LACERS
LA CITY EMPLOYEES' RETIREMENT SYSTEM

Investment Committee Agenda

REGULAR MEETING

TUESDAY, MARCH 14, 2023

TIME: 10:30 A.M. OR IMMEDIATELY FOLLOWING THE REGULAR BOARD MEETING

MEETING LOCATION:

LACERS Boardroom
977 N. Broadway
Los Angeles, California 90012

Important Message to the Public

An opportunity for the public to address the Committee in person from the Boardroom and provide comment on items of interest that are within the subject matter jurisdiction of the Committee or on any agenda item will be provided at the beginning of the meeting and before consideration of items on the agenda.

Members of the public who do not wish to attend the meeting in person may listen to the live meeting via one-way audio on Council Phone by calling (213) 621-CITY (Metro), (818) 904-9450 (Valley), (310) 471-CITY (Westside) or (310) 547-CITY (San Pedro Area).

Disclaimer to Participants

Please be advised that all LACERS Committee meetings are recorded.

LACERS Website Address/link:
www.LACERS.org

In compliance with Government Code Section 54957.5, non-exempt writings that are distributed to a majority or all of the Committee in advance of the meeting may be viewed by clicking on LACERS website at www.LACERS.org, at LACERS' offices, or at the scheduled meeting. In addition, if you would like a copy of a non-exempt record related to an item on the agenda, please call (213) 855-9348 or email at ani.ghoukassian@lacers.org.

Chair:	Elizabeth Lee
Committee Members:	Nilza R. Serrano Janna Sidley
Manager-Secretary:	Neil M. Guglielmo
Executive Assistant:	Ani Ghoukassian
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.ghoukassian@lacers.org***.

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

II. APPROVAL OF MINUTES FOR THE MEETING OF FEBRUARY 14, 2023 AND POSSIBLE COMMITTEE ACTION

III. CHIEF INVESTMENT OFFICER VERBAL REPORT

IV. PRESENTATION BY PGIM, INC. REGARDING THE MANAGEMENT OF AN ACTIVE EMERGING MARKET DEBT PORTFOLIO

V. INVESTMENT MANAGER CONTRACT WITH GRANAHAN INVESTMENT MANAGEMENT, INC. REGARDING THE MANAGEMENT OF AN ACTIVE U.S. SMALL CAP GROWTH EQUITIES PORTFOLIO AND POSSIBLE COMMITTEE ACTION

VI. ADAPTIVE ASSET ALLOCATION POLICY AND POSSIBLE COMMITTEE ACTION

VII. OTHER BUSINESS

VIII. NEXT MEETING: The next Regular meeting of the Investment Committee is scheduled for Tuesday, April 11, 2023, at 10:30 a.m., or immediately following the Board Meeting in the LACERS Boardroom at 977 N. Broadway, Los Angeles, CA 90012-1728.

IX. ADJOURNMENT

Board of Administration Agenda

SPECIAL MEETING

TUESDAY, MARCH 14, 2023

TIME: 10:30 A.M. OR IMMEDIATELY FOLLOWING THE REGULAR BOARD MEETING

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LACERS Boardroom
977 N. Broadway
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President:	Nilza R. Serrano
Vice President:	Elizabeth Lee
Commissioners:	Annie Chao Thuy T. Huynh Janna Sidley Sung Won Sohn Michael R. Wilkinson
Manager-Secretary:	Neil M. Guglielmo
Executive Assistant:	Ani Ghoukassian
Legal Counsel:	City Attorney's Office Public Pensions General Counsel Division

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IX. ADJOURNMENT

Agenda of: **Mar. 14, 2023**

Item No: **II**

MINUTES OF THE REGULAR MEETING
INVESTMENT COMMITTEE
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

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 February 14, 2023 meeting was conducted via telephone and/or videoconferencing.

February 14, 2023

11:22 a.m.

PRESENT via Videoconferencing:	Chair:	Elizabeth Lee
	Committee Member:	Nilza R. Serrano
	Legal Counselor:	Josh Geller
	Manager-Secretary:	Neil M. Guglielmo
	Executive Assistant:	Ani Ghoukassian
ABSENT:	Committee Member:	Janna Sidley

The Items in the Minutes are numbered to correspond with the Agenda.

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** – Chair Lee asked if any persons wished to speak on matters within the Committee's jurisdiction, to which there was no response.

II

APPROVAL OF MINUTES FOR THE MEETING OF JANUARY 10, 2023 AND POSSIBLE COMMITTEE ACTION – Committee Member Serrano moved approval, and adopted by the following vote: Ayes, Committee Members Serrano and Chair Lee -2; Nays, None.

III

CHIEF INVESTMENT OFFICER VERBAL REPORT – Rod June, Chief Investment Officer, discussed the following item:

- Investment Committee Forward Calendar

- Adaptive Asset Allocation Policy annual review scheduled for the Investment Committee Meeting in March 2023
- Triennial Review of the Investment Committee Charter scheduled for the Investment Committee Meeting in May 2023

IV

PRESENTATION BY WASATCH ADVISORS, INC. D/B/A WASATCH GLOBAL INVESTORS REGARDING THE MANAGEMENT OF AN ACTIVE EMERGING MARKETS SMALL CAP GROWTH EQUITIES PORTFOLIO – Ajay Krishnan, Lead Portfolio Manager, Dan Chace, Portfolio Manager, and Kitty Swenson, Director of Client Relations, with Wasatch Advisors, Inc., presented and discussed this item with the Committee for 20 minutes.

V

PRESENTATION BY WELLINGTON MANAGEMENT COMPANY LLP REGARDING THE MANAGEMENT OF AN ACTIVE EMERGING MARKET DEBT PORTFOLIO – Mike Trovato, Managing Director, and Darren Capeloto, Managing Director, with Wellington Management Company LLP, presented and discussed this item with the Committee for 15 minutes.

VI

INVESTMENT MANAGER CONTRACT WITH SEGALL BRYANT & HAMILL REGARDING THE MANAGEMENT OF AN ACTIVE U.S. SMALL CAP VALUE EQUITIES PORTFOLIO AND POSSIBLE COMMITTEE ACTION – Bryan Fujita, Investment Officer III, and Jeremiah Paras, Investment Officer I, presented this item to the Committee. Committee Member Serrano moved approval, and adopted by the following vote: Ayes, Committee Members Serrano and Chair Lee -2; Nays, None.

VII

INVESTMENT OFFICER CONTRACT WITH COPELAND MANAGEMENT, LLC REGARDING THE MANAGEMENT OF AN ACTIVE U.S. SMALL CAP CORE EQUITIES PORTFOLIO AND POSSIBLE COMMITTEE ACTION - Bryan Fujita, Investment Officer III, and Jeremiah Paras, Investment Officer I, presented this item to the Committee. Committee Member Serrano moved approval, and adopted by the following vote: Ayes, Committee Members Serrano and Chair Lee -2; Nays, None.

VIII

OTHER BUSINESS – There was no other business.

IX

NEXT MEETING: The next Regular Meeting of the Investment Committee is scheduled for Tuesday, March 14, 2023, 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 responding to public health concerns relating to the novel coronavirus continue.

X

ADJOURNMENT – There being no further business before the Committee, Chair Lee adjourned the meeting at 12:17 p.m.

Elizabeth Lee
Chair

Neil M. Guglielmo
Manager-Secretary

Los Angeles City Employees' Retirement System

Portfolio Review

March 2023

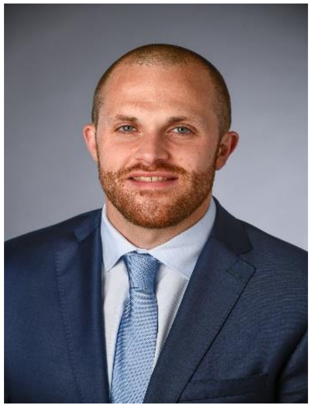
PGIM FIXED INCOME

PGIM FIXED INCOME

Presenter Biographies

Mariusz Banasiak, CFA, is a Managing Director and Head of Local Currency Rates and FX for PGIM Fixed Income's Emerging Markets Debt Team. Mr. Banasiak is also a senior portfolio manager for the Emerging Markets hedge fund product as well as being responsible for developing currency strategy for Global and Core plus mandates. Prior to assuming this position in the Emerging Markets Debt Team, he was responsible for developing portfolio strategies on USD sovereign and local emerging market yield curves and currencies in the Europe, Middle East, and Africa (EMEA) region. Previously, Mr. Banasiak was an Analyst for emerging market debt portfolios in the Portfolio Analyst Group. Earlier, he was responsible for risk analysis and performance attribution for the Firm's proprietary portfolios. Mr. Banasiak joined the Firm in 2004. He received a BS with Honors in Finance from Rutgers University and holds the Chartered Financial Analyst (CFA) designation.

Bridget Chadziutko is a Manager in Client Management for PGIM Fixed Income. Ms. Chadziutko is responsible for providing comprehensive support for PGIM Fixed Income's institutional clients. Prior to joining Client Management in February 2022, Ms. Chadziutko was a Manager of Client Onboarding where she was responsible for managing the launches of PGIM Fixed Income's single client accounts for both domestic and international clients and for providing onboarding services to investors in commingled vehicles. Before joining the Firm in 2019, she held roles within Prudential's Stable Value business, and within other areas of the Firm's asset management business. Ms. Chadziutko received a BS in Finance from Rutgers Business School and an MBA with a concentration in Strategy from Rutgers Business School.



Robert Ventura, CFA is a Manager in Client Management for PGIM Fixed Income. Mr. Ventura is responsible for providing comprehensive support for PGIM Fixed Income's institutional clients including development of customized client communication plans, responding to daily client inquiries, and coordination of activity with our client's service providers. He joined the Firm in 2011. Prior to joining Client Management, Mr. Ventura was a Senior Specialist in PGIM's Hedge Fund Administration group where he was responsible for various reporting, accounting, and regulatory requirements for a variety of PGIM's alternative products including Hedge Fund, UCITs and Qualified Investor Accounts. Mr. Ventura received a BS in Finance from The College of New Jersey and holds the Charted Financial Analyst (CFA) designation.

For purposes of the biographies, the "Firm" is defined as Prudential Financial, Inc. ("PFI"). All PGIM and Prudential named entities are subsidiaries or affiliates of PFI. PFI. of the United States is not affiliated in any manner with Prudential plc, incorporated in the United Kingdom or with Prudential Assurance Company, a subsidiary of M&G plc, incorporated in the United Kingdom.

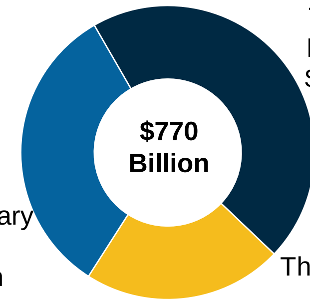
PGIM FIXED INCOME

Assets Under Management

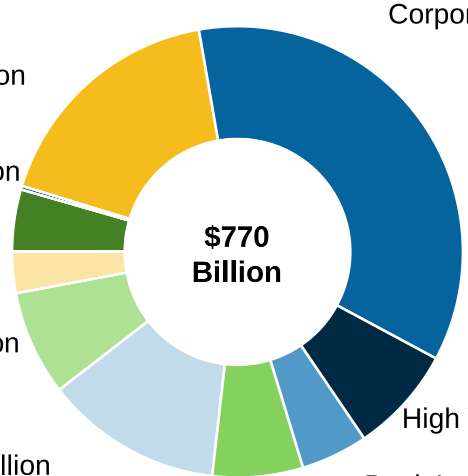
Firm Overview: Active Strategies Across Global Fixed Income Markets

- **Scale and breadth of capabilities**
- **Global experience, stability and continuity**
- **366 investment professionals**
- **995 institutional clients, 1,119 employees**
- **Collegial culture with a heritage of honest debate**
- **Attract, develop, retain and promote diverse talent**
- **ESG factors are also integrated into our fundamental analysis, and are reflected in our proprietary ESG impact ratings framework**

Assets Under Management



Expertise Across a Broad Range of Sectors



Assets as of December 31, 2022. Staffing as of December 31, 2022. ***Please see the Reference section for important disclosures, including risks and ESG.*** *Source: PGIM Fixed Income. Assets under management (AUM) are based on company estimates and are subject to change. PGIM Fixed Income's AUM includes the following businesses: (i) the PGIM Fixed income unit within PGIM, Inc., located in the USA; (ii) the public fixed income unit within PGIM Limited, located in London; (iii) PGIM Japan Co., Ltd. ("PGIM Japan"), located in Tokyo; (iv) the public fixed income unit within PGIM (Singapore) Pte. Ltd., located in Singapore ("PGIM Singapore"); (v) the public fixed income unit within PGIM (Hong Kong) Ltd. located in Hong Kong ("PGIM Hong Kong"); and (vi) PGIM Netherlands B.V., located in Amsterdam ("PGIM Netherlands"). Asset class breakdown based on company estimates and is subject to change. [1]Other includes Japanese equities and Japanese real estate equities.*

PGIM FIXED INCOME

Senior Leadership Team

PGIM Fixed Income
Michael Lillard, CFA, Head of Fixed Income[1]

President
John Vibert[2]

Quantitative Analysis and Risk Management
Stephen Warren

Co-Chief Investment Officers
Craig Dewling & Gregory Peters

Credit
Richard Greenwood, CFA

Emerging Markets and FX
Cathy Hepworth, CFA

Chief Business Officer
Daniel Malooly

Chief Operating Officer
Paul Parseghian

Client Advisory Group
Brad Blalock, CFA

Head of Japan
Taisaku Kunisawa

Head of EMEA
Sarah McMullen, CFA

Human Resources
Yuko Ikeda[3]

Finance
Vasel Vataj[3]

Legal
Yogesh Rai[3]

Compliance
Matthew Fitzgerald[3]

As of December 2022.
[1]Michael Lillard retiring in April 2024.
[2]John Vibert will be appointed as President and CEO of PGIM Fixed Income, effective January 1, 2024.
[3]Dedicated functional teams that have a direct, independent reporting relationship to corporate senior management of the company.

PGIM FIXED INCOME

Emerging Markets Debt Investment Team

Experienced and Stable Team

- Investment team averages 13 years with the firm and 19 years investment experience
- Approach leverages full resources of the firm

Senior Portfolio Manager

Cathy Hepworth, CFA
Head of Emerging Markets Debt
37 yrs Investment Experience

Portfolio Management

Hard Currency and Blend

Cathy Hepworth, CFA
Senior Portfolio Manager
37 yrs Investment Experience

- Zulfi Ali — *Portfolio Manager, LATAM* — *28 yrs inv exp.*
- Johnny Mak — *Portfolio Manager, Asia* — *23 yrs inv exp.*
- Todd Petersen — *Portfolio Manager, EMEA* — *18 yrs inv exp.*
- Eric Giza — *Portfolio Manager, EM Hard Currency* — *15 yrs inv exp.*
- Rodrigo Navarro, CFA — *Portfolio Manager, EM Hard Currency* — *15 yrs inv exp.*

EMD Corporates

Aayush Sonthalia, CFA
Senior Portfolio Manager
23 yrs Investment Experience

- Mark Thurgood[1] — *Portfolio Manager, EM Corporates, CEE, GCC* — *25 yrs inv exp.*

Product Specialist

- Denis Cole — *Product Specialist, EMD* — *17 yrs inv exp.*

Local Currency and Blend

Mariusz Banasiak, CFA
Senior Portfolio Manager
18 yrs Investment Experience

- Pradeep Kumar, PhD, CFA — *Portfolio Manager, Local Rates/FX* — *26 yrs inv exp.*
- David DiChiacchio — *Portfolio Manager and Trader, Local Rates/ FX* — *10 yrs inv exp.*
- Zan Huang, PhD, CFA — *Quantitative Portfolio Manager, Rates and FX* — *12 yrs inv exp.*
- Luke Zhou — *Portfolio Manager, Asset Selection* — *11 yrs inv exp.*
- Markus Zehnder — *Trader, Local Rates / FX* — *23 yrs inv exp.*
- Monika Patel — *Trader, Local Rates / FX* — *8 yrs inv exp*
- Charles Wells[1] — *Trader, Local Rates / FX* — *10 yrs inv exp*

Global Macroeconomic Research & Investment Strategy

U.S.

- Daleep Singh — *Chief Global Economist and Head of Global Macroeconomic Research* — *25 yrs inv exp.*
- Robert Tipp, CFA — *Chief Inv. Strategist and Head of Global Bonds* — *39 yrs inv exp.*
- Gerwin Bell, PhD — *Lead Economist, Asia* — *31 yrs inv exp.*
- Mehill Marku — *Lead Geopolitical Analyst* — *24 yrs inv exp.*
- Francisco Campos-Ortiz, PhD — Lead Economist, LATAM — *11 yrs inv exp.*
- Kishlaya Pathak, CFA — *Investment Strategist* — *23 yrs inv exp.*
- George Jiranek — *Investment Strategist* — *8 yrs inv exp.*

London

- Katharine Neiss[1] — *Chief Economist, Europe* — *23 yrs inv exp.*
- Magdalena Polan[1] — Lead Economist, EM — 19 yrs inv exp.
- Guillermo Felices[1] — *Investment Strategist* — *21 yrs inv exp.*
- Giancarlo Perasso[1] — *Lead Economist, CEEMEA* — *36 yrs inv exp.*

Emerging Market Corporate Debt Research

U.S.

- Nick Ivanov, CFA[2] — *Head of Emerging Markets Corporate Bond Research* — *29 yrs inv exp.*
- Elizabeth Gunning, CFA — Analyst, EMEA/LATAM Corporates — *23 yrs inv exp.*
- Omari Douglas-Hall — Analyst, EMEA/LATAM Corporates — *13 yrs inv exp.*
- Michael Pettit, CFA — Analyst, EMEA/LATAM Corporates — *11 yrs inv exp.*

Singapore

- Yanru Chen[3] — *Analyst, Asian Corporates* — *17 yrs inv exp.*
- Umar Manzoor[3] — *Portfolio Manager/Analyst, Asian Corporates* — *22 yrs inv exp.*
- Yi Ming Oh[3] — *Analyst, Asian Corporates* — *8 yrs inv exp.*

Staff as of December 2022. Years of experience as of December 31, 2022. [1]European Team members are employees of a PGIM affiliate who have been providing services to PGIM Limited, a UK subsidiary that is authorized and regulated by the Financial Conduct Authority. [2]Member of PGIM Fixed Income's credit research group. [3]Employee of a wholly-owned subsidiary of PGIM, Inc., PGIM (Singapore) Pte. Ltd.

Emerging Markets Debt Philosophy

We Believe….

A long-term investment perspective contributes to strong long-term performance

- Our deep credit, macroeconomic and investment resources allow us to establish long-term views of opportunities within hard, local and FX emerging markets within and across countries
- Typically, we do not actively sell on bad news—trading is expensive and once news is released it is priced in for all managers, regardless of size

High confidence, contrarian investing can capture attractive, undervalued opportunities when consistent with long-term investment views

- When other market participants are selling, we utilize our deep investment resources to build high conviction positions at attractive entry points

The "barbell" can capture the upside while minimizing the downside

- We invest in higher yielding securities in short term tenors with an eye toward holding to maturity
- We complement those investments with less volatile, high conviction, higher quality relative value positions in longer tenors

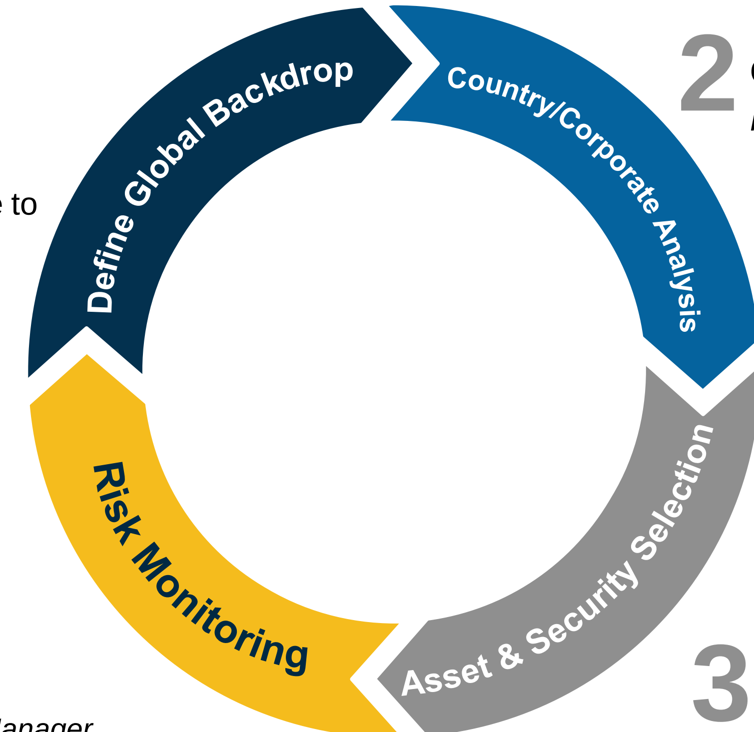
Diversification and conviction win in the long term

- Emerging markets debt securities can be volatile—we believe holding overly concentrated positions is sub-optimal
- We believe a key to long-term success in emerging markets is to establish highly diversified portfolios with the largest investments in our highest relative value convictions

PGIM FIXED INCOME

Investment Process

A Disciplined Approach



1 Global Backdrop & Portfolio Strategy

Senior Portfolio Manager

- Assess global risk appetite to determine portfolio risk profile and refine portfolio positioning, leveraging firm's resources

2 Country & Corporate Analysis

Regional Economists/ Corp Analysts

- Develop comprehensive economic outlook by country
- Evaluate each country from quantitative and qualitative perspective and assign an internal rating
- Analyze EM corporates and assign an internal rating
- ESG integration and engagement on countries and corporates

3 Asset & Security Selection

Regional Portfolio Managers/Economists/Analysts

- Seek to determine best risk/reward opportunities across markets: hard currency (sovereign, quasi-sovereign, corporates), local rates, and FX
- Use proprietary tools to highlight relative value opportunities within markets
- Relative value assessment incorporates ESG factors

4 Risk Monitoring

Senior Portfolio Manager/Risk Manager

- Employ a rigorous process to tightly monitor risk at all levels
- Use proprietary tools to verify performance achieved is appropriate for risk taken

Internal Country Rating Assigned

	Internal Rating	Average Agency Rating	Difference in Notches Between Internal and Average Agency Rating	ESG Rating
Czech Republic	AA	AA-	1	65
South Korea	AA-	AA	-1	70
Israel	A	A+	-1	60
Poland	BBB+	A-	-1	55
Hungary	BBB	BBB	0	50
Chile	BBB-	A	-4	55
Malaysia	BBB-	A-	-3	45
Mexico	BBB-	BBB	-1	35
China	BBB-	A+	-5	25
Peru	BBB	BBB	0	40
Romania	BB	BBB-	-2	50
Thailand	BBB	BBB+	-1	35
Philippines	BBB	BBB	-3	30
Russia	D	C	0	0
Colombia	BB+	BBB-	-1	45
Indonesia	BBB-	BBB	-1	30
India	BB	BBB-	-2	25
Brazil	B+	BB-	-1	45
South Africa	BB-	BB-	0	35
Turkey	B+	B	1	35
Argentina	B-	CCC-	3	45
Venezuela	SD	C	0	15

= Example of Internal Rating Higher than Average (green)

= Example of Internal Rating Lower than Average (yellow)

Internal rating used to determine value and capture conviction of country view

As of June 2022 for Internal and ESG PGIM Fixed Income Ratings and October 2022 for Bloomberg Average Agency Ratings. ***Please see the Reference section for important disclosures, including risks and ESG. For illustrative purposes.*** *Provided for discussion purposes solely as an illustration of our country evaluation process. Does not constitute a recommendation regarding the merits of investing in securities of any of the issuers referenced therein or a complete listing of issuers analysed. Does not constitute a recommendation regarding the merits of any investments. Does not constitute investment advice and should not be used as the basis of any investment decision. Does not constitute a representation that PGIM Fixed Income would purchase any securities of the countries referenced or that an investment in any securities of such countries would be profitable. There can be no assurance that the matrix will be effective in evaluating countries or that opportunities identified within the matrix can be effectively implemented.*

Investment Performance

Los Angeles City Employees' Retirement System

Investment Performance

As of January 31, 2023

	January 2023	2022	2021	Annualized 1 Year	Annualized Since Inception[1]
Portfolio - Gross (%)	4.05	-12.44	-4.48	-7.61	-6.82
Portfolio - Net (%)	4.02	-12.75	-4.77	-7.92	-7.13
Benchmark (%)[2]	3.73	-14.75	-4.97	-10.30	-8.45
Increment - Gross (bps)	**+32**	**+231**	**+48**	**+269**	**+163**
Increment - Net (bps)	**+29**	**+201**	**+20**	**+237**	**+132**

Increment may not sum due to rounding.

= Attribution to Follow

LACEREMB
Source of portfolio returns: PGIM Fixed Income. Performance shown gross of fees and other expenses. Performance reported in USD.
Past performance is not a guarantee or a reliable indicator of future results. Performance over one-year is annualized.
1. Inception Date: February 12, 2021
2. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.
Please refer to Reference section for important disclosures regarding the information contained herein.

PGIM FIXED INCOME

Performance Attribution Summary

Los Angeles City Employees' Retirement System

Performance Attribution

Year-to-Date as of December 31, 2022

	Performance Impact
Hard Currency Interest Rate Impact	+2 bps
Hard Currency Credit	-7 bps
Hard Currency Country Impact	-48 bps
Hard Currency Issue Selection	+41 bps
Local Currency Duration Impact	-6 bps
Local Currency Curve & Issue Selection	+207 bps
Currency Selection	+66 bps
Trading	-32 bps
Total	+231 bps

Attribution Commentary

Hard Currency

- Long spread duration in Brazil and Russia along with short spread duration in Ghana contributed to performance.
- Long spread duration in Pakistan, Romania, and Ukraine along with short spread duration in Turkey detracted from performance.
- Sovereign positioning along the curve of Russia, in the 2120s of Israel, and the front-end of Angola contributed to performance.
- Sovereign positioning in the 2024s of Zambia, the back-end of Ukraine, and the front-end of Pakistan detracted from performance.
- Corporate and quasi-sovereign positioning in Russia (GTLKOA, VEBBNK) contributed to performance.
- Corporate and quasi-sovereign positioning in Russia (VIP, LUKOIL) detracted from performance.

Local Currency

- Long duration in South Africa along with short duration in Colombia, Malaysia, and Poland contributed to performance.
- Long duration in Brazil, China, and Russia along with short duration in Turkey detracted from performance.
- Positioning in the front-end of Brazil, Egypt, and Mexico as well as in the front-end to belly of Russia contributed to performance.
- Positioning in the front-end to belly of Colombia detracted from performance.

Currency Selection

- Overweight positioning in the Hungarian forint along with underweight positioning in the Chinese yuan, Thailand baht, and Taiwan dollar contributed to performance.
- Overweight positioning in the Philippine peso and Russian ruble along with underweight positioning in the Mexican peso and Czech koruna detracted from performance.

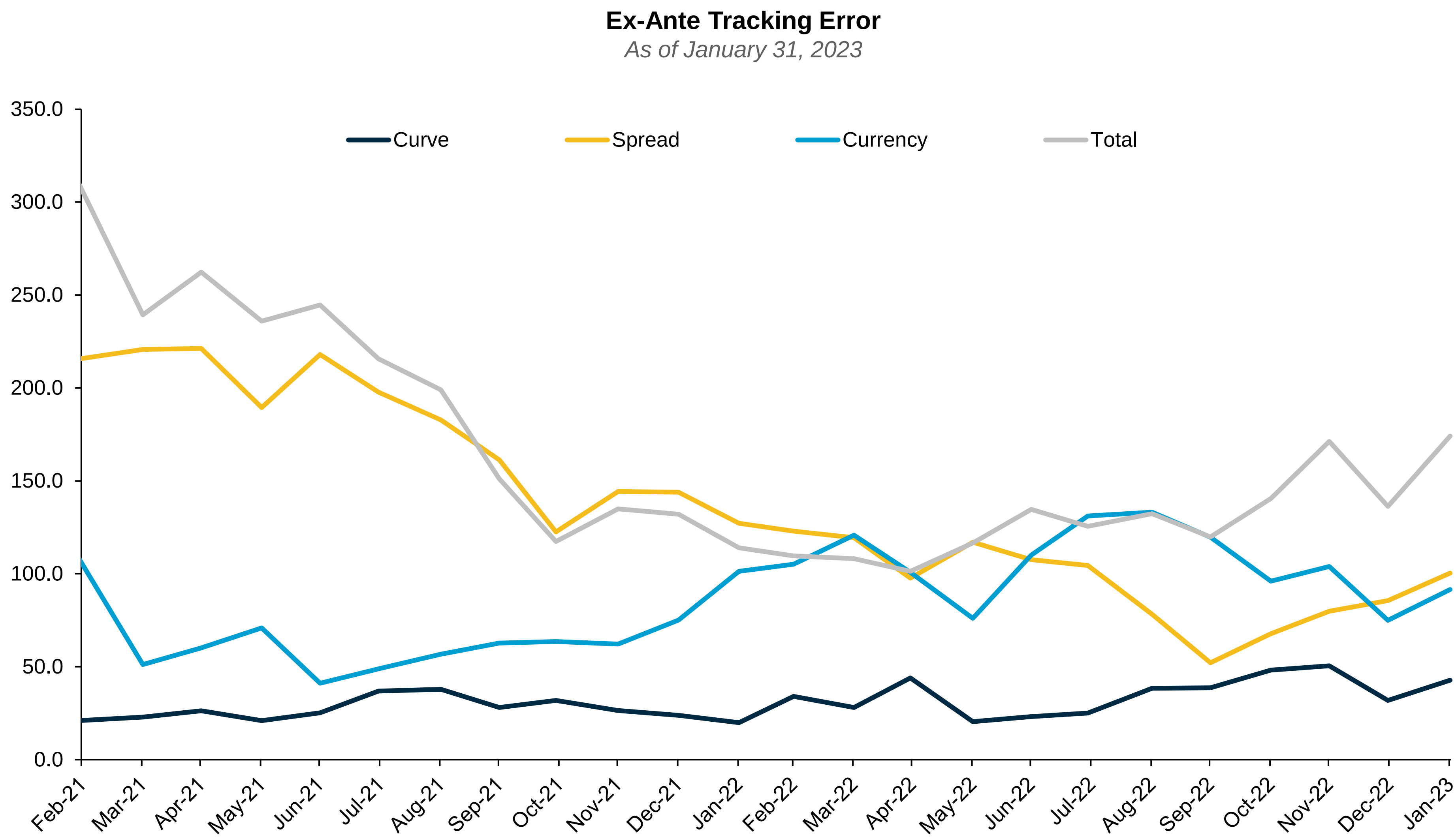
LACEREMB

Source of portfolio attribution: PGIM Fixed Income. Attribution shown above is based on gross returns. Represents attribution vs. the 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan. Totals may not sum due to rounding. Past performance is not a guarantee or a reliable indicator of future results. Please refer to Reference section for important disclosures regarding the information contained herein.

PGIM FIXED INCOME

Portfolio Positioning

Los Angeles City Employees' Retirement System



LACEREMB
Source of portfolio data: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.

PGIM FIXED INCOME

Portfolio Positioning

Los Angeles City Employees' Retirement System

As of January 31, 2023

Characteristics	Portfolio	Benchmark
Market Value *($)*	447,556,098	---
Effective Duration *(yrs)*	5.95	5.97
Effective Yield *(%)*	9.11	6.91
Option Adjusted Spread *(bps)*	252	150
Average Quality	Baa3	Baa3

Quality Breakdown[1]	Portfolio *(% MV)*	Active *(% MV)*
AAA[2]	6.05	0.00
AA	4.22	-2.08
A	13.64	-9.08
BBB	34.94	-0.37
BB	25.83	4.41
B	10.46	-0.70
Below B and NR	4.87	1.77

Sector Breakdown	Portfolio *(% MV)*	Active *(% MV)*	Portfolio DC *(yrs)*	Active DC *(yrs)*	Portfolio SDC *(yrs)*	Active SDC *(yrs)*
FX	**0.4**	**0.4**	**0.00**	**0.00**	**0.00**	**0.00**
Hard Currency	**60.6**	**10.5**	**3.31**	**-0.18**	**3.93**	**0.38**
Sovereign	38.0	-3.0	2.56	-0.32	2.58	-0.36
Quasi-Sovereign	12.9	3.8	0.79	0.18	0.81	0.19
Corporates	7.0	7.0	0.31	0.31	0.32	0.32
Swaps	-0.4	-0.4	-0.01	-0.01	0.23	0.23
Futures	-	0.0	-0.35	-0.35	0.00	0.00
Cash	3.1	3.1	0.00	0.00	-	-
Local Currency	**39.0**	**-10.9**	**2.64**	**0.16**	**-**	**-**
Sovereign	39.0	-10.9	2.39	-0.09	-	-
Swaps	-0.6	-0.6	0.24	0.24	-	-
Currency Options	-0.1	-0.1	0.00	0.00	-	-
Cash	0.7	0.7	-	0.00	-	-

LACEREMB
Source of portfolio data: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.
Please refer to Reference section for important disclosures regarding the information contained herein. Benchmark statistics based on PGIM analytics and may differ from published statistics by official benchmark vendors.
1. Quality Ratings are reported as the median of Moody's, S&P and Fitch.
2. AAA Category includes cash and cash equivalents.

PGIM FIXED INCOME

Portfolio Positioning

Los Angeles City Employees' Retirement System

Top Country and Issuer Exposure (Hard Currency)

As of January 31, 2023

Top 10 Country Overweights

Country	Portfolio (% MV)	Active (% MV)	Portfolio DC (yrs)	Active DC (yrs)
Mexico	4.9	2.3	0.32	0.10
Indonesia	3.7	1.2	0.28	0.08
Israel	1.1	1.1	0.08	0.08
India	1.6	1.2	0.09	0.06
Cote D'Ivoire	0.9	0.8	0.06	0.05
Brazil	2.4	0.8	0.16	0.05
The Republic of Serbia	1.2	0.9	0.06	0.05
Colombia	2.2	0.8	0.16	0.05
Dominican Republic	2.1	0.6	0.15	0.04
South Africa	2.5	1.1	0.13	0.03

Top 10 Issuer Overweights

Issuer	Portfolio (%MV)	Active (%MV)	Portfolio DC (yrs)	Active DC (yrs)
CDX.EM.38.V1	-0.4	-0.4	0.28	0.28
Indonesia	2.2	0.8	0.19	0.06
Mexico City Airport Trust	0.7	0.6	0.06	0.06
Petroleos Mexicanos	2.3	1.2	0.12	0.06
Cote D Ivoire	0.9	0.8	0.06	0.05
Serbia	1.2	0.9	0.06	0.05
Dominican Republic	2.1	0.6	0.16	0.04
Israel	0.2	0.2	0.04	0.04
NK Kazmunaygaz AO	0.3	0.3	0.04	0.04
Abu Dhabi Crude Oil Pipeline LLC	0.3	0.3	0.04	0.03

Bottom 5 Country Underweights

Country	Portfolio (% MV)	Active (% MV)	Portfolio (yrs)	Active (yrs)
Chile	0.8	-0.8	0.06	-0.11
Turkey	1.0	-1.1	0.03	-0.07
Panama	0.8	-0.7	0.08	-0.06
Uruguay	0.7	-0.5	0.07	-0.06
Malaysia	1.5	0.2	0.07	-0.05

Bottom 5 Issuer Underweights

Issuer	Portfolio (%MV)	Active (%MV)	Portfolio DC (yrs)	Active DC (yrs)
Chile	0.3	-0.6	0.02	-0.08
Turkey	0.8	-1.3	0.02	-0.07
Panama	0.5	-0.8	0.06	-0.07
Uruguay	0.7	-0.5	0.07	-0.06
Mexico	0.9	-0.4	0.08	-0.05

LACEREMB
Source of portfolio data: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.
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PGIM FIXED INCOME

Portfolio Positioning

Los Angeles City Employees' Retirement System

Sovereign, Quasi-Sovereign, and Corporate Allocations (Hard Currency)

As of January 31, 2023

Top 10 Active Country Allocations in Spread Duration Contribution (yrs)

Country	Sovereign	Quasi-Sov	Corporate	Total
United States	0.00	0.00	0.00	0.28
Mexico	-0.05	0.11	0.05	0.11
Israel	0.04	0.00	0.03	0.08
Indonesia	0.05	0.03	0.00	0.08
India	0.00	0.02	0.05	0.07
Cote D'Ivoire	0.05	0.00	0.00	0.05
Brazil	0.00	0.02	0.02	0.05
Serbia, Republic of	0.05	0.00	0.00	0.05
Colombia	0.02	0.02	0.01	0.05
Dominican Republic	0.04	0.00	0.00	0.04

Top 5 Active Corporate Exposure by Country in Spread Duration Contribution (yrs)

Country	Active
Mexico	0.05
India	0.05
Thailand	0.04
Israel	0.03
Peru	0.03

Top 10 Corporate and Non EMBI Quasi-Sovereign Overweights (%)

Issuer	Portfolio	Benchmark	Active
1MDB GLOBAL INVESTMENTS LTD	0.9	0.0	0.9
ECOPETROL SA	0.5	0.0	0.5
ENERGEAN ISRAEL FINANCE LTD	0.3	0.0	0.3
NK KAZMUNAYGAZ AO	0.3	0.0	0.3
CEMEX SAB DE CV	0.3	0.0	0.3
SASOL FINANCING USA LLC	0.3	0.0	0.3
BANCO INTERNACIONAL DEL PERU SAA - INTERBANK	0.2	0.0	0.2
LEVIATHAN BOND LTD	0.2	0.0	0.2
FEL ENERGY VI SARL	0.2	0.0	0.2
POWER FINANCE CORPORATION LTD	0.2	0.0	0.2

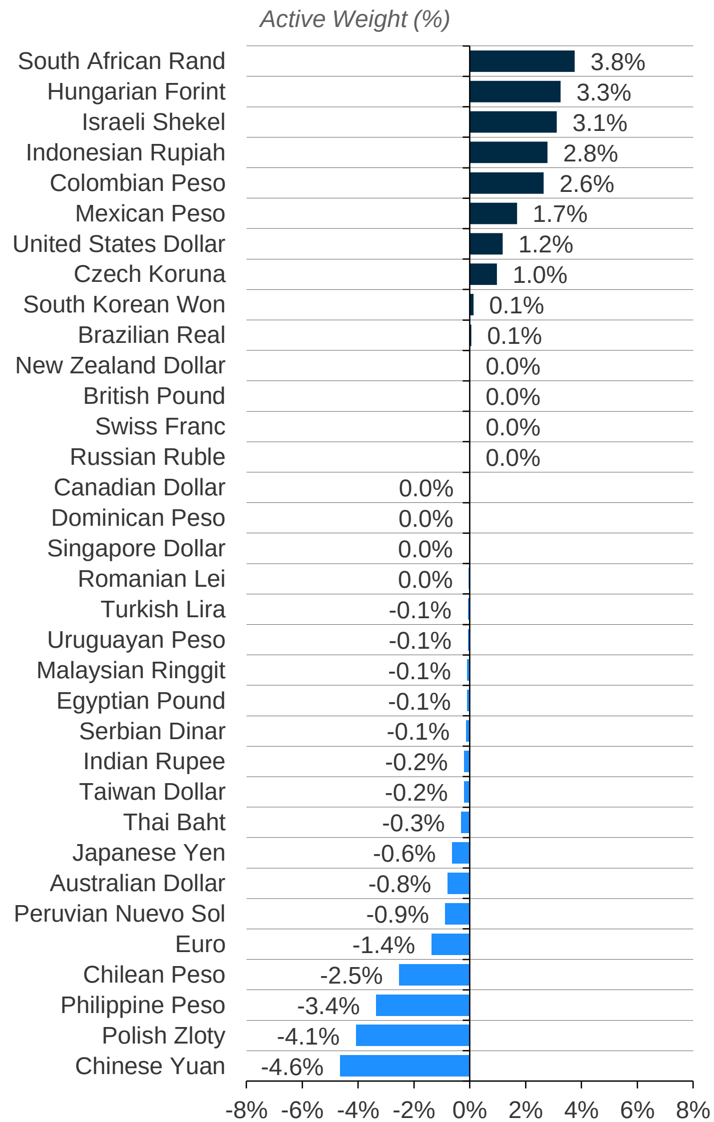
LACEREMB
Source: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.Benchmark statistics based on PGIM analytics and may differ from published statistics by official benchmark vendors

PGIM FIXED INCOME

Portfolio Positioning

Los Angeles City Employees' Retirement System

Active Currency Exposure



As of January 31, 2023

(Sorted by Active Weight)

Top 10 Local Country Overweights—Duration Contribution

Country	Portfolio	Benchmark	Active
Korea (South), Republic of	0.19	0.00	0.19
Mexico	0.33	0.24	0.09
Brazil	0.17	0.11	0.06
Israel	0.06	0.00	0.06
Indonesia	0.33	0.28	0.05
Colombia	0.14	0.09	0.05
Thailand	0.33	0.32	0.02
China	0.27	0.27	0.01
Peru	0.07	0.06	0.00

Bottom 5 Local Country Underweights—Duration Contribution

Country	Portfolio	Benchmark	Active
Chile	-0.06	0.07	-0.13
Malaysia	0.21	0.31	-0.09
Czech Republic	0.10	0.14	-0.04
Poland	0.10	0.13	-0.03
South Africa	0.27	0.29	-0.02

LACEREMB
Source of portfolio data: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.
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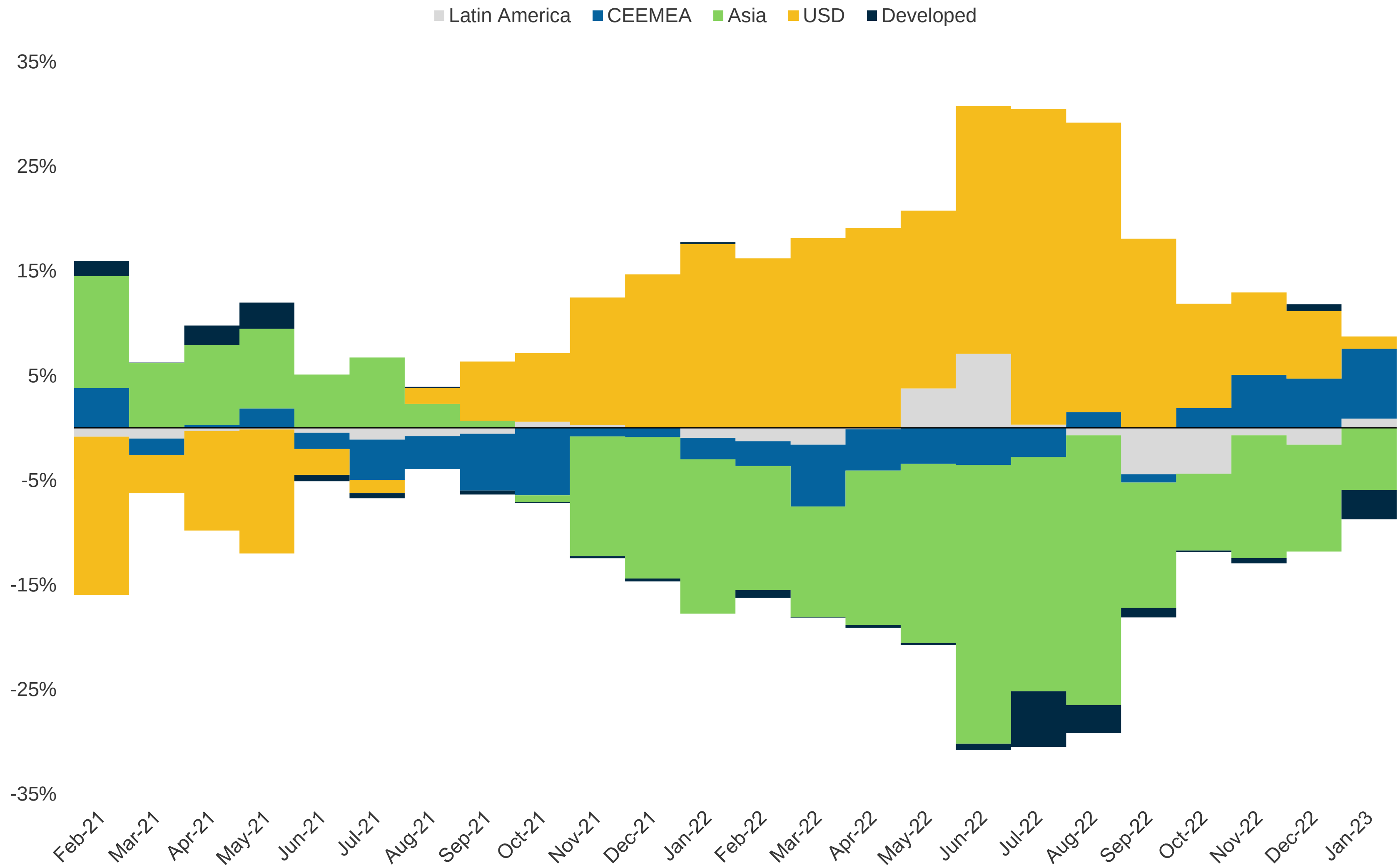
PGIM FIXED INCOME

Active Currency Positioning

Los Angeles City Employees' Retirement System

Active Positioning by Region

As of January 31, 2023



LACEREMB
Source: PGIM Fixed Income

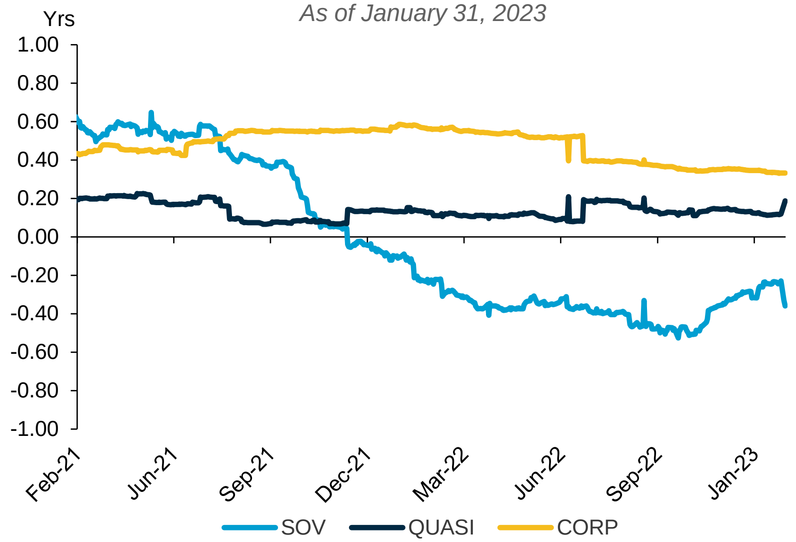
PGIM FIXED INCOME

Active Duration & Spread Duration Contribution

Los Angeles City Employees' Retirement System

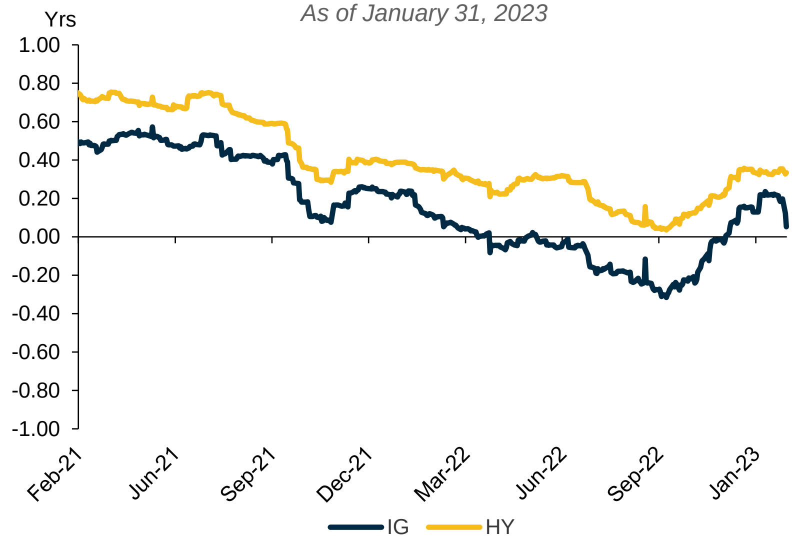
Active SPDC by Sov/Quasi/Corp

As of January 31, 2023



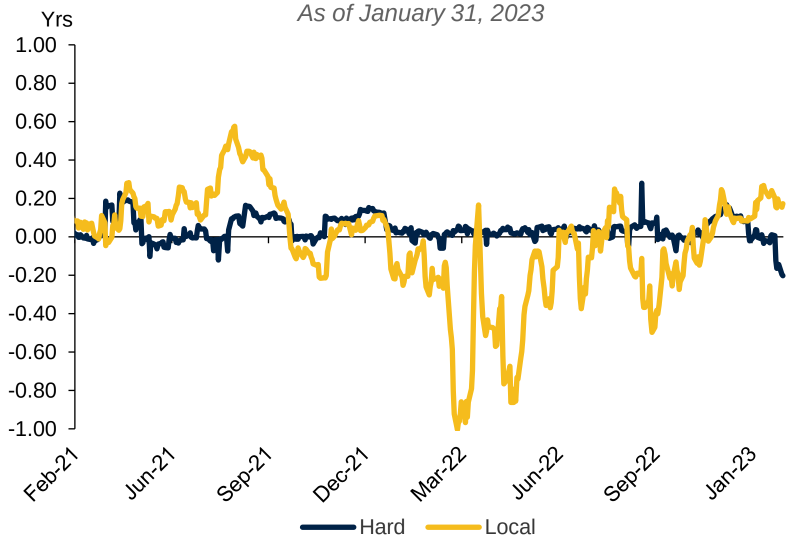
Active SPDC by Investment Grade & High Yield

As of January 31, 2023



Hard & Local Currency Active Duration Contribution

As of January 31, 2023



LACEREMB
Portfolio Inception Date: February 12, 2021
Quality ratings are reported as the middle of Moody's, S&P, and Fitch.
Source: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan.

Market Review & Outlook

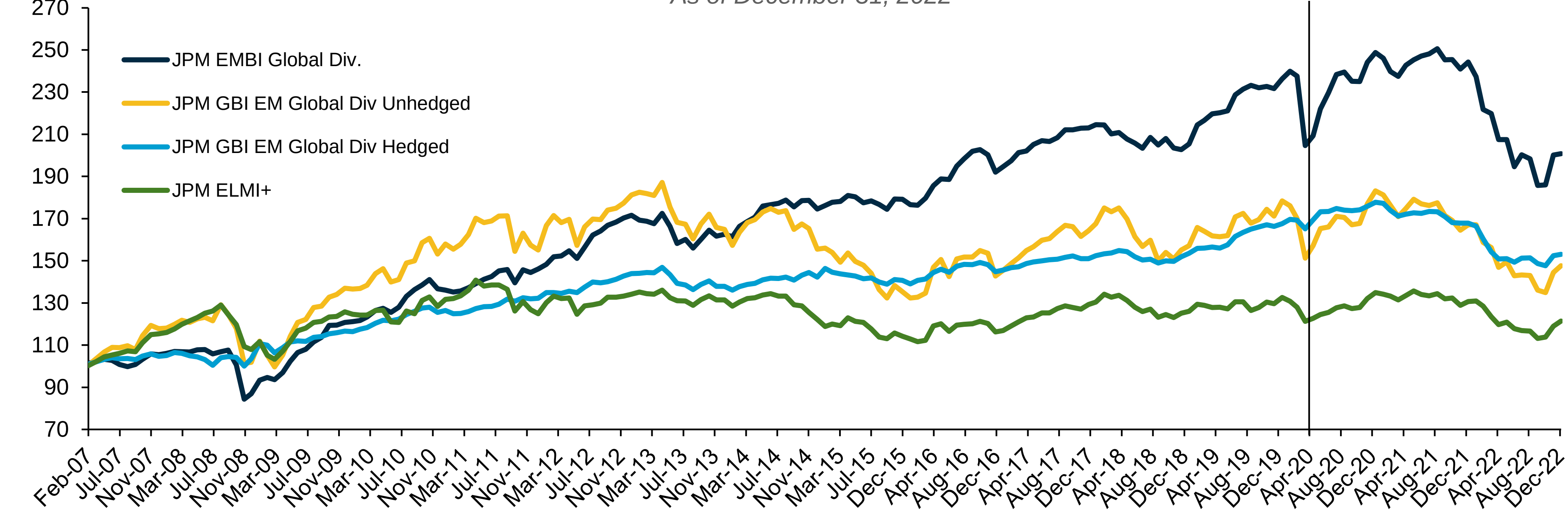
The comments, opinions, and estimates contained herein are based on and/or derived from publicly available information from sources that PGIM Fixed Income believes to be reliable. We do not guarantee the accuracy of such sources or information. This outlook, which is for informational purposes only, sets forth our views as of this date. The underlying assumptions and our views are subject to change. Past performance is not a guarantee or a reliable indicator of future results.

Emerging Markets Debt—Performance

Emerging Market Returns

Emerging Market Debt Returns Normalized

(January 1, 2007 = 100)
As of December 31, 2022



Emerging Market Debt Returns (Annual)

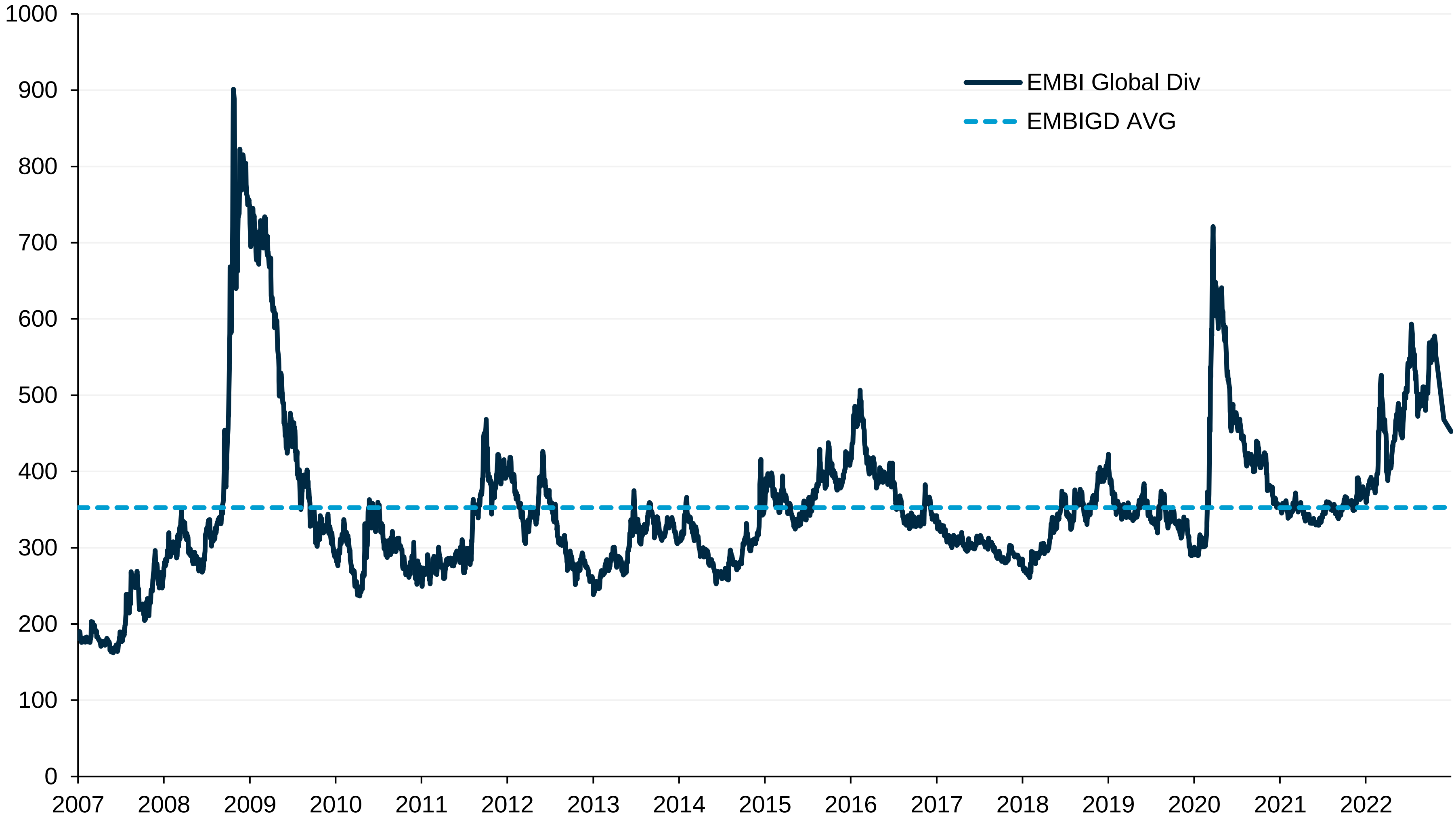
Index	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD 2022
EM FX	-3.85%	11.69%	5.68%	-5.19%	7.45%	-2.04%	-7.03%	-7.61%	3.54%	11.54%	-3.33%	5.20%	1.73%	-3.09%	-7.14%
Hard Currency Sovereigns	-12.03%	29.82%	12.24%	7.35%	17.44%	-5.25%	7.43%	1.18%	10.15%	10.26%	-4.26%	15.04%	5.26%	-1.80%	-17.78%
Hedged Local Currency Sovereigns	5.38%	5.20%	8.62%	4.49%	8.94%	-4.19%	3.15%	-2.24%	4.70%	4.63%	0.75%	9.14%	6.07%	-5.52%	-8.85%
Hard Currency Corporates	-15.86%	34.88%	13.08%	2.32%	15.01%	-0.60%	4.96%	1.30%	9.65%	7.96%	-1.65%	13.09%	7.13%	0.91%	-12.26%

Current Fixed Income Yields

Index	Yield (as of 12/30/22)
Hard Currency Sovereigns	8.56%
Local Currency Sovereigns (Unhedged)	6.86%
Global Aggregate Index	3.73%

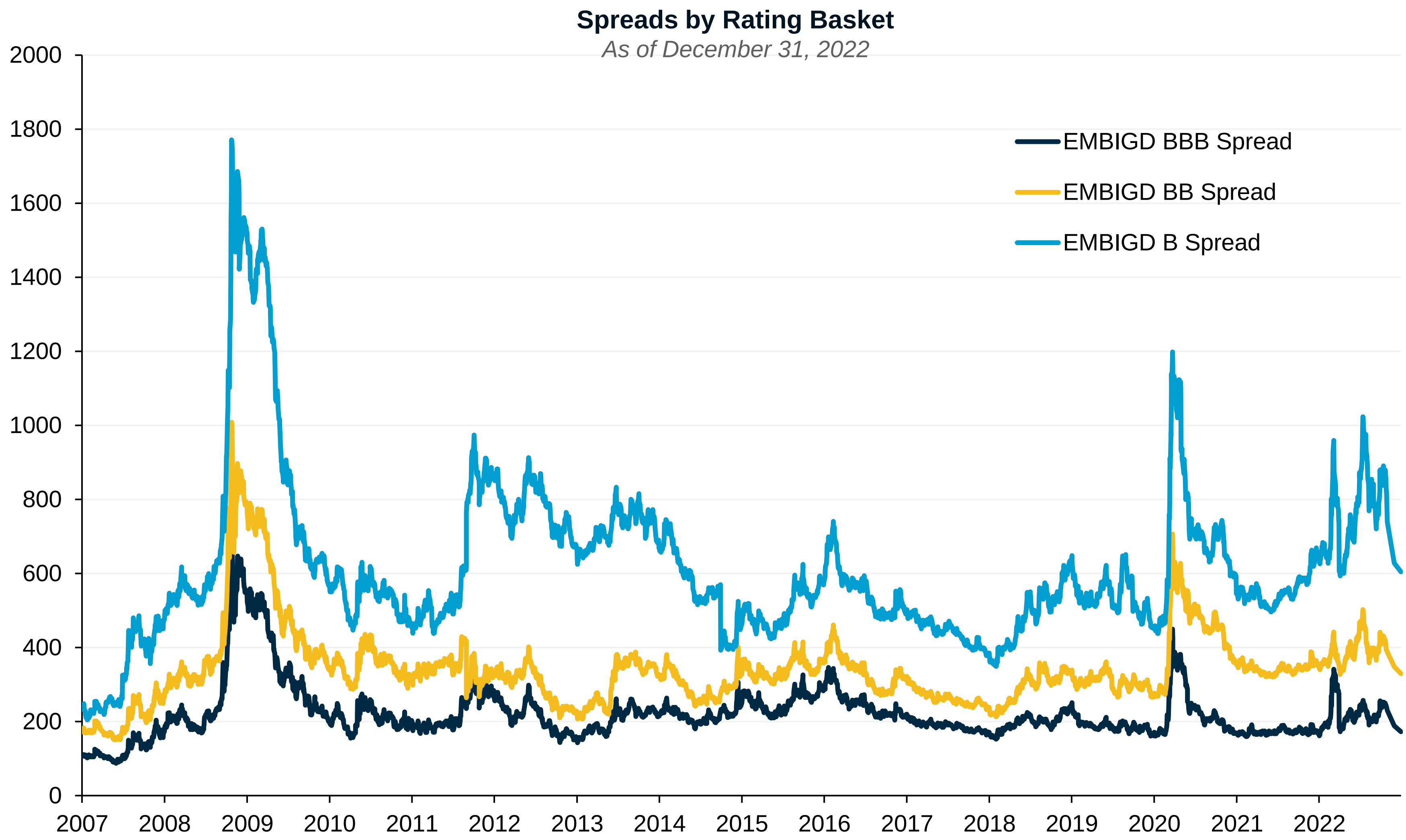
Past performance is not a guarantee or reliable indicator of future results. Please see the Reference section for important disclosures. The value of investments can go down as well as up. Where overseas investments are held the rate of currency exchange may cause the value of investments to fluctuate. If applicable, investments in emerging markets are by their nature higher risk and more volatile than those inherent in some established markets and non-USD securities are converted to USD using spot rate conversion. All returns longer than one year are annualized. Source of all charts: Bloomberg. An investment cannot be made directly in an index. J.P. Morgan index information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

Spreads Are Very Attractive to Historical Levels



Source: JPMorgan. As of December 31, 2022. Information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval. Copyright 2023, J.P. Morgan Chase & Co. All rights reserved.

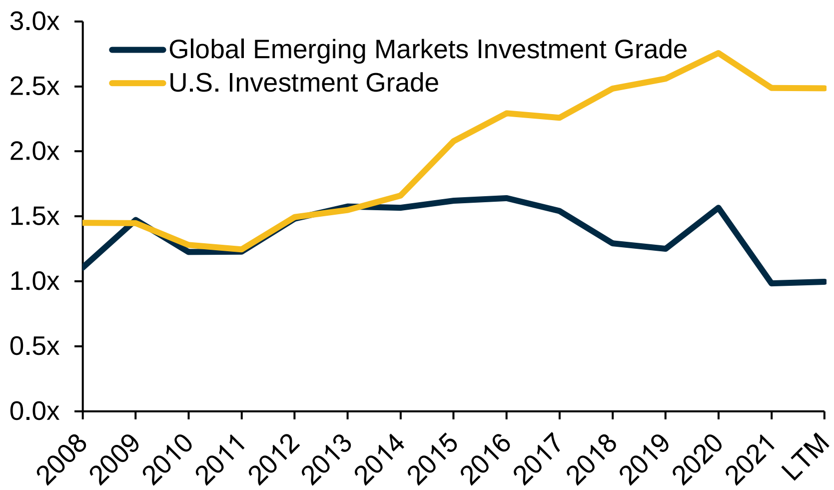
However, Dispersion by Rating is Extreme



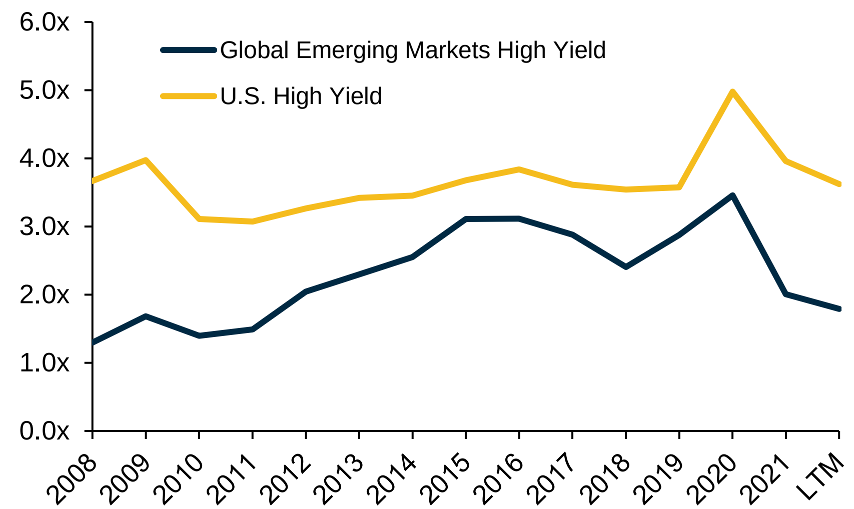
Source: JPMorgan. As of December 31, 2022. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

Corporates Offer Strong Balance Sheets, Diversified Revenue Sources and Attractive Spreads

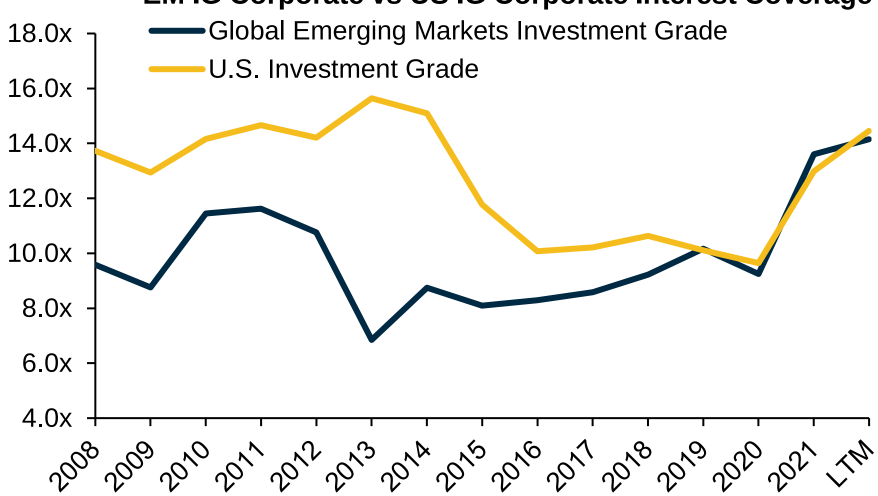
EM IG Corporate vs US IG Corporate Net Leverage



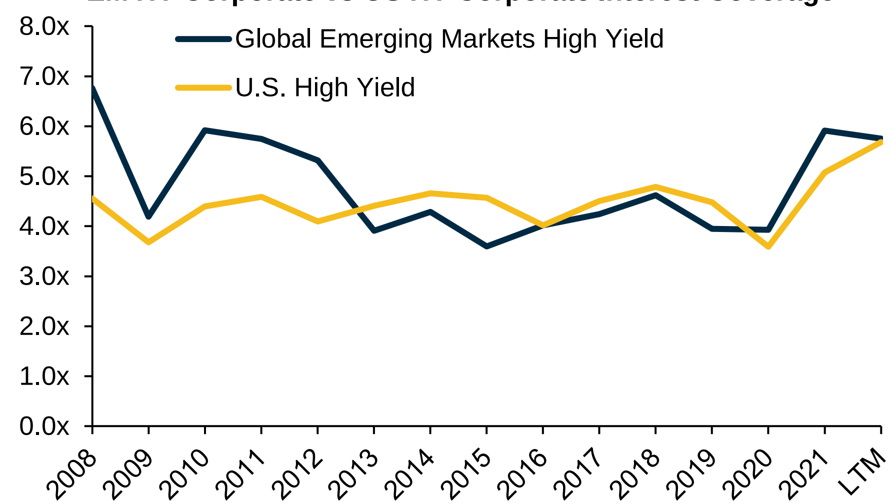
EM HY Corporate vs US HY Corporate Net Leverage



EM IG Corporate vs US IG Corporate Interest Coverage

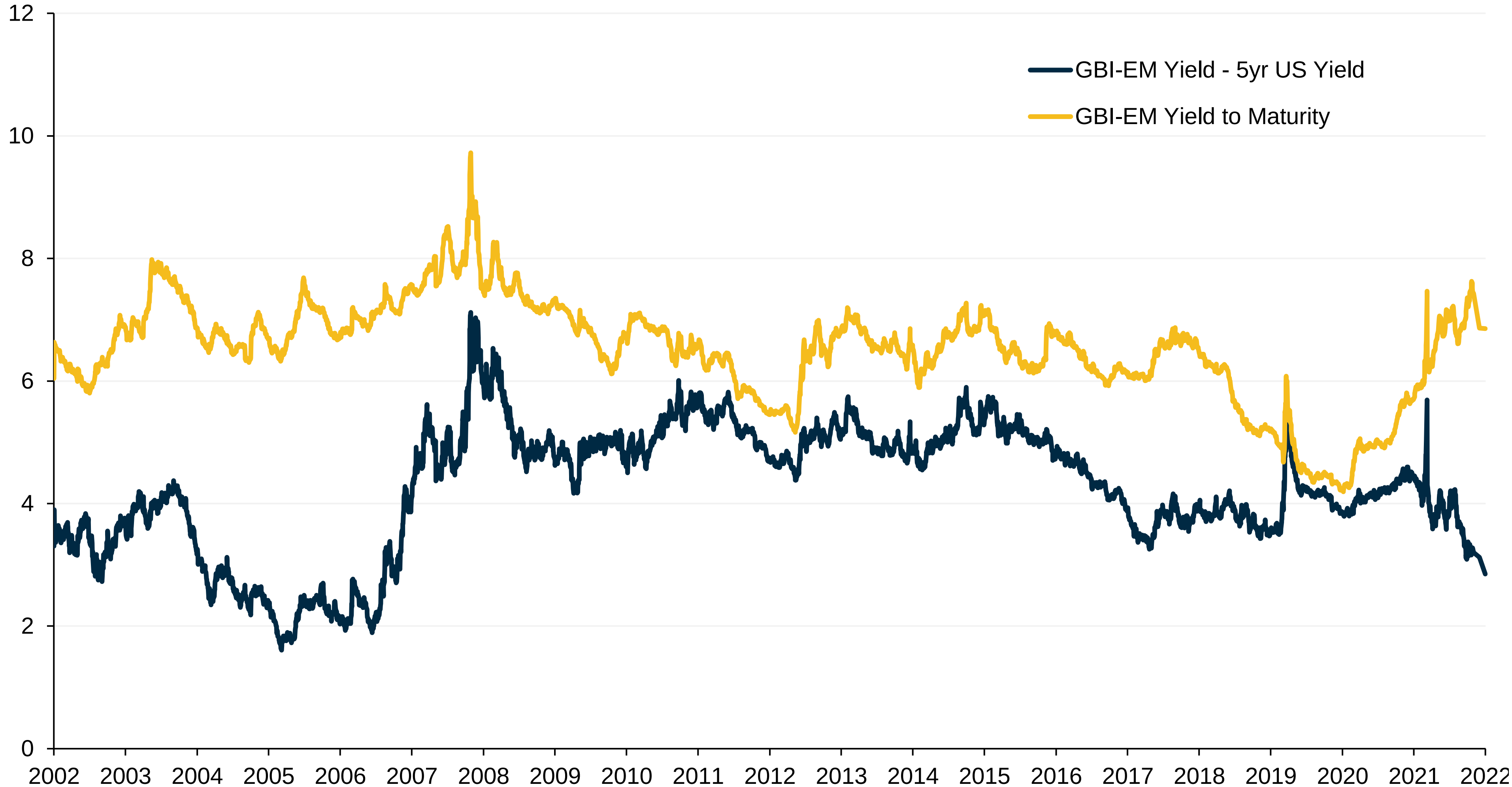


EM HY Corporate vs US HY Corporate Interest Coverage



Source: JP Morgan and PGIM Fixed Income as of June 2022. The forecasts presented herein have been generated for informational purposes as of the date of this presentation. They are based on proprietary models and there can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation. Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

Repricing of Terminal Rate in U.S. is Driving EM Rates Higher



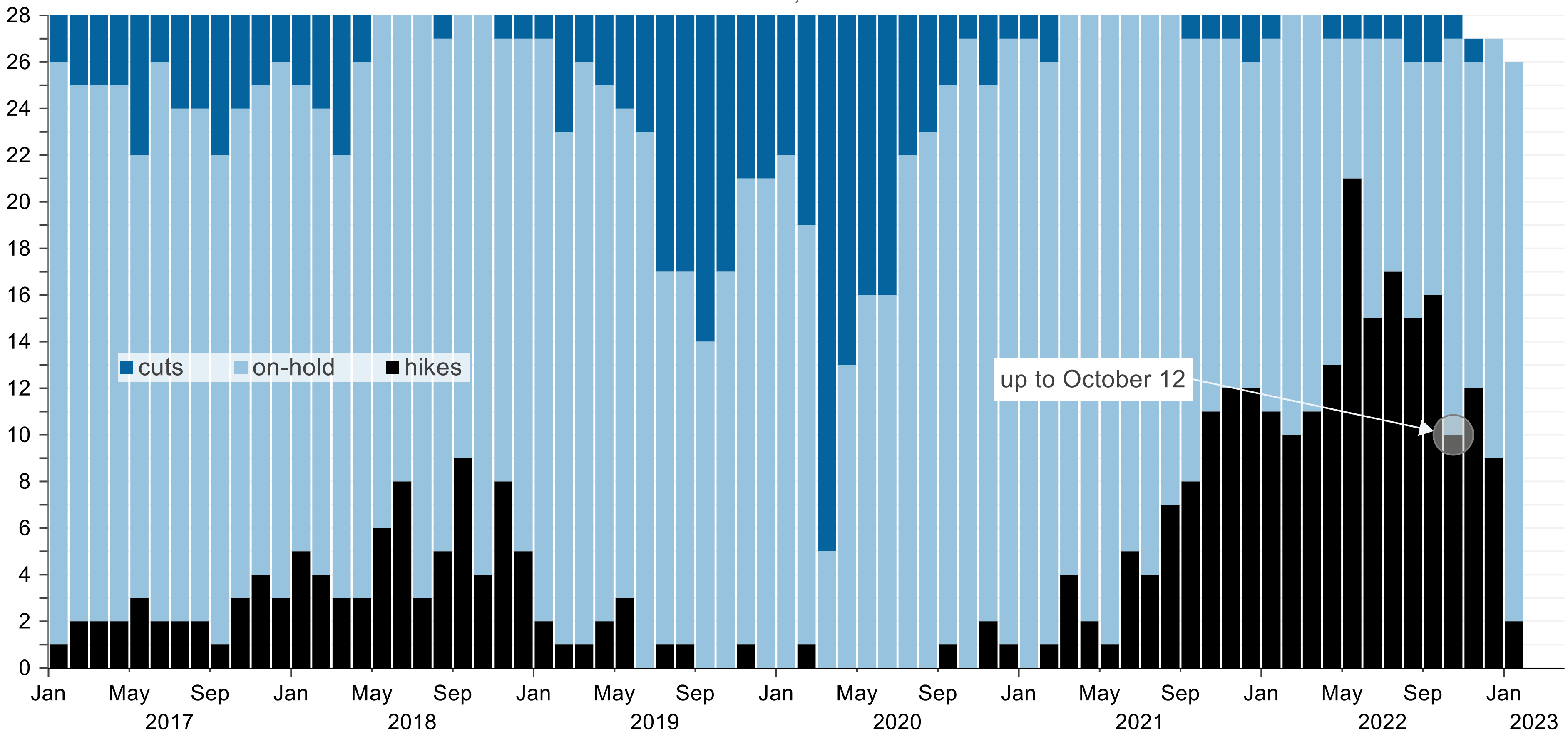
Source: JPMorgan, Bloomberg as of December 31, 2022. Information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

An EM ‘Pivot’ in the Making After Sharp Increase in Rates

- EM central banks now balancing fight with inflation with concerns for growth
- Communication, credibility, coordination with fiscal policy will be essential

EM Central Banks’ Policy Rate Decisions

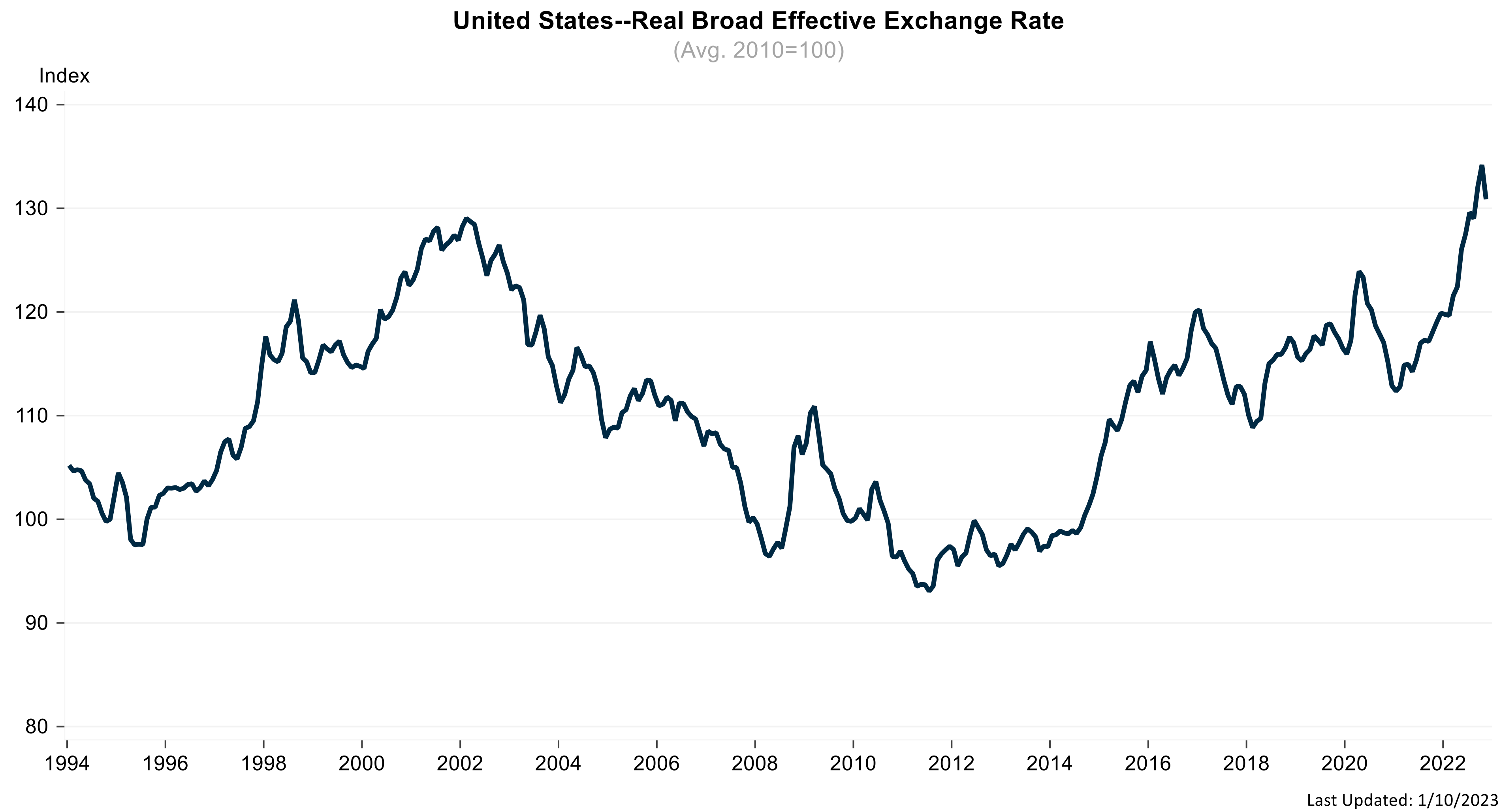
Number of Central Banks Hiking, Cutting, or Keeping Rates on Hold Per Month, 28 EMs



Last Updated: 1/10/2023

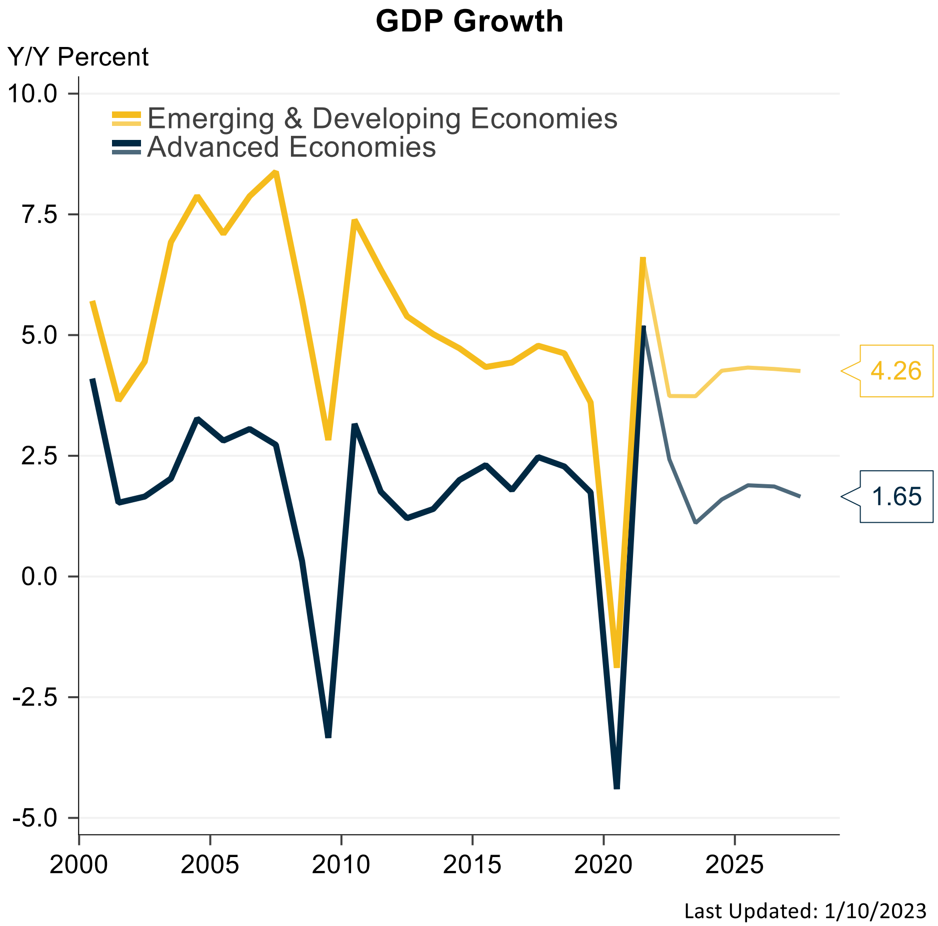
Source: BP Statistical Review of World Energy, Macrobond.

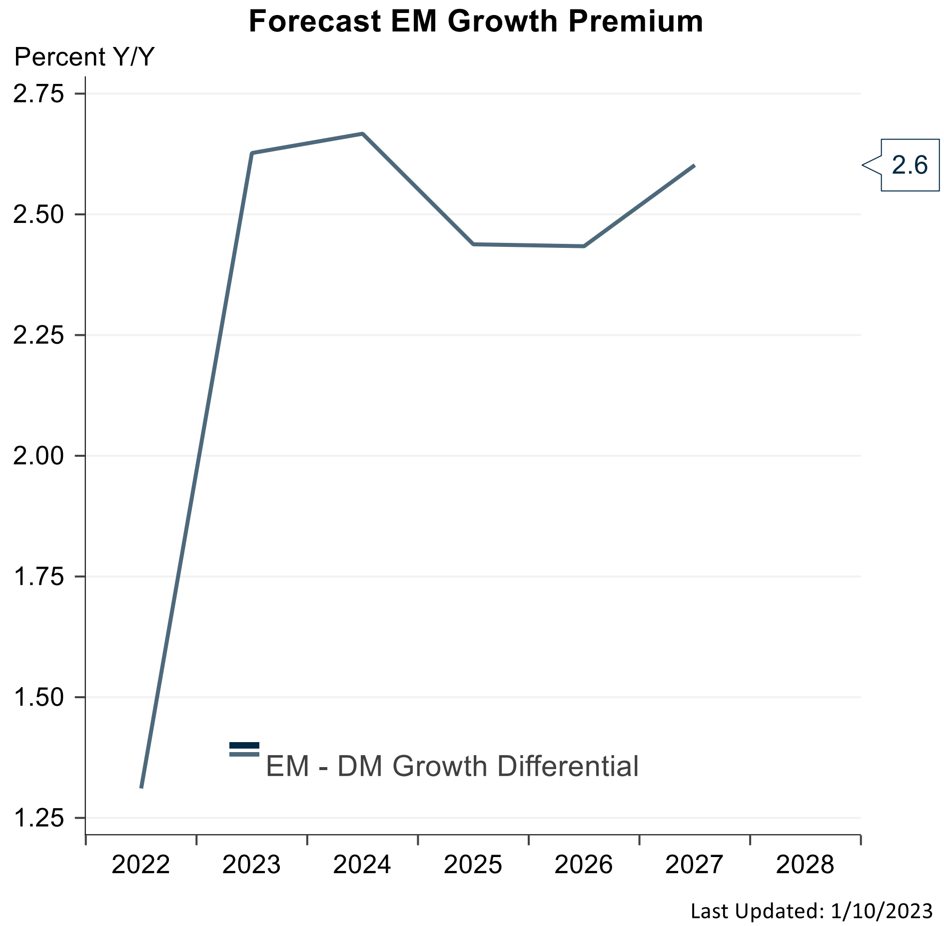
U.S. Dollar Valuation Looks Increasingly Expensive



Source: Macrobond. Bank for International Settlements.

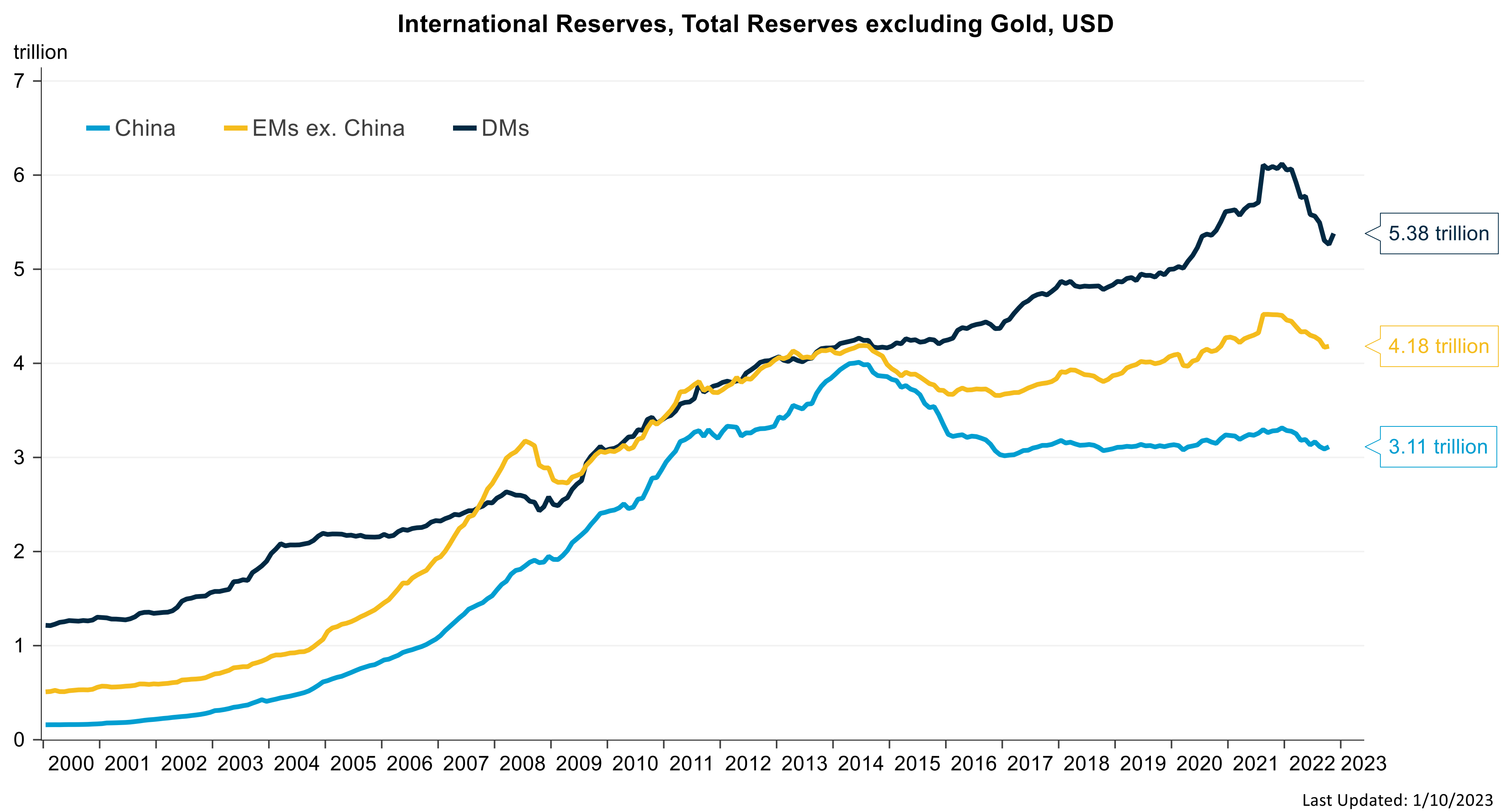
EMs Regaining Their Growth Premium





Source: IMF. Macrobond. There can be no assurance that the forecasts will be achieved.

External Reserves Are Still Ample



Source: IMF WEO, Macrobond, PGIM Fixed Income.

Reference

PGIM FIXED INCOME

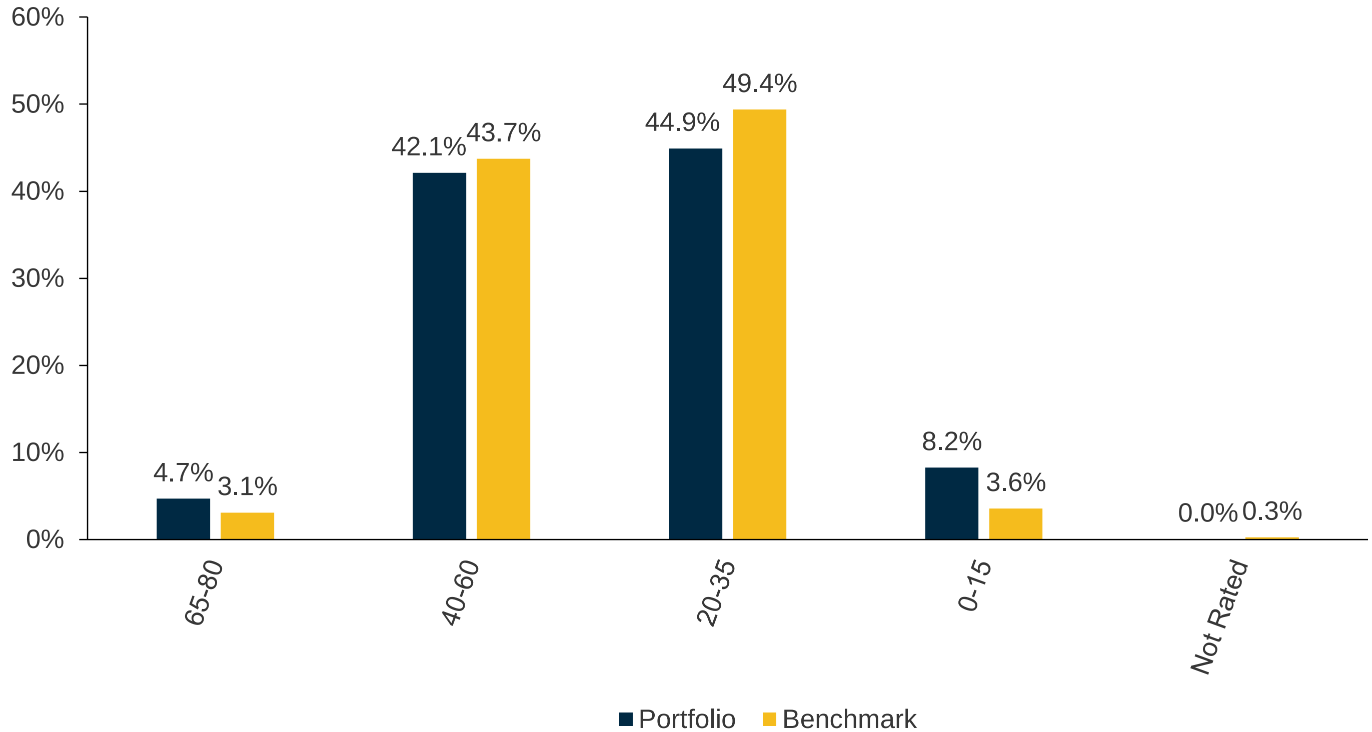
ESG Positioning Based on PGIM FI ESG Impact Ratings

Los Angeles City Employees' Retirement System

As of January 31, 2023

Portfolio PGIM FI Impact Rating	Average Benchmark ESG Rating
37.87	38.44

PGIM FI ESG Impact Ratings Breakdown by Market Value %



LACEREMB
Source of portfolio data: PGIM Fixed Income. Benchmark: 50% JP Morgan EMBI Global Diversified/50% JP Morgan GBI-EM Global Diversified. Source of Benchmark: JP Morgan. PGIM Fixed Income's investment analysts seek to assign an ESG rating on a 100-point scale in 5-point increments, with 0 as the lowest and 100 as the highest ESG rating ("ESG Impact Rating"), to an issuer or issue. In assigning an ESG Impact Rating, investment analysts review information which may be provided by the issuer or obtained from third-party ESG research providers and may also consider information from alternative data sources (e.g., NGO analyses, governmental and inter-governmental studies, etc.). This third party research may, among other things, be used to screen our investable universe for specified economic activities and controversies (including violations of the UNGC principles); provide information regarding ongoing litigation; review performance data for a large number of environmental, social and governance key performance indicators; or otherwise analyse various ESG issues and risks. In certain instances, it may not be possible or practical to obtain and/or analyse the information needed to assess and rate each investment and where this is the case our analysts may either make reasonable assumptions in order to rate the particular investments based on, for example, information relating to the particular industry of an underlying issuer and/or issue or identify the investment as unrated. ESG ratings exclude cash and derivatives. Benchmark statistics and ESG ratings based on PGIM analytics and may differ from published statistics by official benchmark vendors. Does not constitute a recommendation regarding the merits of any investments. Does not constitute investment advice and should not be used as the basis for any investment decision. Does not constitute a representation that the firm has purchased or would purchase any of the investments referenced or that any such investments would be profitable. ESG Ratings are subject to change without notice.

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Benchmark Descriptions

Bloomberg U.S. Aggregate Bond Index (Bloomberg U.S. Aggregate Index)
(Core Fixed Income: Inception Date: January 1, 1991, Core Plus: Inception Date: January 1, 1996, Core Conservative: Inception Date: January 1, 1989)
The Bloomberg U.S. Aggregate Index covers the USD-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities and includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS, and CMBS sectors. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Nomura-BPI Overall (Nomura-BPI Overall Index)
(Japan Core Bond: Inception Date: January 1, 2003)
The Nomura-BPI Overall index tracks total returns of all fixed income securities in the Japanese bond market that meet certain criteria. The intellectual property rights and any other rights in Nomura-BPI Overall Index belong to Nomura Securities Co., Ltd. Nomura Securities Co., Ltd. does not guarantee accuracy, completeness, reliability, usefulness, marketability, merchantability and fitness of the Index, and does not account for performance of the fund with the use of the Index. This disclaimer is applicable to Nomura-BPI Overall Index referenced herein.

Bloomberg Global Aggregate Bond Index USD Unhedged (Bloomberg Global Aggregate Index)
(Global Core: Inception Date: September 1, 2008, Global Total Return: Inception Date: November 1, 2002)
The Bloomberg Global Aggregate Index provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment-grade 144A securities. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB) or better using the middle rating of Moody's, S&P, and Fitch.

FTSE World Government Bond Index
(Former benchmark for Global Total Return: Inception Date: November 1, 2002)
FTSE World Government Bond Index is a market-capitalization-weighted benchmark that tracks the performance of the government bond markets. The composition of the index consists of sovereign debt denominated in the domestic currency. Securities must be rated BBB-/Baa3 by S& P or Moody's.

ICE BofA US 3-Month Treasury Bill Index
(Absolute Return: Inception Date: May 1, 2011, Multi-Asset Credit: Inception Date: November 1, 2016, Global Dynamic Bond: Inception Date: January 1, 2016, Securitized Product (Unconstrained: Inception Date: January 1, 2016))
ICE BofA US 3-Month Treasury Bill Index is comprised of a single issue purchased at the beginning of the month and held for a full month. At the end of the month that issue is sold and rolled into a newly selected issue. The issue selected at each month-end rebalancing is the outstanding Treasury Bill that matures closest to, but not beyond, three months from the rebalancing date. To qualify for selection, an issue must have settled on or before the month-end rebalancing date.

ICE BofA 3-Month Deposit Offered Rate Constant Maturity Index
(Former Benchmark for Absolute Return: Inception Date: May 1, 2011, Multi-Asset Credit: Inception Date: November 1, 2016, Global Dynamic Bond: Inception Date: January 1, 2016, Securitized Product (Unconstrained: Inception Date: January 1, 2016)
The ICE BofA 3-Month Deposit Offered Rate Constant Maturity Index tracks the performance of a synthetic asset paying Libor to a stated maturity. The index is based on the assumed purchase at par of a synthetic instrument having exactly its stated maturity and with a coupon equal to that day's fixing rate. That issue is assumed to be sold the following business day (priced at a yield equal to the current day fixing rate) and rolled into a new instrument.

ICE LIBOR 3-Month Average (ICE LIBOR 3-Month Average Index)
(Former benchmark for Absolute Return: Inception Date: May 1, 2011, Multi-Asset Credit: Inception Date: November 1, 2016, Global Dynamic Bond: Inception Date: January 1, 2016)
The 3 Month LIBOR (London Interbank Offered Rate) is the stated rate of interest at which banks in the London wholesale money markets may borrow funds from one another for three months. The 90-day average of the daily rates set by the Intercontinental Exchange Benchmark Administration Ltd ("IBA") is used to derive the return for the month. ICE Data Indices, LLC, used with permission. ICE Data Indices, LLC is licensing the ICE Data Indices and related data "as is," makes no warranties regarding same, does not guarantee the suitability, quality, accuracy, timeliness, and/or completeness of the ICE Data Indices or any data included in, related to, or derived therefrom, assumes no liability in connection with their use, and does not sponsor, endorse, or recommend PGIM Fixed Income, or any of its products or services. Effective March 1, 2019, the Unconstrained Bond Composite was renamed the Strategic Bond Composite. The strategy benchmark also changed from the ICE LIBOR 3-Month Average to the Bloomberg Intermediate U.S. Aggregate Bond Index.

Bloomberg Intermediate U.S. Aggregate Bond Index (Bloomberg Intermediate U.S. Aggregate Bond Index)
(Strategic Bond: Inception Date: September 1, 2015)
The Bloomberg Intermediate U.S. Aggregate Bond Index covers the USD-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities with maturities of 1-10 years. The index includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS and CMBS sectors. Securities must be rated investment-grade (Baa3/BBB-/BBB- or above) using the middle rating of Moody's, S&: and Fitch and have at least 1 year until final maturity.

Bloomberg U.S. 1-3 Year Government/Credit Bond Index (Bloomberg U.S. 1-3 Year Government/Credit Index)
(Short Duration Core Plus: Inception Date: February 1, 2014)
Bloomberg U.S. 1-3 Year Government/Credit Bond Index covers USD-denominated and nonconvertible, publicly issued U.S. Government or investment-grade securities that are fixed-rate or step ups. Bonds must have a maturity from 1 up to (but not including) 3 years and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

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Benchmark Descriptions (cont'd)

Bloomberg U.S. 1-5 Year Credit Bond Index (Bloomberg U.S. 1-5 Year Credit Index)
(Short Term Corporate: Inception Date: January 1, 1994)
Bloomberg U.S. 1-5 Year Credit Bond Index is a subset of the Bloomberg Credit Index with maturities of 1-5 years. The U.S. Credit Index is comprised of the U.S. Corporate Index and the non-native currency subcomponent of the U.S. Government-Related Index. The U.S. Credit Index includes publicly issued U.S. corporates, specified foreign debentures and secured notes denominated in USD. Securities must be rated investment-grade (Baa3/BBB-/BBB- or above) using the middle rating of Moody's, S&P, and Fitch, respectively.

Bloomberg U.S. High Yield 1-5 Year Ba/B 1% Issuer Constrained Index (Bloomberg U.S. HY 1-5 Year Ba/B 1% Issuer Capped Index)
(U.S. Short Duration Higher Quality High Yield: Inception Date: December 1, 2012)
The Bloomberg U.S. 1-5 Yr High Yield Ba-B 1% Issuer Constrained Index is an issuer-constrained version of the U.S. Corporate High-Yield Index that covers the 1-5 year maturing USD-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. The U.S. HY 1% Issuer Capped Index limits issuer exposures to a maximum 1% and redistributes the excess market value index-wide on a pro-rata basis. Securities must be rated Ba/B using the middle rating of Moody's, S&P, and Fitch, and have at least 1 year until final maturity.

Bloomberg U.S. Long Duration Government/Credit Index (Bloomberg U.S. Long Govt/Credit Index)
(Long Duration Government/Credit: Inception Date: December 1, 2009)
The Bloomberg U.S. Long Government/Credit Index covers USD-denominated and non-convertible, publicly issued U.S. Government or investment-grade securities that are fixed rate or step ups. Securities must have a maturity of 10 years or greater and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Bloomberg U.S. Long Corporate Bond Index (Bloomberg U.S. Long Corporate Index)
(Long Duration Corporate: Inception Date: July 1, 2008)
The Bloomberg U.S. Long Corporate Bond Index covers USD-denominated and non-convertible, publicly issued securities that are fixed-rate or step ups. Securities must have a maturity of 10 years and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Client-Directed Liability Based Benchmark
(Long Duration LDI: Inception Date: July 1, 1998)
The customized benchmark for the Long Duration Custom Composite is the weighted average of each composite member's benchmark return rebalanced monthly. The benchmarks are market-based indices/sub-indices constructed to reflect the liabilities of the portfolios. The benchmarks consists of various weights of the sub indices of the Bloomberg Intermediate (maturities from 1 up to but not including10 years), and Long (maturities of 10+ years) Government/Credit and US Corporate Indices. All securities must be rated investment-grade (Baa3/ BBB-/BBB-) or above using the middle rating of Moody's, S&P, and Fitch.

Bloomberg U.S. Credit Bond Index (Bloomberg U.S. Credit Index)
(Investment Grade Corporates: Inception Date: July 1, 1991)
The Bloomberg U.S. Credit Index is comprised of the U.S. Corporate Index and the non-native currency subcomponent of the U.S. Government-Related Index. The U.S. Credit Index includes publicly issued U.S. corporate, specified foreign debentures and secured notes denominated in USD. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Bloomberg Euro Aggregate Corporate Index USD Hedged (Bloomberg Euro Aggregate Corporate Index USD Hedged)
(European Corporate Fixed Income (USD Hedged): Inception Date: February 1, 2008)
The Bloomberg Euro Aggregate Corporate Index USD Hedged Index is a benchmark that measures the corporate component of the Bloomberg Euro Aggregate Bond Index, a broad-based flagship benchmark that measures the investment grade, euro-denominated, fixed-rate bond market, including treasuries, government-related, corporate and securitized issues. Inclusion is based on currency denomination of a bond and not country of risk of the issuer. The index is hedged to USD. As of January 1, 2020 composite benchmark was changed to the Bloomberg Euro Aggregate Corporate USD Hedged Index from the iBoxx Euro Corporate (USD Hedged) Index.

iBoxx Euro Corporate Index 100% USD Hedged (iBoxx Euro Corporate Index (USD Hedged))
(Former benchmark for European Corporate Fixed Income (USD Hedged): Inception Date: February 1, 2008)
The iBoxx EUR benchmark is made up of only fixed-rate bonds or step ups whose cash flow can be determined in advance. The indices are comprised solely of bonds. Treasury Bills and other money market instruments are not eligible. The iBoxx EUR indices include only Euro and legacy currency denominated bonds. Securities must be rated investment-grade (Baa3/ BBB-/BBB-) or above by at least one of the following rating agencies: Standard & Poor's, Moody's or Fitch and have at least 1 year until final maturity at the rebalancing date.

Bloomberg Global Aggregate Corporate Index Unhedged (Bloomberg Global Corporate Index (Unhedged))
(Global Corporate (Unhedged): Inception Date: May 1, 2010)
The Bloomberg Global Corporate Aggregate Index is a component of the Global Aggregate Index that includes the global investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. The three major components of this index are the U.S. Aggregate Corporate, the Pan-European Aggregate Corporate, and the Asian-Pacific Aggregate Corporate indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian corporate securities, and USD investment-grade 144A securities. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Bloomberg Global Aggregate Corporate Bond Index (USD Hedged) (Bloomberg Global Corporate Index (USD Hedged))
(Global Corporate (USD Hedged): Inception Date: October 1, 2011)
The Bloomberg Global Aggregate Corporate Bond Index (USD Hedged) is a component of the Global Aggregate Index that includes the global investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. The three major components of this index are the U.S. Aggregate Corporate, the Pan-European Aggregate Corporate, and the Asian-Pacific Aggregate Corporate indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian corporate securities, and USD investment-grade 144A securities. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch. The index is hedged to USD.

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Benchmark Descriptions (cont'd)

Bloomberg U.S. Corporate High Yield Ba/B 1% Issuer Capped Bond Index (Bloomberg U.S. High Yield Ba/B 1% Issuer Capped Index)
(Higher Quality High Yield: Inception Date: July 1, 1998)
The Bloomberg U.S. High Yield Ba/B 1% Issuer Capped Index is an issuer-constrained version of the Bloomberg U.S. High Yield Index that covers the USD-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. The Bloomberg U.S. High Yield 1% Ba/B Issuer Capped Index limits issuer exposures to a maximum 1% and redistributes the excess market value index-wide on a pro-rata basis. Securities must be rated below investment-grade (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P, and Fitch, and have at least a one year until final maturity.

Bloomberg US High-Yield 1% Issuer Capped Index (Bloomberg US High-Yield 1% Issuer Capped Index)
(Broad Market High Yield: Inception Date: March 1, 2002)
The Bloomberg US High-Yield 1% Issuer Capped Index is an issuer-constrained version of the US High-Yield Index that covers the USD-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. The US HY 1% Issuer Capped Index limits issuer exposures to a maximum 1% and redistributes the excess market value index-wide on a pro-rata basis. Securities must be rated below investment-grade (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P, and Fitch, and have at least 1 year until final maturity. Effective October 1, 2020 the Benchmark changed to the Bloomberg US High-Yield 1% Issuer Capped Index, prior to that the Benchmark was the Bloomberg US Corporate High Yield Bond Index.

Bloomberg U.S. Corporate High Yield Bond Index (Bloomberg U.S. High Yield Index)
(Former benchmark for Broad Market High Yield: Inception Date: March 1, 2002)
Bloomberg U.S. Corporate High Yield Bond Index covers the USD-denominated, non-investment grade, fixed-rate or step ups, taxable corporate bond market. The index excludes Emerging Markets debt. Securities must be rated below investment-grade (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P, and Fitch, respectively and have at least 1 year until final maturity.

Credit Suisse Leveraged Loan Index (CS Leveraged Loan Index)
(U.S. Senior Secured Loans: Inception Date: May 1, 2007)
The Credit Suisse Leveraged Loan Index is a representative, unmanaged index of tradable, U.S. dollar denominated floating rate senior secured loans and is designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

ICE BofAML European Currency High Yield ex Finance 2% Constrained Index (ML Euro HY ex Finance 2% Constrained Index)
(European High Yield (Euro Hedged):Inception Date: November 1, 2010)
The ICE BofAML European High Yield ex Finance 2% Constrained Index tracks the performance of EUR and GBP denominated below investment grade corporate debt publicly issued in the eurobond, sterling domestic or euro domestic markets. Qualifying securities must have a below investment grade rating and an investment grade country of risk. The index contains all non-Financial securities but caps issuer exposure at 2%. Source: ICE Data Indices, LLC, used with permission. ICE Data Indices, LLC is licensing the ICE Data Indices and related data "as is," makes no warranties regarding same, does not guarantee the suitability, quality, accuracy, timeliness, and/or completeness of the ICE Data Indices or any data included in, related to, or derived therefrom, assumes no liability in connection with their use, and does not sponsor, endorse, or recommend PGIM Fixed Income, or any of its products or services.

Credit Suisse Western European Leveraged Loan Index (EUR Hedged) (CS Western European Leveraged Loan Index (EUR Hedged)
(European Senior Secured Debt: Inception Date: July 1, 2006)
Credit Suisse Western European Leveraged Loan Index: All Denominations Euro Hedged. The Index is a representative, unmanaged index of tradable, floating rate senior secured loans designed to mirror the investable universe of the European leveraged loan market. The index is hedged to EUR. The Index return does not reflect the impact of principal repayments in the current month.

Bloomberg Global High Yield Index (Euro Hedged)
(Global High Yield (Euro Hedged): Inception Date: May 1, 2002)
The Bloomberg Global High Yield Index provides a broad-based measure of the global high yield fixed income markets. It includes U.S. high yield, Pan-European high yield, U.S. emerging markets high yield, and Pan-European emerging markets high yield indices. Securities included in the index must be fully taxable, have at least on year until final maturity, and be rated high yield (Ba//BB+/BB+ or below) using the middle rating of Moody's S&P and Fitch.

CS Blend Lev. Loan & West European Lev. Loan: Euro Denominated (USD Hedged)
(Global Senior Secured Loans: Inception Date: December 1, 2011)
The custom benchmark for this composite is comprised of the Credit Suisse Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index Euro Denominated (hedged to USD) and is rebalanced monthly. As of December 31, 2021, the weights are 75% and 25%, respectively. The Credit Suisse indices are representative unmanaged indices of tradeable, floating rate senior secured loans designed to mirror the investable universe of the U.S. and European Leveraged Loan markets.

JP Morgan Emerging Markets Bond Index Global Diversified (JPM EMBI Global Diversified Index)
(Emerging Markets Debt: Inception Date: July 1, 1996)
The Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for USD-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. To be deemed an emerging market by the EMBI Global Diversified Index, a country must be rated Baa1/BBB+ or below by Moody's/S&P rating agencies. Information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

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Benchmark Descriptions (cont'd)

Blend: JPM EMBI Global Diversified & GBI-EM Global Diversified
(Emerging Markets Blend: Inception Date: December 1, 2007, Emerging Markets Blend Plus: Inception Date: August 1, 2014)
The customized benchmark for this composite is an even blend of the JPMorgan Government Bond Index-Emerging Markets Global Diversified Index and the JPMorgan Emerging Markets Bond Index Global Diversified Index. The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments while the Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for USD-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding.

JPMorgan Government Bond Index-Emerging Markets Global Diversified Index (JPM GBI-EM Global Diversified Index)
(Emerging Markets Debt (Local Currency): Inception Date: January 1, 2011)
The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments.

JPMorgan Corporate Emerging Markets Bond Index Broad Diversified (JPM CEMBI Broad Diversified)
(Emerging Markets Corporate Debt: Inception Date: March 1, 2013)
The CEMBI tracks total returns of US dollar-denominated debt instruments issued by corporate entities in Emerging Markets countries. The CEMBI Broad is the most comprehensive corporate benchmark followed by the CEMBI, which consists of an investable universe of corporate bonds.

Bloomberg US 1-15 Year Municipal Index
(National Municipal Bond: Inception Date: January 1, 1994)
The Bloomberg US 1-15 Year Municipal Index covers the USD-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must have a maturity from 1 up to (but not including) 15 years. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment-grade (Baa3/ BBB-/BBB-) or better by the middle rating of Moody's, S&P, and Fitch. Effective April 1, 2020 the Benchmark changed to the Bloomberg 1-15 Yr. Muni Unhedged Index, prior to that the Benchmark was the Bloomberg Municipal Bond index

Bloomberg Municipal Bond Index
(Former benchmark for National Municipal Bond: Inception Date: January 1, 1994)
The index covers the USD-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment grade (Baa3/BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch.

Blend: Bloomberg Muni High Income/Muni Index
(High Income Municipal Bond: Inception Date: January 1, 1994)
The customized benchmark for this composite is an even blend of the Bloomberg Municipal High Yield Bond Index and Bloomberg Municipal Bond Index. The Bloomberg Municipal Bond Index covers the USD-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment-grade (Baa3/ BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch. The Bloomberg Municipal High Yield Bond Index is the high yield component of the Bloomberg Municipal Bond Index.

ICE BofA US 3-Month Treasury Bill Index
(U.S. Liquidity Relative Value: Inception Date: July 1, 2002, Emerging Markets Long/Short: Inception Date: November 1, 2007, Global Liquidity Relative Value: Inception Date: July 1, 2014)
ICE BofA US 3-Month Treasury Bill Index is comprised of a single issue purchased at the beginning of the month and held for a full month. At the end of the month that issue is sold and rolled into a newly selected issue. The issue selected at each month-end rebalancing is the outstanding Treasury Bill that matures closest to, but not beyond, three months from the rebalancing date. To qualify for selection, an issue must have settled on or before the month-end rebalancing date. Effective April 1, 2020 the Benchmark changed to the ICE BofA U.S. 3-Month Treasury Bill Index, prior to that the Benchmark was 3-Month U.S. Dollar LIBOR.

3 Month U.S. Dollar ICE LIBOR Reset Weekly
(Former benchmark for U.S. Liquidity Relative Value: Inception Date: July 1, 2002)
The 3 Month U.S. Dollar ICE LIBOR Reset Weekly, ICE LIBOR (formerly known as BBA LIBOR), is a widely used benchmark for short-term interest rates, providing an indication of the average rates at which LIBOR panel banks could obtain wholesale, unsecured funding for set periods in particular currencies. It is produced for five currencies (CHF, EUR, GBP, JPY and USD) and seven tenors (Overnight/Spot Next, 1 Week, 1 Month, 2 Months, 3 Months, 6 Months and 12 Months) based on submissions from a reference panel of between 11 and 16 banks for each currency, resulting in the publication of 35 rates every applicable London business day. The benchmark for the Composite uses the 3 Month USD rate on the 8th, 15th, 23rd and month end to derive the return for the subsequent period. If a reset day is a weekend or holiday, then the rate of the preceding business day is used.

3-Month U.S. Dollar ICE LIBOR Reset Monthly
(Former benchmark for Emerging Markets Long/Short: Inception Date: November 1, 2007, Global Liquidity Relative Value: Inception Date: July 1, 2014)
The 3-Month U.S. Dollar ICE LIBOR Reset Monthly, ICE LIBOR (formerly known as BBA LIBOR), is a widely used benchmark for short-term interest rates, providing an indication of the average rates at which LIBOR panel banks could obtain wholesale, unsecured funding for set periods in particular currencies. It is produced for five currencies (CHF, EUR, GBP, JPY and USD) and seven tenors (Overnight/Spot Next, 1 Week, 1 Month, 2 Months, 3 Months, 6 Months and 12 Months) based on submissions from a reference panel of between 11 and 16 banks for each currency, resulting in the publication of 35 rates every applicable London business day. The benchmark for the Composite uses the 3 Month USD rate of the prior month end to derive the return for the current month.

S&P 500 Total Return Index (S&P 500 Index)
(U.S. Liquidity Relative Value (S&P 500 Overlay): Inception Date: April 1, 2014)
S&P 500 Total Return Index is a commonly recognized, market capitalization weighted index of 500 widely held equity securities, designed to measure broad U.S. equity performance.

LACERS
LA CITY EMPLOYEES' RETIREMENT SYSTEM

REPORT TO INVESTMENT COMMITTEE **MEETING: MARCH 14, 2023**
From: Neil M. Guglielmo, General Manager **ITEM: V**

SUBJECT: **INVESTMENT MANAGER CONTRACT WITH GRANAHAN INVESTMENT MANAGEMENT, INC. REGARDING THE MANAGEMENT OF AN ACTIVE U.S. SMALL CAP GROWTH EQUITIES PORTFOLIO AND POSSIBLE COMMITTEE ACTION**

ACTION: ☒ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☐

Recommendation

That the Committee recommend to the Board a three-year contract renewal with Granahan Investment Management, Inc. for management of an active U.S. small cap growth equities portfolio.

Executive Summary

Granahan Investment Management, Inc. (Granahan) has managed an active U.S. small cap growth equities portfolio for LACERS since September 2020. LACERS' portfolio was valued at approximately $124.2 million as of January 31, 2023. Granahan is in compliance with the LACERS Manager Monitoring Policy. Staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant, recommend a three-year contract renewal.

Discussion

Background
Granahan manages an active U.S. small cap growth equities portfolio for LACERS benchmarked to the Russell 2000 Growth Index. Granahan's fundamental, bottom-up research process seeks to identify secular small cap companies that are positioned to grow consistently and significantly over the next five to seven years. The strategy emphasizes a concentrated portfolio of approximately 40 stocks of companies that have large market opportunities, favorable competitive landscapes, products or services with attractive value-propositions, effective management teams, and strong financial conditions with potential to expand margins. Drew Beja serves as the lead Portfolio Manager and has 38 years of investment experience. Mr. Beja collaborates with the six other portfolio managers/analysts who have a combined total of 175 years of investment experience.

The Board hired Granahan through the 2019-2020 Active U.S. Small Cap Equities manager search process and authorized a three-year contract on January 28, 2020; the contract became effective on August 1, 2020. The current contract expires on July 31, 2023. At the time of hire, Granahan qualified as an Emerging Investment Manager pursuant to the LACERS Emerging Investment Manager Policy. LACERS' portfolio was valued at approximately $124.2 million as of January 31, 2023.

Organization
Granahan is headquartered in Waltham, Massachusetts, and has 19 employees, of which 10 are investment personnel. The firm is majority owned by employees with a minority interest held by Kudu Investment Management. As of January 31, 2023, Granahan managed approximately $3.7 billion in total assets, with $1.6 billion in the small cap equities strategy.

Due Diligence
Staff conducts routine due diligence of the manager; since inception of the contract, quarterly due diligence meetings have been conducted virtually. Based upon these due diligence activities as well as staff's and NEPC's continuous monitoring, Granahan's investment philosophy, strategy, and process have not changed materially over the contract period. The next comprehensive onsite due diligence visit to Granahan's headquarters is currently being planned for the second calendar quarter of 2023.

When the Board hired Granahan in January 2020, the firm was wholly owned by employees. In November 2021, Granahan sold a minority interest to Kudu Investment Management, a private equity firm that provides permanent capital to investment boutiques, for long-term succession planning reasons. Slightly more than 75% of the firm's equity continues to be held by Granahan employees and is broadly distributed. As the majority stake holder, Granahan maintains control over its business operations and investment processes. Staff and NEPC did not deem this transaction to be a material organizational change requiring watch status pursuant to the LACERS Manager Monitoring Policy.

Performance
As of January 31, 2023, Granahan outperformed its benchmark, net-of-fees, over the 3-month period and underperformed its benchmark under the 1-year, 2-year, and since inception time periods as presented in the table below.

Annualized Performance as of 1/31/2023 (Net-of-Fees)				
	3-Month	1-Year	2-Year	Since Inception[1]
Granahan	6.54	-10.71	-15.24	1.34
Russell 2000 Growth Index	4.56	-6.50	-10.87	3.32
% of Excess Return	*1.98*	*-4.21*	*-4.37*	*-1.98*

[1]Performance inception date: 9/30/2020. Strategy was funded after contract inception date of 8/1/2020.

The strategy's underperformance relative to the benchmark since inception is largely driven by higher interest rates, inflation, and recession fears. These factors have raised the discount rate investors use to value stocks, resulting in lower stock prices in general and declining returns. Granahan's strategy has experienced a larger decline than the benchmark due to the portfolio's bias toward longer duration stocks, particularly in the Technology and Consumer Discretionary sectors. Granahan is in compliance with the LACERS Manager Monitoring Policy (Policy); the short performance track record of the LACERS account does not provide adequate time to fully evaluate the effectiveness of the manager and strategy. Staff and NEPC recommend renewing Granahan's contract for another three-year period and will continue to monitor the manager and strategy pursuant to the Policy.

Calendar year performance is presented in the table below as supplemental information.

Calendar Year Performance as of 12/31/2022 (Net-of-Fees)			
	2022	2021	9/30/2020-12/31/2020
Granahan	-31.38	-0.40	37.35
Russell 2000 Growth Index	-26.36	2.83	29.61
% of Excess Return	*-5.02*	*-3.23*	*7.74*

Fees
LACERS pays Granahan an effective fee of 73 basis points (0.73%), which is approximately $906,700 annually based on the value of LACERS' assets as January 31, 2023. This fee ranks in the 21st percentile among its peers in the eVestment U.S. Small Cap Growth Universe (i.e., 79% of like-managers have higher fees). From contract inception on August 1, 2020 to December 31, 2022, LACERS has paid Granahan a total of $1.6 million in investment fees.

General Fund Consultant Opinion
NEPC concurs with this recommendation.

Strategic Plan Impact Statement

A contract renewal with Granahan will allow the LACERS total portfolio to maintain a diversified exposure to the U.S. small cap growth equities markets, which is expected to help optimize long-term risk adjusted investment returns (Goal IV). The discussion of the investment manager's profile, strategy, performance, and management fee structure is consistent with Goal V (uphold good governance practices which affirm transparency, accountability, and fiduciary duty).

Prepared By: Barbara Sandoval, Investment Officer II, Investment Division

NMG/RJ/BF/BS:rm

Attachment: 1. Consultant Recommendation – NEPC

To: Los Angeles City Employees' Retirement System Investment Committee

From: NEPC, LLC

Date: March 14, 2023

Subject: Granahan Investment Management – Small Cap Focused Growth Contract Renewal

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Recommendation

NEPC recommends that Los Angeles City Employees' Retirement System (LACERS) renew the contract with Granahan Investment Management (Granahan) for a period of three years from the date of contract expiry.

Background

Granahan was funded on October 1, 2020 to provide active investment management within the growth U.S. equity small cap segment. As of January 31, 2023, Granahan managed $124.2 million or 0.6% of Plan assets. The performance objective is to outperform the Russell 2000 Growth Index, net of fees, annualized over a full market cycle (normally three-to-five years). The account is currently in good standing based on LACERS' Manager Monitoring Policy.

Granahan was founded in 1985 and is headquartered in Waltham, Massachusetts. The firm is 76% employee-owned with the remainder held by Kudu Investment Management. Kudu Investment Management is a passive minority partner since November 2021. Kudu is an independent provider of permanent capital solutions to asset managers and is backed by capital partner White Mountain Insurance Group.

The Small Cap Focused Growth portfolio is managed by Andrew Beja. Mr. Beja collaborates with others on the Granahan team to discuss ideas (both companies and stocks) but has sole responsibility and is accountable for all research and portfolio construction of the Focused Growth product at Granahan. Jane White (Technology), David Rose (Generalist), Jennifer Pawloski (Technology), Jeff Harrison (Generalist), Richard Watson (Generalist) and Chris Martin (Generalist) support Mr. Beja in an Analyst capacity.

The strategy is based on bottom-up fundamental research that looks for sustainable growth companies positioned to grow at 15%+ for many years. Granahan invests in growth companies that they like to call "Desert Island" companies. These are companies that the firm feels are great businesses with strong investment moats. Portfolios are typically constructed with concentration in sectors that exhibit strong secular growth companies (i.e., Technology Services, Business Services, Consumer and Producer Durables). The portfolio is concentrated and aims to hold 30-45 companies which have sustainable 15% earnings growth potential and attractive risk/reward characteristics.

Performance

Referring to Exhibit 1, as of January 31, 2023, since the portfolios inception date of October 2020, the portfolio has underperformed its benchmark by 200 basis points. Over the last year, ended January 31, 2023, the portfolio has underperformed its benchmark by 420 basis points. The portfolio's performance has improved significantly on a fiscal year-to-date basis through January of this year. The portfolio was up 25.1% versus its benchmark of 14.8%.

In Exhibit 2, since inception ending December 31, 2022, the portfolio has underperformed its benchmark by 200 basis points and ranked in the 72nd percentile of a universe of small cap growth managers. During 2022, the portfolio underperformed its benchmark by 5.00% and ranked in the 74th percentile. Higher interest rates and inflation have wreaked havoc on small cap stocks and in particular growth stocks have been hit harder than value stocks. The portfolio held higher weights in the Technology and Consumer Discretionary sectors as expected and this hurt the portfolio earlier in 2022. Additionally, a couple of the larger weighted names in the portfolio had their earnings estimates cut significantly which impacted the stock price and the portfolio's overall performance.

Fees

The portfolio has an asset-based fee of 0.73% annually. This fee ranks in the 21st percentile among its peers in the eVestment U.S. Small Cap Growth universe. In other words, 79% of the products included in the peer universe have a higher fee than the LACERS account.

Conclusion

Granahan has underperformed its benchmark since inception. This portfolio with its concentration in names and sectors can face headwinds in markets like we have just experienced. Since being hired in October of 2020, Granahan has produced both significant over and under performance versus the benchmark. The most significant period of underperformance started in the fourth quarter of 2021 and lasted through June of 2022. Given Granahan's investment process, we believe three years is not adequate time to fully evaluate the portfolio's performance and thus contribution to the overall Plan. NEPC recommends a three-year contract renewal.

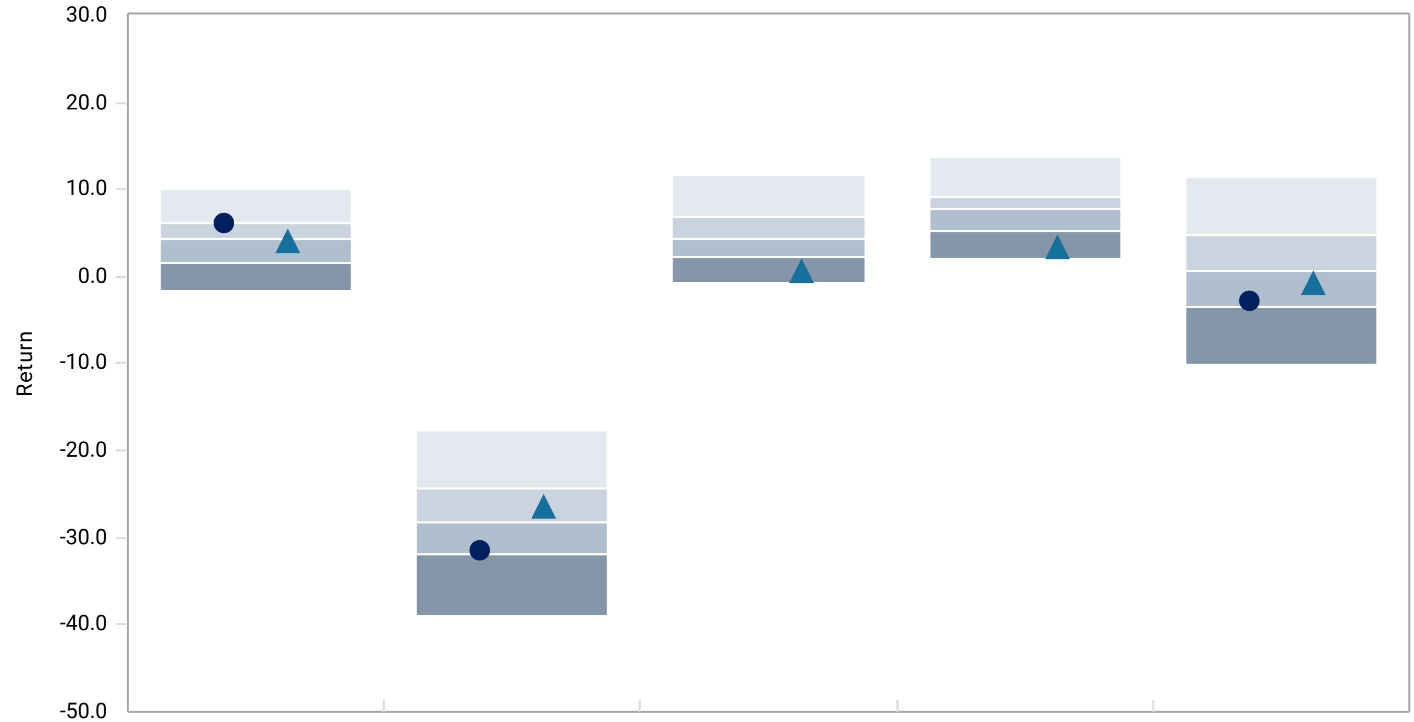
Exhibit 1: Performance Comparison Net of Fees as of January 31, 2023

	Market Value ($)	1 Month	FY YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Granahan Investment Management	**124,229,427**	**9.9**	**25.1**	**-10.7**	**-**	**-**	**1.3**	**Oct-20**
Russell 2000 Growth Index		9.9	14.8	-6.5	-	-	3.3	
Over/Under		0.0	10.3	-4.2	-	-	-2.0	

Exhibit 2

GRANAHAN INVESTMENT MANAGEMENT

Granahan Investment Management vs. eV US Small Cap Growth Equity



	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)
● Granahan Investment Management	6.2 (23)	-31.4 (74)			-2.8 (72)
▲ *Russell 2000 Growth Index*	*4.1 (54)*	*-26.4 (38)*	*0.6 (91)*	*3.5 (88)*	*-0.8 (60)*
5th Percentile	10.0	-17.7	11.6	13.8	11.5
1st Quartile	6.1	-24.3	6.9	9.2	4.8
Median	4.4	-28.2	4.3	7.7	0.6
3rd Quartile	1.5	-31.9	2.2	5.2	-3.5
95th Percentile	-1.7	-38.9	-0.6	2.0	-10.2
Population	164	162	160	157	161

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

REPORT TO INVESTMENT COMMITTEE **MEETING: MARCH 14, 2023**
From: Neil M. Guglielmo, General Manager **ITEM: VI**

SUBJECT: **ADAPTIVE ASSET ALLOCATION POLICY AND STATUS REPORT AND POSSIBLE COMMITTEE ACTION**

ACTION: ☒ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☐

Recommendation

That the Committee recommend to the Board a renewal of the Adaptive Asset Allocation Plan for Fiscal Year 2023-2024.

Executive Summary

This report provides an annual update on adaptive rebalancing pursuant to the LACERS Rebalancing Policy and Adaptive Asset Allocation Plan (AAAP) under Sections V.G and V.H of the Investment Policy Manual. No adaptive rebalances have been initiated through February of fiscal year 2022-2023. Staff recommends renewal of the AAAP for fiscal year 2023-2024.

Discussion

The LACERS Rebalancing Policy and AAAP (Sections V.G and V.H of the Investment Policy Manual) authorize staff to conduct adaptive rebalancing. The AAAP, initially adopted by the Board on May 28, 2019, and revised on October 26, 2021, addresses the goals and objectives of adaptive asset allocation, roles and responsibilities of parties involved, decision-making and implementation framework, and reporting requirements.

Pursuant to Section VII of the AAAP, the CIO must provide an annual report to the Investment Committee of all adaptive rebalances initiated in the current fiscal year and provide recommendations to modify, continue, or cease the AAAP. Through February of fiscal year 2022-2023, staff has not invoked the AAAP and no adaptive rebalances have been initiated. Staff will continue to monitor market conditions and the investment portfolio for opportunities to adaptively rebalance and recommends a renewal of the AAAP in its current form for fiscal year 2023-2024.

Furthermore, staff recognizes that the AAAP may be limited in its usage due to staff's efforts to manage routine operational cash flows and portfolio liquidity. Such efforts generally result in staff rebalancing public market asset classes towards asset allocation targets monthly and maintaining asset classes below the 70% of asset class range trigger point required to implement an adaptive rebalance as defined in Section VI.1 of the AAAP.

LACERS' Internal Auditor has reviewed this report pursuant to Section II of the AAAP.

<u>Strategic Plan Impact Statement</u>

Renewing the Adaptive Asset Allocation Plan aligns with the Strategic Plan Goals to optimize long-term risk adjusted investment returns (Goal IV) and to uphold good governance practices which affirm transparency, accountability, and fiduciary duty (Goal V).

<u>Prepared By:</u> James Wang, Investment Officer I, Investment Division

NMG/RJ/BF/JW:rm

Attachment: 1. Rebalancing Policy and Adaptive Asset Allocation Plan

G. Rebalancing

The investment portfolio shall, on an ongoing basis in accordance with market fluctuations, be rebalanced to remain within the range of targeted allocations and distributions among investment advisors. The Board has a long-term investment horizon and utilizes an asset allocation that encompasses a strategic, long-run perspective of capital markets. It is recognized that a strategic long-run asset allocation plan implemented in a consistent and disciplined manner will be the major determinant of the System's investment performance.

Rebalancing is not primarily intended to be used for tactical asset allocation. The Board will not attempt to time the rise or fall of the investment markets by moving away from long-term targets because (1) market timing may result in lower returns than buy-and-hold strategies; (2) there is little or no evidence that one can consistently and accurately predict market timing opportunities; and (3) rebalancing too often may result in excessive transaction costs. However, the Board may authorize staff to rebalance assets within or among asset classes without breaching Board-established asset allocation policy threshold bands. Such rebalancing would be subject to an annually approved Adaptive Asset Allocation Plan (AAAP) in order to enhance incremental performance, protect portfolio value, or improve the risk-return profile of the portfolio. The Board will consider the approval of a new AAAP or renewal of an existing AAAP within three months prior to the start of each fiscal year. The approved AAAP will be effective on July 1 of each year. Should the Board choose not to renew an AAAP, the existing AAAP may continue to be implemented; however, new AAA positions may not be introduced until a continuance of the existing AAAP or new AAAP is approved by the Board.

The Board delegates the responsibility of rebalancing to the Chief Investment Officer, who will seek the concurrence of the General Fund Consultant. Rebalancing generally will occur when the market values of asset classes (e.g., equities, fixed income, etc.) or sub-asset classes (e.g., large cap value, emerging markets, etc.) exceed their respective thresholds as established by the Board’s approved asset allocation and asset class risk budgets.

The portfolio will be monitored daily, but reviewed by senior investment staff (i.e., Chief Investment Officer or Chief Operating Officer) at the beginning of each month to determine the need to rebalance asset classes or sub-asset classes within approved policy bands. Rebalancing will be conducted in a timely manner, taking into consideration associated costs and operational circumstances and market conditions. Rebalancing will be accomplished by using routine cash flows, such as contributions and benefit payments, by reallocating assets across asset classes, investment mandates, and investment managers.

Asset classes temporarily may remain outside of their ranges due to operational and implementation circumstances to include, but not limited to, illiquidity that prevents immediate rebalancing of certain asset classes such as private equity and private real estate; potential asset shifts pending in the portfolio over the next 12 months such as hiring/termination of a manager(s); an asset allocation review of the entire portfolio; or a structural review of a given asset class.

The Chief Investment Officer shall inform the Board in a timely manner of all rebalancing activity.

H. Adaptive Asset Allocation Plan

TABLE OF CONTENTS

I. Purpose and Scope

The Adaptive Asset Allocation Plan (AAAP) is an addendum to Section I.V.G of the Investment Policy.

On February 12, 2019, the Board of Administration ("Board") of the Los Angeles City Employees' Retirement System (LACERS) approved revisions to the Investment Policy, which included a revision to the Rebalancing Policy (Section I.V.G). Specifically, a provision was added for Tactical Asset Allocation (TAA). Under the TAA section, staff is authorized to initiate tactical rebalancing pursuant to the Tactical Asset Allocation Plan (TAAP).

On October 26, 2021, the Board approved renaming TAA to Adaptive Asset Allocation (AAA) and the TAAP to the Adaptive Asset Allocation Plan (AAAP).

The Board believes that LACERS Total Fund (Total Fund) is best managed when additional tools are available for staff to address a dynamic and rapidly changing investment market. Adaptive Asset Allocation, pursuant to the Rebalancing Policy and procedures found in the AAAP, is designed to supplement and complement the Rebalancing Policy by adding flexibility to rebalancing decisions within a prudent, decision-making framework based on market and/or internal operational conditions. Rebalancing decisions—strategic and tactical—will be based on the principles of prudence, care, and risk mitigation.

More specifically, the AAAP provides additional approaches to the rebalancing of asset classes within established asset class policy target ranges. Rebalancing under the AAAP must achieve at least one of the following objectives: 1) Enhance Total Fund value; 2) Protect Total Fund value; or 3) Enhance the risk/return profile of the Total Fund pursuant to the Asset Allocation Policy and Risk Budget.

II. Roles and Responsibilities

The Board of Administration

The Board authorizes, provides oversight, and approves amendments to the AAAP. The Board delegates to staff the implementation of AAA within the adopted Rebalancing Policy, Asset Allocation Policy, and Risk Budget. The Board will review and approve the AAAP on or before July 1 of each year.

Investment Committee

The Investment Committee reviews AAAP status reports if applicable, conducts an annual performance evaluation of the AAAP, and recommends amendments to the Board.

Chief Investment Officer

The Chief Investment Officer (CIO) is responsible for the implementation of an Adaptive Asset Allocation rebalancing pursuant to the AAAP. The CIO will review recommendations from staff and the General Fund Consultant to determine if an Adaptive Rebalance is appropriate. The CIO is also responsible for unwinding any previously-initiated Adaptive Actions as may be necessary. The CIO along with staff is responsible for observing economic and market indicators, assessing internal operational conditions, and working with the General Fund Consultant (and seeking advisement of other Investment Consultants under contract as may be necessary) to seek concurrence with an Adaptive Action Proposal. The CIO will apprise the Board within 30 days of initiating an Adaptive Rebalance.

General Fund Consultant

The General Fund Consultant reviews the CIO's proposed Adaptive Action, and either concurs, amends, or disagrees with the proposed decision within seven business days of presentation of the Adaptive Rebalance Proposal.

Internal Auditor

The Internal Auditor shall review the CIO's annual AAAP report, as provided in Section VII of this plan, prior to presenting the report to the Investment Committee.

III. Terminology

Adaptive Factors – External landscape observations that include economic, market, and valuation factors plus internal operational factors, all of which are to be considered when developing an Adaptive Rebalance Proposal (see Appendix A).

Adaptive Objectives – The driving force that underpins justification for an Adaptive Rebalance. Objectives may include: 1) Enhance Total Fund value; 2) Protect Total Fund value; and 3) Enhance the Risk/Return Profile of the Total Fund.

Adaptive Rebalance Proposal – A written Adaptive Rebalance plan to address one specific Adaptive Asset Allocation (AAA) Rebalance project. The Adaptive Rebalance Proposal shall consider the provisions found in AAAP Sections IV, V, VI, and VII.

Adaptive Rebalance – One or more individual tactical movements of capital between or among asset classes to achieve one or more Adaptive Objectives. An Adaptive Rebalance may take one to 12 months to implement; up to an additional 12 months may be provided if an Adaptive Reversal is included in an Adaptive Rebalance Proposal.

Adaptive Action – One specific, individual movement of capital that adjusts asset holdings due to movements of cash, in-kind asset transfers, or use of derivatives. Derivatives may be used as an alternative to cash or in-kind asset transfers to obtain the equivalent changes in exposure(s), if derivatives are expected to produce more favorable economic and/or risk enhancements. Derivatives may not be used as a form of leverage.

Adaptive Reversal – An optional component of an Adaptive Rebalance Proposal, an Adaptive Reversal is a specific and time-bound plan to partially or fully unwind an Adaptive Rebalance once economic or market conditions, or internal operations, stabilize. An Adaptive Reversal can be an integral component of an Adaptive Rebalance Proposal and may take up to 12 additional months to achieve full implementation.

IV. Adaptive Asset Allocation Considerations

LACERS is a long-term strategic investor and implements the Asset Allocation Policy. AAA allows LACERS flexibility to adjust exposures to established asset classes to achieve one of several aforementioned AAA Objectives. AAA Factors that are considered when contemplating an Adaptive Rebalance include (but are not restricted to): stage of the economic cycle; abrupt or trending market or capital dislocations; excessive or deep under valuations of specific or broad asset types within the Total Fund or in the market; and internal operational factors.

V. Implementation

Implementation of an Adaptive Action will comply with the following procedures, as they may apply:

1. External Landscape Evaluation – Economic market outlook, including economic indicators, monetary and fiscal policies, geo-political events, Federal Reserve Bank actions, interest rates, inflation, etc.
2. Internal Operational Evaluation – Actual asset allocation of the Total Fund compared to policy targets, asset class movements and trends, portfolio valuations, operational cash, future, pending, or existing RFP manager searches and hiring of investment managers, pending investment manager terminations, market and economic landscape commentary or information from investment managers, and compliance with existing Investment Policy
3. General Fund Consultant Discussion and Concurrence (and discussion with other contracted Investment Consultants as warranted)
4. Written Adaptive Rebalance Proposal should include the following decision considerations (as appropriate):
    a. External Landscape and Internal Operational Evaluations;
    b. Projected Impact on Asset Allocation and Asset Classes;
    c. Projected Impact on Total Fund addressing Adaptive Objectives:
        i. Enhancement to Total Fund Value; and/or
        ii. Protection of Total Fund Value; and/or
        iii. Enhanced Risk/Return Profile and Compliance to Risk Budget
    d. Projected Quantitative Outcomes including measurable Performance and Risk Metric improvements and Capital Preservation amounts;
    e. Financial Considerations - Funds directly impacted by an Adaptive Rebalance; Proposed Implementation Timing and Transactional Costs; Benchmark to evaluate performance; Monitoring Schedule
    f. Adaptive Reversal (Partial or Full) as needed

5. Implementation of Adaptive Action pursuant to the written Adaptive Rebalance Proposal and AAAP Risk Management Guidelines.
6. Report to the Board within 30 days of initiating a Adaptive Rebalance
7. Quarterly Status Reporting of Adaptive Rebalancing implementation
8. Internal Monthly Rebalancing and Compliance Staff Reviews per the Rebalancing Policy (Section I.V.G of the LACERS Investment Policy)
9. Annual Investment Committee Review of AAAP based on CIO Report as provided in Section VII of this plan
10. Annual Board Renewal, Modification, or Repeal of AAAP based on Investment Committee Report as provided in Section VII of this plan

VI. Risk Management Guidelines

The following guidelines are designed to help the CIO manage the implementation of the AAA Policy within a prudent risk-management framework.

1. An Adaptive Rebalance may be initiated when the actual market value weighting of an asset class exceeds 70% of the range from its target weighting to its established bands.
2. An Adaptive Rebalance Proposal shall not exceed 50% of the excess valuation that is over- or under-weight to its policy target at the time the decision to rebalance is made.
3. An Adaptive Rebalance should be completed within 12-24 months of initiation, except in the case of a partial or full reversal of the original Adaptive Rebalance, which may extend the Adaptive Rebalance up to an additional 12 months.
4. An Adaptive Rebalance may be suspended after the first Adaptive Action is completed if such single Adaptive Action or subsequent Adaptive Actions achieves the Adaptive Objective(s) within the Adaptive Rebalance Proposal pursuant to an Adaptive Rebalancing Proposal.
5. An Adaptive Rebalance Proposal may be modified or suspended by the CIO upon the concurrence of the General Fund Consultant if market conditions or other external landscape factors change or strategic asset class rebalances are necessary that disrupt the orderly implementation of the Adaptive Rebalance Proposal, or when internal operations such as liquidity needs would have a material impact on the Adaptive Rebalance Proposal such that the Adaptive Objectives are no longer achievable within the established Adaptive Rebalance Proposal timeframe due to material changes in the original market assumptions, operational factors, or risk levels.
6. A specific Adaptive Rebalance should not be initiated if it will cause another asset class to breach its regular Asset Allocation policy upper or lower rebalance threshold.
7. The General Fund Consultant must concur with the Adaptive Rebalance Proposal prior to initiation.

VII. Annual Review of the AAAP

Annual AAAP Review by the Investment Committee

The CIO will prepare an annual report of all Adaptive Rebalance Proposals that were initiated in the current fiscal year, the current status of Adaptive Rebalances and Adaptive

Actions, and the projected and actual impact of the Adaptive Rebalance(s) including (but not restricted to) performance, capital preservation, and/or risk factors. Staff may also include recommendations to modify, continue or cease the AAAP. The Annual AAAP Review will be presented to the Investment Committee no later than the month of April of each year.

The Investment Committee will determine if the AAAP requires any modifications including repeal. The Investment Committee recommendations will be then sent to the Board of Administration for approval.

Annual AAAP Approval or Repeal by the Board of Administration

The Board of Administration shall review and approve, modify, or repeal the AAAP prior to the beginning of each Fiscal Year.

If the AAAP is repealed, staff may not enter any new Adaptive Rebalances; except Adaptive Reversals that were contemplated in the Adaptive Rebalance Proposal may be implemented according to the implementation sequence of the Adaptive Actions.

VIII. APPENDIX

External Landscape and Internal Operational Considerations

a. *Economic Cycle Consideration* - An Adaptive Action may be appropriate based on the economic cycle, as illustrated below:

   Early Stage Phase - The early stage of the economic cycle is characterized by recovering growth in the gross domestic product (GDP), profit margins, and consumer confidence. Credit and inflation in the economy are typically flat while interest rates start to rise. Stocks tend to be trading at more attractive levels compared to longer term historical averages.

   Early to Mid-Cycle Stage Phase - During the early and mid-cycle phases, equities have the potential to outperform. AAA may attempt to take advantage of expansion stages by shifting exposure to public equities and reducing exposures to core fixed income assets.

   Later and Recession Stage Phases - During late and recession stages, equities have potential to underperform risk-off assets. AAA may attempt to protect the Total Fund by reducing public equities and increasing fixed income assets.

b. *Market Stages Consideration*

   The economy oscillates between stages of expansion (early and middle stages) and contraction (late and recession stages). The early stage of the economic cycle is characterized by recovering growth in the gross domestic product (GDP), profit margins, and consumer confidence. Credit and inflation in the economy are typically flat while interest rates start to rise. Stocks tend to be trading at more attractive levels compared to longer term historical averages.

During the mid-cycle period of the economic cycle, the economy generally experiences expansion in GDP, credit growth, profit margins, and consumer confidence. Interest rates and inflation are typically stable during this period. Stocks tend to recover to levels in-line with long term average valuations.

In the late-cycle period of the economic cycle, the economy typically experiences moderation in GDP growth, profit margins, and credit expansion. Consumer confidence is high and both interest rates and inflation are on the rise. Stocks trade at the higher band of long term averages while volatility tends to be higher than the earlier parts of the cycle.

Finally, during the recession stage of the economic cycle, excesses are purged from the system. GDP, credit, profit margins, interest rates, inflation and consumer confidence are all falling. During this phase of the market, volatility in the stock market increases dramatically while prices tend to fall to below average valuations.

c. *Assessment of Market Conditions*
Staff will evaluate and assess if the market is Early-Cycle, Mid-Cycle, Late-Cycle or in a Recession on a quarterly basis.

This assessment will be based on the factors listed in the chart below.

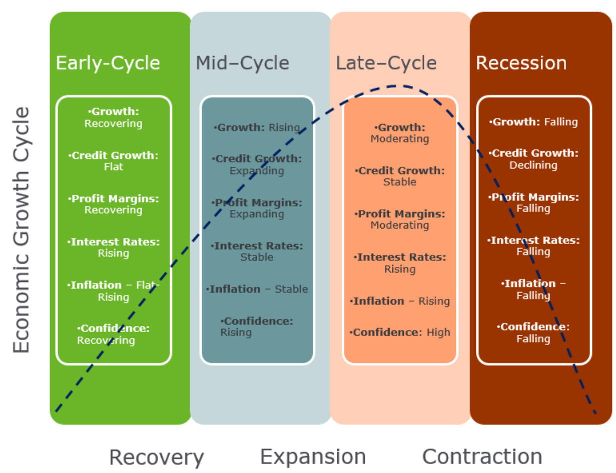


*chart provided by NEPC, LLC

d. *Economic and Market Risk Assessment*
Staff will address one or more of the economic, financial, and market indicators.

- Growth: Year-over-year growth in GDP
- Credit Growth: Year-over-year growth in total credit
- Profit Margins: Corporate profit margins
- Interest Rates: Short, Long, Yield Curve
- Inflation: Consumer Price Index
- Confidence Levels: Consumer Sentiment Index
- Additional factors such as commodity and currency trends, unemployment statistics, building permits, sales, and manufacturing statistics.

e. *Asset Valuations*
Staff will address the relevant market valuation indicators to include (but not restricted to):
- Current to Long-Term Historical Valuations reflected in Price to Earnings, Price to Book, and Dividend Yields
- Interest rate spreads, duration
- Growth versus Value

f. *Internal Operational Considerations*
Staff will evaluate factors to include (but not restricted to):
- Benefits and Consequences of initiating an Adaptive Action versus strategic rebalancing against asset allocation upper and lower policy target thresholds
- Liquidity Impact

I. Evaluation of Policy

The Investment Policy Statement shall be reviewed by the Board at least annually, with the assistance of the Staff and investment consultant(s), and revised as necessary.