strategy. There can be no assurance that an active trading market for shares of an ETF will develop or be maintained.

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. Fund performance assumes reinvestment of income and does not reflect management fees and certain transaction costs and expenses charged to the fund. 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 .

© 2022 BlackRock, Inc. All rights reserved. **BLACKROCK** is a registered trademark of BlackRock, Inc. in the United States and elsewhere. All other trademarks are the property of their respective owners.

NOT FDIC INSURED. MAY LOSE VALUE. NO BANK GUARANTEE.

Important Notes *(cont'd)*

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.

This communication is not an offer and should not be deemed to be a contractual commitment or undertaking between the intended recipient of this communication and BlackRock but an indication of what services may be offered subject to a legally binding contract between the parties and therefore no reliance should be placed on this document or its content. Opinions, estimates and recommendations offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This communication and its content represent confidential information. This material has been prepared for informational purposes only, and is not intended to provide, and should not be relied on for, accounting, legal or tax advice. You should consult your tax or legal adviser regarding such matters.

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.

Performance and Fees

Past performance is not a guarantee or a reliable indicator of future results. Certain performance figures do not reflect the deduction of investment advisory fees (described in Part 2 of BlackRock's Form ADV) but they do reflect commissions, other expenses (except custody), and reinvestment of earnings. Such fees that a client may incur in the management of their investment advisory account may reduce the client's return. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. The "net of fees" performance figures reflect the deduction of actual investment advisory fees but do not reflect the deduction of custodial fees. All periods longer than one year are annualized. (Separate account clients may elect to include BlackRock funds in their portfolio; sector funds may be subject to additional terms and fees.)

Credit Quality

The credit quality of a particular security or group of securities does not ensure the stability or safety of an overall portfolio. The Quality ratings of individual issues/issuers are provided to indicate the credit worthiness of such issues/issuer and generally range from AAA, Aaa, or AAA (highest) to D, C, or D (lowest) for S&P, Moody's, and Fitch respectively.

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, 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.

Important Notes *(cont'd)*

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 are those of the authors and may change as subsequent conditions vary. Individual portfolio managers for BlackRock may have opinions and/or make investment decisions that, in certain respects, may not be consistent with the information contained in this document. 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. Past performance is no guarantee of future results. There is no guarantee that any of these views will come to pass. Reliance upon information in this material is at the sole discretion of the reader.

Index

It is not possible to directly invest in an unmanaged index.

Risk

Investing in the bond market is subject to certain risks including market, interest-rate, issuer, credit, and inflation risk. Equities may decline in value due to both real and perceived general market, economic, and industry conditions. Mortgage and asset-backed securities may be sensitive to changes in interest rates, subject to early repayment risk, and while generally backed by a government, government-agency or private guarantor there is no assurance that the guarantor will meet its obligations. High-yield, lower-rated, securities involve greater risk than higher-rated securities; portfolios that invest in them may be subject to greater levels of credit and liquidity risk than portfolios that do not. Investors will, at times, incur a tax liability. Income from municipal bonds may be subject to state and local taxes and at times the alternative minimum tax. Derivatives may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested.

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.

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 is 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 or 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.

© 2022 BlackRock, Inc. All rights reserved. **ALADDIN, BLACKROCK, BLACKROCK SOLUTIONS,** and **iSHARES** are trademarks of BlackRock, Inc. or its subsidiaries in the United States and elsewhere. All other trademarks are the property of their respective owners.

Disclaimer

Capital at risk. The value of investments and the income from them can fall as well as rise and are not guaranteed. Investors may not get back the amount originally invested.

Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy.

Changes in the rates of exchange between currencies may cause the value of investments to diminish or increase. Fluctuation may be particularly marked in the case of a higher volatility fund and the value of an investment may fall suddenly and substantially. Levels and basis of taxation may change from time to time.

Any research in this document has been procured and may have been acted on by BlackRock for its own purpose. The results of such research are being made available only incidentally. The views expressed do not constitute investment or any other advice and are subject to change. They do not necessarily reflect the views of any company in the BlackRock Group or any part thereof and no assurances are made as to their accuracy.

This document is for information purposes only and does not constitute an offer or invitation to anyone to invest in any BlackRock funds and has not been prepared in connection with any such offer.

In the U.S., this material is for Institutional use only – not for public distribution.

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.)

Money Market Fund

Although a money market fund seeks to preserve the value of one's investment at \$1.00 per share, it is possible to lose money by investing in a money market fund. Investment in a money market fund is not similar to making a bank deposit. This investment is not insured or guaranteed by the Federal Deposit Insurance Corporation or by any bank or governmental agency.

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 is 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.

©2022 BlackRock, Inc. All Rights reserved. **BLACKROCK** is a trademark of BlackRock, Inc. or its subsidiaries in the United States and elsewhere. All other trademarks are those of their respective owners.

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. Fund performance assumes reinvestment of income and does not reflect management fees and certain transaction costs and expenses charged to the fund. 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 .

© 2022 BlackRock, Inc. All rights reserved. **BLACKROCK** is a trademark of BlackRock, Inc. in the United States and elsewhere. All other trademarks are the property of their respective owners.

NOT FDIC INSURED. MAY LOSE VALUE. NO BANK GUARANTEE.

Important Notes *(cont'd)*

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.

This communication is not an offer and should not be deemed to be a contractual commitment or undertaking between the intended recipient of this communication and BlackRock but an indication of what services may be offered subject to a legally binding contract between the parties and therefore no reliance should be placed on this document or its content. Opinions, estimates and recommendations offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This communication and its content represent confidential information. This material has been prepared for informational purposes only, and is not intended to provide, and should not be relied on for, accounting, legal or tax advice. You should consult your tax or legal adviser regarding such matters.

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.

Performance and Fees

Past performance is not a guarantee or a reliable indicator of future results. Certain performance figures do not reflect the deduction of investment advisory fees (described in Part 2 of BlackRock's Form ADV) but they do reflect commissions, other expenses (except custody), and reinvestment of earnings. Such fees that a client may incur in the management of their investment advisory account may reduce the client's return. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. The "net of fees" performance figures reflect the deduction of actual investment advisory fees but do not reflect the deduction of custodial fees. All periods longer than one year are annualized. (Separate account clients may elect to include BlackRock funds in their portfolio; sector funds may be subject to additional terms and fees.)

Credit Quality

The credit quality of a particular security or group of securities does not ensure the stability or safety of an overall portfolio. The Quality ratings of individual issues/issuers are provided to indicate the credit worthiness of such issues/issuer and generally range from AAA, Aaa, or AAA (highest) to D, C, or D (lowest) for S&P, Moody's, and Fitch respectively.

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, 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.

Important Notes (cont'd)

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 are those of the authors and may change as subsequent conditions vary. Individual portfolio managers for BlackRock may have opinions and/or make investment decisions that, in certain respects, may not be consistent with the information contained in this document. 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. Past performance is no guarantee of future results. There is no guarantee that any of these views will come to pass. Reliance upon information in this material is at the sole discretion of the reader.

Index

It is not possible to directly invest in an unmanaged index.

Risk

Investing in the bond market is subject to certain risks including market, interest-rate, issuer, credit, and inflation risk. Equities may decline in value due to both real and perceived general market, economic, and industry conditions. Mortgage and asset-backed securities may be sensitive to changes in interest rates, subject to early repayment risk, and while generally backed by a government, government-agency or private guarantor there is no assurance that the guarantor will meet its obligations. High-yield, lower-rated, securities involve greater risk than higher-rated securities; portfolios that invest in them may be subject to greater levels of credit and liquidity risk than portfolios that do not. Investors will, at times, incur a tax liability. Income from municipal bonds may be subject to state and local taxes and at times the alternative minimum tax. Derivatives may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested.

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.

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 is 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 or 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.

© 2022 BlackRock, Inc. All rights reserved. **ALADDIN, BLACKROCK, BLACKROCK SOLUTIONS,** and **iSHARES** are trademarks of BlackRock, Inc. or its subsidiaries in the United States and elsewhere. All other trademarks are the property of their respective owners.



RhumbLine

Institutional Index Management

PRESENTATION TO THE TRUSTEES OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

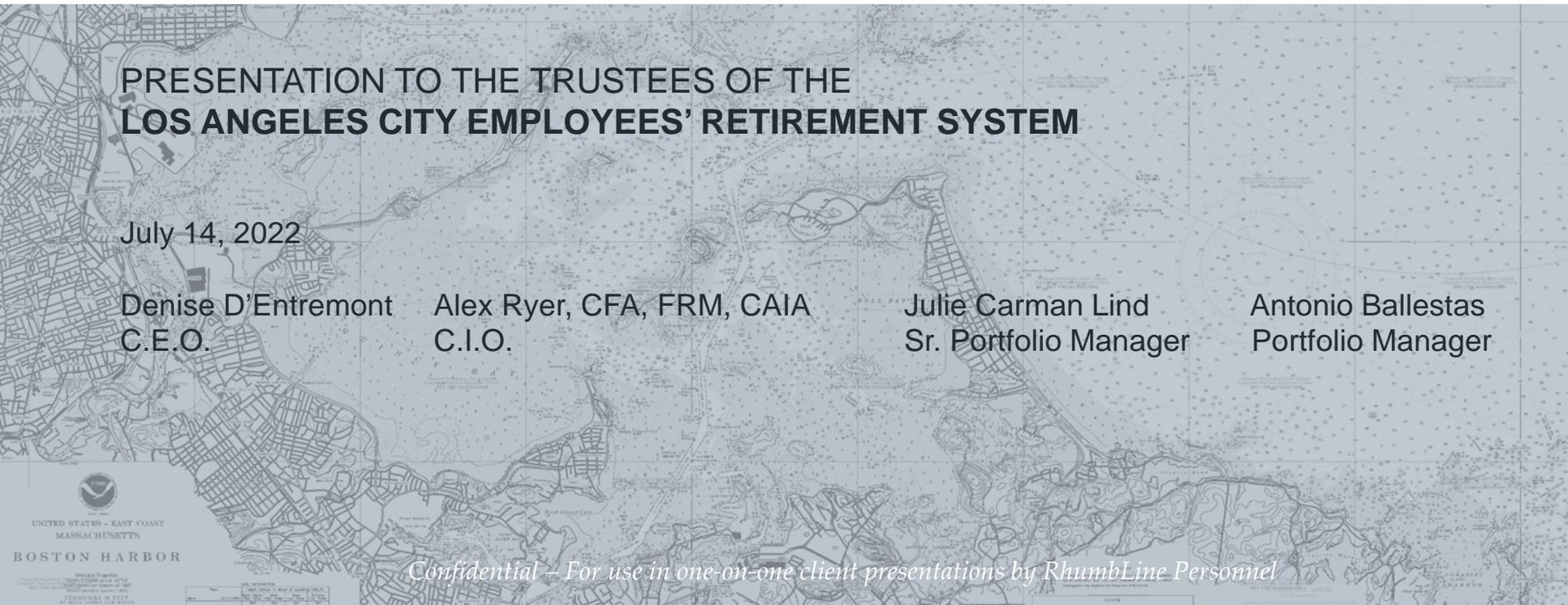
July 14, 2022

Denise D'Entremont
C.E.O.

Alex Ryer, CFA, FRM, CAIA
C.I.O.

Julie Carman Lind
Sr. Portfolio Manager

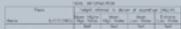
Antonio Ballestas
Portfolio Manager



Confidential – For use in one-on-one client presentations by RhumbLine Personnel



UNITED STATES - EAST COAST
MASSACHUSETTS
BOSTON HARBOR



RhumbLine Presenters



Denise A. D'Entremont
Chief Executive Officer, General Partner

- Joined RhumbLine in 1994; promoted to C.E.O. in 2022.
- Total of 31 years of industry experience.
- Has full executive authority for all aspects of RhumbLine Advisers Limited Partnership.
- Member of the firm's Management Committee.
- Spent most of RhumbLine tenure primarily responsible for market strategy and distribution, new business and oversight of the firm's existing client and consultant relationships.
- Previously: President, Director of Marketing & Client Service, Portfolio Manager and Marketing & Client Service Associate at RhumbLine.
- Prior experience: Broker Sales & Services at Evergreen Funds.
- Member of the National Women in Pensions organization.
- B.A. from the University of Rhode Island.



Julie Carman Lind
Senior Portfolio Manager, Limited Partner

- Joined RhumbLine in 2000 and has served as Portfolio Manager since 2001. Promoted to Senior Portfolio Manager in 2022.
- Total of 25 years of industry experience.
- Member of the firm's Investment/Risk Committee.
- Responsible for managing and trading RhumbLine's client portfolios.
- Previously: Portfolio Analyst at RhumbLine.
- Prior experience: Senior Account Administrator at Investors Bank & Trust.
- Fixed Income Certificate from ICMA Executive Education.



Alex Ryer, CFA®, FRM®, CAIA®
Chief Investment Officer, Limited Partner

- Joined RhumbLine in 2016 as Director of Investments; promoted to Chief Investment Officer in 2017. Mr. Ryer was also a Senior Portfolio Manager at RhumbLine from 2003-2005.
- Total of 22 years of industry experience.
- Member of the firm's Investment/Risk and Management Committees.
- Oversees RhumbLine's investment team and all aspects of portfolio management and trading. Responsible for managing a range of investment portfolios and servicing clients, product development and thought leadership on industry issues and trends.
- Prior experience: Senior Equity Research Analyst (Fundamental Active - Quant Alpha Research) at BlackRock; Senior Portfolio Manager (Fundamental Active & Quant Active) at Northern Trust Global Investments; Senior Portfolio Manager at RhumbLine; and Principal/Senior Portfolio Manager (Global Structured Products - Emerging Markets) at State Street Global Advisors.
- CFA® charterholder, Certified FRM®, Chartered Alternative Investment Analyst.
- M.B.A. from University of New Hampshire and B.S. in Electrical Engineering from Bucknell University.



Antonio J. Ballestas
Portfolio Manager, Limited Partner

- Joined RhumbLine in 2012; promoted to Portfolio Manager in 2019.
- Total of 14 years of industry experience.
- Member of the firm's Investment/Risk Committee.
- Responsible for managing and trading RhumbLine's client portfolios.
- Previously: Assistant Portfolio Manager and Portfolio Analyst in Investment Operations at RhumbLine.
- Prior experience: Client Service Specialist and Hedge Fund Accountant at J.P. Morgan.
- CFA Exam Level II Candidate and B.S. in Business Administration from Bryant University.

LACERS/RhumbLine Relationship Highlights

❑ 29-Year Partnership

- Board hired RhumbLine on March 1, 1993
- Initial Account: \$175MM S&P 500 Index Strategy
- RhumbLine AUM at that time: \$624M; now more than \$86B (as of May 31, 2022)
- Managed multiple strategies over the years for LACERS.
- Currently manage \$3.9B for LACERS across three strategies (S&P 500, R2000, R2000 Value).
- Good synergies with Staff & Board over the years.
- Good relationship with Plan service providers

❑ Significant Client and Portfolio Growth

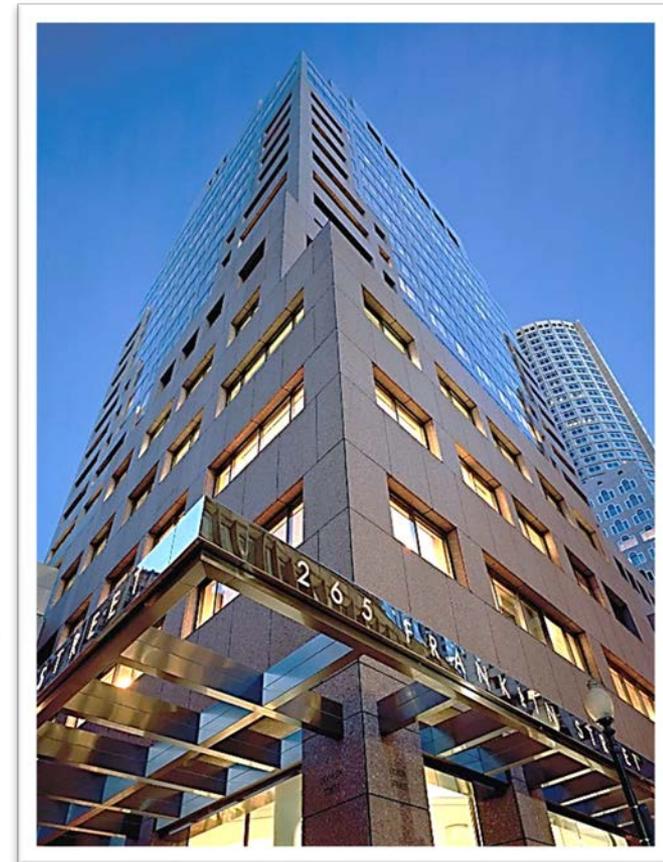
- 2nd California Public Fund Client to join RhumbLine; now 32 CA-based Clients
- Of RhumbLine's 308 clients, 146 have multiple products with us across a variety of asset classes.

❑ Advantages of a Dedicated Index Manager

- Unique Ownership – Employee Owned
- Loyal and Responsive Service
- Pooled Funds have daily liquidity, no securities lending
- Portfolios are monitored daily but rebalanced about once a month to keep costs low

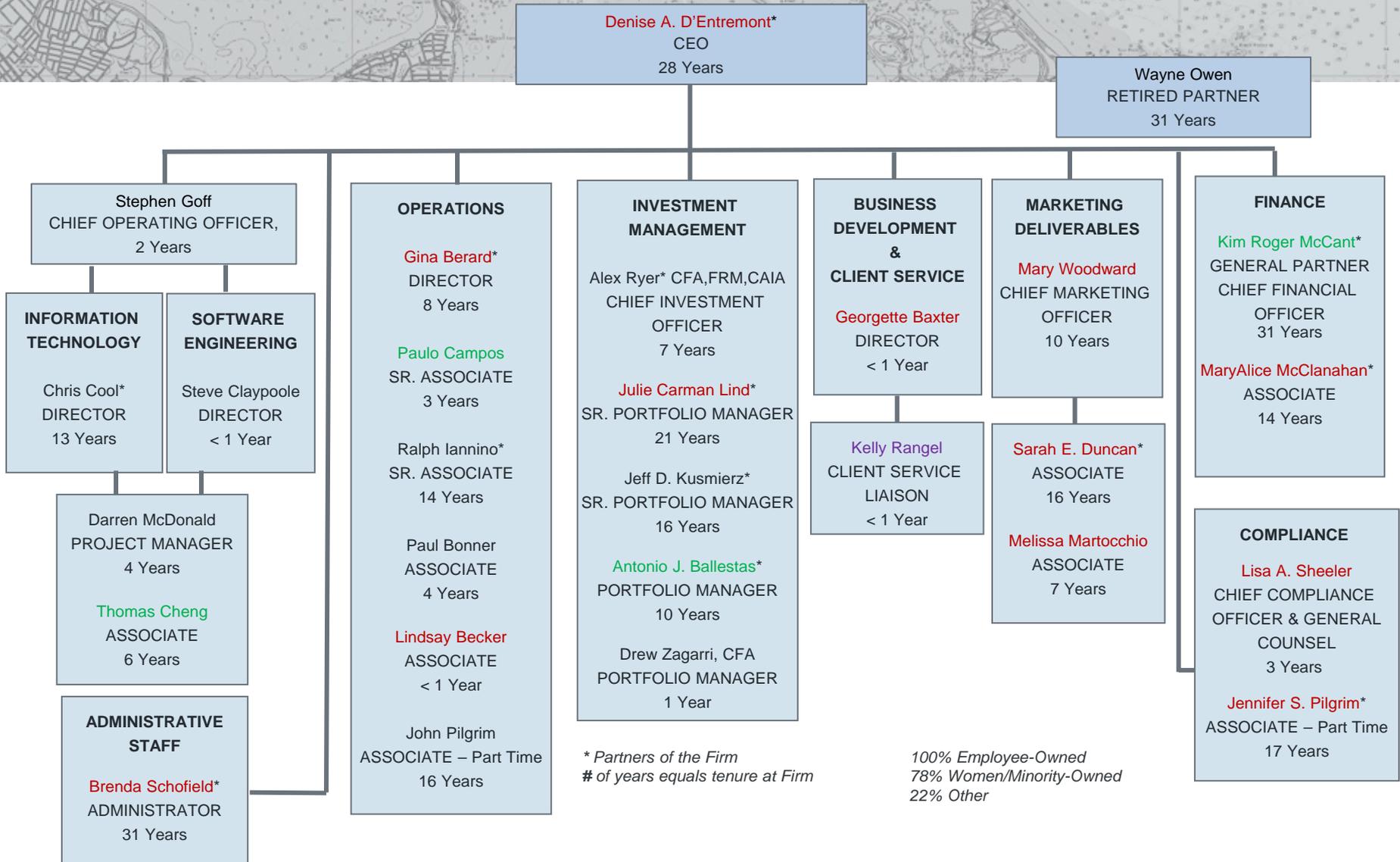
Current Profile

- Assets under management: \$86.3 Billion
- Asset classes include:
 - Domestic Equity
 - Domestic Fixed Income
 - International Equity
- Diversified client base:
 - 121 Public Funds: 282 Accounts/\$54.1 Billion
 - 54 Corporate/ERISA: 105 Accounts/\$16.3 Billion
 - 88 Endowments/Foundations: 192 Accounts/\$7.8 Billion
 - 44 Taft-Hartley: 74 Accounts/\$4.6 Billion
 - 1 Sub-Advisory: 5 Accounts/\$3.5 Billion





Organization Chart



* Partners of the Firm
of years equals tenure at Firm

100% Employee-Owned
78% Women/Minority-Owned
22% Other

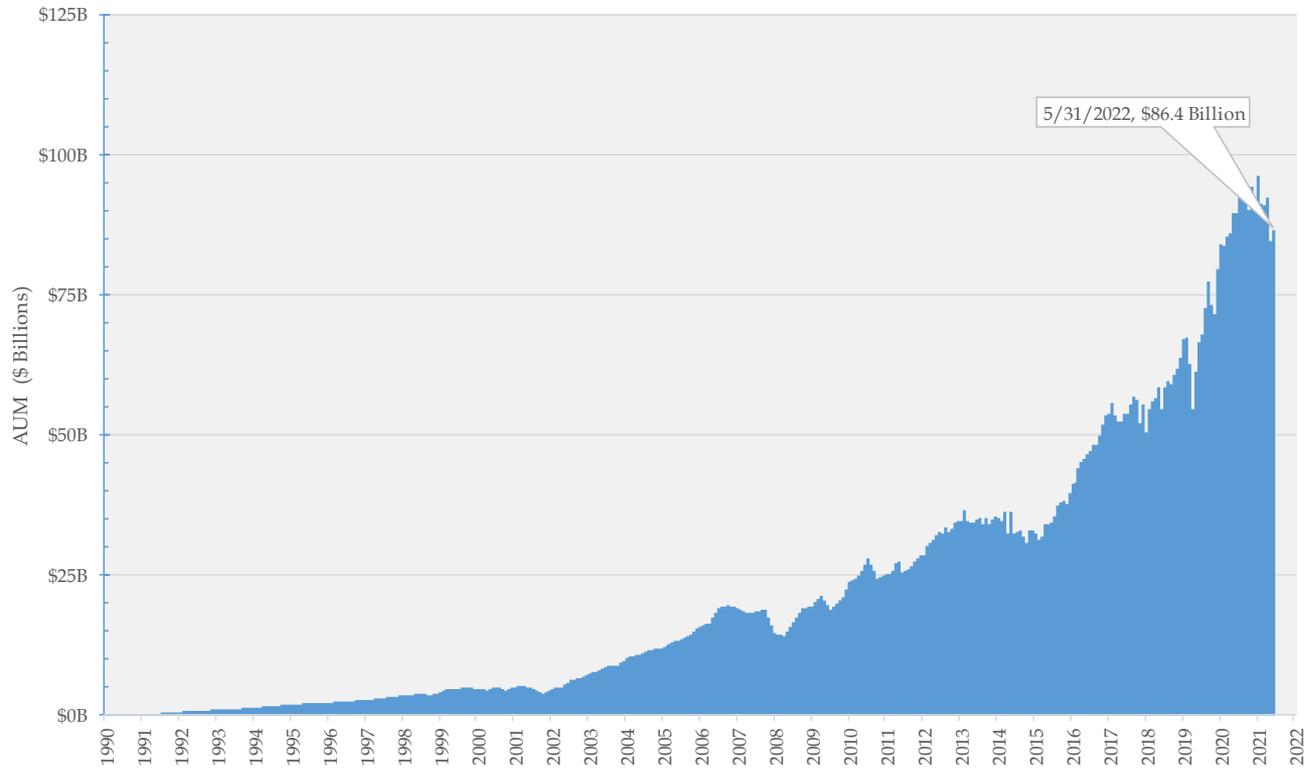
Diversity Initiatives

As a firm founded by a minority, supporting and promoting diversity is part of our corporate culture and has been since our inception in 1990.

- Ownership structure has always been 100% employee-owned with a majority ownership comprised of diverse individuals.
- Added three limited partners in December of 2021.
- Recent and pending promotions are almost all diverse personnel.
- Over the last 10 years, RhumbLine has hired 11 employees. Of those, 9 are diverse/female personnel.
- Total of 27 employees; 17 are diverse personnel.
- As of April 30, 2022, diverse/women ownership increased to more than 70%.
- As of April 30, 2022, senior leaders that are diverse/women increased from 40% to 75%.
- Mentorship opportunities for diverse/women candidates increased from 1 to 2 personnel.
- Mandatory diversity training for all employees on an annual basis. This has increased to twice a year for 2022.
- Approximately 40% of all trades are executed with diverse brokers.
- Use of other diverse-owned businesses - compliance, legal, stationery, and recruiter.

Assets Under Management

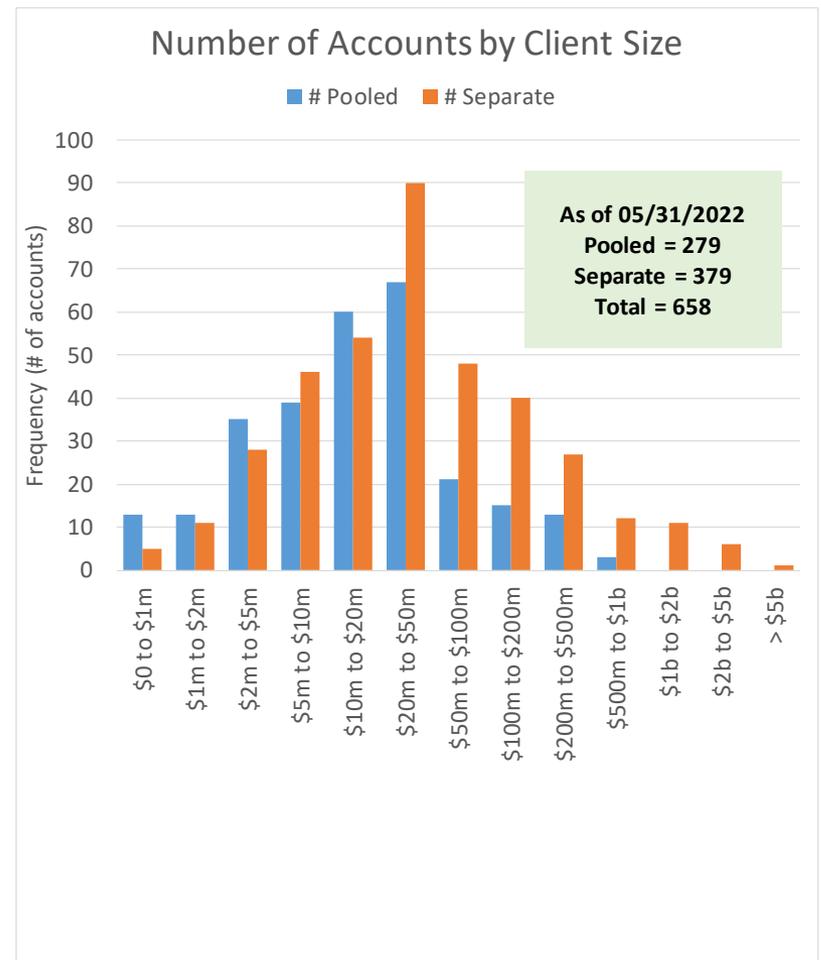
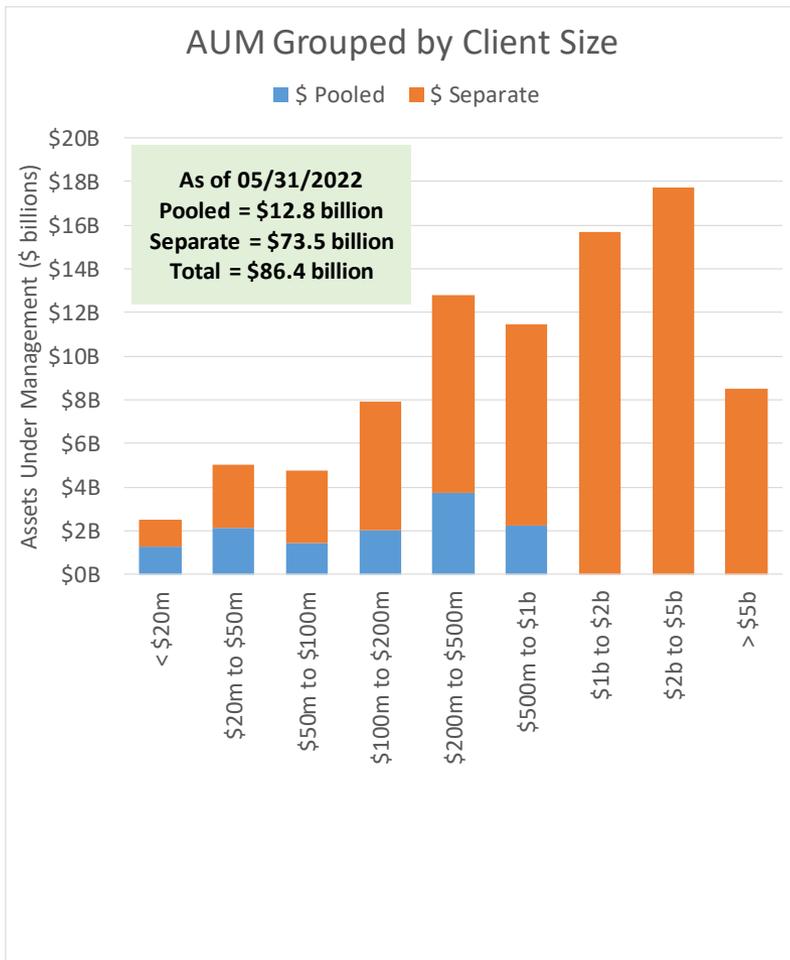
RhumbLine Advisers - Assets Under Management





Distribution of AUM

Sum and number of client accounts managed by RhumbLine, grouped into AUM bins.



Products

FIXED INCOME STRATEGIES

- Core Bond*
- ICE BofA US 3-Mo. Treasury Bill
- Intermediate Government/Credit
- Bloomberg Capital US 5-7 Yr. Treasury Bond
- Bloomberg Capital US 1-3 Yr. Government
- Bloomberg US TIPS*
- Bloomberg US Government Long
- Bloomberg US Long Term Treasury
- Bloomberg US Intermediate Treasury Bond

BROAD MARKET INDEX STRATEGIES

- S&P 1500
- S&P 1500 ex-Fossil Fuels
- Russell 3000
- Wilshire 5000
- MSCI Global Investible US

INTERNATIONAL INDEX STRATEGIES

- S&P ADR
- MSCI EAFE*
- MSCI ACWI
- MSCI ACWI ex-US
- MSCI ACWI ex-Fossil Fuels
- MSCI ACWI Minimum Volatility*
- MSCI ACWI ESG Leaders
- MSCI Emerging Markets
- MSCI Japan Broad
- MSCI World
- MSCI World ex-Fossil Fuels
- MSCI World ex-US
- DJ Brookfield Global Infrastructure
- DJ Brookfield Global Infrastructure Composite
- S&P Global Natural Resources
- S&P Global Low Volatility

ALTERNATIVE STRATEGIES

- Russell RAFI US
- Russell RAFI Global ex-US
- Russell 1000 HEDI Moderate TTE
- RhumbLine Multi-Factor
- Energy Select Sector
- FTSE Nareit All Equity REIT*
- S&P Global Low Volatility
- SciBeta US Multi-Beta Multi-Strategy 4-Factor EW
- SciBeta Dev ex-US Value Diversified Multi-Strategy
- TOBAM MaxDiv USA

SPECIALTY STRATEGIES

- Completeness
- Customized Screens
- Customized Tax-Efficient
- Equal Weighted
- Fossil Fuel-Free
- High Quality
- Minimum Volatility
- Sudan-Free
- Sustainable Investment
- Tobacco-Free

MID CAP INDEX STRATEGIES

- S&P 400*
- S&P 400 Growth
- Russell Mid Cap
- Russell Mid Cap Growth
- Russell Mid Cap Value

SMALL-MID CAP INDEX STRATEGIES

- S&P 1000
- S&P 1000 Value
- Russell 2500
- Russell 2500 Value
- Russell Small Cap Completeness

SMALL CAP INDEX STRATEGIES

- S&P 600*
- Russell 2000
- Russell 2000 Growth
- Russell 2000 Value

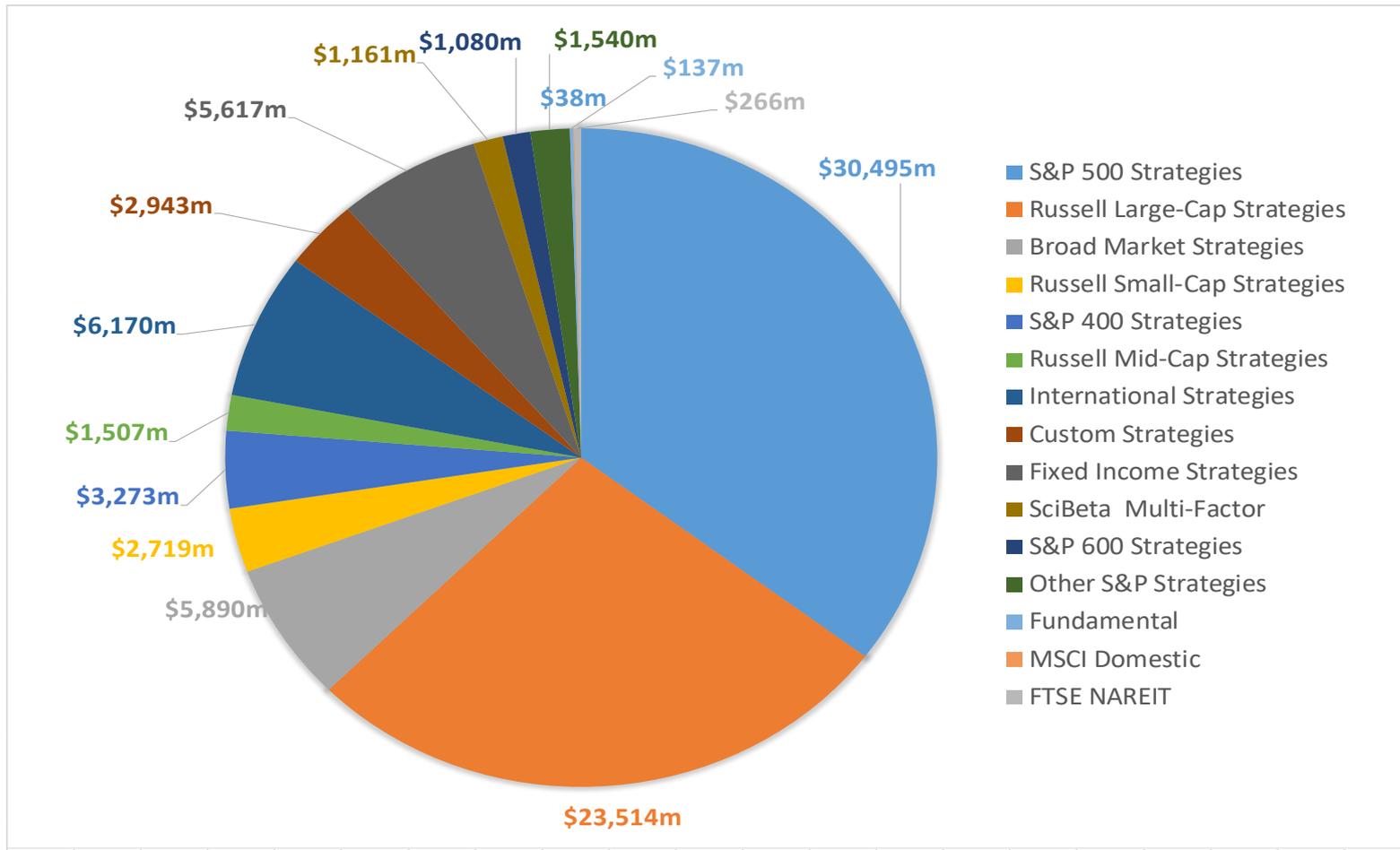
*Also available through a pooled investment fund to qualified investors with at least \$5 million in assets.

**Please contact us if interested in any index or strategy that is not listed.

Breakdown of Strategies

\$86,350.9 MILLION

as of May 31, 2022



RhumbLine Investment Process

Domestic Equity Index Strategies

- Use full replication, optimization or stratified sampling dependent on asset size and client requirements.
- Review portfolios daily, monitoring tracking and cash.
- Monitor index changes and consider impact in determining trading strategy.
- Trade when appropriate for client directed cash flows, cash balance maintenance, mergers/acquisitions, index changes.
 - Buy decisions are driven by the requirement to remain fully invested at all times
 - Stock selection is driven by risk management in the optimization
- Use agency trading desks.
- Provide daily liquidity for all pooled funds.

RhumbLine Investment Process

Domestic Fixed Income Index Strategies

- Use of Optimization for portfolio construction. Proven risk model with more than 20 years of bond indexing history.
- Utilize Bloomberg to communicate bid & offer lists to maximize trade inventory and best execution.
- Credit Risk induced by limiting size of each issuer and broadening number of holdings in the Credit Sector.
- Scenario analysis on proposed portfolio trades to understand risk/return trade-offs among term structure, sectors, qualities and yield ratios.
- Excellent relationship with five brokers including two W/M/DV-owned firms.
- Analyze performance daily to ensure tight tracking to benchmark.

RhumbLine's Investment Process

Global Index Strategies

- Use full replication, optimization or stratified sampling dependent on asset size, restrictions and client requirements.
- Review portfolios daily monitoring tracking and cash levels.
- Trade only with high-quality, agency-only brokerage firms.
- Utilize existing broker relationships to obtain low commission rates.
- Transaction cost estimate: 3-5 basis points on trade value.
- Do not generate soft dollars.

Portfolio Management Process

- Database management
 - Daily benchmark, holdings, and restrictions data loaded overnight.
- Portfolio monitoring daily in DataEase.
 - Cross-sectional and time series tracking error, cash and misweights.
 - Daily compliance checking vs. benchmark, restrictions, hold lists, etc.
- Periodic optimizations are run in rebalancing tool, and scenarios are evaluated for trade efficacy.
 - Replication / stratified sampling, incorporating trading costs.
 - Mean-variance optimization used for more complex scenarios.
 - Single-issue rebalance tool for index changes & cash equitization.
- Trade list run through RhumbLine's OMS, checked for compliance.
- Approved trade list is entered into EMS for execution.

RhumbLine Trading Approach

- Advanced rebalancing systems.
 - Fixed ticket charges incorporated into rebalance to minimize custody cost.
 - Market impact t-cost models incorporated into trade optimization.
- Low-cost trading techniques.
 - Pre-trade cost analysis to inform best execution strategy.
 - Quantitative algorithms, dark pools, ECNs, DMA, program trading desks.
- Best execution analysis of all trades.
 - Third party transaction cost analysis, reviewed by investment committee.
- Driven by low-cost, high-quality agency execution only.
 - No soft dollars or sell-side company research.
 - Average US commission rate \$0.0068/share 3-yr average 2019-2021.
 - Executed \$1.9 billion (42%) in trades with MWDVBE brokers YTD thru May.

Composite Returns (Gross of Management Fees)

as of May 31, 2022

Annualized									
INDEX STRATEGIES	Inception Date	2022 – YTD thru May (%)	1-YR Trailing (%)	3-YR Trailing (%)	5-YR Trailing (%)	7-YR Trailing (%)	10-YR Trailing (%)	Since Inception (%)	Assets as of 05/31/22 (\$M)
LARGE CAP									
S&P 500*	12/90	-12.76	-0.32	16.41	13.36	12.17	14.36	10.18	\$30,227.5
S&P 500 Index		-12.76	-0.30	16.44	13.38	12.20	14.40	10.10	
Russell 1000*	12/96	-13.70	-2.69	15.99	13.08	11.84	14.21	9.12	\$12,161.5
Russell 1000 Index		-13.72	-2.71	16.03	13.12	11.87	14.24	9.09	
Russell 1000 Growth*	12/99	-21.84	-6.20	18.31	16.12	14.50	16.05	6.18	\$2,317.5
Russell 1000 Growth Index		-21.88	-6.25	18.31	16.13	14.51	16.06	6.12	
Russell 1000 Value*	05/96	-4.50	0.95	12.73	9.49	8.78	12.02	8.93	\$2,522.0
Russell 1000 Value Index		-4.52	0.93	12.75	9.50	8.79	12.06	8.86	
MID CAP									
S&P 400*	07/95	-10.96	-6.54	13.21	9.52	9.09	12.21	11.37	\$3,208.0
S&P 400 Index		-10.98	-6.52	13.28	9.56	9.12	12.24	11.28	
S&P 400 Growth	09/17	-16.61	-10.76	11.35	-	-	-	8.66	\$64.6
S&P 400 Growth Index		-16.60	-10.74	11.40	-	-	-	8.70	
Russell Mid Cap	12/05	-12.85	-6.74	12.87	10.47	9.35	12.79	9.35	\$1,086.2
Russell Mid Cap Index		-12.87	-6.77	12.87	10.48	9.35	12.78	9.33	
Russell Mid Cap Growth	04/99	-25.39	-18.64	9.48	10.67	9.32	12.59	7.82	\$282.4
Russell Mid Cap Growth Index		-25.43	-18.71	9.44	10.65	9.30	12.59	7.86	
Russell Mid Cap Value	08/07	-5.81	0.02	13.35	9.16	8.59	12.33	8.37	\$138.4
Russell Mid Cap Value Index		-5.88	-0.06	13.37	9.10	8.55	12.31	8.32	

Composite Returns (Gross of Management Fees)

as of May 31, 2022

INDEX STRATEGIES	Inception Date	2022 – YTD thru May (%)	1-YR Trailing (%)	3-YR Trailing (%)	5-YR Trailing (%)	Annualized			Assets as of 05/31/22 (\$M)
						7-YR Trailing (%)	10-YR Trailing (%)	Since Inception (%)	
SMALL CAP									
Russell 2000	12/04	-16.21	-16.26	10.00	7.90	7.47	10.91	7.73	\$2,247.5
Russell 2000 Index		-16.56	-16.92	9.70	7.72	7.33	10.83	7.64	
Russell 2000 Growth	03/05	-24.65	-25.50	6.21	6.89	6.12	10.52	8.35	\$41.0
Russell 2000 Growth Index		-24.79	-25.71	6.18	6.87	6.13	10.55	8.35	
Russell 2000 Value	04/04	-8.23	-7.62	12.23	7.86	8.03	10.67	8.06	\$309.4
Russell 2000 Value Index		-8.25	-7.67	12.21	7.83	8.02	10.71	8.04	
INTERNATIONAL									
MSCI EAFE*	05/14	-11.04	-10.27	6.66	4.39	3.92	-	3.59	\$915.4
MSCI EAFE Index		-11.34	-10.38	6.43	4.17	3.71	-	3.38	
MSCI Emerging Markets**	01/13	-12.20	-21.83	4.04	3.34	3.31	-	2.29	\$284.5
MSCI Emerging Markets Index		-11.76	-19.83	5.00	3.80	3.41	-	2.47	
FIXED INCOME									
Core Bond*	03/05	-8.96	-8.24	-0.09	1.16	1.49	1.68	3.42	\$1,240.9
Bloomberg US Aggregate Bond Index		-8.92	-8.22	0.00	1.18	1.49	1.71	3.43	

LACERS Returns (Net of Fees/Trading Costs*)

INDEX STRATEGIES	Inception Date	2022 – YTD thru May (%)	1-YR Trailing (%)	3-YR Trailing (%)	5-YR Trailing (%)	Annualized			Assets as of 05/31/22 (\$M)
						7-YR Trailing (%)	10-YR Trailing (%)	Since Inception (%)	
S&P 500 Index - Portfolio	2/28/1993	-12.75	-0.31	16.41	13.37	12.19	14.38	10.17	\$3,511.1
S&P 500 Index - Benchmark		-12.76	-0.30	16.44	13.38	12.20	14.40	10.06	
Russell 2000 Index - Portfolio	3/13/2015	-16.46	-16.79	9.74	7.75	7.35	-	7.30	\$299.8
Russell 2000 Index - Benchmark		-16.56	-16.92	9.70	7.72	7.33	-	7.32	
Russell 2000 Value Index - Portfolio	12/23/2020	-8.24	-7.64	-	-	-	-	11.86	\$146.5
Russell 2000 Value Index - Benchmark		-8.25	-7.67	-	-	-	-	11.86	

Expected Tracking

INDEX STRATEGIES	Expected Annualized Total Return Net of Fees Over the Short (1 Year) and Long-Term (3 – 5 Years) Investment Horizons
LARGE CAP	
S&P 500	+/- 5 basis points
Russell 1000	+/- 5 basis points
Russell 1000 Growth	+/- 5 basis points
Russell 1000 Value	+/- 5 basis points
MID CAP	
S&P 400	+/- 5 basis points
S&P 400 Growth	+/- 5 basis points
Russell Mid Cap	+/- 5 basis points
Russell Mid Cap Growth	+/- 5 basis points
Russell Mid Cap Value	+/- 5 basis points
SMALL CAP	
Russell 2000	+/- 10 basis points
Russell 2000 Growth	+/- 10 basis points
Russell 2000 Value	+/- 10 basis points
INTERNATIONAL	
MSCI EAFE	+/- 20 basis points
MSCI Emerging Markets*	+/- 25 basis points
FIXED INCOME	
Core Bond	+/- 30 basis points

*Projected tracking assumes that all countries will be opened for trading purposes.

Strategic Advantages

- **Dedicated Asset Manager:** Our Firm derives 100% of revenue from Investment Management; we offer and manage only index strategies.
- **Successfully Launched new index products for more than 30 years:** Created 60 new products with an initial investor for each fund – equities, fixed income, and international.
- **Low risk indexing strategy:** Index funds in general are a much lower-risk strategy to manage than active products. In addition, RhumbLine's commingled index funds have no securities lending exposure, allowing our portfolio management, operations and client service teams to remain focused on delivering consistent investment results and outstanding client service.
- **Simple Non-Hierarchical Organization Structure:** A flat management structure allows clients access to the entire management team, resulting in prompt responsiveness.
- **RhumbLine track record and reputation:** Since the firm's inception (1990) we have built an excellent reputation among our clients by delivering exactly what we have promised.
- **Existing Client Growth:** More than half of our clients utilize multiple index strategies with us.*
- **Private, Management-Owned Partnership:** Our ownership structure keeps our interest and focus closely aligned with our client's interest. This encourages efficient decision-making, client attention and avoids the pressures that public shareholders sometimes can place on large public firms.

*As of 5/31/2022

Important Disclosures & Disclaimers

General

All information contained herein is confidential and has been prepared for use in a one-on-one presentation with current or prospective qualified client's of RhumbLine Advisers Limited Partnership ("RhumbLine"). This material has been prepared for informational purposes only and should not be construed as investment advice or an offering of securities. RhumbLine permits consultants to share this presentation with prospects of RhumbLine provided they do so in a one-on-one presentation to qualified clients with the following disclosures provided. RhumbLine is an SEC registered investment adviser, providing investment advice to clients on a discretionary basis. Registration with the SEC does not imply any level of expertise or training. RhumbLine claims compliance with the Global Investment Performance Standards (GIPS®). RhumbLine has been independently verified for the periods 01/01/09 – 12/31/19. The verification report is available upon request. To receive a copy or a complete list and description of RhumbLine's composites and/or a presentation that adheres to the GIPS standards, please contact us at 617-345-0434 or info@indexmng.com.

Performance

The U.S. Dollar is the currency used to express performance. Returns are presented gross of management fees and include trading expenses and the reinvestment of all income. Actual returns will be reduced by investment advisory fees and other expenses that may be incurred in the management of the account. Performance returns of RhumbLine's Pooled Funds are also net professional fees including custody and audit expenses. The collection of fees produces a compounding effect on the total rate of return, net of management fees. As an example, the effect of investment management fees on the total value of a client's portfolio assuming (a) quarterly fee assessment, (b) \$10,000,000 investment, (c) portfolio return of 8% a year, and (d) 0.10% annual investment advisory fee would be \$10,416 in the first year, and cumulative effects of \$59,816 over five years and \$143,430 over ten years. Actual investment advisory fees will vary. More information on RhumbLine's investment advisory fees are available upon request and are described in Part 2A of RhumbLine's Form ADV. AS WITH ANY INVESTMENT, PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Index Disclosures

The S&P® Indices are products of S&P Dow Jones Indices, LLC, or its affiliates ("SPDJ"). S&P® is a registered trademark of Standard & Poor's Financial Services, LLC ("S&P"), and this trademark has been licensed for use by SPDJI and sublicensed for certain purposes by RhumbLine Advisers Limited Partnership ("RhumbLine"). The RhumbLine S&P Index Composites are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, or their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such products nor do they have any liability for any errors, omissions, or interruptions of the S&P Indices. The Russell® Indices are registered trademarks of Russell Investment Group. Russell Investment Group is the source and owner of the trademarks, service marks and copyrights related to the Russell Indexes. "FTSE®" is a trade mark of the London Stock Exchange Group companies, and is used by FTSE International Limited ("FTSE") under license. "NAREIT" a trade mark of the National Association of Real Estate Investment Trusts ("NAREIT"). The FTSE NAREIT INDEX is calculated by FTSE. Neither FTSE nor NAREIT sponsor, endorse or promote this product and are not in any way connected to it and do not accept any liability. All intellectual property rights in the index values and constituent list vests in FTSE and NAREIT. RhumbLine Advisers LP has obtained full license from FTSE to use such intellectual property rights in the creation of this product. The Bloomberg Barclays Indices are a proxy of the indices distributed by Barclays Capital Inc. and is created by Wilshire Axiom or Bloomberg utilizing the characteristics data supplied by Barclays Capital Inc. The Wilshire IndexesSM are produced by Wilshire Associates Incorporated and have been licensed for use. All content of the Wilshire Indexes® 2009 is proprietary to Wilshire Associates Incorporated. The Carbon Underground 200TM is proprietary information of Fossil Free Indexes, LLC. Any use of these materials beyond this presentation without prior express written permission of Fossil Free Indexes, LLC, is strictly prohibited. The information contained in the Carbon Underground 200TM has been obtained from sources that Fossil Free Indexes, LLC, believes to be reliable; however, Fossil Free Indexes, LLC, does not guarantee its accuracy, timeliness or completeness, and it is subject to change without notice. The Carbon Underground 200TM is a trademark of Fossil Free Indexes, LLC. Users are not permitted to use this or any other Fossil Free Indexes, LLC, trademark without the prior written consent of Fossil Free Indexes, LLC. The Carbon Underground 200TM does not constitute financial or investment advice, or an offer to buy or sell, or a promotion or recommendation of any security, financial instrument or product or trading strategy. Neither MSCI nor any other party involved in or related to compiling, computing or creating the MSCI data makes any express or implied warranties or representations with respect to such data (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such data. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in or related to compiling, computing or creating the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. No further distribution or dissemination of the MSCI data is permitted without MSCI's express written consent. Dow Jones Brookfield® Global Infrastructure Index is a registered trademark of Brookfield Redding, Inc. and/or its affiliates (including but not limited to Brookfield Asset Management, Inc.) Dow Jones® is a registered trademark of Dow Jones Trademark Holdings, LLC. The ERI Scientific Beta United States Multi-Beta Multi-Strategy Four-Factor Equal Weight Index and the ERI Scientific Beta Developed ex-USA Value Diversified Multi-Strategy Index are the intellectual property (including registered trademarks) of EDHEC Risk Institute Asia Ltd and/or its licensors, which is used under license within the framework of ERI Scientific Beta activity. The *RhumbLine SciBeta US Multi-Beta Multi-Strategy 4-Factor EW Index Strategy*, and the *RhumbLine SciBeta Brookfield ex-US Value Diversified Multi-Strategy Index Strategy* that replicate fully or partially the ERI Scientific Beta United States Multi-Beta Multi-Strategy Four-Factor Equal Weight Index and the ERI Scientific Beta Developed ex-USA Value Diversified Multi-Strategy Index are not sponsored, endorsed, sold or promoted by EDHEC Risk Institute Asia Ltd and its licensors and neither EDHEC Risk Institute ASIA Ltd nor its licensors shall have any liability with respect thereto.

Index returns are calculated in U.S. dollars. Indexes are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. Index performance is proprietary data of the listed index provider(s) and has been licensed for use by RhumbLine Advisers. Please refer to the index provider's website for additional information.



*To the Trustees at the
Los Angeles City Employees' Retirement System:
Thank you for your business and continued support of
our firm! Thank you for inviting us to present today!*



Institutional Index Management



THE RHUMBLINE TEAM



UNITED STATES - EAST COAST
MASSACHUSETTS

BOSTON HARBOR

Notice to Mariners
This chart is published under the authority of the
United States Coast Guard and is subject to
change without notice.
SOUNDINGS IN FEET
AT MEAN LOW WATER

State Street Global Advisors

A Presentation to LACERS

July 14, 2022

For Investment Professional Use Only.

Biographies



Sonya Park

Sonya is a Managing Director of State Street Global Advisors in the San Francisco Office. She is responsible for managing existing SSGA client relationships and driving new business development in the Western U.S. Prior to joining State Street Global Advisors in 2011, Sonya was a Vice President at Dimensional Fund Advisors in the Institutional Sales & Services Group. Prior to Dimensional Fund Advisors, Sonya was an Associate Director at Watson Pharmaceuticals. Sonya has also worked at Lehman Brothers as an Equity Research Analyst and began her career at SEI Corporation. Sonya earned a BA from the University of Pennsylvania and an MBA from the NYU Stern School of Business and has been working in the financial services industry since 1993. Sonya holds the FINRA 7 and 63 registrations. Sonya also holds the NFA Series 3 and 30 and is an Associated Person of SSGA Funds Management, Inc. ('SSGA FM') SSGA FM is a Commodity Trading Advisor registered with the Commodity Futures Trading Commission.



Matthew Steinaway, CFA

Matthew Steinaway is a Senior Managing Director of State Street Global Advisors and is the Chief Investment Officer of the firm's Global Fixed Income, Currency and Cash Group. In this role, he oversees a team of approximately 120 professionals managing more than US\$1.0TN of assets across active, smart beta and passive strategies for fixed income, cash and currency portfolios. Matt joined the company in 2003 and has more than 27 years of credit and investment experience. He is also a member of State Street Global Advisors' Executive Management Group and Investment Committee. Prior to his current role, Matt was the Chief Risk Officer for State Street Global Advisors where he was responsible for all investment, credit, and operational risks across State Street Global Advisors' global investment platform. He also previously was the Head of Global Cash Management, where he oversaw the global investment activities of short duration and money investment strategies and has served in leadership roles in the firm's Cash and Fixed Income research efforts. Matt has a BA in Philosophy from Saint Anselm College, graduated with an MBA from Bentley College and has earned the Chartered Financial Analyst designation.



John Tucker, CFA

John is a Senior Managing Director of State Street Global Advisors and CIO of Global Equity Beta Solutions. In this capacity, he oversees a team of approximately 80 portfolio managers and analysts globally, and more than 1,400 portfolios with assets in excess of \$22 trillion across all equity index and smart beta strategies. He also oversees State Street Global Advisors' Equity Trading teams, which transact over \$3 Trillion annually, and the Company Stock Group, which manages fiduciary transactions and company stock investments. In addition, John is a Director of the State Street Global Advisors Trust Company, a member of the State Street Global Advisors Investment Committee, and member of State Street Global Advisors' Executive Management Group. Prior to this, John was Chief Operating Officer for Investments where he had been deeply engaged in many of the firm's IT transformation efforts. In this role, John promoted operational efficiencies and worked towards implementing new technology for certain trading processes while streamlining the overall number of systems within our global platform. In addition to leading Global Trading and transforming the way the Investments team operates, John's team was responsible for portfolio oversight, model validation, and transaction cost analysis functions globally. Previously, John was Co-Head of Index Equity Strategies in North America and responsible for overseeing the management of all equity index strategies and Exchange Traded Funds managed in North America, and formerly head of the Equity Index group in SSGA's London office, where he was responsible for the management of all index strategies in our second largest investment center. John received a BA from Trinity College and an MS in Finance from Boston College. He has also earned the Chartered Financial Analyst designation and is a member of the Boston Security Analysts Society and the CFA Institute. He joined State Street in 1988. Outside of work, John is a Trustee at Shore Country Day School in Beverly, Massachusetts.

LACERS and SSGA

Goals & Objectives

LACERS

- Seeking an investment manager for equity and fixed income index mandates.

How we aim to deliver

- Partner with LACERS as your preferred beta provider
- Produce low cost and predictable returns with minimal tracking error to the benchmark
- Provide access to broader SSGA Resources such as investment and research specialists.
- Tenured Experience: State Street Global Advisors has been managing Equity Index mandates since 1979 and Fixed Income Index mandates since 1995.

Firm Overview

A Leading Partner to Institutions and Intermediaries

#1	#2	#3	Top 10
government retirement plan provider globally	US Defined Benefit manager	largest global ETF provider	largest asset manager (4 th largest)
endowment & foundation asset manager globally	US Defined Contribution Investment Only (DCIO) manager ¹	largest global index manager (excluding ETFs)	Institutional Money Market provider ²
sovereign wealth fund asset manager worldwide	manager of index non-US equity and global equity assets	central bank asset manager	Outsourced Chief Investment Officer (OCIO) services
manager of index global/non-US bond assets		index US bond asset manager	manager of ESG mandates

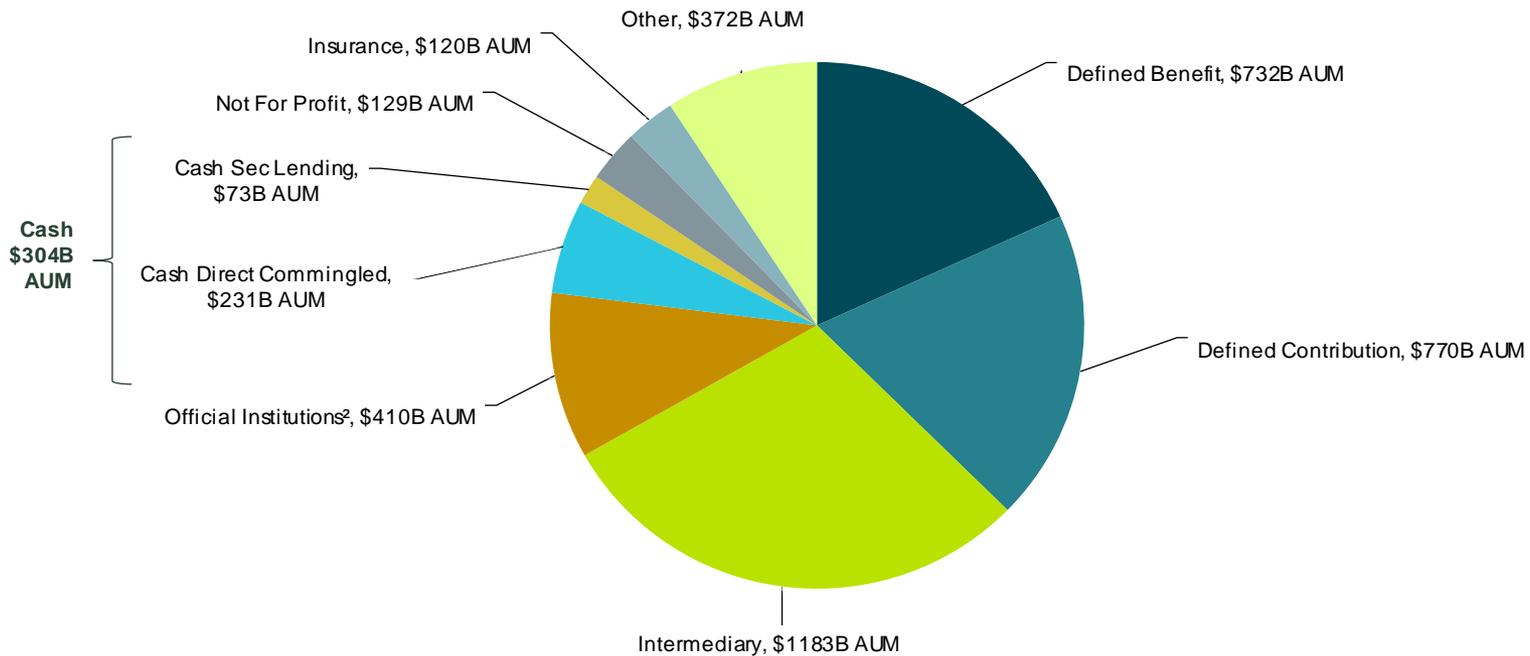
Source: Pensions & Investments Research Center, as of 12/31/2020.

¹ Managers of Defined Contribution Assets without recordkeeping services.

² iMoneyNet (Institutional Money Market Provider) as of 3/31/2022.

US \$4.02 Trillion in Assets Under Management¹

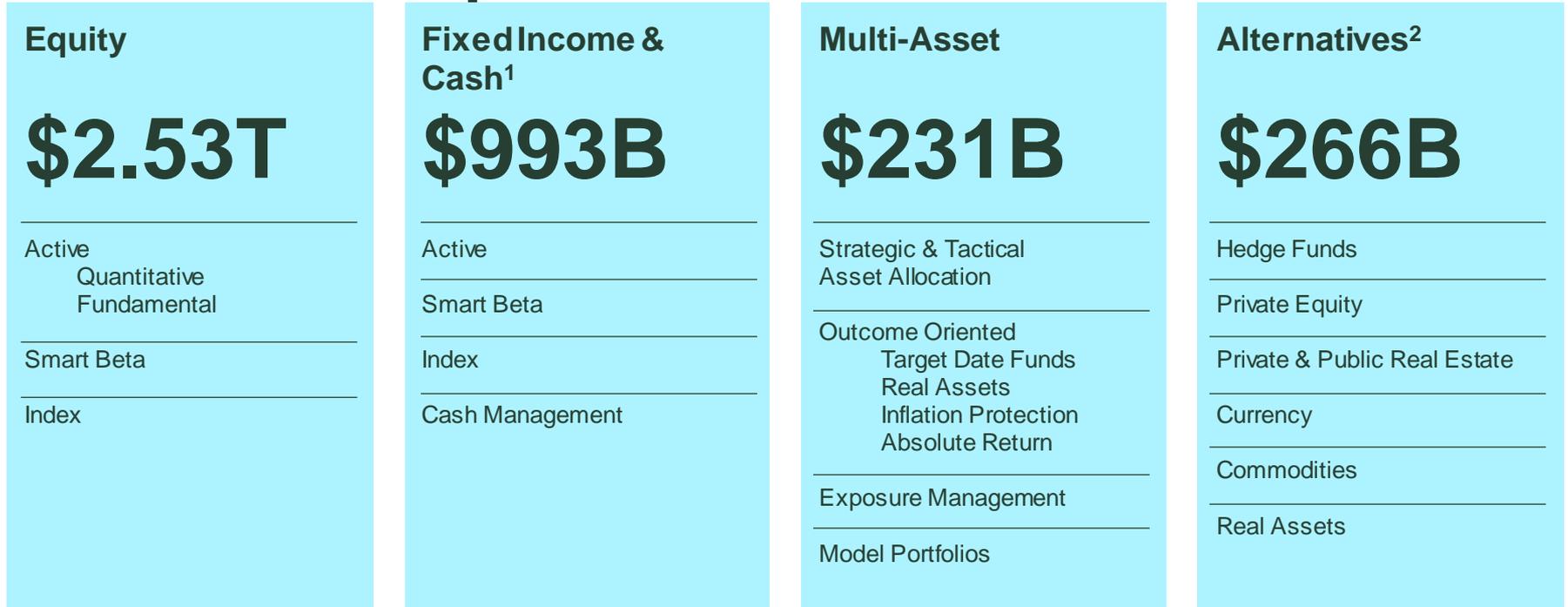
Clients by AUM



¹This figure is presented as March 31, 2022 and includes approximately \$73.35 billion of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated.

²Official Institutions is a client type that includes all plan type assets including DB and DC.

Our Index and Active Capabilities Cover the Risk/Reward Spectrum



Figures are in USD dollars; Period end as of March 31, 2022

¹Cash includes both floating- and constant-net-asset-value portfolios held in commingled structures or separate accounts.

²Alternatives includes real estate investment trusts, currency and commodities, including gold-backed ETFs for which SSGA only serves as marketing agent.

Business Leadership Team

Cyrus Taraporevala, President & CEO

Matteo Andretto
Head of SPDR EMEA

John Brockelman
Chief Marketing Officer

Marc Brown
Chief Administrative Officer

Gunjan Chauhan
Head of SPDR Capital Markets and Strategic Partners

Jaclyn Collier
Chief Compliance Officer

Tim Corbett
Chief Risk Officer

Lochiel Crafter
Head of Global Institutional Group

Kem Danner
Head of Human Resources

Marie-Anne Heeren
Head of European Institutional Distribution

Kim Hochfeld
Head of Global Cash

David Ireland
Head of Institutional, Americas

Ann Prendergast
Head of State Global Advisors Europe Ltd

Susan Lasota
Chief Technology Officer and
Head of Transformation

Steven Lipiner
Chief Financial Officer

James MacNevin
Head of State Street Global Advisors APAC

Sunita Naik
Head of State Street Global Advisors India

Sean O'Malley
General Counsel

Barry F.X. Smith
Chief Operating Officer,
Global Institutional Group

Sue Thompson
Head of SPDR® ETFs Americas Distribution

Rory Tobin
Head of Global SPDR® ETFs and
Head of State Street Global Advisors EMEA

As of May 2022.

Why State Street Global Advisors for Equity Indexing

Key Strength and Core Focus Area

- 40 years history of delivering high quality, broad based index solutions
- >99%¹ of equity index funds have historically tracked within their tolerance bands
- 150 dedicated individuals across investments, trading, risk and compliance

Industry Leader and Innovator

- ✓ Launched first US ETF
- ✓ In-house index creation
- ✓ Developing smart beta since 2006
- ✓ In-house proprietary ESG scoring framework (R-Factor) covering over **7,500** listed companies

Experienced and Reliable Team

- 20 years average portfolio manager tenure
- Utilize a globally consistent investment management platform and processes
- Strategic focus on implementation, cost reduction and risk management
- Deep research expertise in cap weighted, smart beta and ESG

¹ Based on cumulative quarterly gross-of-fees returns for all GEBS managed pooled, and separate account for both 3 years and 5 years period ending December 31, 2021. Tracking error based on the difference between portfolio and benchmark cumulative returns.

Why State Street Global Advisors for Fixed Income Indexing

Rich Heritage and History

- 27 year history of delivering a wide range of fixed income index products
- >99%¹ of fixed income index funds have historically tracked within their tolerance bands
- 140 dedicated individuals across investments, trading, risk and compliance

Solutions-Oriented Offerings

- ✓ Over 200 strategies and 100 commingled funds
- ✓ Building blocks structure allows for bespoke solutions to even the most complex client challenges
- ✓ Adding value through effective implementation
- ✓ Collaboration with Bloomberg and SASB to offer new ESG indices using proprietary R-Factor scores

Experienced and Reliable Team

- 38 portfolio managers and analysts averaging 18 years of experience
- Sector specialist teams provide deeper market insights
- Six investment centers: global footprint with local expertise
- Strategic focus on implementation, cost reduction and risk management

¹ Based on 1 year performance as of 4Q21. Tracking error based on the difference between portfolio and benchmark cumulative returns.

Equity Indexing

A Long History of Indexing Innovation

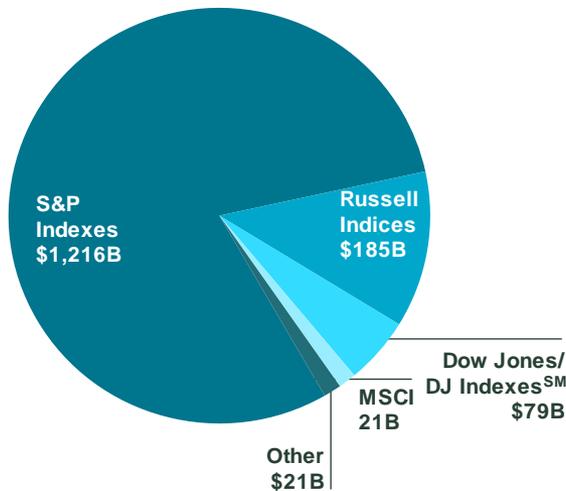
	1970s	1990s	2000s	2010-20
Standard Indices	Launched International Index and S&P Strategies (1979)	First equity index ESG mandate (1990) First US listed ETF launch (1993)	S&P HY Div Aristocrats (2005) FTSE RAFI US 1000 (2006)	FTSE EPRA Nareit Liquid (2007) Nikkei 225 (2008) FTSE RAFI ALL World 3000 MSCI Min Volatility (2010) MSCI World Equally-weighted (2011) RAFI Low Vol (2012)
Proprietary Indices and Strategies		SSGA S&P 500 Equal Weighted (1993)	SSGA US Valuation-Tilted (2005) SSGA Global Size & Global Valuation Tilted Strategies (2009)	SSGA Europe Managed Volatility (2010) SSGA Dividend Tilted (2012) SSGA Global & US Multi-factor (2015) Kensho New Economies Indices (2018) FTSE EDHEC Risk Efficient EM Russell 1000 Factors (2015) Gender Diversity Index (2015) Core Factors (2017) US Cap Weighted Self Indices (2017)
				BBG SASB Index Strategy (2019) ex Fossil Fuels Strategy (2020) International Cap Weighted Self Indices (2019) Sustainable Climate Strategy (2020)

Source: State Street Global Advisors, as of December 31, 2021. Inception date of select portfolios.

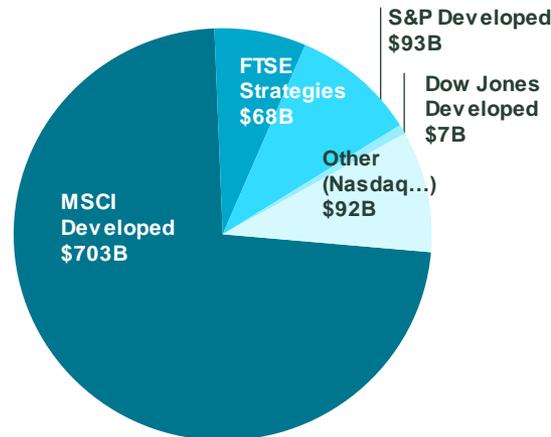
A Leading Manager of Global Indexed Assets

Total Global Equity Beta Solutions Assets Under Management:
 \$2.57 Trillion (USD) as of March 31, 2022

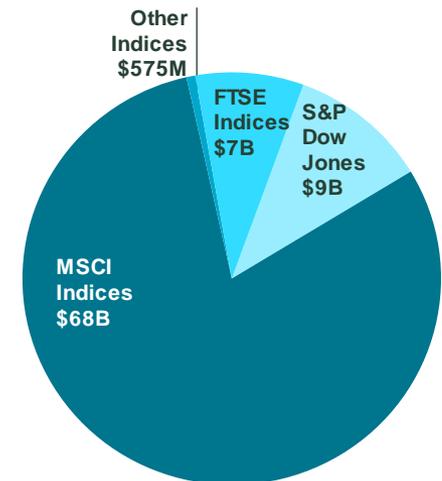
US Index AUM
 \$1,522B



International & Global Equity AUM \$964B



Emerging Markets Equity AUM \$85B



Source: State Street Global Advisors. As of March 31, 2022.

Exclusive of Emerging Markets Equities invested in other MSCI-benchmarked strategies such as MSCI ACWI and MSCI ACWI ex-US.

State Street Global Equity Beta Solutions

70+ Portfolio Managers & Researchers

30+ Traders & Analysts

10+ Equity Strategists & Specialists



CIO	Exp Yrs
John Tucker, CFA	33

Team Highlights

Investment Team Members ¹	71
Average Experience Years	21
Number of CFA Charter Holders	20

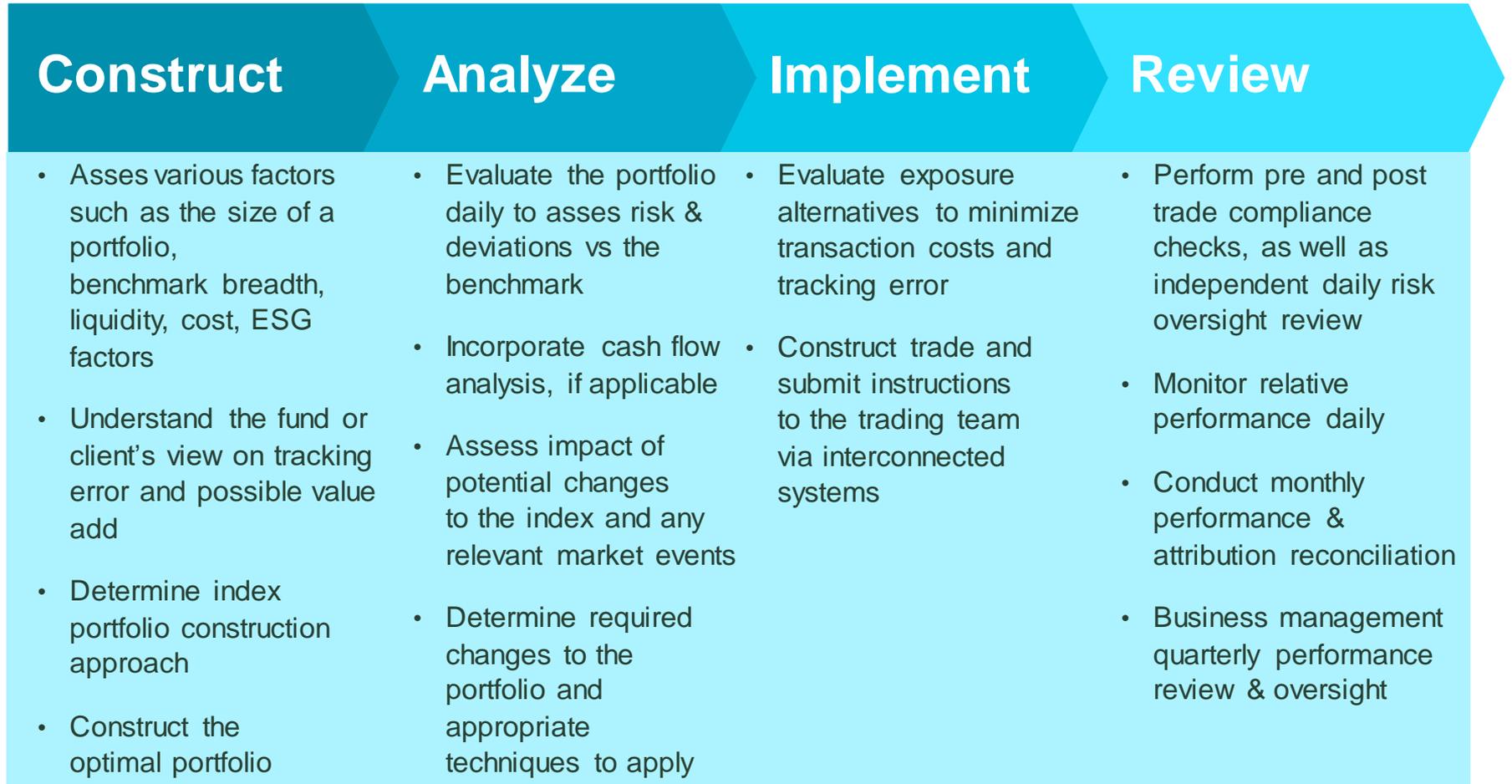
Senior Leadership	Exp Yrs
Jennifer Bender ² , PhD (Research)	24
Nobuya Endo, CFA (Japan)	27
Mike Feehily, CFA (US)	28
Julian Harding, IIMR, FCA (EMEA)	25
Mark Hui, CFA (Hong Kong)	22
Alex King, CFA (Australia)	18
Shayne White ² (Technology)	28

Portfolio Strategists ²	Exp Yrs
Heather Apperson	16
Emma Johnston	4
Yvette Murphy	12
Hidehiko Shimizu	14

As of March 31, 2022. ¹ Investment Team members include portfolio managers and researchers. ² Does not manage assets for the Global Equity Beta Solution team. CFA® is a trademark of the CFA Institute.

Investment Process

A tried and tested process marrying human insight and technology



Source: State Street Global Advisors.

Improving Risk Controls & Oversight Through Technology

Features of our portfolio management system:

- Full data integration with other State Street Global Advisors applications and risk/oversight teams
- Designed and customized to our process, workflow and portfolio universe
- Provides a comprehensive portfolio view for portfolio management, as well as risk and oversight
- Dedicated software development resources to ensure continuous development and improvements



Source: State Street Global Advisors.

Internal Crossing: A Powerful Source of Cost Savings & Liquidity

	Total Value ⁵	In-kind ⁴ /Internal Crossing/ Unit Crossing	Estimated Cost Savings ⁶	Transaction Cost Savings ⁶
US Market Case Study¹ (2018–2020)	\$193.5 Billion	91% of the Total	0.05% of the Total	\$87.8M
Non-US Developed Case Study² (2018–2020)	\$24.8 Billion	74% of the Total	0.20% of the Total	\$36.9M
Emerging Markets Case Study³ (2018–2020)	\$24.6 Billion	66% of the Total	0.25% of the Total	\$40.6M

Availability of internal crossing at State Street Global Advisors may be affected by your asset class, vehicle type, jurisdiction, or other factors.

¹ Based on actual client order flow trading activity in the S&P 500[®] Defined Contribution Commingled Fund.

² Based on actual client order flow trading activity in the Thrice-Monthly EAFE ERISA Commingled Funds.

³ Based on actual client order flow trading activity in the Thrice-Monthly Emerging Markets ERISA Commingled Funds.

⁴ In-kind transfers are redemptions/contributions made via security transfers.

⁵ For calendar years 2018–2020. It is not known whether similar results have been achieved after 2020.

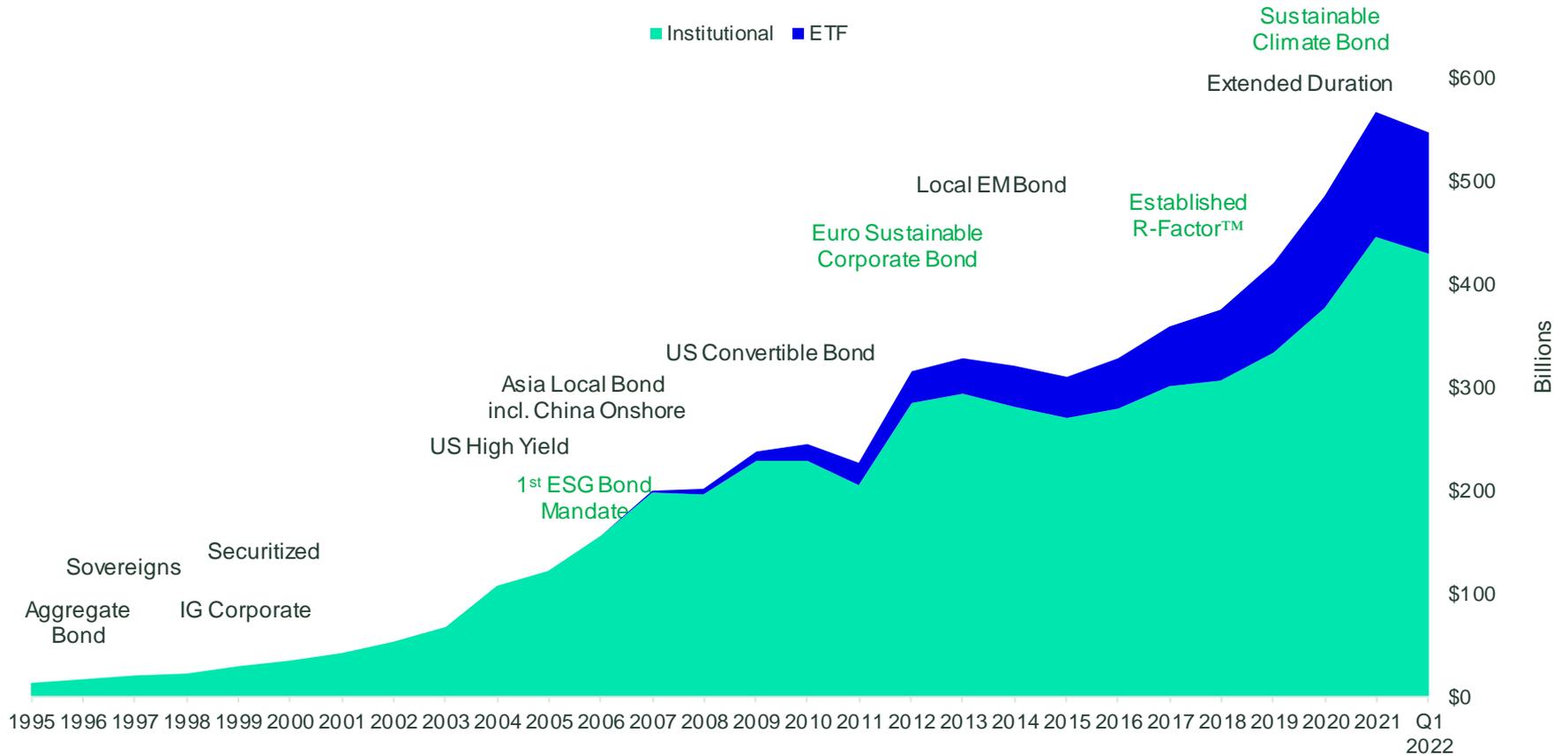
⁶ This represents estimated average savings across all aggregate trading over the period. These estimates are based on subjective judgments and assumptions and do not reflect the effect of unforeseen economic and market factors on decision making. There is no guarantee that a particular client transaction will experience the same level of savings.

In fact, savings could differ substantially. Any savings is contingent upon other activity taking place on a given transaction day. Had other funds been selected, different results of transaction cost savings may have been achieved. All figures are in USD.

Fixed Income Indexing

A History of Innovation in Indexing

Fixed income indexing is on the rise



Source: SSGA. As of March 31, 2022. 1995–2001 data includes active fixed income. AUM excludes custom solutions AUM from 2009–2012 (US Treasury TARP Assets).

Comprehensive Platform of Indexed Fixed Income Capabilities

Addressing client objectives from Simple to Complex

- \$547 Bn Indexed Fixed Income AUM
- 100+ Strategy “Building Blocks”
- Separate Accounts — Commingled — ETFs

Multi Sector \$149 B	Sovereign \$236 B	IG Corporate \$82 B	HY Corporate \$33 B	Securitized \$10 B	Emerging Markets \$37 B	ESG \$44 B
Global Aggregate	Global Governments	Global Credit	Global HY	Mortgage Backed	EM Local Currency	ESG-Screened
US, Euro, Sterling, Aggregate	US Treasuries, STRIPS	US, Euro, Sterling Credit	US, Euro HY	Asset Backed	EM Hard Currency	Climate
Asia Bond	Euro Governments	US High Quality Corporate	Short HY	Commercial Mortgage Backed	EM Corporate	R-Factor
Short, Intermediate, Long Duration	UK Gilts	US Long Duration Credit	Preferreds		EM Inflation	Values-Based/Client-Specific
LDI	Inflation Linked	Issuer Scored Corporate (ISC)	Convertibles			
	China Bond	Municipals				

Source: SSGA as at 31 March 2022.

Experienced and Specialized Global Team

Leverage Expertise and Insights across Entire Platform



Active FI & Currency
Matthew Nest, CFA
39 Professionals
\$129B Assets Managed

ESG & Asset Stewardship*
14 Professionals

Cash Management
Pia McCusker
22 Professionals
\$417B Assets Managed

Credit Research
9 Professionals

Portfolio Strategy
Thomas Coleman
12 Professionals

Quantitative Research
9 Professionals

Indexed Fixed Income

Stephen Yeats, CFA **38** Investment Professionals
Global Head of **19** Average Years Experience
Fixed Income Beta Solutions **\$547B** Assets Managed

Sector Specialization

	Rates & Securitized	Credit	Emerging Markets
Sector Specialist PMs	12	13	6
North America	6	9	1
EMEA	5	4	4
APAC	1		1

Fixed Income Trading **Investment Risk & Liquidity**
12 Fixed Income, 6 Currency 13 Investment Professionals
20 Average Years Experience 12 Average Years Experience

140 Fixed Income Investment Professionals

As of 31 March 2022. CFA® is a trademark of the CFA Institute. *Cross-asset class team.

Process Discipline Delivers Results

Our stratified sampling approach seeks to deliver reliable outcomes by controlling risks, minimizing costs and adding incremental returns

Control Risks

Identify and match key risk dimensions

Monitor and control risk within set tolerances

Minimize Costs

Selective turnover

Innovative trading techniques

Efficient execution

Add Incremental Return

Proactive management of index changes/events

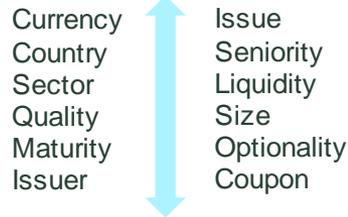
Pragmatic security selection

Harvest new issue/primary market premium

Source: SSGA. The above objectives are based on certain assumptions and analysis made by SSGA. There is no guarantee that the objectives will be achieved.

Dynamic Index Process Delivers Risk-Controlled Outcomes

- Evaluate key risk dimensions



- Stratified Sampling Structure
- Match risk dimensions within set tolerances
- Value-driven security selection



- Assess impact of flows
- Plan for index changes
- Rebalance as necessary

- Advanced trading techniques
- Access primary market
- Consider both if and when to trade

The information contained above is for illustrative purposes only

Performance

Domestic Equity Returns (Gross)

	One Month (%)	Three Months (%)	Year to Date (%)	Last 12 Months (%)	Three Years (%)	Five Years (%)	Ten Years (%)	Since Inception Date (%)	Strategy AUM	Strategy Expected Tracking Error Range
								Dec/1987	\$706B	+/- 0-5bps
S&P 500® Strategy	0.19	-5.16	-12.75	-0.32	16.41	13.39	14.42	10.94		
S&P 500® Index	0.18	-5.16	-12.76	-0.30	16.43	13.39	14.40	10.91		
Difference	0.00	0.00	0.00	-0.02	-0.02	0.00	0.03	0.03		
								Dec/2008	\$33B	+/- 5bps
Russell 1000® Index Strategy	-0.15	-5.98	-13.71	-2.70	16.04	13.13	14.26	14.37		
Russell 1000® Index	-0.15	-5.98	-13.72	-2.71	16.02	13.12	14.24	14.34		
Difference	0.00	0.00	0.01	0.01	0.02	0.01	0.02	0.02		
								Apr/2005	\$13B	+/- 5 to 10bps
Russell 1000® Growth Index Strategy	-2.32	-10.74	-21.84	-6.23	18.30	16.12	16.06	11.64		
Russell 1000® Growth Index	-2.32	-10.76	-21.88	-6.25	18.31	16.14	16.06	11.64		
Difference	0.01	0.02	0.04	0.02	0.00	-0.02	0.00	0.00		

As of 5/31/2022. These are representative funds.

Source: SSGA. Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis and do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

State Street Global Advisor's defines expected tracking error as the difference between our fund and benchmark returns.

Domestic Equity Returns, cont.

	One Month (%)	Three Months (%)	Year to Date (%)	Last 12 Months (%)	Three Years (%)	Five Years (%)	Ten Years (%)	Since Inception Date (%)	Strategy AUM	Strategy Expected Tracking Error Range
								Apr/2005	\$14B	+/- 5 to 10bps
Russell 1000® Value Index Strategy	1.94	-1.11	-4.54	0.94	12.80	9.55	12.11	8.14		
Russell 1000® Value Index	1.94	-1.09	-4.52	0.93	12.75	9.50	12.06	8.07		
Difference	-0.01	-0.02	-0.03	0.01	0.05	0.05	0.05	0.07		
								May/2017	\$102M	+/- 5bps
Russell Mid Cap Index Strategy	0.08	-5.26	-12.84	-6.71	12.87	10.50	N/A	10.51		
Russell Midcap® Index	0.08	-5.26	-12.87	-6.77	12.86	10.48	N/A	10.49		
Difference	0.00	0.00	0.04	0.06	0.00	0.02	N/A	0.02		
								Aug/1999	\$20B	+/- 5bps
S&P Midcap 400® Index Strategy	0.75	-5.11	-10.98	-6.52	13.25	9.54	12.23	10.06		
S&P MidCap 400® Index	0.75	-5.12	-10.98	-6.52	13.28	9.56	12.24	10.03		
Difference	0.00	0.01	0.00	0.00	-0.03	-0.02	-0.01	0.03		

As of 5/31/2022. These are representative funds.

Source: SSGA. Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis and do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

State Street Global Advisor's defines expected tracking error as the difference between our fund and benchmark returns.

Domestic Equity Returns, cont.

	One Month (%)	Three Months (%)	Year to Date (%)	Last 12 Months (%)	Three Years (%)	Five Years (%)	Ten Years (%)	Since Inception Date (%)	Strategy AUM	Strategy Expected Tracking Error Range
								Nov/2008	\$13B	+/- 5 to 10bps
Russell 2000® Index Strategy	0.14	-8.65	-16.54	-16.86	9.75	7.76	10.90	11.15		
Russell 2000® Index	0.15	-8.65	-16.56	-16.92	9.70	7.72	10.83	11.08		
Difference	-0.01	0.00	0.02	0.06	0.05	0.04	0.06	0.07		
								Sep/1999	\$472M	+/- 10 to 15bps
Russell 2000® Growth Index Strategy	-1.86	-13.43	-24.65	-25.58	6.18	6.90	10.57	6.54		
Russell 2000® Growth Index	-1.89	-13.53	-24.79	-25.71	6.18	6.87	10.55	6.43		
Difference	0.03	0.11	0.14	0.13	0.00	0.03	0.02	0.11		
								Apr/1996	\$501M	+/- 10 to 15bps
Russell 2000® Value Index Strategy	1.92	-4.13	-8.28	-7.77	12.23	7.90	10.76	9.31		
Russell 2000® Value Index	1.92	-4.15	-8.25	-7.67	12.21	7.83	10.72	9.32		
Difference	0.00	0.02	-0.03	-0.10	0.02	0.07	0.04	-0.01		

As of 5/31/2022. These are representative funds.

Source: SSGA. Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis and do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

State Street Global Advisor's defines expected tracking error as the difference between our fund and benchmark returns.

Non-US Equity Returns (Gross)

	One Month (%)	Three Months (%)	Year to Date (%)	Last 12 Months (%)	Three Years (%)	Five Years (%)	Ten Years (%)	Since Inception Date (%)	Strategy AUM	Strategy Expected Tracking Error Range
								Jun/2018	\$8B	+40bps +/- 10 to 15bps*
MSCI World ex U.S. IMI Strategy	0.74	-4.79	-10.64	-9.65	7.60	N/A	N/A	3.59		
MSCI World ex U.S. IMI Index	0.61	-5.06	-10.92	-9.92	7.21	N/A	N/A	3.21		
Difference	0.13	0.27	0.29	0.27	0.39	N/A	N/A	0.38		
								Dec/1980	\$51B	+40bps +/- 10bps*
MSCI EAFE Index Strategy	0.90	-4.87	-11.06	-10.09	6.81	4.55	7.51	8.26		
MSCI EAFE® Index	0.75	-5.16	-11.34	-10.38	6.43	4.18	7.15	7.98		
Difference	0.15	0.29	0.28	0.29	0.38	0.37	0.36	0.29		
								Sep/2007	\$2B	+25bps +/- 10 to 15bps*
MSCI EAFE Small Cap Index Strategy	-0.63	-7.34	-15.11	-15.71	6.73	4.30	9.06	4.28		
MSCI EAFE Small Cap Index	-0.72	-7.57	-15.42	-16.02	6.58	4.11	8.87	4.04		
Difference	0.10	0.23	0.32	0.31	0.15	0.19	0.19	0.24		

As of 5/31/2022. These are representative funds.

Source: SSGA. Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis and do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

State Street Global Advisor's defines expected tracking error as the difference between our fund and benchmark returns.

*We utilized our ERISA commingled funds (which LACERS is qualified to invest in) as representative funds. The majority of the estimated tracking error in ERISA commingled funds includes a positive mean expected t.e. attributed to tax withholdings differences (+25 to +50 basis points). The remaining contributors to estimated tracking error would be compounding, mis-weights, cash drag, and ineligibility to participate in certain corporate actions (because of non-QIB status).

Non-US Equity Returns, cont.

	One Month (%)	Three Months (%)	Year to Date (%)	Last 12 Months (%)	Three Years (%)	Five Years (%)	Ten Years (%)	Since Inception Date (%)	Strategy AUM	Strategy Expected Tracking Error Range
								Aug/2002	\$59B	+/- 15 to 20bps
MSCI Emerging Markets Index Strategy	0.54	-6.78	-11.72	-19.80	4.95	3.76	4.08	9.07		
MSCI Emerging Markets Index	0.44	-7.29	-11.76	-19.83	4.99	3.80	4.17	9.28		
Difference	0.10	0.51	0.04	0.03	-0.05	-0.04	-0.09	-0.20		
								Mar/2008	\$974M	+/- 60 to 70bps
MSCI Emerging Markets Small Cap Index Strategy	-1.29	-4.01	-10.36	-9.08	11.37	6.45	6.24	4.22		
MSCI Emerging Markets Small Cap Index	-1.64	-4.09	-10.62	-9.32	11.20	5.97	5.79	4.06		
Difference	0.35	0.08	0.26	0.24	0.17	0.48	0.45	0.16		

As of 5/31/2022. These are representative funds.

Source: SSGA. Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis and do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

State Street Global Advisor's defines expected tracking error as the difference between our fund and benchmark returns.

For the EM country funds, custody fees, mis-weights, cash/receivables drag, and compounding are the typical sources of tracking error.

*

Fixed Income (Gross)

	One Month (%)	Three Months (%)	Year to Date (%)	Last 12 Months (%)	Three Years (%)	Five Years (%)	Ten Years (%)	Since Inception Date (%)	Strategy AUM	Strategy Expected Tracking Error Range
								Oct/2000	\$77B	0-15bps
U.S. Aggregate Bond Index Strategy	0.64	-5.88	-8.91	-8.23	0.03	1.20	1.74	4.13		
Bloomberg US Aggregate Bond Index	0.64	-5.86	-8.92	-8.22	0.00	1.18	1.71	4.11		
Difference	0.00	-0.01	0.01	-0.01	0.03	0.03	0.03	0.02		
								Mar/2010	\$7B	25-35bps
Real Asset Strategy	1.67	6.12	12.26	19.76	14.59	9.94	5.10	5.11		
Real Asset NL Custom Blended Index	1.68	5.81	11.93	19.26	13.93	9.51	4.85	4.88		
Difference	-0.01	0.31	0.33	0.50	0.66	0.43	0.25	0.23		
								Jul/2000	\$29B	0-10bps
Bloomberg U.S. TIPS Index Strategy	-1.01	-4.86	-5.97	-1.47	4.43	3.67	1.99	5.16		
Bloomberg U.S. TIPS Index	-0.99	-4.82	-5.95	-1.45	4.45	3.68	2.00	5.16		
Difference	-0.01	-0.04	-0.02	-0.03	-0.01	-0.01	-0.01	0.00		

As of 5/31/2022. These are representative funds.

Source: SSGA. Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis and do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

State Street Global Advisor's defines expected tracking error as the difference between our fund and benchmark returns.

Lending Returns

Domestic Equity Lending Returns

Fund Name	Securities Lending Return (bps)		
	2019	2020	2021
State Street S&P 500® Flagship Securities Lending Fund	0.4	0.2	0.2
State Street Russell 1000® Index Securities Lending Fund	0.8	0.5	0.3
State Street Russell 1000® Growth Index Securities Lending Fund	0.7	0.4	0.3
State Street Russell 1000® Value Index Securities Lending Fund	0.9	0.6	0.4
Russell Mid Cap Index Strategy*	N/A	N/A	N/A
State Street S&P MidCap 400® Index Securities Lending Common Trust Fund	1.4	0.8	0.2
State Street Russell 2000® Index Securities Lending Fund	11.9	11.9	3.2
State Street Russell 2000® Growth Index Securities Lending Fund	17.3	15.7	4.0
State Street Russell 2000® Value Index Securities Lending Common Trust Fund	5.8	7.9	2.0

*No commingled fund available.
Past performance is not a reliable indicator of future performance.

Non-US Equity Lending Returns

Fund Name	Securities Lending Return (bps)		
	2019	2020	2021
MSCI World ex U.S. IMI Strategy*	2.0-3.0	2.0-3.0	2.0-3.0
State Street MSCI EAFE Index Securities Lending Fund	1.5	0.9	1.3
State Street MSCI EAFE Small Cap Index Securities Lending Fund	14.2	11.3	7.8
State Street Daily MSCI Emerging Markets Index Securities Lending Fund	2.7	1.8	2.1
State Street MSCI Emerging Markets Small Cap Index Securities Lending Fund	12.7	13.6	10.6

*The MSCI World Ex US IMI strategy is composed of underlying lending commingled funds. The estimated lending returns for this exposure is 2-3 basis points. Past performance is not a reliable indicator of future performance.

Fixed Income Lending Returns

Fund Name	Securities Lending Return (bps)		
	2019	2020	2021
State Street U.S. Aggregate Bond Index Securities Lending Fund	1.9	3.3	1.1
State Street U.S. Treasury Inflation Protected Securities (TIPS) Index Securities Lending Fund	2.7	6.8	1.2

The SSGA Real Asset Strategy CIT does not have a lending option/sleeve at this time.
 Past performance is not a reliable indicator of future performance.

Closing Remarks

Why Choose State Street Global Advisors?

Indexing Skillfully Delivered

Research

Embedded research team delivering innovative solutions — such as factors, ESG and implementation techniques

Client Centric Focus

Listen, understand and adapt to client needs and challenges

Performance

Aim to before deliver performance by striking the appropriate balance between return, risk and costs (>98% of funds have consistently* tracked within expectations)

Team

Tenured and stable team with dedicated portfolio managers

Asset Stewardship

Effective steward of client assets with a coordinated firm wide proxy voting platform and focused engagement

Source: State Street Global Advisors. * Based on cumulative quarterly gross-of-fees returns for all GEBS managed pooled, and separate account for both 3 years and 5 years period ending December 31, 2021. Tracking error based on the difference between portfolio and benchmark cumulative returns.

The Benefits of Partnering with SSGA

Our objectives in working with you will be to:

- Deliver consistent, risk-controlled investment outcomes
- Emphasize transparency on key drivers of portfolio risks and returns
- Provide comprehensive exposures across fixed income
- Improve overall results through cost efficiencies

Appendix A: Important Disclosures

Important Risk Disclosure

Investing involves risk including the risk of loss of principal.

The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without SSGA's express written consent.

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor.

All information has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. There is no representation or warranty as to the current accuracy, reliability or completeness of, nor liability for, decisions based on such information and it should not be relied on as such.

The returns on a portfolio of securities which exclude companies that do not meet the portfolio's specified ESG criteria may trail the returns on a portfolio of securities which include such companies. A portfolio's ESG criteria may result in the portfolio investing in industry sectors or securities which underperform the market as a whole.

Responsible-Factor (R Factor) scoring is designed by State Street to reflect certain ESG characteristics and does not represent investment performance. Results generated out of the scoring model is based on sustainability and corporate governance dimensions of a scored entity.

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates rise, bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Standard & Poor's, S&P and SPDR are registered trademarks of Standard & Poor's Financial Services LLC (S&P); Dow Jones is a registered trademark of Dow Jones Trademark Holdings LLC (Dow Jones); and these trademarks have been licensed for use by S&P Dow Jones Indices LLC (SPDJI) and sublicensed for certain purposes by State Street Corporation. State Street Corporation's financial products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates and third party licensors and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability in relation thereto, including for any errors, omissions, or interruptions of any index.

The trademarks and service marks referenced herein are the property of their respective owners. Third party data providers make no warranties or representations of any kind relating to the accuracy, completeness or timeliness of the data and have no liability for damages of any kind relating to the use of such data.

SSGA generally delegates commodities management for separately managed accounts to SSGA FM, a wholly owned subsidiary of State Street and an affiliate of SSGA. SSGA FM is registered as a commodity trading advisor ("CTA") with the Commodity Futures Trading Commission and National Futures Association.

The Fund's securities lending returns shown above are estimates and are based on certain assumptions. Annual returns are calculated by compounding the monthly returns of the fund for a calendar year. Monthly returns are calculated by dividing the earnings realized by the Fund from securities lending activities for the period of a calendar month (net of applicable fees and expenses associated with the Fund's participation in State Street's securities lending program) by the Fund's average daily net asset value for the month in which they are earned. Daily net assets are calculated by multiplying the net asset value per share by the total number of shares on a given day, where the total number of shares takes into account contribution and redemption requests submitted to the Fund one day subsequent to trade date (TD+1). Prior to January 1, 2015, the number of shares took into account the contribution and redemption requests submitted to the Fund on trade date, and the net asset value per share was rounded to 3 digits after the decimal point.

To the extent the Fund invests in underlying funds that participate in securities lending, the Fund's securities lending returns are calculated based on the monthly returns of the underlying funds in proportion to the allocation of the Fund's assets to such funds as of the first day of the applicable month. The Fund's actual securities lending returns for the period shown may differ for reasons including but not limited to the timing of the Fund's recognition of the earnings, fluctuations in the Fund's daily NAV, and/or fluctuations in the proportion of assets a fund of fund has invested in the underlying funds during the period. Past revenues are not a guarantee of future results, which could differ substantially for any reason, including without limitation market conditions, asset allocation changes, fluctuations in the Fund's net assets, securities lending limits imposed on the Fund and modifications to applicable tax rates and regulations.

Important Risk Disclosure

United States: State Street Global Advisors, 1 Iron Street, Boston, MA 02210-1641.

Information Classification: Limited Access

Web: www.ssga.com

© 2022 State Street Corporation - All Rights Reserved

Tracking Number: 4796604.3.1.AM.INST

Expiration Date: August 31, 2022