

ORDER OF BUSINESS
Board of Trustees Meeting
Indiana Public Retirement System
One North Capitol, Indianapolis, IN 46204
1st Floor Conference Room
September 8, 2023
10:00 A.M. – 2:00 P.M.

- | | | | |
|--|---|----------------|-------------|
| I. | Approve Minutes from June 23, 2023
Board of Trustees Meetings | (Tab 1) | Vote |
| II. Unfinished Business | | | |
| III. Required Business | | | |
| IV. New Business | | | |
| | • Investments Update | (Tab 2) | |
| | • Investments Policy Statement Update | (Tab 3) | Vote |
| | • FY23 – A look Back | (Tab 4) | |
| | • Benefits Update | (Tab 5) | |
| | • Financial Update | (Tab 6) | |
| | • Executive Director Report | (Tab 7) | |
| V. Other business as requested by the Board | | | |
| VI. Preliminary Agenda for October 27, 2023 Board Meeting | | | |
| VII. Executive Session | | | |
| | The Board of Trustees of the Indiana Public Retirement System will meet in Executive Session immediately after the regularly scheduled Board meeting to discuss personnel matters as authorized pursuant to IC 5-14-1.5-6.1(b)(9) | | |
| VIII. Adjournment | | | |

**MINUTES
BOARD OF TRUSTEES OF THE
INDIANA PUBLIC RETIREMENT SYSTEM
1 N. Capitol, Indianapolis, IN 46204
1st Floor Conference Room and Virtual Webcast**

June 23, 2023

Board Members Present

Bret Swanson
Justin McAdam
Brian Abbott
Michael Pinkham

Tera Klutz
David Frick
Daniel Elliott
(absent: Vivienne Ross)

Guest Speakers

Tim McEnery, Verus Investments
Chris Doll, CEM Benchmarking
Brad Armstrong, GRS Consulting
Brian Murphy, GRS Consulting

Staff Presenters

Steve Russo, Executive Director
Anthony Green, Deputy Executive Director
Robert Corne, Chief Financial Officer
Cheryl Harding, Chief Strategic Initiatives Officer
Scott Davis, Chief Investment Officer

Steven Barley, Chief IT Officer
Keith Hall, Chief Audit & Risk Officer

Meeting called to order at 10:00 a.m. by Chairman Swanson.

In accordance with normal practice, Board members were provided electronically written materials in advance of the meeting.

I. Approval of Minutes from May 5, 2023 Board of Trustees Meeting

MOTION duly made and carried to approve the Board of Trustees Meeting minutes from the May 5, 2023 Board meeting.

<i>Proposed by:</i>	<i>Bret Swanson</i>
<i>Seconded by:</i>	<i>Daniel Elliott</i>
<i>Votes:</i>	<i>7 in favor, 0 opposed, 0 abstentions</i>

II. Unfinished Business

Investment Policy Statement

Scott Davis discussed the Investment Policy Statement. INPRS staff requested the following recommendations to the Board of Trustees:

- Amend the IPS to include new China-related legislation
 - Update benchmarks to “Ex-China” (Addendum 2)
 - Add China to list of prohibited securities (Section 9)
- Amend the IPS to address ESG issues and ESG-related legislation
 - Adjust existing and add new IPS definitions (Section 1)
 - Restate INPRS’s fiduciary duty pursuant to HEA 1008 (Section 2 and Section 5)
 - Restate INPRS’s policy regarding governance risk to clarify risks with ESG and any non-financial factors (Section 8.2.6)
 - Restate INPRS’s policy regarding proxy voting to clarify non-financial factors (Addendum 7)
 - Add shareholder engagement INPRS’s policy regarding proxy voting (Addendum 7)
 - Add the now Indiana Code-require annual proxy voting reports as IPS provision (Addendum 7)

Proposed by: Daniel Elliott
Seconded by: Justin McAdam
Votes: 7 in favor, 0 opposed, 0 abstentions

III. Required Business

FY24 Internal Audit Plan Approval

Keith Hall provided FY23 and FY24 Audit Plan Highlights. Mr. Hall discussed the audit planning steps, risk assessment, and the heat map. INPRS staff recommended that the Board approve the Audit Plan as it was presented.

Proposed by: Brian Abbott
Seconded by: Tera Klutz
Votes: 7 in favor, 0 opposed, 0 abstentions

FY24 Expense Budget & Strategic Plan

Cheryl Harding discussed the FY2024-2026 Strategy Plan Budget and the Balanced Scorecard Measurements.

Anthony Green outlined the CRM & IT Modernization Project and the Current-to-Future-State Opportunities. He also discussed the Integrated Implementation Strategies & Timelines.

Robert Corne discussed the INPRS Expenses & Capital Budget along with the FY2024 Budget Summary. Mr. Corne also provided the FY24 Administrative Budget Walk Forward information.

INPRS staff recommended that the Board approve the Fiscal Year 2024 Strategic Plan and Budget as it was presented.

Proposed by: Tera Klutz
Seconded by: Michael Pinkham
Votes: 7 in favor, 0 opposed, 0 abstentions

IV. New Business

A. Investment Incentive Compensation Plan

Steve Russo outlined the Investment Incentive Plan. INPRS staff recommended to the Board to approve changes to the Investment Incentive Compensation Plan as presented to better align total INPRS investment professional compensation to current labor market data.

Proposed by: David Frick
Seconded by: Justin McAdam
Votes: 7 in favor, 0 opposed, 0 abstentions

B. CEM DB Administration Benchmarking Review

CEM Benchmarking representative, Chris Doll, discussed global pension system trends and comparisons.

C. Actuarial Audit Results

GRS Consulting presenters, Brian Murphy and Brad Armstrong, discussed the actuarial audit results for the DB plans.

D. Investment Update

Scott Davis introduced Tim McEnery from Verus Investments who discussed the fiscal year market environment. Mr. Davis discussed investment performance across the defined benefit and defined contribution accounts as of May 31, 2023.

E. Financial Update

Robert Corne presented the financial update which included the year-to-date financial results, Supplemental Reserve Accounts (SRA's) balances, and the administrative and investment expenses.

F. Executive Director Report

Steve Russo acknowledged recent Line of Duty Deaths (LODD) and discussed the Working Balanced Scorecard.

V. Other business as requested by the Board

None

VI. Preliminary Agenda for September 8, 2023 Board Meeting

None

VII. Adjournment

MOTION duly made and carried to adjourn the June 23, 2023 Board meeting and adjourned at 1:08 p.m.



INPRS Investments Update

September 8, 2023

(844) GO-INPRS
inprs.in.gov

Team Imperatives

Defined Benefit (“DB”)

- Achieve 6.25% Long Term Rate of Return Assumption
- Achieve the return as efficiently & effectively as possible
- Always have enough cash on hand to pay the bills

Defined Contribution (“DC”)

- Provide a simple & diversified default option (“Allocate it for me” – Target Date Funds)
- Provide a simple & diversified menu of stand-alone options (“Allocate it myself” – Core & Specialty)
- Leverage DB asset base to provide low-cost investment options



INPRS Investment Team

Legislative Update: HEA 1008 (ESG Commitment)

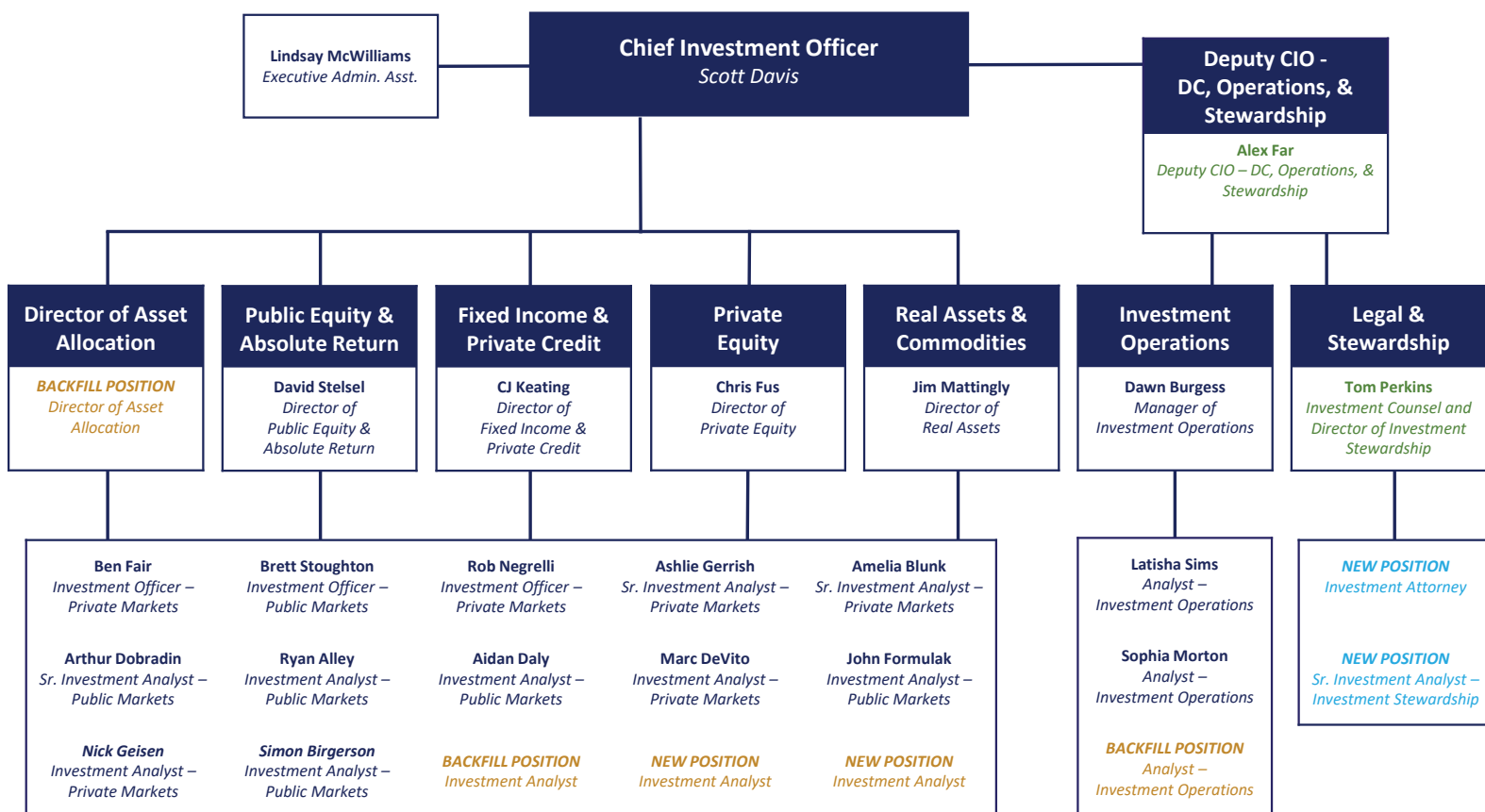
HEA 1008 Update

INPRS is collaborating with the Treasurer's office regarding HEA 1008's formal policy and procedures

- INPRS and the Treasurer's office are working to establish a process of:
 1. *Reviewing eligible service providers regarding ESG Commitments;*
 2. *How the Treasurer would provide names of service providers who are believed to have made ESG Commitments to INPRS Board;*
 3. *Evaluation and vote by INPRS Board on named service providers believed to have made ESG Commitments; and,*
 4. *Remedial steps, if necessary.*
- INPRS's Staff is also working on potential updates to the Board Governance Manual to accommodate the statutory obligations and the associated process.



INPRS's Investment Team Changes



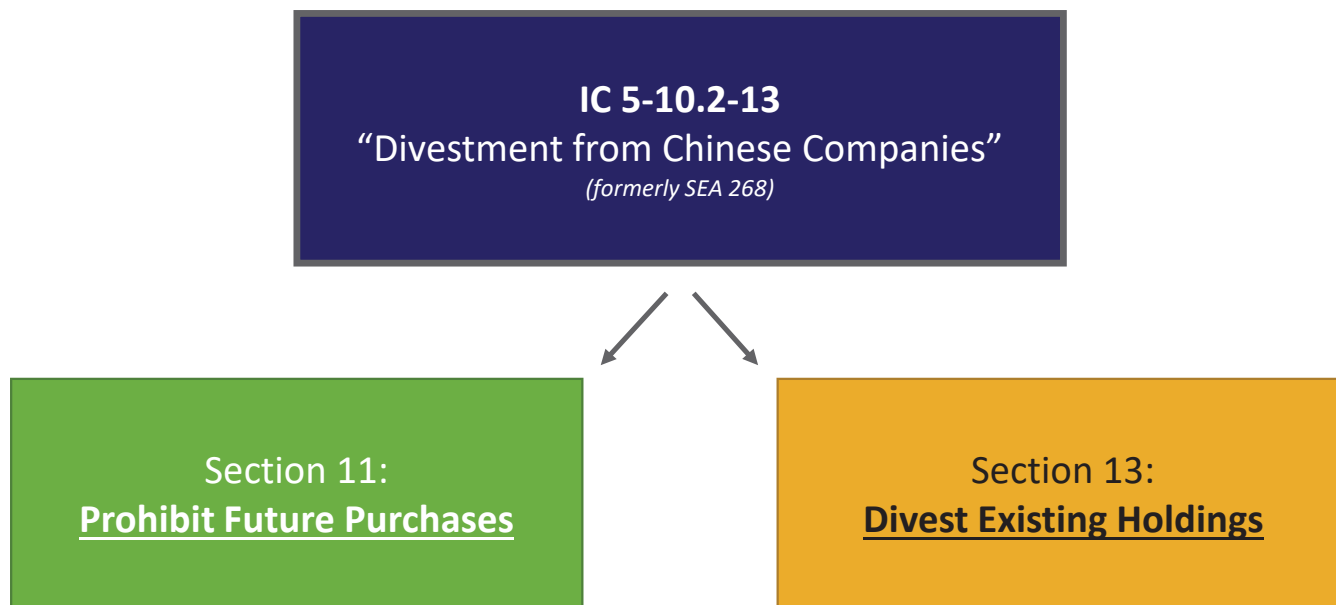


INPRS Investment Team

Legislative Update: SEA 268 (Divestment from China)

SEA 268 Key Provisions

INPRS generally must 1) abstain from future China purchases, and 2) divest of existing China holdings



Legislative Update: SEA 268 (Divestment from China)

INPRS China Exposure (\$MM)



Asset Class As of 3/31/2023	China Exposure Subject to Divestment	China Exposure Excluded from Divestment	Total INPRS China Exposure
Public Equity	377	-	377
Fixed Income	109	2	111
Total Public Markets	486	2	488
Risk Parity	-	529	529
Absolute Return	-	52	52
Private Equity	-	83	83
Real Assets	-	44	44
Total Private Markets	-	709	709
TOTAL	486	711	1,197¹

Public Markets Divestment Progress	3/31/2023	6/30/2023	7/31/2023	Estimated 6/30/2024
Total Public Markets	486	327	40	-



Notes: Exposure to China is limited to investments issued, domiciled, listed, incorporated in China or otherwise have China as their primary source of risk. Unless undistinguishable by the underlying data vendor, exposure does not include Taiwan or Hong Kong. (1) BNY Mellon as of March 31, 2023. Consultants and investment managers for private markets as of March 31, 2023. Includes defined benefit plan, defined contribution plan, and other plans managed by INPRS.



INPRS Investment Team

Fiscal Year Review

► As of June 30, 2023

INPRS Highlights

- **Defined Benefit (“DB”)**

- INPRS’s DB portfolio has returned:
 - *2.18% fiscal year-to-date 2023*
 - *5.69% annualized over the past 5 years*
 - *6.00% annualized over the past 10 years*
- INPRS’s DB portfolio is outperforming the passive target benchmark by:
 - *0.02% fiscal year-to-date 2023*
 - *0.28% annually over the trailing 3 years*
 - *0.31% annually over the trailing 5 years*

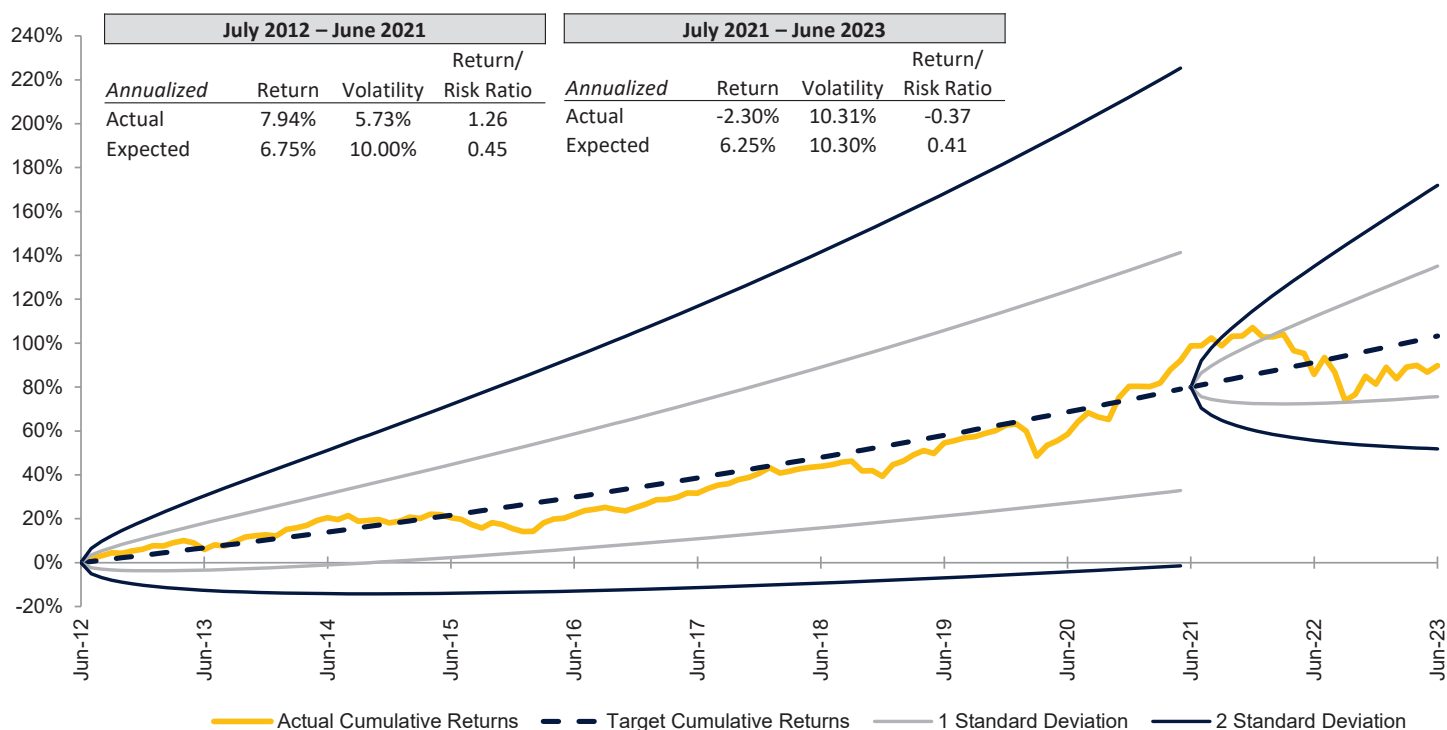
- **Defined Contribution (“DC”)**

- All Target Date Funds continue to outperform their respective benchmarks over the 3- and 5-year trailing time periods.
- All active stand-alone funds have outperformed their respective benchmarks over the 3- and 5-year trailing time periods, except for the Small/Mid Cap Equity Fund.



► Defined Benefit Performance Since 2012

INPRS Fiscal Year 2023 Review



Risk Return Ratio = Sharpe Ratio = (Total Return - Cash Return) / Volatility. Sharpe Ratio measures the return per unit of risk taken.

► Expected Performance over 30 Years

Defined Benefit (DB)

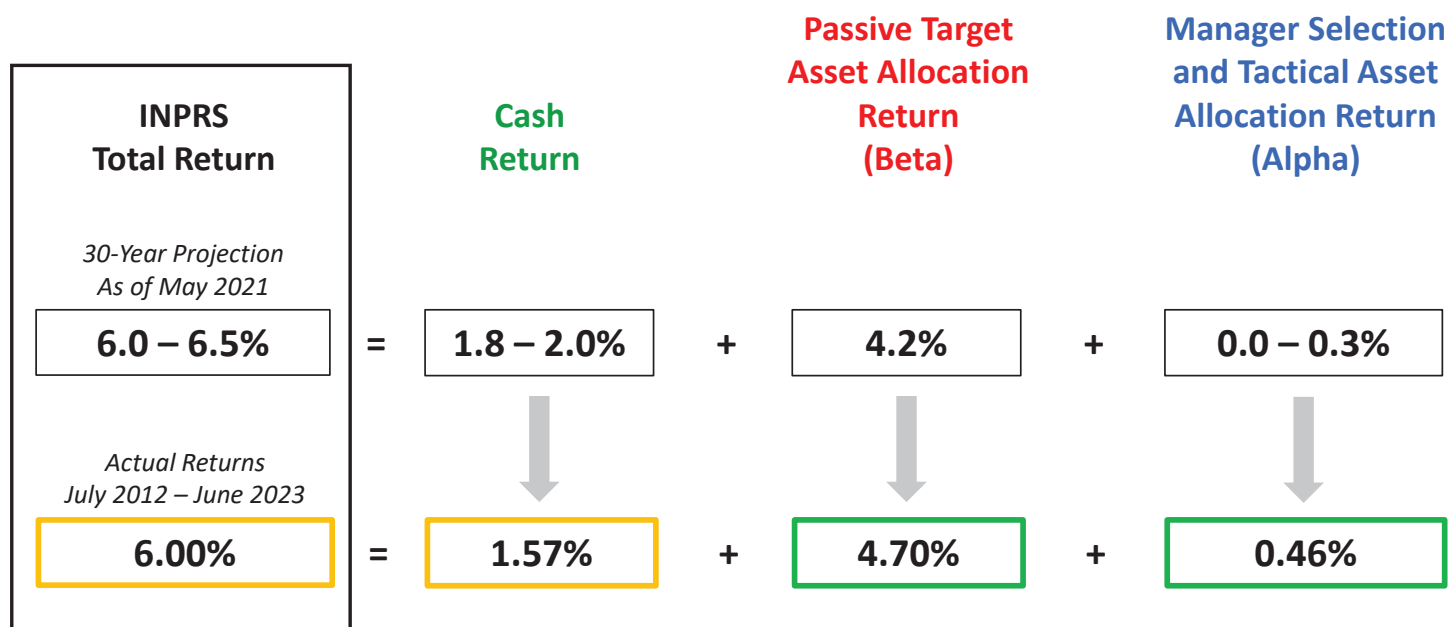
INPRS Total Return <i>Back-Test Over 80+ Yrs.</i>		Cash Return		Passive Target Asset Allocation Return (Beta)		Manager Selection and Tactical Asset Allocation Return (Alpha)
7.92%	=	3.60%	+	4.32%	+	?
30-Year Projection As of May 2021						
6.0 – 6.5%	=	1.8 – 2.0%	+	4.2%	+	0.0 – 0.3%



The Back-Test Projected Cash Return assumes the return of the one-month US Treasury Bill since 1935 (3.6%, Source: Dimensional Matrix Book 2015). The Back-Test Beta return is estimated based on INPRS Asset Allocation and long-term Sharpe ratios for each asset class (Source: Bridgewater). The lower end of the projected total return range equals Verus's inflation assumption plus real return. The higher end of the total return range equals INPRS's inflation assumption plus real return plus alpha. Verus's 30-year inflation assumption equals 1.8% as of January 2021. INPRS uses 2.0% for expected inflation which aligns with the Federal Reserve's target rate of inflation. Beta is calculated as the Verus projected 30-year nominal return less the Verus 30-year inflation rate. A range is shown for the alpha expectation reflecting the volatility around excess returns. The max alpha shown is viewed by staff as a conservative estimate of the alpha that could be added to the portfolio. INPRS estimates expected alpha of 0.35% based on strategies in place today.

► Defined Benefit Return Breakdown vs. Expectations Since 2012

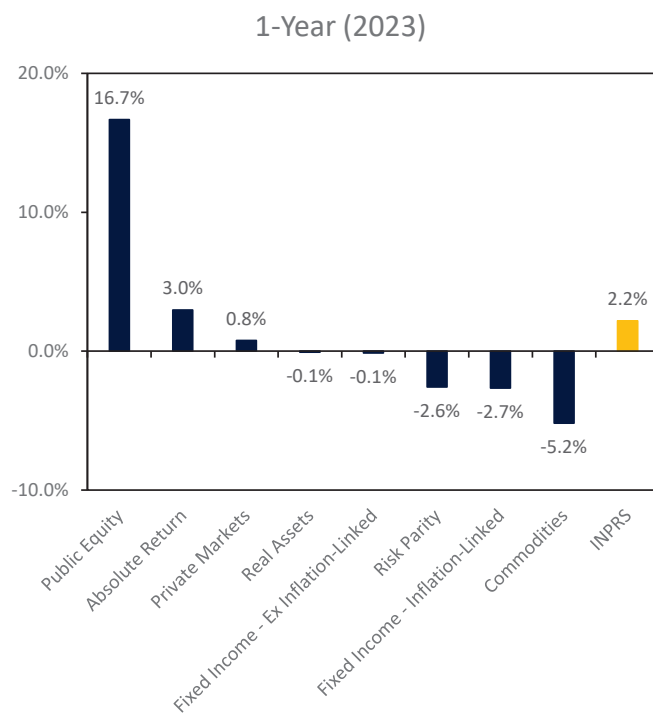
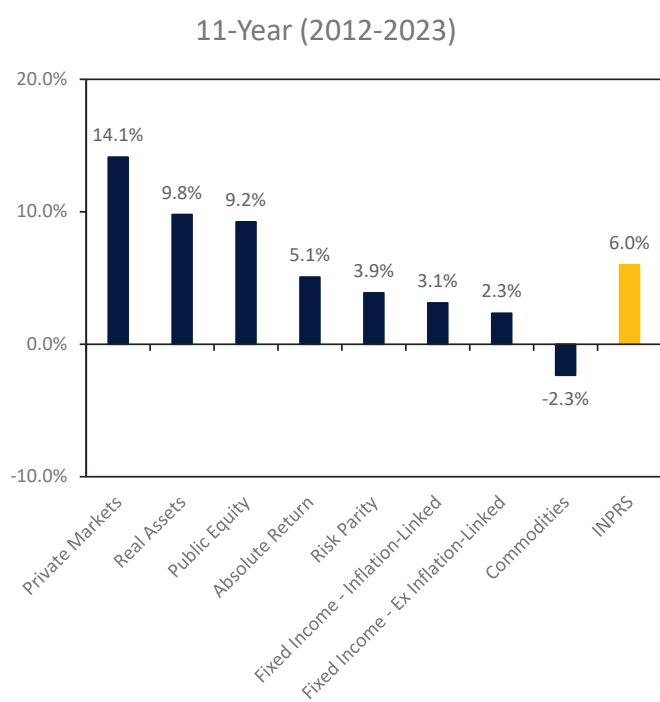
INPRS Fiscal Year 2023 Review



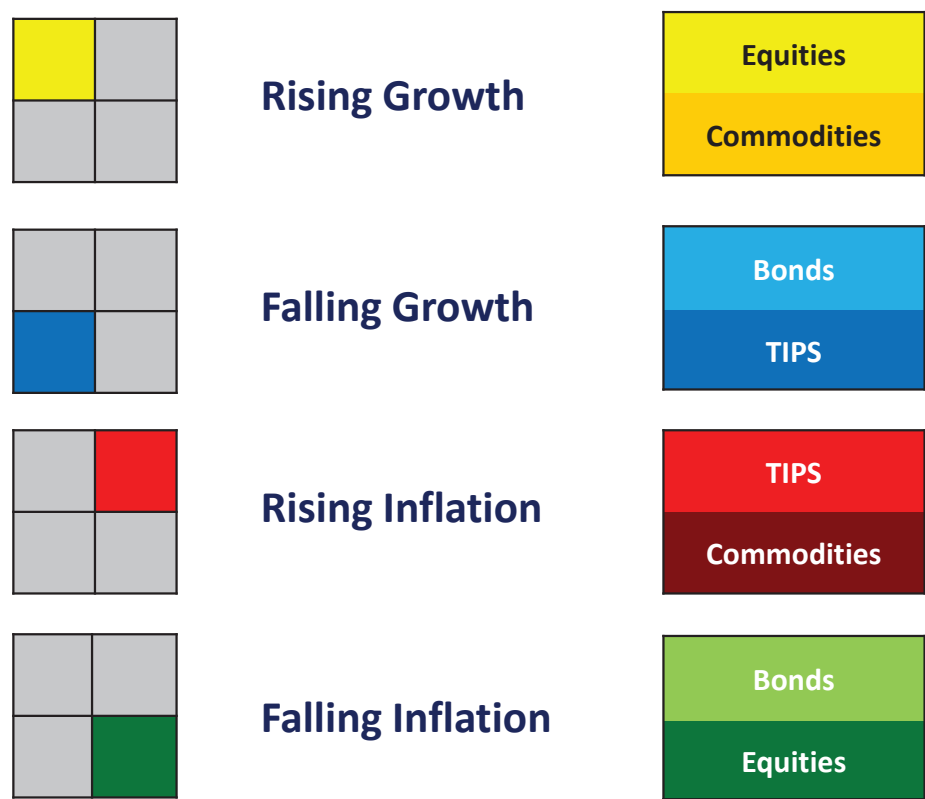
The lower end of the projected total return range equals Verus's inflation assumption plus real return. The higher end of the total return range equals INPRS's inflation assumption plus real return plus alpha. Verus's 30-year inflation assumption equals 1.8% as of January 2021. INPRS uses 2.0% for expected inflation which aligns with the Federal Reserve's target rate of inflation. Beta is calculated as the Verus projected 30-year nominal return less the Verus 30-year inflation rate. A range is shown for the alpha expectation reflecting the volatility around excess returns. The max alpha shown is viewed by staff as a conservative estimate of the alpha that could be added to the portfolio. INPRS estimates expected alpha of 0.35% based on strategies in place today.

► Defined Benefit Asset Class Performance as of June 30, 2023

INPRS Fiscal Year 2023 Review



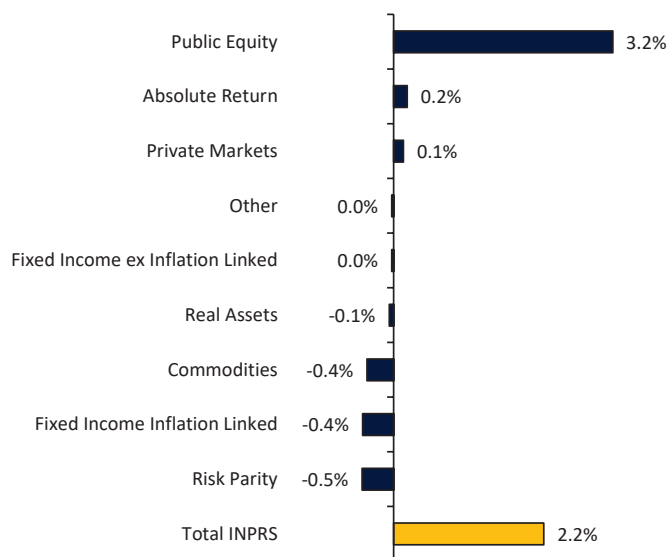
Economic Environments & Asset Class Returns



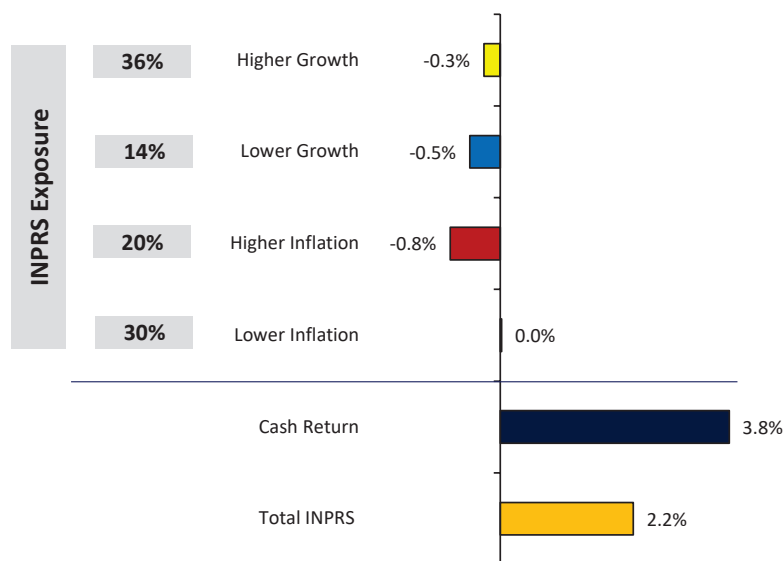
► Defined Benefit Performance Attribution

INPRS Fiscal Year 2023 Review

Fiscal Year 2023 Performance
Attribution by Asset Class



Fiscal Year 2023 Performance
Attribution by Economic Environment



Numbers may not add up due to rounding.

► As of June 30, 2023

Defined Benefit Asset Class Performance

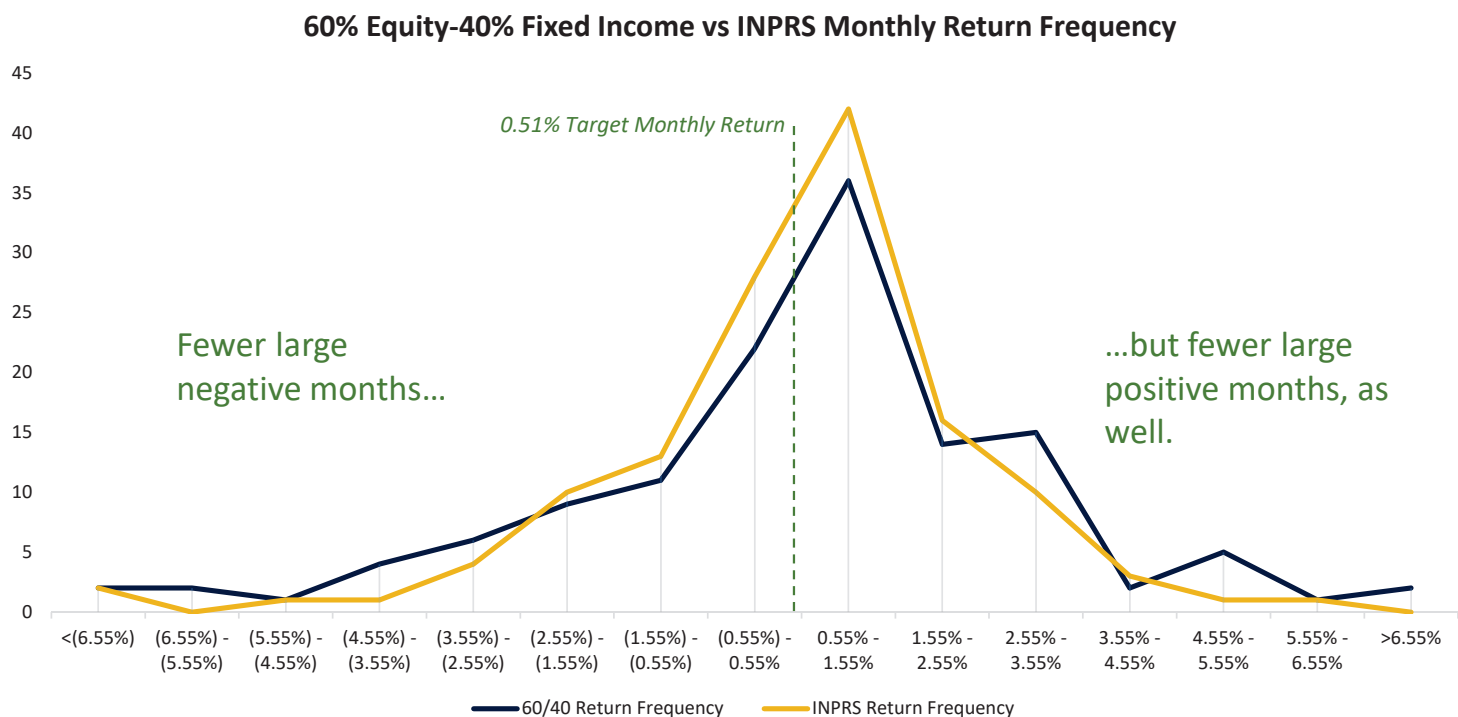
Passive Return				Passive Return			
Asset Class	FYTD	5 Years	Since July 2012	Asset Class	FYTD	5 Years	Since July 2012
Equities				Fixed Income - Gov't Bonds			
Global	16.1%	7.7%	9.4%	U.S. Long Duration Gov't	-6.8%	-0.9%	0.9%
U.S. Large/Mid Cap	19.4%	11.9%	13.4%	Developed Mkts. Ex U.S. Gov't	-0.6%	0.3%	N/A
U.S. Small Cap	12.3%	4.2%	9.6%				
Developed Mkts. Ex U.S.	16.4%	4.2%	6.5%	Inflation-Linked Bonds			
Emerging Mkts.	1.8%	0.9%	2.9%	U.S. Long Duration TIPS	-4.9%	1.2%	1.4%
				U.S. Intermediate Duration TIPS	-0.9%	2.8%	1.5%
Private Markets & Real Estate				Global Inflation-Linked	-3.1%	1.0%	2.0%
Private Equity ¹	-0.8%	16.0%	14.3%	Commodities			
Private Credit ^{1,2}	4.9%	8.7%	N/A	Diversified Commodities ³	-5.6%	5.1%	-1.0%
Real Estate - Equity ¹	-0.1%	10.9%	12.3%				
Real Estate - Debt ¹	-7.1%	3.4%	5.3%	Multi-Asset			
Infrastructure ^{1,4}	12.1%	N/A	N/A	Risk Parity ¹	-2.6%	2.4%	3.5%
Fixed Income - Credit				Absolute Return ¹	3.0%	5.3%	5.2%
Emerging Mkts. Bonds	9.4%	0.4%	1.1%				
Opportunistic Credit ¹	9.3%	5.0%	N/A	INPRS DB			
				Global 60/40	2.2%	5.7%	6.0%
					9.9%	5.3%	6.6%



¹INPRS's actual returns used where a passive benchmark was not an accurate representation of the exposure. ²Private Credit's inception date is 10/17/2017. ³Commodities is an equal weighted blend of the Bloomberg Commodity Excess Return Index and Bloomberg Gold Subindex. ⁴Infrastructure's inception date is 7/30/2021.

► July 2012 – June 2023

Defined Benefit Monthly Return Distribution



► Net of Fees as of June 30, 2023

Defined Benefit Performance

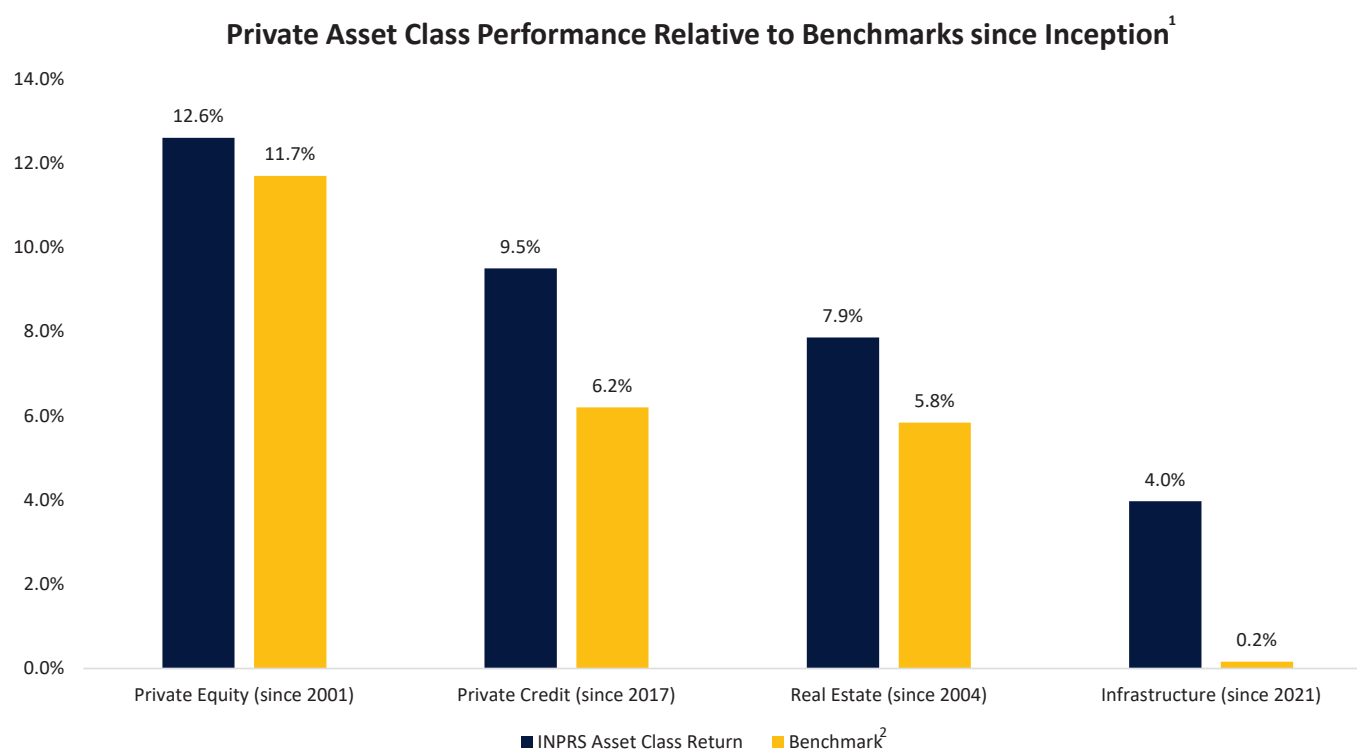
	Mkt. Value (\$MM)	%	Cal YTD	1 Year	3 Year	5 Year	10 Year
Total DB Plan	39,644	100.0	4.66	2.18	6.19	5.69	6.00
INPRS Blended Target Return			3.05	6.25	6.41	6.55	6.65
Passive Asset Allocation Bmk ¹			4.34	2.16	5.91	5.38	5.55
Manager Selection Bmk ¹			4.26	1.76	6.01	5.40	5.66
Physical + Asset Class Derivative Performance	Notional Exposure (\$MM)	%	Cal YTD	1 Year	3 Year	5 Year	10 Year
Public Equity	7,776	19.6	13.36	16.67	11.24	8.30	9.23
MSCI ACWI Market Net Index			13.25	16.14	10.97	7.65	8.62
Private Markets²	6,376	16.1	2.81	0.77	17.96	15.12	14.12
Private Markets Custom Bmk ¹			11.56	-0.64	22.93	9.91	11.62
Fixed Income (Ex Inflation Linked)	6,177	15.6	4.11	-0.13	-5.04	0.64	2.34
Custom Fixed Income ex ILB Bmk ¹			4.78	1.97	-4.42	1.03	2.40
Fixed Income (Inflation Linked)	5,483	13.8	2.38	-2.66	-1.44	3.00	3.11
Custom Fixed Income ILB Bmk ¹			2.63	-1.98	-1.63	3.27	3.20
Commodities	3,534	8.9	-3.11	-5.18	17.71	1.87	-2.34
Custom Commodities Bmk ¹			-3.64	-5.64	15.36	1.16	-2.98
Real Assets³	3,279	8.3	-1.57	-0.07	11.81	9.27	9.78
Real Assets Custom Bmk ¹			1.86	-13.07	0.58	4.50	6.20
Absolute Return	2,642	6.7	1.89	2.96	7.40	5.32	5.06
HFRI Custom Bmk ¹			1.15	2.30	7.32	4.43	3.80
Risk Parity	8,114	20.5	4.13	-2.58	0.16	2.36	3.87
Global 60/40 Index ¹			9.09	9.88	5.48	5.27	6.22
Cash and Overlay⁴	1,161	2.9	4.80	2.95	-5.27	-0.29	2.05

¹More information on custom benchmarks can be found in the Custom Benchmarks slide in the Appendix. ²Includes Private Equity and Private Credit. ³Includes Real Estate and Infrastructure. ⁴Return includes Cash, Parametric Overlay, and Securities Lending Income Accounts. Market value does not include stock distribution, worthless securities, or global reclaim



► Net of Fees as of March 31, 2023

Private Asset Class Performance



¹Based on first capital calls made for INPRS, Private Equity inception date is 5/14/2001, Private Credit inception date is 10/17/2017, Real Estate inception date is 2/26/2004 and Infrastructure inception date is 7/30/2021. The benchmark IRR for Private Equity, Private Credit, Real Estate, and Infrastructure are calculated by taking each cash flow and buying and selling the index on the actual date the private cash flows have occurred. ² The benchmark for Private Equity, Private Credit, and Real Estate are custom benchmarks. More information on custom benchmarks can be found in the Custom Benchmarks slide in the Appendix. The benchmark for Infrastructure is the Global Listed Infrastructure Organization Index (GLIO).

► Net of Fees as of June 30, 2023

Defined Contribution Performance

	Market Value (\$MM)	% of DC	Cal YTD	1 Year	3 Year	5 Year	10 Year
Large Cap Equity Index Fund <i>S&P 500 Index</i>	1,392	20.2	16.89 <i>16.89</i>	19.58 <i>19.59</i>	14.59 <i>14.60</i>	12.31 <i>12.31</i>	12.85 <i>12.86</i>
Small/Mid Cap Equity Fund <i>Russell Small Cap Completeness Index</i>	745	10.8	12.22 <i>12.66</i>	15.26 <i>15.32</i>	10.22 <i>10.05</i>	6.37 <i>6.60</i>	9.33 <i>9.64</i>
International Equity Fund <i>MSCI ACWI ex US IMI Index¹</i>	248	3.6	10.29 <i>9.10</i>	14.35 <i>12.47</i>	7.74 <i>7.33</i>	4.64 <i>3.54</i>	5.88 <i>4.76</i>
Fixed Income Fund <i>Bloomberg US Aggregate Index</i>	143	2.1	2.50 <i>2.09</i>	-0.31 <i>-0.94</i>	-3.52 <i>-3.96</i>	1.03 <i>0.77</i>	1.75 <i>1.52</i>
Inflation Linked Fixed Income Fund <i>Bloomberg US TIPS Index</i>	44	0.6	1.91 <i>1.87</i>	-1.43 <i>-1.40</i>	-0.12 <i>-0.12</i>	2.49 <i>2.49</i>	2.04 <i>2.08</i>
Stable Value Fund <i>3yr Constant Maturity Treasury</i>	2,228	32.3	1.33 <i>2.03</i>	2.44 <i>3.98</i>	2.20 <i>1.89</i>	2.28 <i>1.86</i>	2.15 <i>1.54</i>
Money Market Fund <i>FTSE 3 Month T-Bill Index</i>	77	1.1	2.42 <i>2.39</i>	3.90 <i>3.75</i>	1.36 <i>1.33</i>	1.60 <i>1.57</i>	1.07 <i>0.98</i>
Target Date Funds²	1,640	23.8					
PERF, TRF, & LEDC PLANS	6,517	94					
Retirement Medical Benefits Account³ <i>Bloomberg Intermediate Gov/Credit Index</i>	386	5.6	1.65 <i>1.50</i>	-0.04 <i>-0.10</i>	-2.44 <i>-2.46</i>		
TOTAL DC ASSETS	6,903	100					



¹Reported benchmark includes the MSCI ACWI ex US Index prior to 2/1/2019 and the MSCI ACWI ex US IMI Index on and after 2/1/2019. ²Total assets in the PERF, TRF and LEDC plans. ³Not an available investment option for DC Plan participants. Numbers may not add up due to rounding.

► Net of Fees as of June 30, 2023

Target Date Funds Performance

	Market Value (\$MM)	% of Target Date Funds	Cal YTD	Fiscal YTD	1 Year	3 Year	5 Year	10 Year
2065 Fund	3	0.2	11.49	14.01	14.01			
<i>2065 Fund Index</i>			<i>11.07</i>	<i>13.28</i>	<i>13.28</i>			
2060 Fund	148	9.0	11.49	14.01	14.01	9.07	7.56	7.67
<i>2060 Fund Index</i>			<i>11.07</i>	<i>13.28</i>	<i>13.28</i>	<i>8.81</i>	<i>7.02</i>	<i>7.17</i>
2055 Fund	258	15.7	11.49	14.01	14.01	9.06	7.56	7.66
<i>2055 Fund Index</i>			<i>11.07</i>	<i>13.28</i>	<i>13.28</i>	<i>8.81</i>	<i>7.02</i>	<i>7.16</i>
2050 Fund	238	14.5	11.22	13.61	13.61	9.01	7.52	7.65
<i>2050 Fund Index</i>			<i>10.86</i>	<i>12.94</i>	<i>12.94</i>	<i>8.76</i>	<i>6.99</i>	<i>7.15</i>
2045 Fund	197	12.0	10.65	12.71	12.71	8.40	7.22	7.49
<i>2045 Fund Index</i>			<i>10.33</i>	<i>12.08</i>	<i>12.08</i>	<i>8.16</i>	<i>6.69</i>	<i>7.00</i>
2040 Fund	189	11.5	9.82	11.42	11.42	7.71	6.90	7.29
<i>2040 Fund Index</i>			<i>9.56</i>	<i>10.86</i>	<i>10.86</i>	<i>7.47</i>	<i>6.36</i>	<i>6.79</i>
2035 Fund	197	12.0	8.72	9.64	9.64	6.45	6.38	6.78
<i>2035 Fund Index</i>			<i>8.49</i>	<i>9.15</i>	<i>9.15</i>	<i>6.20</i>	<i>5.85</i>	<i>6.28</i>
2030 Fund	180	11.0	7.91	8.30	8.30	5.28	5.86	5.93
<i>2030 Fund Index</i>			<i>7.66</i>	<i>7.80</i>	<i>7.80</i>	<i>5.00</i>	<i>5.35</i>	<i>5.47</i>
2025 Fund	150	9.1	7.06	7.09	7.09	4.62	5.49	5.14
<i>2025 Fund Index</i>			<i>6.91</i>	<i>6.70</i>	<i>6.70</i>	<i>4.40</i>	<i>5.02</i>	<i>4.72</i>
2020 Fund	52	3.2	5.96	5.45	5.45	3.47	4.74	4.29
<i>2020 Fund Index</i>			<i>5.83</i>	<i>5.13</i>	<i>5.13</i>	<i>3.20</i>	<i>4.27</i>	<i>3.84</i>
2015 Fund	12	0.7	4.87	3.77	3.77	2.23		
<i>2015 Fund Index</i>			<i>4.99</i>	<i>3.84</i>	<i>3.84</i>	<i>2.00</i>		
Retirement Fund	16	1.0	4.29	2.90	2.90	1.18	3.36	3.13
<i>Retirement Fund Index</i>			<i>4.12</i>	<i>2.65</i>	<i>2.65</i>	<i>0.88</i>	<i>2.99</i>	<i>2.69</i>
TOTAL TARGET DATE FUNDS¹	1,640	100						



¹Target Date Fund rebalance was completed from July to September 2019. The figures above are reflective of actual performance for each of the funds. Numbers may not add up due to rounding.

► Net of Fees as of June 30, 2023

Other Funds Performance

	Market Value (\$MM)	Cal YTD	1 Year	3 Year	5 Year	10 Year
Police & Fire Pension Relief	10	2.42	3.91	1.36	1.59	1.07
<i>FTSE 3 Month T-Bill Index</i>		<i>2.39</i>	<i>3.75</i>	<i>1.33</i>	<i>1.57</i>	<i>0.98</i>
Special Death Benefit Fund	9	1.48	0.03	-2.43	1.23	1.39
<i>Bloomberg Intermediate Gov/Credit Index</i>		<i>1.50</i>	<i>-0.10</i>	<i>-2.46</i>	<i>1.23</i>	<i>1.41</i>



INPRS Investment Team

Portfolio Review

► As of July 31, 2023

INPRS Highlights

- **Defined Benefit (“DB”)**

- INPRS's DB portfolio has returned:
 - 1.62% *fiscal year-to-date 2024*
 - 5.93% *annualized over the past 5 years*
 - 5.96% *annualized over the past 10 years*
- INPRS's DB portfolio is underperforming the target benchmark by 0.08% fiscal year-to-date 2024, but is outperforming the target benchmark by:
 - 0.27% *annually over the trailing 3 years*
 - 0.31% *annually over the trailing 5 years*

- **Defined Contribution (“DC”)**

- All Target Date Funds continue to outperform their respective benchmarks over the 3- and 5-year trailing time periods.
- All active stand-alone funds have outperformed their respective benchmarks over the 3- and 5-year trailing time periods, except for the Small/Mid Cap Equity Fund.



INPRS Portfolio Update

► INPRS Market Values

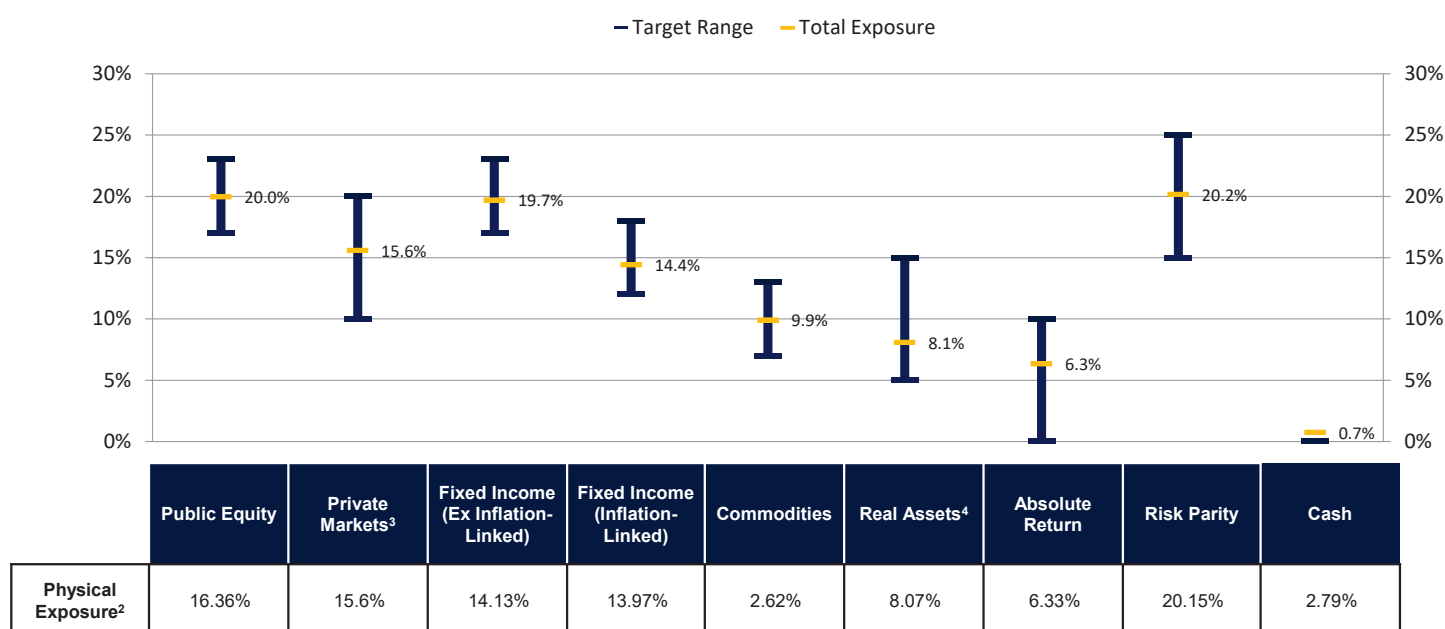
	07/31/2023	6/30/2023	6/30/2022	6/30/2021	6/30/2020
Defined Benefit Retirement Funds	\$41,324,157,091	\$39,643,727,490	\$36,141,194,759	\$38,561,731,209	\$30,657,831,037
Defined Contribution Retirement Funds	\$7,035,906,470	\$6,902,917,447	\$6,371,259,590	\$7,252,325,321	\$6,205,672,106
<i>PERF, TRF, & LEDC Plans</i>	\$6,635,258,641	\$6,517,361,699	\$5,999,218,175	\$6,863,474,553	\$5,828,853,665
<i>Retirement Medical Benefits Account</i>	\$400,647,829	\$385,555,748	\$372,041,415	\$388,850,768	\$376,818,441
Other Funds	\$176,153,731	\$19,157,114	\$14,716,559	\$18,875,419	\$23,915,102
<i>Local Public Safety Pension Relief Fund</i>	\$166,818,404	\$9,923,089	\$4,391,623	\$4,260,249	\$8,290,717
<i>Special Death Benefit Fund</i>	\$9,335,327	\$9,234,025	\$10,324,936	\$14,615,170	\$15,624,385
TOTAL ASSETS	\$48,536,217,292	\$46,565,802,051	\$42,527,170,908	\$45,832,931,949	\$36,887,418,245



► As of July 31, 2023

Defined Benefit Asset Allocation

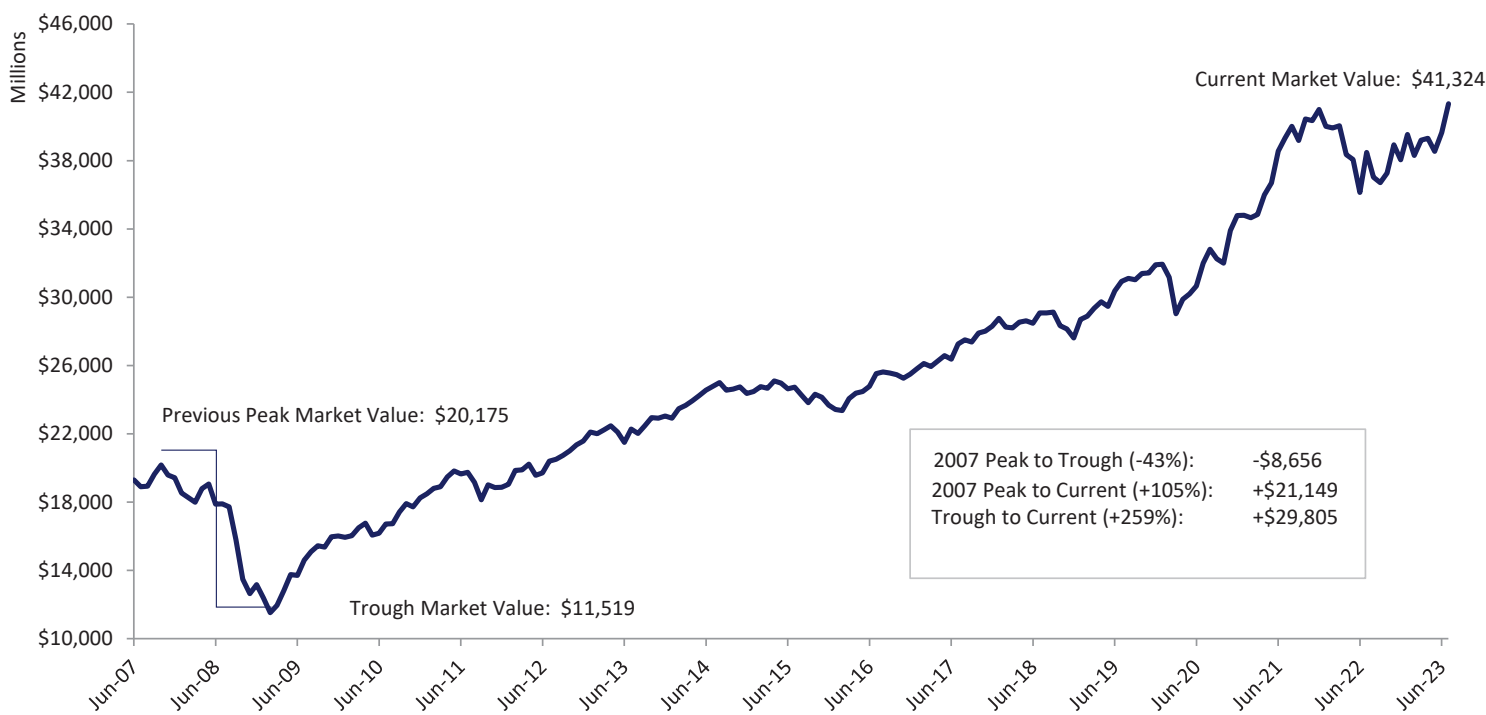
Total Exposure	114.8%
Target Exposure	115.0%
Max Exposure	120.0%



¹Total Exposure = Physical Exposure + Asset Class Derivatives + Cash Overlay Derivatives. The following manager accounts have derivatives: Parametric Equity, Parametric Bonds, PIMCO Long Government, Bridgewater Global Inflation-Linked, all Commodities accounts, and Parametric Overlay. ²Numbers may not add up to 100.0% due to rounding. ³Private Markets consists of 10.9% Private Equity and 4.7% Private Credit. ⁴Real Assets consists of 6.1% Real Estate and 2.0% Infrastructure.

Defined Benefit Performance

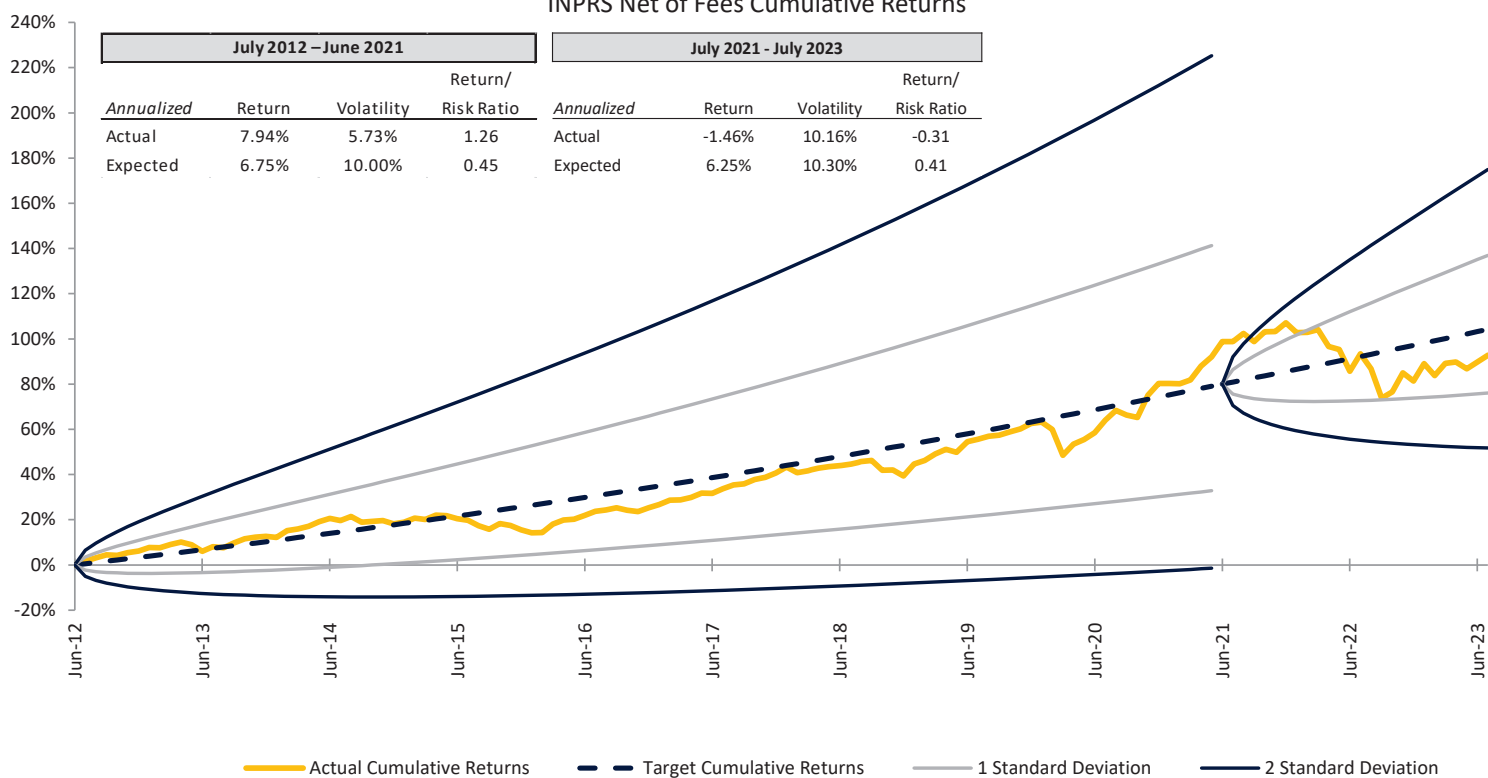
► *INPRS DB Market Value as of July 31, 2023 (\$MM)*



► Net of Fees as of July 31, 2023

Defined Benefit Performance

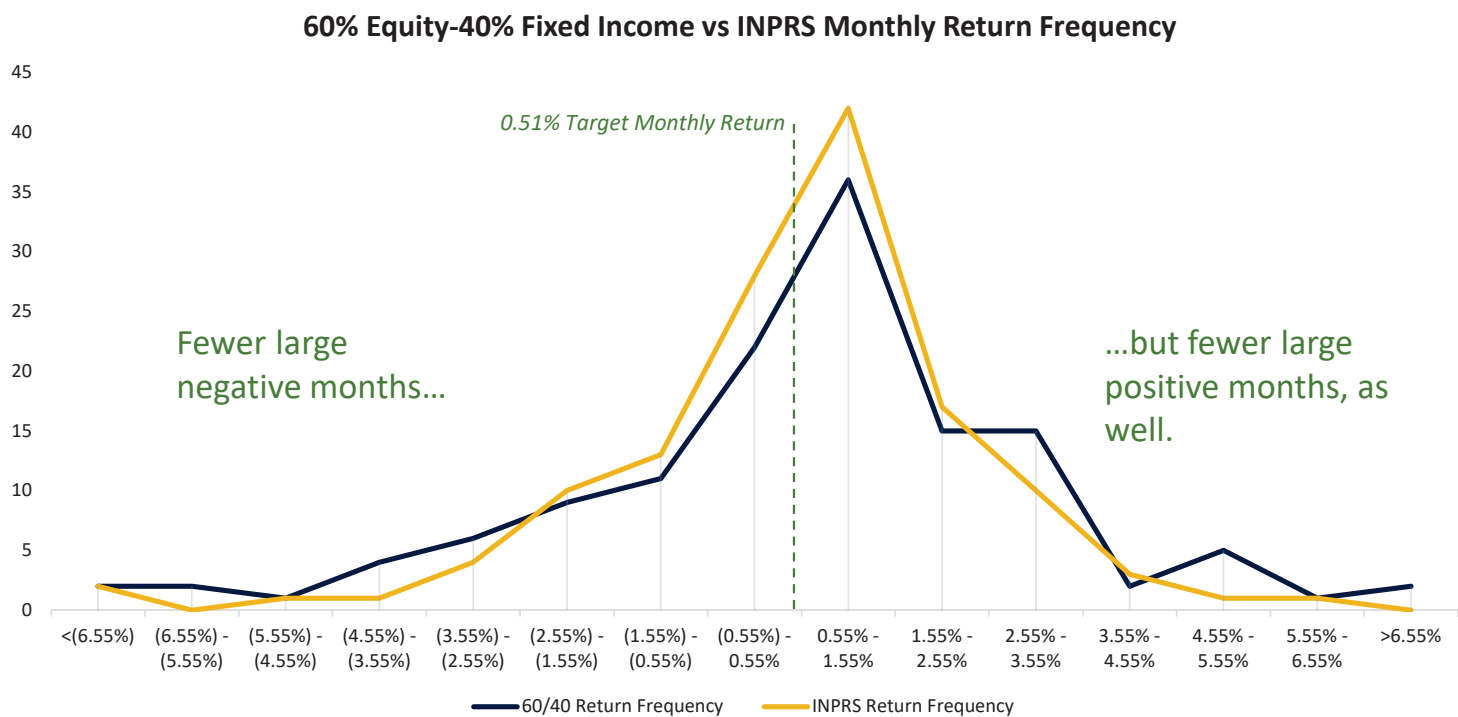
INPRS Net of Fees Cumulative Returns



Risk Return Ratio = Sharpe Ratio = (Total Return - Cash Return) / Volatility. Sharpe Ratio measures the return per unit of risk taken.

► July 2012 – July 2023

Defined Benefit Monthly Return Distribution



► As of July 31, 2023

Defined Benefit Asset Class Performance

Passive Return				Passive Return			
Asset Class	FYTD	5 Years	Since July 2012	Asset Class	FYTD	5 Years	Since July 2012
Equities				Fixed Income - Gov't Bonds			
Global	3.8%	7.9%	9.7%	U.S. Long Duration Gov't	-2.2%	-1.0%	0.7%
U.S. Large/Mid Cap	3.4%	11.9%	13.6%	Developed Mkts. Ex U.S. Gov't	-0.3%	0.3%	N/A
U.S. Small Cap	6.1%	5.1%	10.1%				
Developed Mkts. Ex U.S.	3.4%	4.4%	6.8%	Inflation-Linked Bonds			
Emerging Mkts.	6.2%	1.7%	3.5%	U.S. Long Duration TIPS	-1.7%	1.1%	1.2%
				U.S. Intermediate Duration TIPS	0.5%	2.9%	1.5%
				Global Inflation-Linked	-0.1%	1.1%	1.9%
Private Markets & Real Estate				Commodities			
Private Equity ¹	0.5%	15.9%	14.2%	Diversified Commodities ³	3.9%	6.4%	-0.6%
Private Credit ^{1,2}	-0.1%	8.5%	N/A				
Real Estate - Equity ¹	-1.0%	10.6%	12.1%	Multi-Asset			
Real Estate - Debt ¹	0.1%	3.2%	5.3%	Risk Parity ¹	2.6%	3.0%	3.7%
Infrastructure ^{1,4}	1.3%	N/A	N/A	Absolute Return ¹	0.4%	5.3%	5.2%
Fixed Income - Credit							
Emerging Mkts. Bonds	2.4%	0.5%	1.3%	INPRS DB	1.6%	5.9%	6.1%
Opportunistic Credit ¹	2.0%	5.2%	N/A	Global 60/40	2.3%	5.4%	6.8%

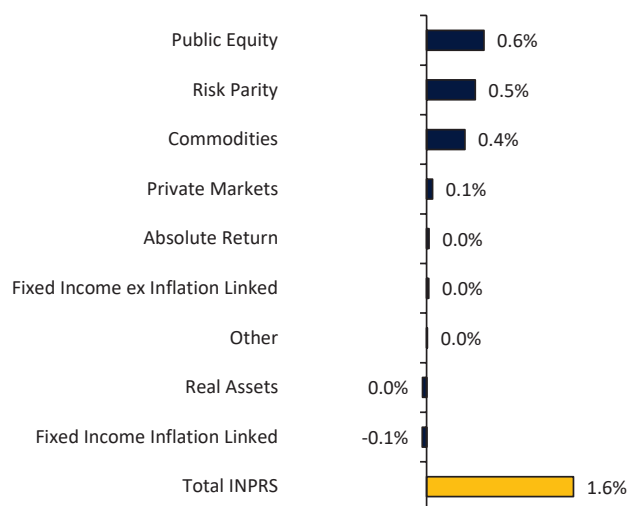


¹INPRS's actual returns used where a passive benchmark was not an accurate representation of the exposure. ²Private Credit's inception date is 10/17/2017. ³Commodities is an equal weighted blend of the Bloomberg Commodity Excess Return Index and Bloomberg Gold Subindex. ⁴Infrastructure's inception date is 7/30/2021.

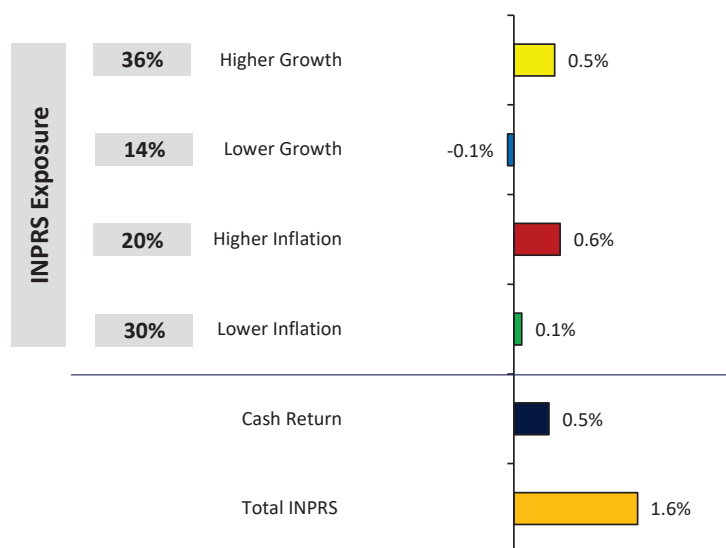
► Attribution as of July 31, 2023

Defined Benefit Performance

**Fiscal YTD Performance
Attribution by Asset Class**



**Fiscal YTD Performance
Attribution by Economic Environment**



Numbers may not add up due to rounding.

► Net of Fees as of July 31, 2023

Defined Benefit Performance

	Mkt. Value (\$MM)	%	Fiscal YTD	Cal YTD	1 Year	3 Year	5 Year	10 Year
Total DB Plan	41,324	100.0	1.62	1.62	-0.31	5.53	5.93	5.96
INPRS Blended Target Return			0.52	0.52	6.25	6.40	6.54	6.64
Passive Asset Allocation Bmk ¹			1.69	1.69	-0.67	5.27	5.62	5.52
Manager Selection Bmk ¹			1.66	1.66	-0.93	5.38	5.64	5.63
Physical + Asset Class Derivative Performance	Notional Exposure (\$MM)	%	Fiscal YTD	Cal YTD	1 Year	3 Year	5 Year	10 Year
Public Equity	8,038	19.5	3.17	3.17	12.36	10.45	8.41	9.06
MSCI ACWI Market Net Index			3.82	3.82	12.54	10.48	7.87	8.50
Private Markets²	6,436	15.6	0.30	0.30	0.12	18.62	15.03	14.09
Private Markets Custom Bmk ¹			0.74	0.74	3.04	19.01	9.82	11.58
Fixed Income (Ex Inflation Linked)	6,701	16.2	0.13	0.13	-2.33	-6.18	0.58	2.35
Custom Fixed Income ex ILB Bmk ¹			0.18	0.18	-0.52	-5.49	0.99	2.43
Fixed Income (Inflation Linked)	5,773	14.0	-0.36	-0.36	-7.64	-3.16	3.11	2.98
Custom Fixed Income ILB Bmk ¹			-0.31	-0.31	-7.22	-3.32	3.37	3.09
Commodities	4,012	9.7	4.57	4.57	-0.41	16.87	3.41	-2.30
Custom Commodities Bmk ¹			3.94	3.94	-2.69	14.78	2.60	-2.98
Real Assets³	3,335	8.1	-0.34	-0.34	-0.42	11.12	9.08	9.74
Real Assets Custom Bmk ¹			-13.11	1.86	-13.07	0.58	4.50	6.20
Absolute Return	2,617	6.3	0.40	0.40	4.12	7.15	5.34	5.00
HFRI Custom Bmk ¹			0.91	0.91	2.99	6.93	4.55	3.81
Risk Parity	8,328	20.2	2.63	2.63	-7.83	-0.66	2.95	3.87
Global 60/40 Index ¹			2.31	2.31	6.75	5.06	5.40	6.14
Cash and Overlay⁴	1,153	2.8	0.44	0.44	-2.44	-5.95	-0.25	2.09

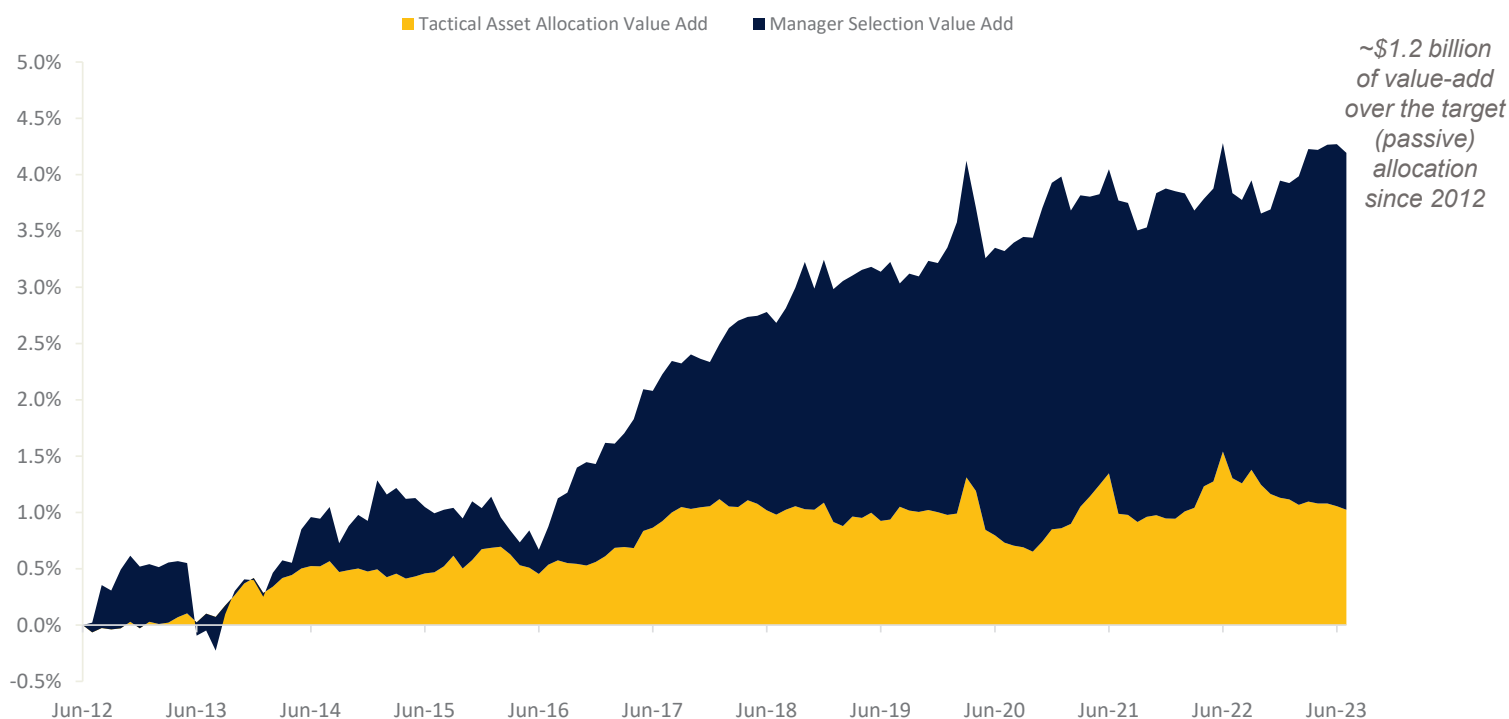
¹More information on custom benchmarks can be found in the Custom Benchmarks slide in the Appendix. ²Includes Private Equity and Private Credit. ³Includes Real Estate and Infrastructure. ⁴Return includes Cash, Parametric Overlay, and Securities Lending Income Accounts. Market value does not include stock distribution, worthless securities, or global reclaim.



► Net of Fees, July 2012 – July 2023

“Value Add” to the Defined Benefit Portfolio

Cumulative Excess Returns over the Target Allocation (Net of Fees)



► Net of Fees as of July 31, 2023

Defined Contribution Performance

	Market Value (\$MM)	% of DC	Fiscal YTD	Cal YTD	1 Year	3 Year	5 Year	10 Year
Large Cap Equity Index Fund <i>S&P 500 Index</i>	1,429	20.3	3.21 3.21	20.64 20.65	13.00 13.02	13.70 13.72	12.20 12.20	12.65 12.66
Small/Mid Cap Equity Fund <i>Russell Small Cap Completeness Index</i>	784	11.1	5.92 5.82	18.87 19.22	10.52 10.45	10.44 10.04	7.26 7.50	9.25 9.51
International Equity Fund <i>MSCI ACWI ex US IMI Index¹</i>	255	3.6	3.37 3.69	14.01 13.13	14.07 12.40	7.24 7.04	4.84 3.80	5.76 4.69
Fixed Income Fund <i>Bloomberg US Aggregate Index</i>	142	2.0	0.03 -0.07	2.53 2.02	-2.70 -3.37	-4.05 -4.46	1.01 0.75	1.74 1.50
Inflation Linked Fixed Income Fund <i>Bloomberg US TIPS Index</i>	43	0.6	0.14 0.13	2.05 2.00	-5.37 -5.39	-0.84 -0.84	2.62 2.62	1.98 2.02
Stable Value Fund <i>3yr Constant Maturity Treasury</i>	2,212	31.4	0.24 0.37	1.58 0.37	2.52 4.12	2.21 2.01	2.29 1.89	2.15 1.57
Money Market Fund <i>FTSE 3 Month T-Bill Index</i>	78	1.1	0.44 0.46	2.87 2.85	4.23 4.11	1.50 1.48	1.65 1.62	1.11 1.02
Target Date Funds²	1,692	24.0						
PERF, TRF, & LEDC PLANS	6,635	94						
Retirement Medical Benefits Account³ <i>Bloomberg Intermediate Gov/Credit Index</i>	401	5.7	0.28 0.26	0.28 0.26	-1.40 -1.44	-2.59 -2.61		
TOTAL DC ASSETS	7,036	100						



¹Reported benchmark includes the MSCI ACWI ex US Index prior to 2/1/2019 and the MSCI ACWI ex US IMI Index on and after 2/1/2019. ²Total assets in the PERF, TRF and LEDC plans. ³Not an available investment option for DC Plan participants. Numbers may not add up due to rounding.

► Net of Fees as of July 31, 2023

Target Date Funds Performance

	Market Value (\$MM)	% of Target Date Funds	Fiscal YTD	Cal YTD	1 Year	3 Year	5 Year	10 Year
2065 Fund	3	0.2	3.12	14.96	10.59			
<i>2065 Fund Index</i>			<i>3.12</i>	<i>14.53</i>	<i>9.81</i>			
2060 Fund	155	9.2	3.12	14.96	10.59	8.50	7.79	7.63
<i>2060 Fund Index</i>			<i>3.12</i>	<i>14.53</i>	<i>9.81</i>	<i>8.27</i>	<i>7.26</i>	<i>7.13</i>
2055 Fund	268	15.8	3.12	14.96	10.59	8.50	7.79	7.62
<i>2055 Fund Index</i>			<i>3.12</i>	<i>14.53</i>	<i>9.81</i>	<i>8.27</i>	<i>7.26</i>	<i>7.13</i>
2050 Fund	247	14.6	3.02	14.59	10.15	8.41	7.73	7.59
<i>2050 Fund Index</i>			<i>3.01</i>	<i>14.14</i>	<i>9.36</i>	<i>8.17</i>	<i>7.20</i>	<i>7.10</i>
2045 Fund	204	12.1	2.85	13.81	9.26	7.80	7.39	7.42
<i>2045 Fund Index</i>			<i>2.83</i>	<i>13.38</i>	<i>8.48</i>	<i>7.55</i>	<i>6.85</i>	<i>6.92</i>
2040 Fund	196	11.6	2.56	12.63	7.96	7.06	7.03	7.19
<i>2040 Fund Index</i>			<i>2.54</i>	<i>12.21</i>	<i>7.20</i>	<i>6.80</i>	<i>6.47</i>	<i>6.68</i>
2035 Fund	203	12.0	2.21	11.12	6.24	5.80	6.52	6.65
<i>2035 Fund Index</i>			<i>2.17</i>	<i>10.73</i>	<i>5.52</i>	<i>5.53</i>	<i>5.97</i>	<i>6.15</i>
2030 Fund	184	10.9	1.96	10.02	4.94	4.66	6.05	5.83
<i>2030 Fund Index</i>			<i>1.92</i>	<i>9.66</i>	<i>4.28</i>	<i>4.38</i>	<i>5.54</i>	<i>5.37</i>
2025 Fund	152	9.0	1.67	8.85	3.78	3.96	5.70	5.10
<i>2025 Fund Index</i>			<i>1.64</i>	<i>8.54</i>	<i>3.17</i>	<i>3.72</i>	<i>5.21</i>	<i>4.67</i>
2020 Fund	52	3.1	1.33	7.37	2.25	2.83	4.93	4.27
<i>2020 Fund Index</i>			<i>1.28</i>	<i>7.06</i>	<i>1.71</i>	<i>2.54</i>	<i>4.43</i>	<i>3.81</i>
2015 Fund	12	0.7	0.97	5.88	0.64	1.59		
<i>2015 Fund Index</i>			<i>0.92</i>	<i>5.62</i>	<i>0.21</i>	<i>1.33</i>		
Retirement Fund	16	0.9	0.82	5.14	-0.06	0.62	3.47	3.13
<i>Retirement Fund Index</i>			<i>0.78</i>	<i>4.93</i>	<i>-0.39</i>	<i>0.35</i>	<i>3.11</i>	<i>2.70</i>
TOTAL TARGET DATE FUNDS¹	1,692	100						



¹Target Date Fund rebalance was completed from July to September 2019. The figures above are reflective of actual performance for each of the funds. Numbers may not add up due to rounding.

► Net of Fees as of July 31, 2023

Other Funds Performance

	Market Value (\$MM)	Fiscal YTD	Cal YTD	1 Year	3 Year	5 Year	10 Year
Police & Fire Pension Relief	167	0.40	0.40	4.19	1.49	1.63	1.11
<i>FTSE 3 Month T-Bill Index</i>		<i>0.46</i>	<i>2.85</i>	<i>4.11</i>	<i>1.48</i>	<i>1.62</i>	<i>1.02</i>
Special Death Benefit Fund	9	0.28	0.28	-1.27	-2.57	1.28	1.38
<i>Bloomberg Intermediate Gov/Credit Index</i>		<i>0.26</i>	<i>0.26</i>	<i>-1.44</i>	<i>-2.61</i>	<i>1.28</i>	<i>1.41</i>

Investments/Terminations

Investment	Asset Class	Action	Effective Date ¹	Commitment/Initial Amount	Description
New Mountain Strategic Equity II, L.P.	Private Markets	New Investment	06/23/2023	\$100MM	New Mountain Strategic Equity Fund II, L.P. ("NMSEF II") is targeting \$1 billion of commitments and will seek to make minority non-control investments. NMSEF II will use the firm's focus and knowledge in a cyclical 'defensive growth' niche sectors to target high quality, often founder-owned businesses, seeking value-added acquisition/growth capital.
NM IN Co-Invest II, L.P.	Private Markets	New Investment	06/23/2023	\$50MM	NM IN Co-Invest, L.P. will invest alongside certain New Mountain funds in select deals.
KKR Project Denali Co-Investment	Real Assets	New Investment	07/31/2023	\$10MM	Co-investment opportunity made alongside existing general partner KKR.



¹Effective Date refers to the closing date for private assets and the date funds are invested for public assets.

Manager and Strategy Assessment

What We Look For

- Quality Portfolio Manager(s) & Team
- Team Continuity
- Alignment of Interest
- Competitive Advantage
- Consistent Philosophy
- Repeatable Process
- Robust Operations
- Reliable Client Service
- Strong Performance

Manager Communication

- RFP Every 10 Years
- Annual On-site Visits at Manager's Office
- Manager Meetings at INPRS
- Quarterly Update Calls

Third Party Resources

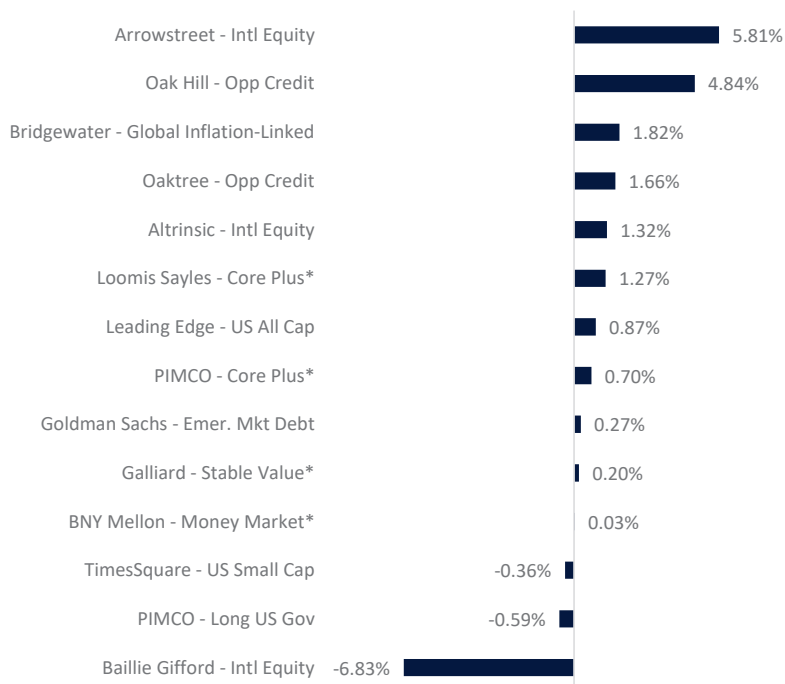
- Qualitative
 - *Verus*
- Risk/Performance
 - *Barra*
 - *Bloomberg*
 - *BNY Mellon*
 - *eVestment*



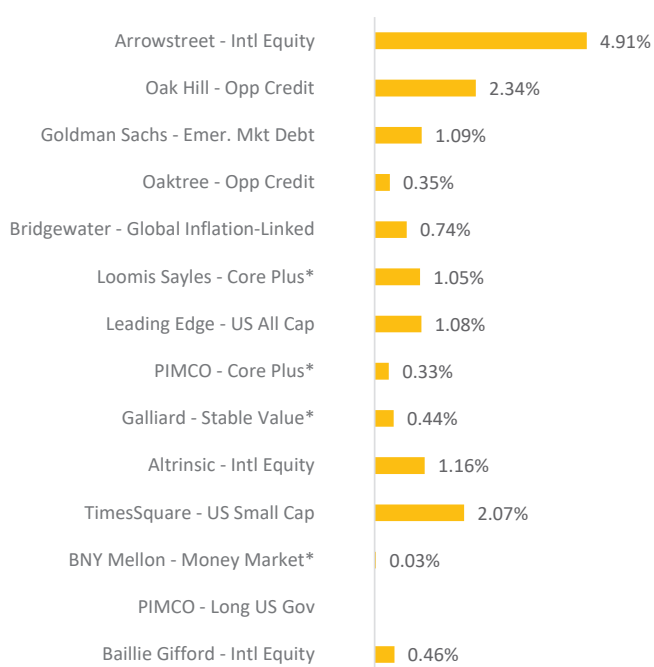
► As of July 31, 2023

Active Strategy Performance

3 Yr Excess Return



5 Yr Excess Return



*DC only

► As of July 31, 2023

Watch List

Manager	Asset Class	% of INPRS Assets	Watch List Effective Date	Investment Inception Date	Quantitative Factors				Qualitative Factors		
					3 Year Performance	5 Year Performance	Since Inception Performance (>5 years)	Other	Personnel	Investment Strategy or Process	Other
Baillie Gifford	Public Equity	2.32%	05/31/2022	11/1/2003	⚡	⚡	✓	⚡	✓	✓	✓
PIMCO	Fixed Income	3.58%	09/30/2022	9/1/2019	⚡	N/A	⚡	⚡	✓	✓	✓
Goldman Sachs	Fixed Income	2.01%	01/31/2023	7/01/2013	✓	⚡	✓	⚡	⚡	✓	✓
TimesSquare	Public Equity	0.33%	07/31/2023	11/01/2009	⚡	✓	✓	✓	✓	✓	✓

► Removals from Watch List

Manager	Asset Class	Effective Date	Reason
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⚡ = Underperforming the benchmark over the specified time period.
 ⦿ = Key area of focus during ongoing diligence and monitoring due to recent changes.
 ✓ = Outperforming from a quantitative perspective and/or in-line with qualitative expectations.

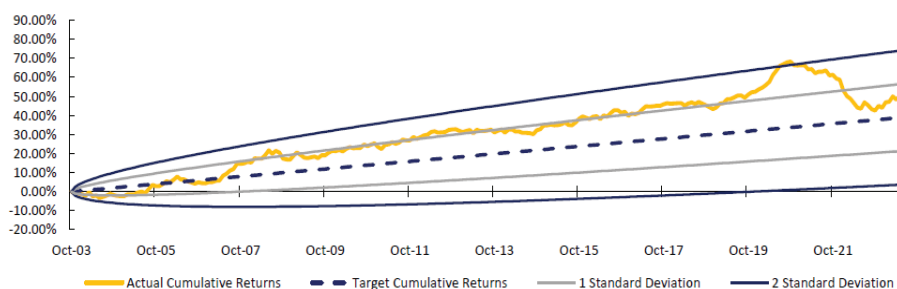
Baillie Gifford

Strategy: Active International Equity

Performance:

	3-Year	5-Year	ITD
Strategy	0.26%	3.79%	8.61%
Benchmark	7.09%	3.85%	6.19%
Difference ¹	-6.83%	-0.06%	2.42%

As of July 31, 2023
INPRS Investment Inception: November 1, 2003



Underperformance: Baillie Gifford International Alpha's 3-year and 5-year excess returns became negative in May 2022, triggering its watchlist status. Baillie Gifford International Alpha is benchmarked to an international core mandate, which can cause underperformance during periods where growth underperforms value, as has been the case recently. As such, recent underperformance has been a result of multiples contraction for some of the best performing companies over the past decade.

Conviction: Baillie Gifford ACWI ex-US is a long-term growth fund with an emphasis on holding discipline and identifying companies that deliver strong earnings growth over long term periods. It has traditionally had a high active share, which can cause periods of significant under-performance and out-performance. Despite their recent difficulties, which can be attributed to an overweight to growth relative to the core benchmark, Baillie Gifford has delivered positive excess returns since inception. There has been no change to their strategy.



¹Numbers may not add up due to rounding.

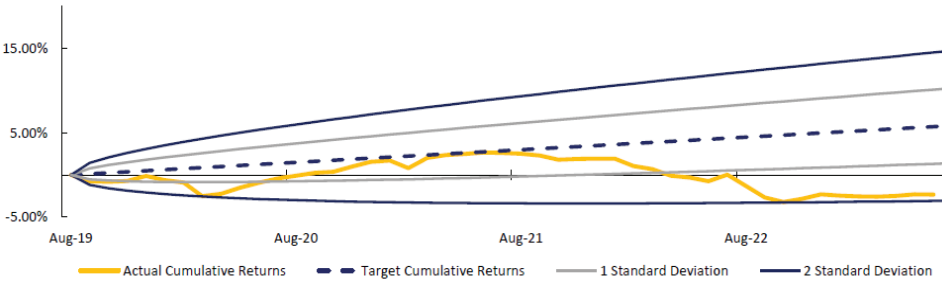
PIMCO

Strategy: Long U.S. Government Bond with Active Bond Overlay

Performance:

	3-Year	5-Year	ITD
Strategy	-14.42%	N/A	-7.51%
Benchmark	-13.84%	N/A	-6.95%
Difference ¹	-0.58%	N/A	-0.56%

As of July 31, 2023
INPRS Investment Inception: September 1, 2019



Underperformance: Overall underperformance of the PIMCO strategy has been a result of the Dynamic Bond Fund (DBF) overlay sleeve which has underperformed its benchmark by 1.68% in fiscal year 2023, and by 0.65% annually since inception.. Performance has been stronger in 2023, with the DBF outperforming its financing rate benchmark by 30bps in the first half of 2023. Given the DBF overlay has additional duration and spread risk, this strategy is likely to underperform the benchmark during periods of broad negative fixed income market performance.

Conviction: PIMCO obtains U.S Long Government bond exposure using a combination of physical and synthetic treasuries, while also pursuing additional return by investing in diversified fixed income exposures through the Dynamic Bond Fund (DBF). Prior to 2022, the DBF had demonstrated strong performance, contributing 4.2% in 2020 and 1.5% in 2021. Over longer time periods, the DBF objective is to increase the return potential by 1.50%, while slightly reducing volatility compared to a dedicated U.S. Long Government bond allocation. There have been no changes to PIMCO's strategy and process.



¹Numbers may not add up due to rounding.

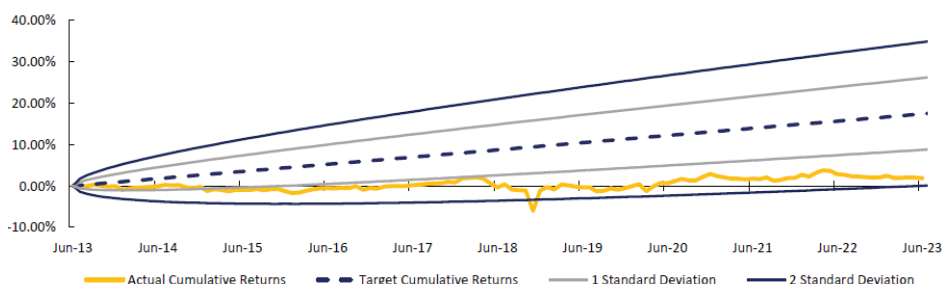
Goldman Sachs

Strategy: Active Emerging Market Debt (EMD)

Performance:

	3-Year	5-Year	ITD
Strategy	-2.27%	0.73%	1.54%
Benchmark	-2.54%	0.50%	1.41%
Difference ¹	0.27%	0.23%	0.13%

As of July 31, 2023
INPRS Investment Inception: July 1, 2013



Personnel: Goldman Sachs also recently announced the retirements of Ricardo Penfold, managing director on the EMD team, and Sam Finkelstein, global head and CIO of Fixed Income and Liquidity Solutions. Their responsibilities are being transferred to other members of the Fixed Income team.

Conviction: The Goldman Sachs EMD strategy offers a wide investment opportunity set and incorporates a robust multi-step approach that considers both macro quantitative and fundamental factors. The team implements their active investment views within a controlled risk budgeting framework that emphasizes appropriate scaling to ensure views are appropriately expressed in portfolios. While performance has been disappointing, the last two years have been characterized by extraordinary events, with markets driven by overall risk sentiment. We remain constructive on GSAM's approach to EMD and believe the team is highly experienced and well resourced.



¹Numbers may not add up due to rounding.

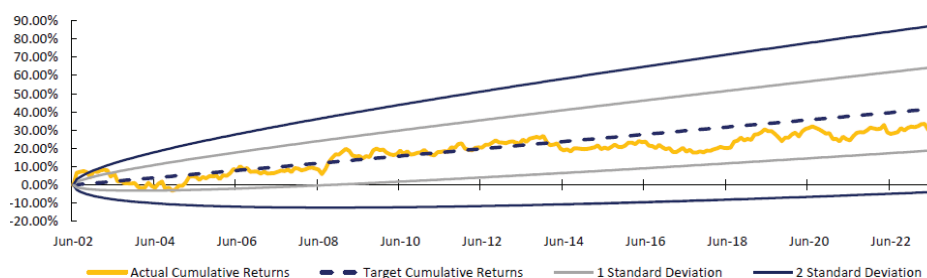
TimesSquare

Strategy: Active U.S. Small Cap Equity

Performance:

	3-Year	5-Year	ITD
Strategy	6.16%	6.89%	11.12%
Benchmark	6.52%	4.82%	9.00%
Difference ¹	-0.36%	2.07%	2.12%

As of July 31, 2023
INPRS Investment Inception: July 1, 2002



Underperformance: TimesSquare's 3-year excess return became negative during the second quarter of 2023. As 1-year excess returns have been positive, the 3-year underperformance can be attributed to difficult market environments in 2021 and 2022. While TimesSquare manages to a small-cap growth benchmark, they prioritize quality growth, and can underperform during "junk rallies" in which speculative growth companies see strong performance. This was especially the case in 2021, in which profitless health care and lower quality energy names saw dominant performance. In 2022, small-cap growth names were indiscriminately punished, which led to falling multiples in the TimesSquare portfolio

Conviction: TimesSquare is a long-term growth manager, and has seen strong performance since inception, regularly placing in the top-quartile of small-cap growth managers. As a high conviction manager, TimesSquare displays high active share, and a quality bias, which can lead to periods of significant outperformance and underperformance. There have been no changes to the overall strategy, and TimesSquare has displayed strong relative performance in fiscal year 2023.



¹Numbers may not add up due to rounding.



INPRS Investment Team

Appendix



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

SEPTEMBER 2023

Analysis date: 6/30/2023

INPRS Board Dashboard



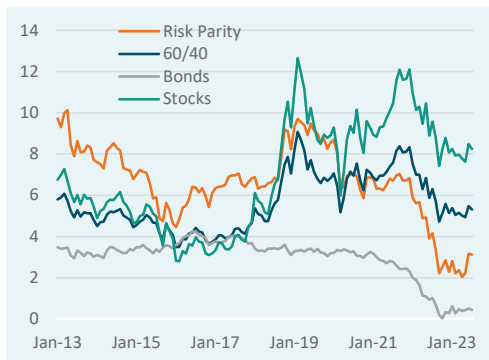
Summary

- Forecasted portfolio volatility remains elevated due to uncertainty surrounding fed policy, inflation, and geopolitical risks
- Economic exposures remain consistent with the recommended target
- Relative to the policy, the portfolio is operating with marginally higher risk - mainly coming from equity and rates factors
- Liquidity remains healthy with a coverage ratio at 2.45

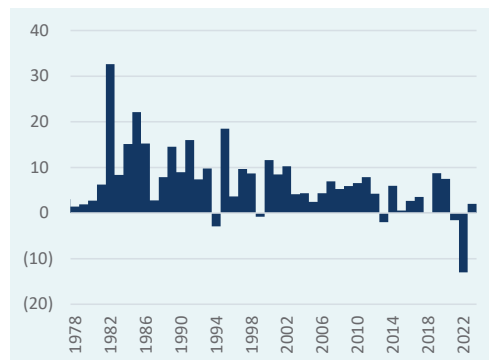
Risk parity performance

- Until 2021, Risk Parity had kept up or outperformed a global 60/40 over long-term trailing periods
- Deterioration of long-term performance is primarily due to recent returns driven by unique market forces:
 - Unprecedented drawdown in nominal bond markets in 2022 while inflation dynamics led to limited support for intermediate/long term inflation protection assets (TIPS)
 - Increase in volatility in all markets (stocks, bonds, and commodities) combined with an increase in correlation across those markets limited power of diversification
 - Diversification within markets has been declining, impacting returns relative to a 60/40 as those returns become (even more) predominantly driven by US large cap stocks

ROLLING 10-YEAR ANNUALIZED RETURNS



ANNUAL RETURNS FOR US BONDS



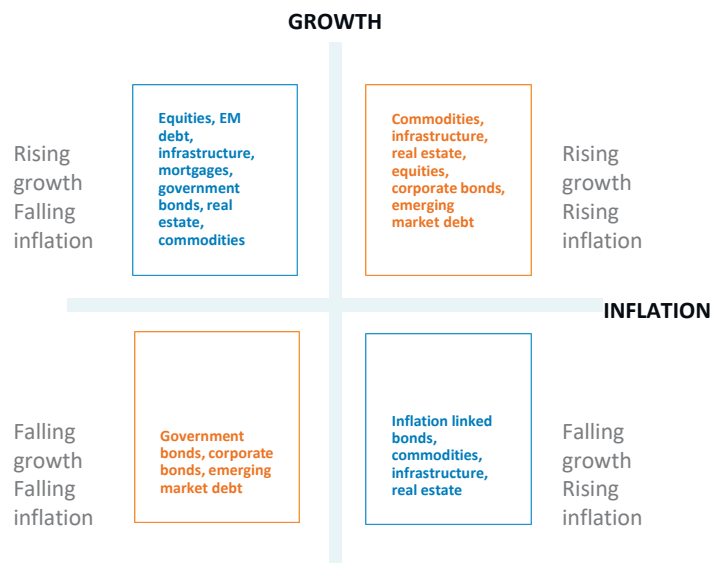
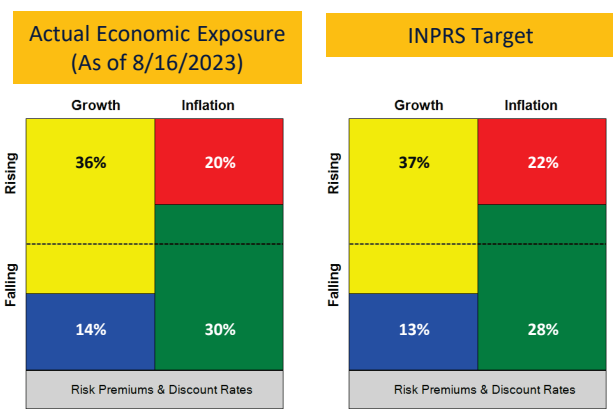
ROLLING 2-YEAR STOCK/BOND CORRELATION



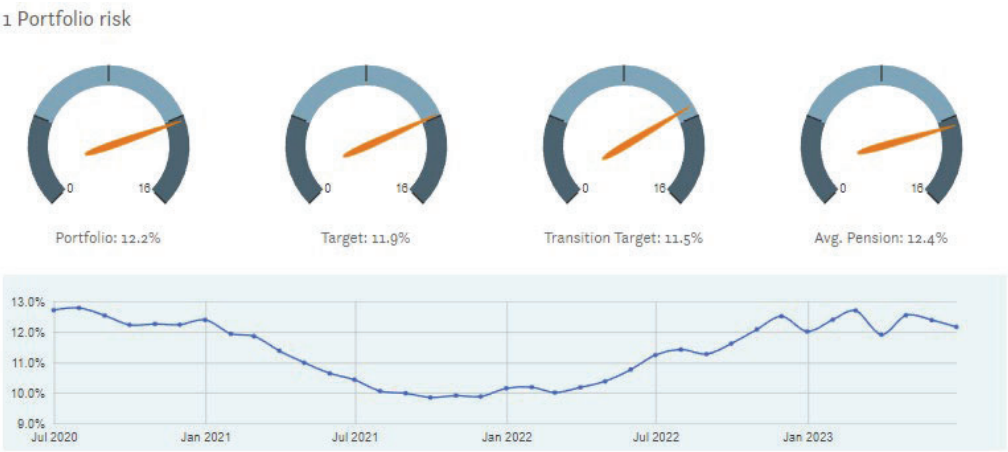
Risk Parity: HFR 10% Vol Institutional scaled up to proxy 12% volatility. Stocks = MSCI World, Bonds = Bloomberg US Aggregate, 60/40 = MSCI World + Bloomberg US Aggregate with monthly rebalancing.

Source: Morningstar, HFR, MPI, Verus

Economic sensitivity



Portfolio risk

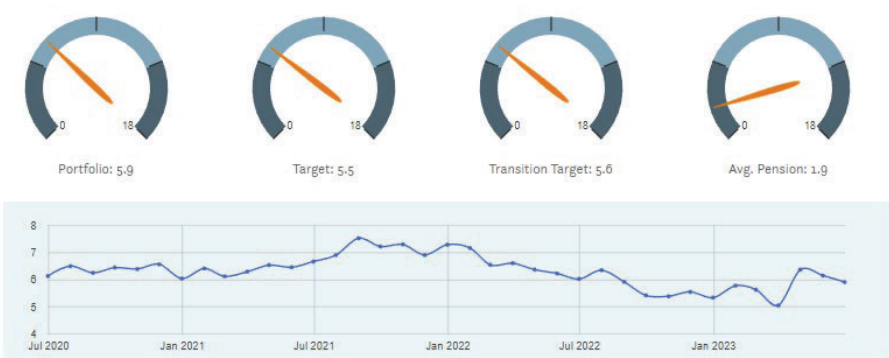


Portfolio beta and duration

2 Portfolio equity beta



3 Portfolio interest rate risk - Duration



Spread duration and inflation risk

4 Portfolio credit risk - Spread duration

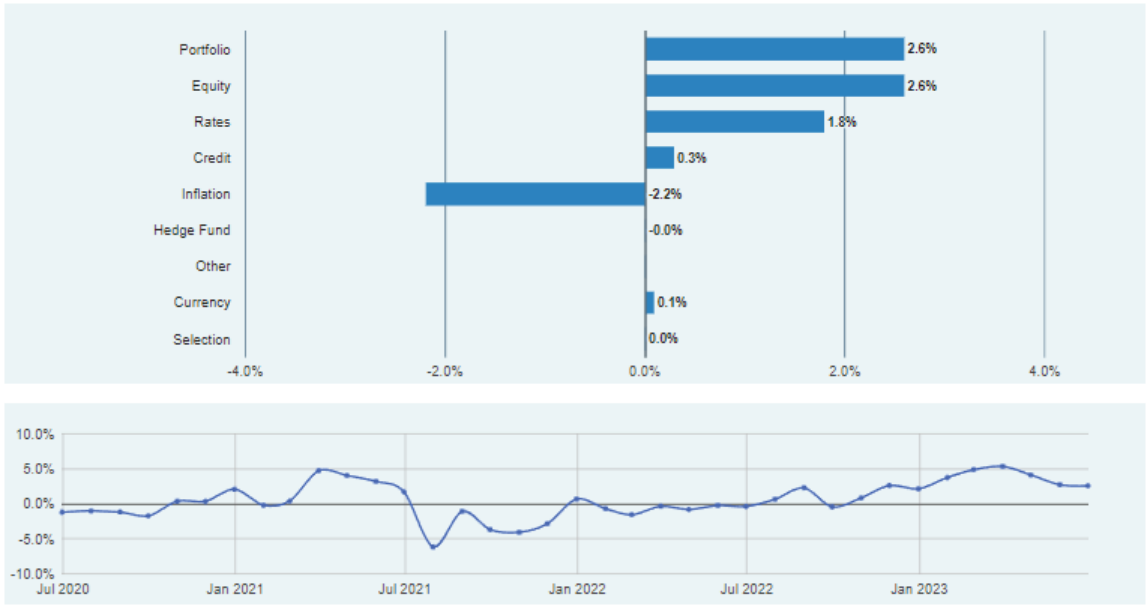


5 Inflation Factor Risk Contribution



Relative risk factor contribution

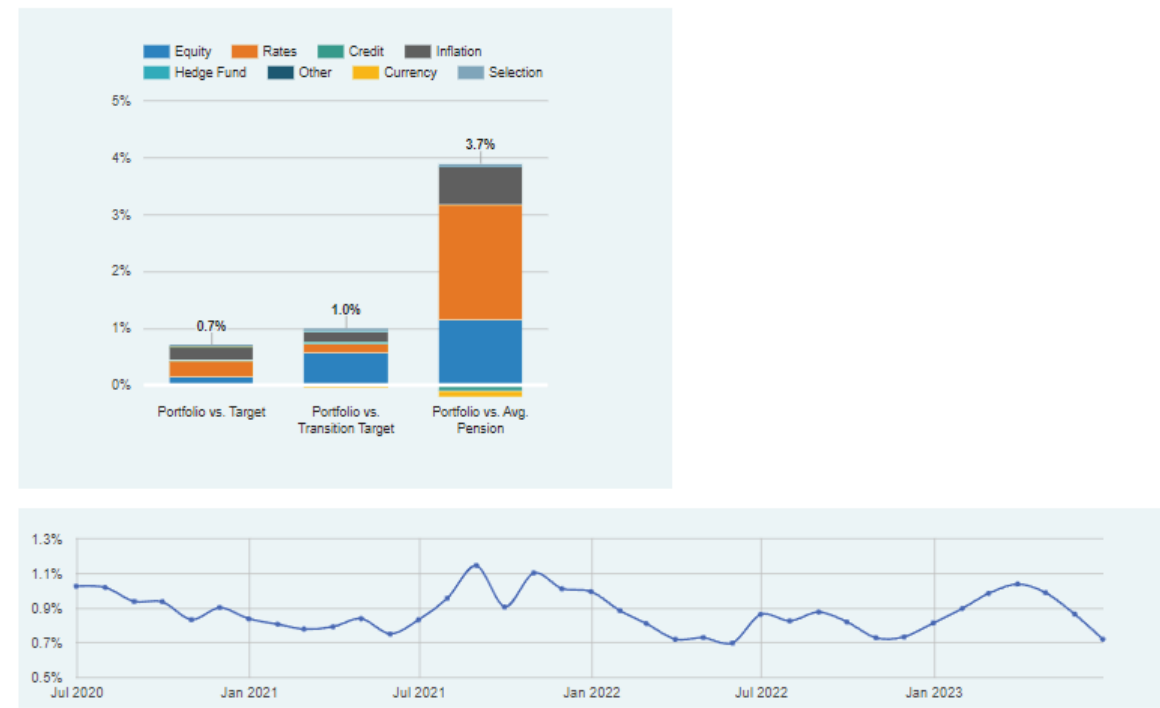
7 Risk factor weight relative to target



Active risk

Active risk measured the volatility of excess returns between two portfolios. Below we look at the portfolio relative to the target policy and the portfolio relative to an average pension.

12 Active risk contribution by risk factor



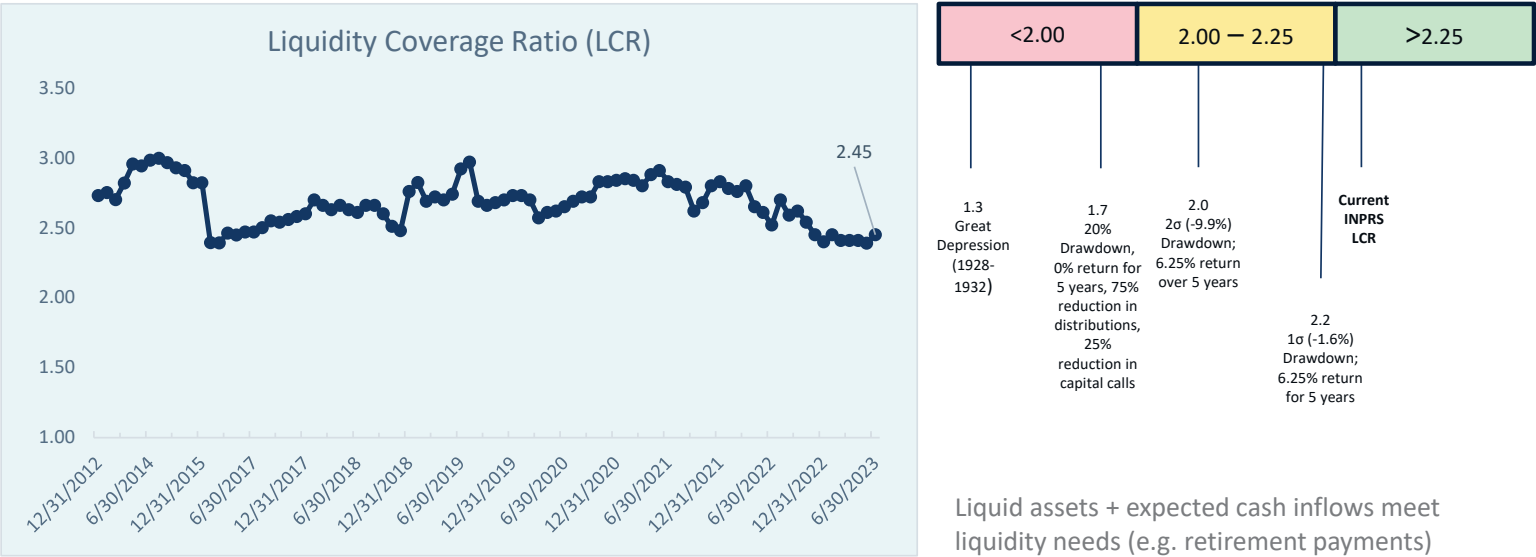
Exposure allocation by asset class

		Portfolio	Target	Transition Target	Avg. Pension
Absolute Return Total		7.0%	5.0%	7.0%	2.7%
Cash Total		0.0%	0.0%	0.0%	1.5%
	Gold	4.8%	5.0%	5.0%	
	Diversified	4.9%	5.0%	5.0%	0.8%
	Commodity Basket	0.0%			
Commodities Total		9.7%	10.0%	10.0%	0.8%
Fixed Income (Ex Inflation-Linked)					
	Fixed Income Core				15.1%
	Unconstrained	2.1%	2.5%	2.5%	
	Opportunistic Credit	3.1%	2.5%	2.5%	1.9%
	EMD	4.9%	5.0%	5.0%	0.7%
	Long Government	7.3%	5.0%	8.8%	3.7%
	Domestic Overlay Bond Futures	0.0%			
	Global Ex US Government	1.0%	5.0%	1.3%	1.6%
	Int'l Fixed Income Overlay	0.0%			
Fixed Income (Ex Inflation-Linked) Total		18.5%	20.0%	20.0%	23.0%
Fixed Income (Inflation-Linked)					
	US TIPS	4.8%	5.0%	5.0%	2.1%
	US TIPS - Medium Term	5.1%	5.0%	5.0%	
	Global ILBs	2.6%	2.5%	2.5%	
	Global ILB - Medium Term	2.6%	2.5%	2.5%	
Fixed Income (Inflation-Linked) Total		15.0%	15.0%	15.0%	2.1%
Private Markets					
	Private Credit	4.9%	5.0%	4.0%	1.3%
	Private Equity	11.3%	10.0%	10.0%	9.2%
Private Markets Total		16.2%	15.0%	14.0%	10.5%
Private Real Assets					
Total		8.4%	10.0%	9.0%	7.6%
Public Equity					
	International Equity	7.1%	7.8%	7.8%	25.2%
	Domestic Equity	12.3%	12.2%	12.2%	25.7%
Public Equity Total		19.4%	20.0%	20.0%	50.9%
Risk Parity Total		19.6%	20.0%	20.0%	0.9%
Portfolio Total		115.5%	115.0%	115.0%	100.0%

Unconstrained contains the PIMCO DBF account. Global ILBs contain the Pure Alpha component of Bridgewater's International Inflation Linked Bond Portfolio. Commodities and Gold are roughly split 50/50 of the Commodities Overlay Basket. Total Exposure column contains the Plan allocations including overlays. Numbers are as of 8/16/2023, no Risk Parity adjustment.

Liquidity Coverage (5-year Projection)

The liquidity coverage ratio measures if the plan has enough liquidity to cover cash-flow needs. Values greater than one indicate there is sufficient liquidity.



The Formula and additional details are provided in the Appendix. The great Depression assumes a 75% reduction in distributions and a 0% reduction in capital calls.

Appendix

Definitions

Portfolio risk: The total risk of an asset, which is the standard deviation of the asset's total return distribution, expressed as a percent.

Portfolio equity beta: Equity risk presented by equity beta to market. Equity beta is a measure describing the sensitivity of portfolio returns with returns of the equity market (MSCI ACWI).

Portfolio interest rate risk – Duration: Interest rate risk presented by duration and dollar movement of portfolios. Duration of a financial asset that consists of fixed cash flows is the weighted average of the times until those fixed cash flows are received (measured in years). It also measures the percentage change in price for a given change in yields (the price sensitivity to yield).

Portfolio credit risk – Spread Duration: Credit risk presented by spread duration and dollar movement of portfolios. Spread duration measures the percentage change in price for a one percentage point change in spreads.

Active risk: Active risk in terms of annual tracking error. Tracking error measures how closely a portfolio follows its benchmark. It is the standard deviation of the difference between the portfolio and benchmark returns.

Definitions

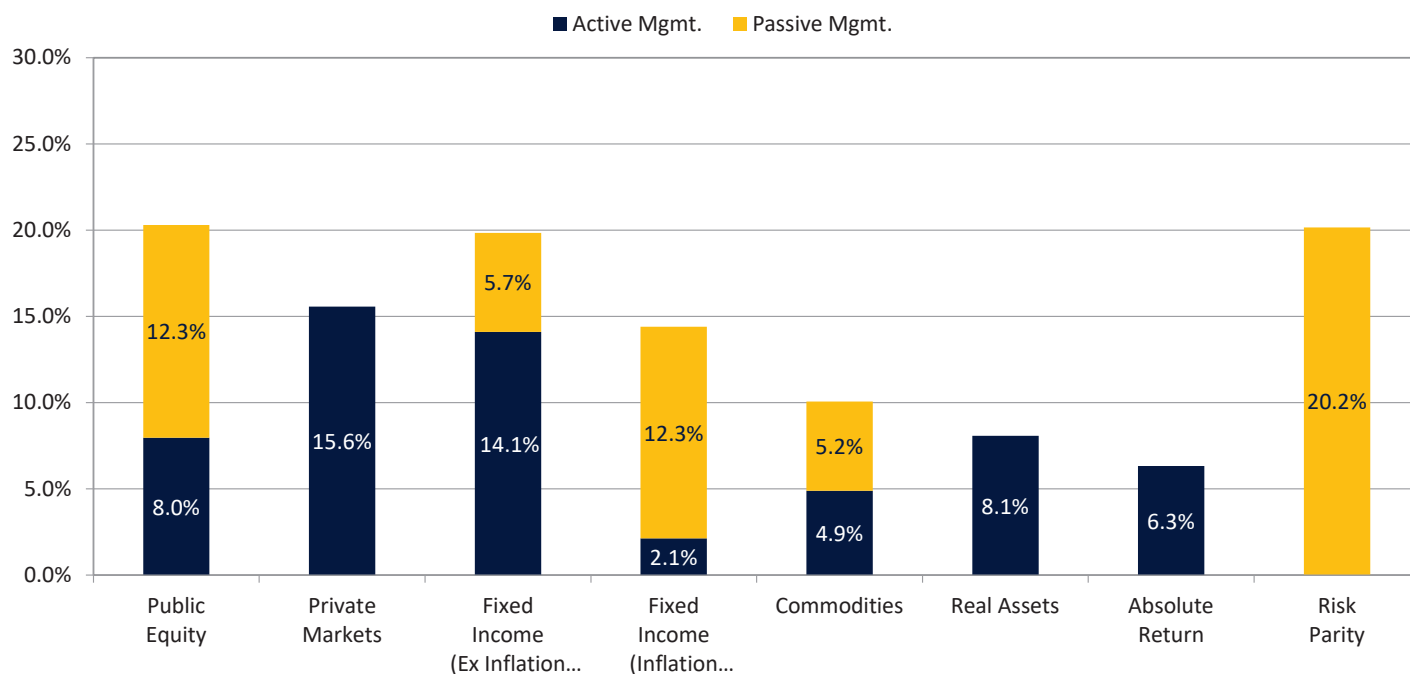
Liquidity Coverage Ratio (LCR):

$$\text{Liquidity Coverage Ratio (LCR)} = \frac{\begin{aligned} &\text{Liquid Financial Assets (stressed market condition)} \\ &\Sigma(\text{Distributions from Illiquid Assets}) \\ &\Sigma\left(\frac{\text{Employer}}{\text{Employee}} \text{Contributions}\right) \\ &\Sigma(\text{State Appropriations}) \\ &\Sigma(\text{Investment Income}) \end{aligned}}{\begin{aligned} &\Sigma(\text{Benefit Payments}) \\ &\Sigma(\text{Capital Calls for Illiquid Assets}) \\ &\Sigma(\text{Plan Expenses}) \end{aligned}}$$

LCR Value	Implication
<1	The plan will need to sell illiquid assets to cover cash flows
1	The plan has sufficient liquidity to cover all cash flows
>1	The plan will not be required to sell illiquid assets to cover liquidity needs

► As of July 31, 2023

Active vs. Passive Management



INPRS Historical Asset Class Returns

FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	July FY 2023
					Dom Eq +23.58%				Cmmdty +21.96%			Cmmdty +54.98%			
	Dom Eq +15.98%	Dom Eq +32.91%			Intl Eq +21.34%				Dom Eq +15.61%	Private Eq +20.85%	TIPS +14.59%	Private Eq +54.97%			
	FI no Tips +15.84%	Intl Eq +30.78%			Private Eq +19.63%			Intl Eq +23.08%	Private Eq +15.97%	FI no Tips +9.99%	FI no Tips +9.62%	Dom Eq +45.13%			Dom Eq +4.91%
	Private Eq +15.79%	Cmmdty +28.87%		Dom Eq +21.05%	Risk Parity +16.69%		FI no Tips +8.94%	Dom Eq +18.70%	Total RE +12.20%	Total RE +8.67%	LT BENCH +6.75%	Intl Eq +38.87%			Cmmdty +4.57%
	INPRS DB +13.81%	INPRS DB +19.37%	Private Eq +11.95%	Intl Eq +15.20%	INPRS DB +13.73%		Total RE +8.09%	Private Eq +12.71%	INPRS DB +9.33%	Risk Parity +8.43%	Dom Eq +5.19%	INPRS DB +25.47%			Intl Eq +2.70%
	HF +11.54%	Private Eq +18.74%	TIPS +11.07%	Total RE +13.77%	Cmmdty +12.79%	Private Eq +10.94%	Private Eq +6.81%	Total RE +10.35%	Risk Parity +8.14%	Dom Eq +8.07%	Risk Parity +3.16%	Risk Parity +23.72%			Risk Parity +2.63%
	Intl Eq +10.70%	Total RE +18.86%	Total RE +9.01%	Private Eq +11.71%	HF +10.34%	Total RE +10.60%	LT BENCH +6.75%	INPRS DB +7.98%	Intl Eq +7.82%	INPRS DB +7.35%	Total RE +2.56%	Total RE +16.78%	Real Assets +17.88%	Dom Eq +25.57%	LT BENCH +0.52%
	TIPS +10.02%	HF +10.86%	LT BENCH +6.75%	HF +6.93%	Total RE +10.24%	LT BENCH +6.75%	TIPS +5.36%	HF +7.80%	LT BENCH +6.75%	LT BENCH +6.75%	INPRS DB +2.56%	HF +12.20%	Private Eq +12.92%	Intl Eq +15.91%	Private Eq +0.46%
Cmmdty +12.42%	LT BENCH +7.00%	TIPS +9.02%	FI no Tips +6.67%	LT BENCH +6.75%	FI no Tips +7.05%	Dom Eq +6.73%	Risk Parity +1.69%	LT BENCH +6.75%	TIPS +5.92%	TIPS +5.66%	Private Eq +1.80%	LT BENCH +6.75%	Cmmdty +9.63%	LT BENCH +6.25%	HF +0.40%
LT BENCH +7.00%	Total RE +0.22%	LT BENCH +7.00%	Dom Eq +3.34%	INPRS DB +5.98%	LT BENCH +6.75%	HF +3.77%	INPRS DB +1.19%	Risk Parity +4.61%	HF +5.46%	HF +4.24%	HF +0.36%	TIPS +6.26%	HF +8.20%	HF +2.96%	INPRS DB +1.62%
FI no Tips +1.69%	Cmmdty +0.06%	FI no Tips +6.56%	INPRS DB +0.67%	FI no Tips +0.52%	TIPS +5.37%	FI no Tips +1.54%	Dom Eq +0.10%	FI no Tips +1.89%	FI no Tips +1.18%	Intl Eq +2.64%	Intl Eq +0.13%	FI no Tips +3.41%	LT BENCH +6.25%	INPRS DB +2.18%	FI no Tips +0.13%
TIPS -2.29%		HF -2.64%	Risk Parity -0.43%			INPRS DB -0.03%	HF -2.87%	TIPS -0.23%		Cmmdty -8.16%	Cmmdty -26.76%		INPRS DB -6.44%	Real Assets -0.07%	Real Assets -0.34%
HF -16.04%		Cmmdty -11.71%	TIPS -3.59%			TIPS -0.09%	Intl Eq -8.64%	Cmmdty -6.67%					TIPS -7.44%	FI no Tips -0.13%	TIPS -0.36%
Private Eq -19.17%		Intl Eq -14.54%	Cmmdty -4.41%			Intl Eq -2.46%	Cmmdty -19.61%						Risk Parity -16.63%	Private Eq -0.80%	
INPRS DB -20.23%						Risk Parity -3.14%							FI no Tips -17.06%	TIPS -2.66%	
Total RE -23.09%						Cmmdty -30.33%							Dom Eq -19.14%	Risk Parity -2.58%	
Dom Eq -25.72%													Intl Eq -22.66%	Cmmdty -5.18%	
Intl Eq -30.67%															



► Only Risk Parity and Public Asset Classes

INPRS Historical Asset Class Returns

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	July FY 2024
		Risk Parity +21.67%	US Eq +32.36%			US Eq +25.22%										
		US Eq +15.68%	Intl Eq +30.26%			Intl Eq +22.28%				US Eq +14.77%	US Eq +8.98%					
		Intl Eq +11.49%	Commodities +25.91%	Risk Parity +13.26%		Risk Parity +16.69%		Global ILBs +9.78%		Risk Parity +8.14%	Risk Parity +8.43%	US Tsy. +10.45%	Commodities +45.61%			
		US TIPS +9.52%	Risk Parity +19.84%	US TIPS +11.66%		Commodities +8.21%		Intl Bonds +8.97%		Intl Eq +7.75%	US Tsy. +7.24%	US TIPS +8.28%	US Eq +44.15%			Commodities +6.26%
		Global ILBs +7.86%	US TIPS +7.74%	US Tsy. +9.04%	US Eq +21.48%	DB Target +6.75%	Global ILBs +8.54%	DB Target +6.75%	Intl Eq +20.43%	Commodities +7.35%	DB Target +6.75%	Intl Bonds +6.79%	Intl Eq +37.18%			Intl Eq +4.20%
Intl Bonds +8.11%	DB Target +6.75%	DB Target +6.75%	Global ILBs +7.94%	Intl Eq +13.91%	Intl Bonds +4.84%	US Eq +7.29%	US Tsy. +6.22%	US Eq +18.50%	DB Target +6.75%	Global ILBs +5.75%	DB Target +6.75%	Risk Parity +23.72%				US Eq +3.58%
DB Target +6.75%	US Tsy. +6.67%	Global ILBs +6.10%	Intl Bonds +6.85%	DB Target +6.75%	Global ILBs +4.45%	DB Target +6.75%	US TIPS +4.35%	DB Target +6.75%	Global ILBs +2.72%	US TIPS +4.84%	US Eq +6.52%	DB Target +6.75%			US Eq +18.93%	Risk Parity +2.63%
US Tsy. +6.47%	Intl Bonds +5.43%	US Tsy. +2.24%	DB Target +6.75%	Intl Bonds +1.67%	US TIPS +4.44%	Intl Bonds +3.59	US Eq +2.13%	Risk Parity +4.61%	Intl Bonds +2.13%	Intl Bonds +2.13%	Global ILBs +5.89%	US TIPS +6.51%	Commodities +24.27%	Intl Eq +12.47%	DB Target +0.51%	
Global ILBs +0.91%	Commodities +2.75%	Intl Bonds +0.69%	US Eq +3.84%	Global ILBs +1.20%	US Tsy. +2.04%	US Tsy. +2.31%	Risk Parity +1.69%	Global ILBs +2.95%	US TIPS +2.11%	Intl Eq +0.26%	Risk Parity +3.16%	Global ILBs +0.25%	DB Target +6.25%	DB Target +6.25%	US TIPS +0.13%	
US TIPS -1.11%			Commodities -14.32%	Risk Parity -0.43%		US TIPS -1.73%	Intl Eq -9.61%	US TIPS -0.63%	US Tsy. -0.65%	Commodities -6.75%	Intl Eq -4.74%	Intl Bonds -1.41%	US TIPS -5.14%	US TIPS -1.40%	Global ILBs -0.03%	
Risk Parity -11.19%			Intl Eq -14.79%	US Tsy. -1.64%		Risk Parity -3.14%	Commodities -13.32%	Intl Bonds -2.03%				Commodities -17.38%	US Tsy. -3.22%	US Tsy. -8.90%	Intl Bonds -1.67%	US Tsy. -0.35%
US Eq -26.59%				US TIPS -4.78%		Intl Eq -4.97%		US Tsy. -2.32%						Intl Bonds -9.10%	US Tsy. -2.13%	Intl Bonds -0.38%
Intl Eq -30.50%				Commodities -8.01%		Commodities -23.71%		Commodities -6.50%						Global ILBs -10.17%	Risk Parity -2.58%	
Commodities -47.08%														US Eq -13.89%	Global ILBs -8.30%	
														Risk Parity -16.63%	Commodities -9.61%	
														Intl Eq -19.86%		



Prior to FY2013, Risk Parity returns are a composite (net of fees) made up of 50% Bridgewater All Weather II simulated returns and 50% AQR GRP-EL simulated returns.
Index return source: Bloomberg. US Eq – Russell 3000, Intl Eq – MSCI ACWI ex-US IMI, US Treasuries – Bloomberg US Treasury Index, Intl Bonds – WGBI ex-US USD Hedged, US TIPS – Bloomberg Global Inflation-Linked: US TIPS Total Return Unhedged, Global ILBs – Bloomberg World Govt ex-US Inflation Linked Bonds All Maturities, Commodities – BCOM Total Return, US HY – Bloomberg US Corporate High Yield Total Return Index, EM Bonds – JP Morgan GBI-EM Global Diversified Custom Index (data available after 01/03/2005).

Custom Benchmarks

- **Passive Asset Allocation Bmk:** Weights for each asset class benchmark are set by the target asset allocation for the fiscal year. The return for Risk Parity, Real Estate, Infrastructure, Private Equity, and Private Credit are equal to the asset class returns and not the benchmark. Plan leverage (as well as assumed financing) is explicitly incorporated within the benchmark; however, leverage residing within any portable alpha strategies has been excluded.
- **Manager Selection Bmk:** Weights for each asset class benchmark are set equal to the Beg. Adjusted values of the asset class at the start of the month. The return for Cash Overlay, Risk Parity, Real Estate, Infrastructure, Private Equity, and Private Credit are equal to the asset class returns and not the benchmark. Plan leverage (as well as assumed financing) is explicitly incorporated within the benchmark; however, leverage residing within any portable alpha strategies has been excluded.
- **Private Markets Custom Bmk:** Made up of two custom benchmarks for Private Equity and Private Credit. 100% Private Equity from July 2008-September 2017, 96% Private Equity and 4% Private Credit from October 2017-June 2021, and 77% Private Equity and 23% Private Credit from July 2021-Present. October 2017 marked the inception of Private Credit.
- **Private Equity Custom PME:** Made up of the following components lagged one quarter: 60% Russell 2000 Index, 20% MSCI EAFE Small Cap Index, 15% CS US High Yield Index, and 5% CS Western European High Yield Index EUR Hedged plus 3.00%.
- **Private Credit Custom PME:** Made up of the following components lagged one quarter: 50% CS Leverage Loan Index, 33% S&P BDC Index, and 17% CS Western European Leveraged Loan Index plus 1.50%.
- **Custom Fixed Income ex ILB Bmk:** 29% Bloomberg US Long Government, 29% WGBI ex-US 25% Japan Cap (USD Hedged), 14% JPM GBI EM, 14% JPM EMBI, 7% ICEML High Yld Mstr II, 6% CS Leveraged Loan Total Return Index, 1% CS Western Europe Leveraged Loan Total Return Index
- **Custom Fixed Income ILB Bmk:** 34.5% ICE BofA ML Treasury Inflation-Linked 15+ years, 14% Bloomberg US Treasury Inflation Notes 1-10 years, 52% Custom weighted mix of country indices within the Bloomberg Capital World Government Inflation-Linked Bond Index, 100% Hedged to USD (Country weights: 40% US, 30% Euroland, 15% UK, 10% Canada, 5% Sweden)
- **Custom Commodities Bmk:** An equal weighted blend of the Bloomberg Commodity Excess Return Index and Bloomberg Gold Excess Return.
- **Real Asset Custom Bmk:** Made up of two benchmarks for Real Estate and Infrastructure. 100% Real Estate from February 2005-June 2021, 87.5% Real Estate and 12.5% Infrastructure from July 2021-June 2022, and 78% Real Estate and 22% Infrastructure from June 2022-Present. June 2021 marked the inception of Infrastructure.
- **Real Estate Custom PME:** Made up of the following components lagged one quarter: 70% FTSE NAREIT All Equity REITS and 30% Bloomberg CMBS.
- **HFRI Custom Bmk:** 45% HFRI Relative Value/40% HFRI Macro/10% HFRI Fund of Funds/5% HFRI Event-Driven
- **Global 60/40 Index:** 60% MSCI ACWI Market Net Index (Equity)/ 40% Bloomberg Global Aggregate (Fixed Income)





Total Performance Summary

Report ID: IPM0005

TOTAL NET OF FEES

Reporting Currency: USD

07/31/2023

					Annualized					
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
TOTAL DEFINED BENEFIT PLAN	PR8GCRIF0000	41,324,157,091.23	100.00	1.62	-0.31	5.53	5.93	5.96	5.90	07/01/1992
INPRS Blended Target Return	PR8GX0903TAR			0.52	6.25	6.40	6.54	6.64	6.72	07/01/1992
Excess Return				1.10	-6.56	-0.86	-0.61	-0.68	-0.81	07/01/1992
Passive DB Target w Notional	PR8GX09PTGNL			1.69	-0.67	5.27	5.62	5.52		07/01/1992
Excess Return				-0.08	0.36	0.27	0.31	0.44		07/01/1992
DB Manager Selection Index v2	PR8GXCOMPNTL			1.66	-0.93	5.38	5.64	5.63	5.58	07/01/1992
Excess Return				-0.05	0.62	0.16	0.29	0.34	0.33	07/01/1992
FTSE Treasury Bill-3 Month	IX1F00001668			0.46	4.11	1.48	1.62	1.02	2.36	07/01/1992
Excess Return				1.16	-4.42	4.06	4.31	4.94	3.54	07/01/1992
TOTAL PUBLIC EQUITY NOTIONAL	PR8GI001NTL0	8,037,610,804.70	19.45	3.17	12.36	10.45	8.41	9.06	6.67	01/01/2008
MSCI All Country World Investable	IX1F0000972C			3.82	12.54	10.48	7.87	8.50	5.87	01/01/2008
Market Net Index										
Excess Return				-0.66	-0.18	-0.03	0.55	0.55	0.80	01/01/2008
TOTAL PUBLIC EQUITY	PR8GI0010000	6,759,852,345.70	16.36	3.89	14.91	10.53	8.45	9.08	6.69	01/01/2008
TOTAL DOMESTIC EQUITY	PR8GI0100000	3,799,917,923.72	9.20	4.91	14.38	13.59	11.27	11.69	9.39	03/01/2001
Russell 3000 Index	IX1F00003858			3.58	12.65	13.13	11.45	12.14	8.21	03/01/2001
Excess Return				1.32	1.74	0.46	-0.18	-0.44	1.18	03/01/2001
LEADING EDGE EQUITY	PR8G10020000	178,338,254.43	0.43	4.51	9.36	14.11	8.83	9.84	9.50	09/01/2008
Leading Edge Custom	PR8GX0903LED			4.82	8.22	13.24	8.07	10.49	9.78	09/01/2008
Excess Return				-0.30	1.14	0.87	0.75	-0.65	-0.28	09/01/2008
Parametric Equity Notional	PR8G1531NTL0	2,344,166,000.00	5.67	2.81	8.11				0.02	08/01/2021
S&P 500 - Total Return Index	IX1F00079488			3.21	13.02				3.81	08/01/2021
Excess Return				-0.40	-4.90				-3.80	08/01/2021
RhumbLine SmallCap Value	PR8G00730000	93,592,690.82	0.23	7.54	3.89	17.62	4.81		8.68	04/01/2016
Russell 2000 Value Index	IX1F00039298			7.55	3.94	17.46	4.69		9.03	04/01/2016
Excess Return				-0.01	-0.05	0.16	0.12		-0.35	04/01/2016
TIMESQUARE SMALL CAP GROWTH	PR8GITIMES00	159,571,639.01	0.39	5.87	14.06	6.16	6.89	9.42	11.11	07/01/2002
Russell 2000 Growth Index	IX1F00039058			4.68	11.58	6.52	4.82	8.54	9.01	07/01/2002
Excess Return				1.20	2.48	-0.36	2.06	0.88	2.11	07/01/2002
TOTAL INTERNATIONAL EQUITY	PR8GI0200000	2,959,934,421.98	7.16	2.70	15.21	6.69	5.14	6.11	7.27	11/01/2003
MSCI ACWI ex US IMI Net	IX1F00074857			4.20	12.96	7.22	3.80	4.85	6.38	11/01/2003
Excess Return				-1.50	2.25	-0.53	1.35	1.26	0.89	11/01/2003
ALTRINSIC ACWI EX U.S.	PR8GIALTRN00	672,019,183.41	1.63	2.48	16.61	8.41	4.42	5.87	5.97	10/01/2009
MSCI All Country World Ex United States Net Index	IX1F00269138			4.07	13.42	7.09	3.85	4.72	4.84	10/01/2009
Excess Return				-1.58	3.20	1.32	0.57	1.16	1.13	10/01/2009



Total Performance Summary

Report ID: IPM0005

TOTAL NET OF FEES

Reporting Currency: USD

07/31/2023

				Annualized						
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
ARROWSTREET ACWI EX U.S. MSCI All Country World Ex United States Net Index	PR8GIARROW00 IX1F00269138	1,163,902,090.54	2.82	3.49 4.07	19.24 13.42	12.89 7.09	8.88 3.85	8.22 4.72	8.19 4.84	10/01/2009 10/01/2009
Excess Return				-0.57 4.07	5.82 13.42	5.81 7.09	5.03 3.85	3.50 4.72	3.35 6.19	10/01/2009 11/01/2003
Baillie Gifford ACWI ex U.S. MSCI All Country World Ex United States Net Index	PR8F12110002 IX1F00269138	1,114,311,802.94	2.70	1.95 4.07	13.14 13.42	0.26 7.09	3.79 3.85	6.15 4.72	8.61 6.19	11/01/2003 11/01/2003
Excess Return				-2.12 4.07	-0.28 13.42	-6.83 7.09	-0.06 3.85	1.44 4.72	2.42 6.19	11/01/2003 11/01/2003
Baillie Gifford EM All Cap MSCI Emerging Markets Net Dividend Index	PR8F10190002 IX1F00274888	1,094,209.70	0.00	2.66 6.23	10.16 8.35	-0.58 1.46			2.78 4.28	07/01/2020 07/01/2020
Excess Return				-3.56 6.23	1.81 8.35	-2.05 1.46			-1.50 4.28	07/01/2020 07/01/2020
BlackRock EM Alpha Tilts MSCI Emerging Markets Net Dividend Index	PR8F10200002 IX1F00274888	2,729,536.53	0.01	3.25 6.23	5.04 8.35	-0.84 1.46			2.30 4.28	07/01/2020 07/01/2020
Excess Return				-2.97 6.23	-3.31 8.35	-2.31 1.46			-1.98 4.28	07/01/2020 07/01/2020
BlackRock World ex U.S. MSCI World Ex United States IMI Net Composite^	PR8F12280002 IX1G03166518	5,877,598.86	0.01	2.87 3.41	13.51 14.32	9.11 9.08	4.84 4.42	5.60 5.26	2.84 2.70	12/01/2007 12/01/2007
Excess Return				-0.54 3.41	-0.81 14.32	0.03 9.08	0.42 4.42	0.35 5.26	0.14 2.70	12/01/2007 12/01/2007
TOTAL EX INFL-LINKED NOTIONAL Custom Fixed Income ex ILB Bmk	PR8GI05NTL00 PR8GX0903GBX	6,700,756,809.00	16.22	0.13 0.18	-2.33 -0.52	-6.18 -5.49	0.58 0.99	2.35 2.43	2.44 2.19	01/01/2012 01/01/2012
Excess Return				-0.05 0.03	-1.80 -1.95	-0.69 -3.22	-0.40 0.93	-0.08 2.08	0.25 2.21	01/01/2012 01/01/2012
Bloomberg Global Aggregate (USDH)	IX1F0005006C			0.03 0.10	-1.95 -0.38	-3.22 -2.96	0.93 -0.35	2.08 0.27	2.21 0.23	01/01/2012 01/01/2012
Excess Return				0.10 0.18	-0.38 -0.52	-2.96 -5.49	-0.35 0.99	0.27 2.43	0.23 4.94	01/01/2012 07/01/1992
TOTAL EX INFL-LINKED BONDS Custom Fixed Income ex ILB Bmk	PR8GI0500000 PR8GX0903GBX	5,839,723,062.83	14.13	0.18 0.18	-2.68 -0.52	-7.06 -5.49	0.01 0.99	2.06 2.43	4.49 4.94	07/01/1992 07/01/1992
Excess Return				0.00 0.18	-2.15 -0.52	-1.57 -5.49	-0.97 0.99	-0.37 2.43	-0.45 4.94	07/01/1992 07/01/1992
Parametric Bonds Notional Bloomberg U.S. Government-Long Term Index	PR8G1532NTL0 IX1F00001908	1,342,824,156.25	3.25	-2.58 -2.16	-16.46 -11.18				-17.22 -15.27	08/01/2021 08/01/2021
Excess Return				-0.42 -2.16	-5.28 -11.18				-1.94 -6.95	08/01/2021 09/01/2019
PIMCO Long Government Bloomberg U.S. Government-Long Term Index	PR8F15770002 IX1F00001908	1,715,956,433.43	4.15	-1.98 -2.16	-13.30 -11.18	-14.42 -13.84			-7.51 -6.95	09/01/2019 09/01/2019
Excess Return				0.18 -2.16	-2.12 -11.18	-0.59 -13.84			-0.56 -6.95	09/01/2019 09/01/2019
State St Global Adv Dev Intl FTSE WGBI Ex US 25 Pct Japan Cap Hedged Index~	PR8F15710002 IX1F00332557	405,035,123.69	0.98	-0.29 -0.29	-4.08 -3.90	-4.20 -4.00	0.09 0.27		0.75 0.91	03/01/2016 03/01/2016
Excess Return				-0.01 -0.29	-0.18 -3.90	-0.20 -4.00	-0.18 0.27		-0.16 0.91	03/01/2016 03/01/2016

TOTAL NET OF FEES

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					Annualized					
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
TOTAL EMERGING MARKET DEBT	PR8GI0510000	2,014,989,885.43	4.88	2.61	11.17	-1.61	0.88	1.31	0.15	04/01/2013
JP Morgan GBI-Emerging Markets Global Diversified Index	IX1F00104657			2.88	14.25	-1.46	0.49	-0.22	-0.97	04/01/2013
Excess Return				-0.27	-3.08	-0.15	0.39	1.53	1.11	04/01/2013
JP Morgan Emerging Markets Bond Index GD	IX1F0000195C			1.91	6.37	-3.67	0.43	2.90	2.34	04/01/2013
Excess Return				0.69	4.80	2.06	0.45	-1.59	-2.20	04/01/2013
Goldman Sachs EMD	PR8F15570002	962,811,886.19	2.33	2.63	9.64	-2.27	0.73	1.52	1.54	07/01/2013
JP Morgan Emerging Markets Bond Index GD	IX1F0000195C			1.91	6.37	-3.67	0.43	2.90	2.99	07/01/2013
Excess Return				0.72	3.27	1.40	0.31	-1.38	-1.46	07/01/2013
JP Morgan GBI-Emerging Markets Global Diversified Index	IX1F00104657			2.88	14.25	-1.46	0.49	-0.22	-0.27	07/01/2013
Excess Return				-0.24	-4.61	-0.81	0.25	1.74	1.81	07/01/2013
Oaktree EM Total Return	PR8F15720002	54,421,960.12	0.13	0.27	16.42	1.73	1.19		3.07	10/01/2016
JP Morgan GBI-Emerging Markets Global Diversified Index	IX1F00104657			2.88	14.25	-1.46	0.49		0.81	10/01/2016
Excess Return				-2.61	2.16	3.19	0.71		2.26	10/01/2016
PIMCO EMD	PR8F15800002	997,756,039.12	2.41	2.71	12.52				-3.93	01/01/2021
JP Morgan Emerging Markets Bond Index GD	IX1F0000195C			1.91	6.37				-5.82	01/01/2021
Excess Return				0.80	6.15				1.89	01/01/2021
TOTAL DEV WORLD CORPORATE DEBT	PR8GI0520000	1,222,010,735.24	2.96	1.99	9.92	4.27	5.76		6.22	01/01/2015
Dev World Corporate Debt Cstm	PR8GX0903I52			1.35	7.27	1.64				01/01/2015
Excess Return				0.64	2.64	2.63				01/01/2015
Oak Hill Opportunistic Credit	PR8F15670002	667,444,314.11	1.62	2.19	9.90	8.97	6.16		7.10	02/01/2015
Oak Hill Opp Credit Bmk	PR8GX0903OHC			1.37	7.15	4.13	3.83		4.42	02/01/2015
Excess Return				0.82	2.76	4.84	2.33		2.68	02/01/2015
Oak Hill Structured Prods II	PR8F15780002	41,424,689.00	0.10	2.38	13.88				12.99	09/01/2020
Oak Hill Opp Credit Bmk	PR8GX0903OHC			1.37	7.15				3.82	09/01/2020
Excess Return				1.02	6.73				9.17	09/01/2020
Oaktree Opportunistic Cr	PR8F15660002	317,498,644.81	0.77	1.97	11.27	5.67	3.78		3.96	01/01/2015
Oaktree Opp Credit Bmk	PR8GX0903OTC			1.33	7.48	4.20	3.79		4.44	01/01/2015
Excess Return				0.65	3.80	1.47	-0.01		-0.47	01/01/2015
Oaktree Opportunistic Cr CLV	PR8F15690002	195,643,087.32	0.47	1.28	8.55	6.22	4.58		6.70	02/01/2015
Oaktree Opp Credit Bmk	PR8GX0903OTC			1.33	7.48	4.20	3.79		4.42	02/01/2015
Excess Return				-0.04	1.07	2.02	0.78		2.28	02/01/2015

TOTAL NET OF FEES
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					Annualized					
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
PIMCO Long Credit Bloomberg U.S. Credit-Long Term Index Excess Return	PR8F15760002 IX1F0000489C	0.00	0.00	0.00 -0.15 0.15						09/01/2019 09/01/2019 09/01/2019
TOTAL INFL-LINK BONDS JUL-2021	PR8GI0410000	5,772,995,043.36	13.97	-0.36	-7.64	-3.16	3.11	2.98	4.40	02/01/2003
Custom Fixed Income ILB Bmk Excess Return	PR8GX0903BIM			-0.31 -0.05	-7.22 -0.42	-3.32 0.16	3.37 -0.27	3.09 -0.11	4.34 0.06	02/01/2003 02/01/2003
BlackRock Global Infl Linked Bloomberg Glb IL 1-10Y ex US ex Italy ex Spain USDH~ Excess Return	PR8F15290002 IX1F00336147	1,019,033,227.55	2.47	0.81 0.81 0.00	-0.92 -0.92 0.01				1.28 1.72 -0.44	11/01/2021 11/01/2021 11/01/2021
Bridgewater Global Infl-Linked Bridgewater Custom BM TIPS Excess Return	PR8F15510002 PR8GX09BWTIP	701,927,601.29	1.70	-0.38 -0.14 -0.24	-10.23 -8.31 -1.92	-1.41 -3.23 1.82	1.81 1.09 0.72	3.03 2.30 0.74	4.54 2.94 1.60	11/01/2009 11/01/2009 11/01/2009
Northern Trust Long TIPS Northern Trust Blended Bmk Excess Return	PR8F15100002 PR8GX0903NTC	2,022,772,833.10	4.89	-1.71 -1.69 -0.02	-13.55 -13.42 -0.13	-8.96 -8.77 -0.19	0.89 1.06 -0.18	1.60 1.69 -0.09	4.35 4.40 -0.04	01/01/2001 01/01/2001 01/01/2001
Northern Trust Short TIPS Bloomberg U.S. Treasury Inflation Notes: 1-10 Year Excess Return	PR8F15250002 IX1F00307598	2,029,261,381.42	4.91	0.46 0.46 0.01	-3.80 -3.92 0.13				-2.78 -2.81 0.03	11/01/2021 11/01/2021 11/01/2021
TOTAL COMMODITIES NOTIONAL	PR8GI0810000	4,011,880,539.94	9.71	4.57	-0.41	16.87	3.41	-2.30	-0.08	01/01/2009
Custom Commodities Bmk Excess Return	PR8GX0903COM			3.94 0.63	-2.69 2.28	14.78 2.09	2.60 0.81	-2.98 0.67	-1.05 0.97	01/01/2009 01/01/2009
TOTAL COMMODITIES	PR8GI0800000	1,082,705,591.75	2.62	21.58	-8.20	19.68	4.90	-1.60	0.41	01/01/2009
CoreComm Div Comm NTL Gross Bloomberg Commodity Excess Return Index Excess Return	PR8G1519NTL0 IX1F00320067	1,034,211,221.80	2.50	7.29 5.78 1.51	-14.14 -11.89 -2.25				1.00 2.18 -1.18	11/01/2021 11/01/2021 11/01/2021
CoreComm Gold Notional Gross Bloomberg Gold Commodity Excess Return Index Excess Return	PR8G1520NTL0 IX1F00398377	796,045,040.00	1.93	2.08 2.11 -0.04	6.47 6.72 -0.26				2.45 3.03 -0.58	12/01/2021 12/01/2021 12/01/2021
Wellington Div Comm NTL Gross Bloomberg Commodity Excess Return Index Excess Return	PR8G1523NTL0 IX1F00320067	990,781,649.80	2.40	6.93 5.78 1.15	-0.78 -11.89 11.11				4.79 2.18 2.61	11/01/2021 11/01/2021 11/01/2021



Total Performance Summary

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Annualized										
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
Gresham Gold Notional Gross	PR8G1533NTL0	1,191,455,600.00	2.88	2.07	6.34				1.51	12/01/2021
Bloomberg Gold Commodity Excess	IX1F00398377			2.11	6.72				3.03	12/01/2021
Return Index										
Excess Return				-0.04	-0.39				-1.52	12/01/2021
TOTAL ABSOLUTE RETURN	PR8GI0600000	2,616,827,109.49	6.33	0.40	4.12	7.15	5.34	5.00	4.29	09/01/2005
HFRI Custom Bmk	PR8GX0903HFI			0.91	2.99	6.93	4.55	3.81	3.17	09/01/2005
Excess Return				-0.51	1.13	0.23	0.79	1.18	1.11	09/01/2005
TOTAL EVENT DRIVEN	PR8GI6100000	10,214,258.43	0.02	0.43	3.39	8.04	4.02	4.48	4.56	03/01/2009
HFRI Event-Driven (Total) Index	IX1F0000929C			2.28	5.54	8.76	4.70	4.62	6.57	03/01/2009
Excess Return				-1.84	-2.15	-0.72	-0.67	-0.14	-2.01	03/01/2009
King Street Capital	PR8F13060002	10,214,258.43	0.02	0.43	3.39	7.99	4.29	4.05	5.15	06/01/2009
TOTAL RELATIVE VALUE	PR8GI6200000	1,137,671,772.85	2.75	0.49	7.09	5.87	5.26	4.75	4.69	09/01/2009
HFRI Relative Value (Total) Index	IX1F0000537C			0.97	4.16	5.65	3.58	4.03	5.19	09/01/2009
Excess Return				-0.48	2.93	0.22	1.67	0.72	-0.50	09/01/2009
Aeolus Keystone PF Fund	PR8F13400002	23,163,799.00	0.06	0.76	4.75	-0.79	-0.39		0.55	05/01/2015
Garda FI Relative Value Opp	PR8F13380002	262,648,254.02	0.64	1.30	14.40	10.15	10.99		8.36	03/01/2015
HSCM Bermuda Fund	PR8F13460002	117,689,655.30	0.28	0.00	-3.53	-7.07			-4.23	07/01/2019
Mariner Partners	PR8F18082002	132,321,890.03	0.32	0.59	6.12	8.16			8.54	03/01/2020
Palmetto Catastrophe Fund	PR8F13390002	217,745.99	0.00	0.28	78.60	32.09	19.49		11.82	05/01/2015
Two Sigma AR Enhanced Fund	PR8F13330002	302,290,606.71	0.73	0.79	7.77	6.27	6.74		8.81	07/01/2014
Voloridge Fund	PR8F18092002	147,571,523.87	0.36	-1.00	3.62	5.18			5.69	06/01/2020
Whitebox Relative Value Fund	PR8F13480002	151,768,297.93	0.37	0.23	9.50	14.38			9.46	10/01/2019
TOTAL TACTICAL TRADING	PR8GI6300000	815,146,250.46	1.97	0.44	2.63	7.77	5.85	4.94	5.33	09/01/2005
HFRI Macro (Total) Index	IX1F0000536C			0.62	1.02	6.55	5.16	3.16	3.70	09/01/2005
Excess Return				-0.18	1.61	1.22	0.68	1.78	1.63	09/01/2005
Bridgewater Pure Alpha Fund II	PR8F13220002	239,093,548.00	0.58	0.09	-5.43	10.96	3.79	4.03	3.88	10/01/2012
Kirkoswald Global Macro Fund	PR8F18077002	316,201,280.38	0.77	1.33	2.47	15.54			15.69	02/01/2020
Man AHL Crossroads	PR8F13420002	257,977,782.00	0.62	-0.31	2.61	14.71	9.71		8.61	01/01/2017
Rokos Global Macro Fund	PR8F13430002	1,873,640.08	0.00	0.00	17.91	3.88	7.51		6.52	02/01/2017
TOTAL MULTI STRATEGY	PR8GI6500000	112,292,267.80	0.27	0.70	6.22	7.05	3.67	4.44	5.65	09/01/2009
DE Shaw Multi Asset Fund	PR8F13290002	112,292,267.80	0.27	0.70	6.29	8.37	7.15	6.56	6.43	07/01/2013
TOTAL FUND OF FUNDS	PR8GI6400000	374,694,196.93	0.91	0.11	4.54	8.85	6.25	5.71	4.37	10/01/2007
HFRI Fund of Funds Composite	IX1F0000607C			1.06	4.00	4.64	3.50	3.40	1.97	10/01/2007
Index										
Excess Return				-0.95	0.54	4.21	2.75	2.31	2.40	10/01/2007



Total Performance Summary

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TOTAL NET OF FEES

Reporting Currency: USD

07/31/2023

				Annualized						
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
Blackstone Quarry Fund	PR8F13170002	374,694,196.93	0.91	0.11	4.53	8.89	6.39	6.41	4.75	10/01/2007
TOTAL DISTRESSED & SPECIAL SITS	PR8GI6600000	166,808,363.02	0.40	0.03	-8.65	10.86	5.64		5.90	08/01/2017
HFRI ED: Distressed/Restructuring Index	IX1F00094527			1.02	1.91	9.46	4.46		4.77	08/01/2017
Excess Return				-0.98	-10.56	1.40	1.18		1.13	08/01/2017
Blackstone Tac Opps I	PR8F17440002	146,564,359.41	0.35	0.00	-8.22	12.90	6.94		6.94	03/01/2014
Perella Weinberg ABV Opp II	PR8F13150002	3,322,764.40	0.01	0.00	-14.62	-3.20	-3.17	-5.03	-1.29	07/01/2010
Perella Weinberg ABV Opp III	TR8F16040002	16,921,239.21	0.04	0.34	-11.67	-0.32	-1.76	0.78	3.17	03/01/2011
TOTAL RISK PARITY	PR8GI0300000	8,327,707,489.27	20.15	2.63	-7.83	-0.66	2.95	3.87	3.66	03/01/2012
Global 60/40 Index	PR8GX0903RSK			2.31	6.75	5.06	5.40	6.14	6.39	03/01/2012
Excess Return				0.33	-14.58	-5.72	-2.44	-2.27	-2.72	03/01/2012
AQR GRP EL Fund 12v	PR8F11040002	2,109,717,681.00	5.11	3.11	-3.40	2.13			4.60	05/01/2020
Bridgewater All Weathr II 12v	PR8F11050002	3,416,669,398.30	8.27	3.20	-6.58	-0.38			1.60	07/01/2020
Panagora Div Risk 12v	PR8F11060002	1,969,676,673.97	4.77	1.31	-12.73	-3.64			0.97	04/01/2020
Parametric Custom Risk Parity	PR8F19040902	831,643,736.00	2.01	2.29	-11.04				-12.89	02/01/2022
TOTAL PRIVATE MARKETS	PR8GI9100000	6,436,334,623.34	15.58	0.30	0.12	18.62	15.03	14.09	11.87	12/01/2002
Private Markets Custom Bmk	PR8GX0903CAF			0.74	3.04	19.01	9.82	11.58		12/01/2002
Excess Return				-0.44	-2.92	-0.39	5.21	2.51		12/01/2002
TOTAL PRIVATE EQUITY	PR8GI0900000	4,511,787,245.02	10.92	0.46	-1.78	20.33	15.94	14.54	12.09	12/01/2002
Private Equity Custom PME	PR8GX0903PCR			-0.37	1.17	13.34	6.64	9.97	12.03	12/01/2002
Excess Return				0.82	-2.95	6.98	9.30	4.57	0.06	12/01/2002
ABRY Advanced Securities	TR8F19000002	7,367.64	0.00	0.00	-78.13	-51.05	-39.20	-16.63	-11.16	07/01/2011
ABRY Advanced Securities II	PR8F17120002	609,750.48	0.00	0.00	-50.68	-7.12	-12.90	0.13	1.78	05/01/2011
ABRY Advanced Securities III	PR8F17450002	22,889,302.38	0.06	0.00	-2.91	14.55	-2.34		2.08	06/01/2014
ABRY Partners V	TR8F19020002	11,833.69	0.00	0.00	2.92	-0.79	0.11	6.80	6.89	07/01/2011
ABRY Partners VI	TR8F19030002	63,170.47	0.00	0.00	6.69	-7.56	-2.80	19.93	20.53	07/01/2011
ABRY Partners VII	PR8F17140002	8,487,320.36	0.02	0.00	-24.15	0.97	-5.85	4.77	4.71	08/01/2011
ABRY Partners VIII	PR8F17500002	9,992,544.17	0.02	0.00	8.77	19.31	12.27		9.23	05/01/2015
Accel-KKR Cap Ptrs CV III	PR8F20050002	15,033,785.62	0.04	6.16	-34.51	12.90			11.25	09/01/2019
Accel-KKR Cap Ptrs III (HL)	TR8F19050002	47,753.00	0.00	8.85	7.83					07/01/2011
Actis Emerging Markets III	PR8F17000002	286,000.00	0.00	0.00	56.92	-7.70	-25.63	-17.44	-13.49	05/01/2008
Advanced Tech Ventures VII	TR8F19070002	94,687.00	0.00	0.00	-43.32	-11.89	-15.83	-9.14	-7.72	07/01/2011



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Advanced Tech Ventures VIII	TR8F19080002	919,284.00	0.00	0.00	-38.69	-30.36	-25.29	-14.64	-11.13	07/01/2011
Advent International GPE VI A	PR8F16940002	4,101,137.00	0.01	0.00	-7.45	11.41	-0.50	7.26	5.26	07/01/2008
Advent International GPE VII B	PR8F17300002	7,614,260.00	0.02	0.00	-17.60	0.15	-3.11	8.89	7.76	12/01/2012
Aisling Capital II	TR8F19090002	109,923.00	0.00	0.00	62.12	99.95	349.46	116.62	93.76	07/01/2011
Aisling Capital III	TR8F19100002	31,006.00	0.00	0.00	2.22	975.55				07/01/2011
AM Pappas Life Sci Ventures IV	PR8F17080002	1,190,488.00	0.00	0.00	8.32	-2.41	-10.53	10.76	10.57	02/01/2009
American Securities Opp II	TR8F19110002	1,101,912.00	0.00	0.00	-29.16	8.28	-19.44	-7.85	-4.75	07/01/2011
Apax Europe VI	TR8F19130002	346,491.40	0.00	1.06	-20.28	13.15	6.24	12.45	11.76	07/01/2011
Apax Europe VII	TR8F19140002	23,904.39	0.00	1.06	-90.69	-22.69	-38.17	-19.40	-16.40	07/01/2011
Apollo Euro Principal Finance	TR8F19150002	6,143.82	0.00	1.06	57.54	56.65	28.19	28.88	24.78	07/01/2011
Apollo Investment Fund VI	TR8F19160002	90,131.00	0.00	0.00	-2.09	-1.83	1.52	2.16	3.56	07/01/2011
Apollo Investment Fund VII	TR8F19170002	75,313.44	0.00	0.00	2.67	86.76	30.51	20.75	21.02	07/01/2011
ARCH Venture Fund VI	PR8F16550002	56,742.79	0.00	0.00	-49.78	-15.78	-3.07	-7.27	-4.00	03/01/2004
ARCH Venture Fund VII	PR8F16790002	5,451,135.16	0.01	0.00	-26.61	-10.78	-9.68	34.49	18.02	10/01/2007
Ares Corp Opportunities III	PR8F16960002	498,905.45	0.00	0.00	-65.44	-15.99	-17.07	1.34	7.21	07/01/2008
Ares Corp Opportunities IV	PR8F17230002	20,915,339.42	0.05	0.00	-1.86	23.71	16.03	13.14	10.21	11/01/2012
Austin Ventures X	TR8F19180002	426,104.58	0.00	0.00	-39.42	108.74	67.62	35.32	31.45	07/01/2011
Bain Capital Europe Fund III	TR8F19210002	255,431.07	0.00	1.06	-20.76	-4.68	-4.03	20.53	16.33	07/01/2011
Bain Capital Fund VII	TR8F19230002	725,709.00	0.00	0.00	-3.81	69.92	16.22	19.71	25.73	07/01/2011
Bain Capital Fund X	TR8F19250002	2,086,638.00	0.01	0.00	-13.94	1.96	-5.83	7.56	7.38	07/01/2011
Baring Asia Private Equity IV	TR8F19290002	0.37	0.00	0.00						07/01/2011
BDCM Opportunity Fund	TR8F19330002	265,128.00	0.00	0.00	3.97	20.27	25.77	24.92	24.50	07/01/2011
Bertram Growth Capital II	PR8F16510002	1,744,228.08	0.00	0.00	-35.45	48.39	176.64	78.21	58.54	09/01/2010
BlackFin Financial Serv III	PR8F17099002	38,773,418.85	0.09	1.06	17.56	-30.25			-38.32	12/01/2019
Blackstone Capital Partners IV	TR8F19340002	24,989.48	0.00	0.00	42.14	8.55	9.28	8.87	8.97	07/01/2011
Blackstone Capital Partners V	TR8F19350002	22,926.41	0.00	0.00	-25.00	15.29	6.55	12.21	13.93	07/01/2011
Blackstone Capital Partners VS	TR8F19360002	68.00	0.00	-24.44	-91.94	989.33	272.45	111.33	87.79	07/01/2011
Blackstone COF IV Co-Invest	PR8F18095002	7,961,634.00	0.02	0.00	12.67				7.05	11/01/2021
Bregal Sagemount II	PR8F17800002	27,080,591.72	0.07	0.00	5.70	87.16	60.88		46.88	03/01/2017
Bregal Sagemount II Co-Inv B	PR8F19010702	17,290,291.25	0.04	0.00	14.60				44.35	01/01/2021



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Bregal Sagemount III-B	PR8F17098002	66,482,856.37	0.16	0.00	12.43	0.24			-11.61	01/01/2020
Bregal Sagemount IV B	PR8F19060302	7,867,674.18	0.02	0.00					-34.89	09/01/2022
Brentwood Assoc PE IV	PR8F16830002	3,768,514.00	0.01	0.00	-43.93	-11.34	-13.72	-1.15	1.50	02/01/2008
Brentwood Assoc PE V	PR8F17410002	57,892,136.55	0.14	1.54	3.93	15.50	8.17		7.95	01/01/2014
Brentwood Assoc PE V - Excel.	PR8F17560002	43,455,225.00	0.11	0.00	33.12	103.01	11.89		9.36	12/01/2014
Brentwood Assoc PE VI	PR8F17820002	97,875,593.17	0.24	0.00	-1.09	23.61	13.95			12/01/2017
Butterfly Fund I	PR8F17860002	88,959,431.00	0.22	0.00	8.18	17.83	8.77		3.24	06/01/2017
Caltius Partners III	TR8F19380002	110,333.00	0.00	0.00	173.44	70.67	44.21	19.13	17.72	07/01/2011
Caltius Partners IV	TR8F19390002	612,843.00	0.00	0.00	9.57	9.09	7.87	12.01	10.05	07/01/2011
Centerfield Capital Ptrs II	TR8F19420002	2,862.00	0.00	-0.83	-8.74	-46.94	-28.15	-4.10	-0.14	07/01/2011
Cerberus Institutional Ptrs S4	PR8F16640002	1,060,712.27	0.00	7.34	539.34	142.53	62.08	41.57	24.98	11/01/2006
Charterhouse Capital Ptrs IX	TR8F19470002	197,370.10	0.00	1.06	37.87	18.02	0.05	3.17	4.25	07/01/2011
CHP III Cardinal	TR8F19500002	1,731,423.64	0.00	0.00	236.85	156.30	94.52	46.10	41.33	07/01/2011
CID Capital Opportunity Fund	TR8F19510002	89,151.00	0.00	0.00	-0.18	1.55	7.97	17.68	23.59	07/01/2011
Clarity China Partners II	PR8F16390002	266,684.00	0.00	0.00	-10.27	-0.46	-1.07	-9.95	-10.66	05/01/2010
Coller International Ptrs V	TR8F19550002	1,010.27	0.00	0.00	-68.24	-37.68	-26.65	-12.30	-9.03	07/01/2011
Columbia Capital Eq Ptrs IV	TR8F19560002	520,161.66	0.00	0.00	-39.79	0.24	-2.70	15.07	14.94	07/01/2011
Credit Suisse Indiana Venture	PR8F17010002	8,906,464.87	0.02	12.69	-2.60	26.45	21.83	12.71	5.94	06/01/2008
Crescent Capital VI	PR8F17240002	5,601,367.00	0.01	0.00	0.99	13.30	11.69	9.71	8.85	09/01/2012
Crestview Partners II	PR8F17030002	22,740,158.49	0.06	0.00	2.59	19.64	9.83	13.43		11/01/2008
Crestview Partners III	PR8F17390002	63,547,159.00	0.15	0.00	3.36	15.28	13.98		8.65	03/01/2015
Crestview Partners III - WOW	PR8F17720002	14,549,204.00	0.04	0.00	-39.29	26.23	1.75		-3.76	04/01/2016
CVC Capital Partners VIII (A)	PR8F18080002	74,514,167.51	0.18	1.06	16.23				6.32	12/01/2021
CVC European Equity Partners V	PR8F16970002	1,295,953.02	0.00	1.06	-41.46	10.27	29.34	30.78	19.44	07/01/2008
CVC Strategic Opportunities II	PR8F17990002	54,262,631.66	0.13	1.06	27.14	12.16			19.37	04/01/2020
DCM IV	TR8F19590002	531,189.44	0.00	0.00	-37.62	175.92	116.30	52.41	41.60	07/01/2011
DCM V	TR8F19600002	535,816.00	0.00	0.00	-57.69	-12.13	-15.39	4.10	4.43	07/01/2011
DCM VI	TR8F19610002	1,217,756.00	0.00	0.00	-39.07	-8.30	-5.83	0.04	-0.50	07/01/2011
Energy Capital Partners I	PR8F16630002	1.01	0.00	0.00	0.00	-5.98	-22.21	-23.47	-14.06	12/01/2006
Escalate Capital I	TR8F19660002	70,613.00	0.00	0.00	-20.16					07/01/2011



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Falcon Strategic Partners III	PR8F16040002	5,967,606.00	0.01	0.00	23.60	23.90	10.11	7.84	8.90	04/01/2009
Forbion Capital II	TR8F19690002	3,559,484.88	0.01	1.77	23.90	-7.18	-3.45	16.26	11.50	07/01/2011
Fortress Investment IV	TR8F19710002	393,918.58	0.00	0.00	-14.62	-12.75	-16.25	-10.75	-6.57	07/01/2011
Fortress Investment V	TR8F19720002	2,850,855.23	0.01	-0.02	-0.62	1.98	-1.56	2.00	2.46	07/01/2011
Fortress Investment V Co-Inv	TR8F19730002	817,544.08	0.00	0.00	-14.92	-8.52	-6.99	1.54	3.20	07/01/2011
Francisco Partners Agility II	PR8F18087002	24,442,679.00	0.06	0.00	22.74				9.52	09/01/2020
Francisco Partners Conan	PR8F19020702	12,483,767.00	0.03	0.00	11.96				9.34	06/01/2021
Francisco Partners VI	PR8F18086002	77,154,665.00	0.19	0.00	5.16				11.09	01/01/2021
Gamut Investment Fund I	PR8F17670002	88,052,881.00	0.21	0.00	4.21	23.72	13.48		5.51	02/01/2016
Gilde Buy-Out Fund IV	TR8F19740002	1,201,444.32	0.00	1.78	19.68	43.17	24.74	20.33	15.16	07/01/2011
Globespan Capital Partners IV	TR8F19750002	586.38	0.00	0.00	-7.27	-28.47	-22.75	-12.24	-7.39	07/01/2011
Globespan Capital Partners V	TR8F19760002	3,466,898.87	0.01	0.00	-8.44	21.42	18.24	14.93	17.90	07/01/2011
Green Equity Investors VI	PR8F17170002	115,956,134.00	0.28	8.76	4.15	14.90	11.39	13.96	12.35	11/01/2012
Greenpark Intl Invest III	PR8F16690002	87,935.89	0.00	1.06	-29.69	-21.49	12.29	17.90	7.39	04/01/2007
GSO Capital Opps I	PR8F17060002	1,002,841.00	0.00	0.00	7.59	25.20	-6.11	-3.59	3.98	06/01/2008
GSO Capital Opps II	PR8F17180002	1,816,358.00	0.00	0.00	-13.46	13.00	2.42	6.80	9.22	03/01/2012
GSO Capital Opps III	PR8F17740002	15,691,064.00	0.04	14.18	14.03	16.45	11.28		10.24	09/01/2016
GSO Capital Opps III Co-Invest	PR8F17770002	1,895,173.00	0.00	0.00	-2.39	13.42	9.97		10.40	08/01/2017
GSO Capital Opps IV	PR8F18094002	24,603,791.00	0.06	3.89	6.15				5.64	03/01/2021
GSO Capital Sols III	PR8F17880002	16,737,408.00	0.04	0.00	2.39	18.07	4.96		6.19	04/01/2018
GSO Capital Sols III Co-Invest	PR8F17940002	608,585.00	0.00	6.31	21.57	23.21			13.16	03/01/2019
Hamilton Lane Equity Opps V-A	PR8F19020202	74,183,547.00	0.18	0.00	8.68				3.95	04/01/2021
Hellman Friedman Cap Ptrs IX	PR8F18060002	99,467,115.00	0.24	0.00	5.79	18.66			11.43	04/01/2020
Hellman Friedman Cap Ptrs VI	PR8F16650002	0.00	0.00							06/01/2007
Hellman Friedman Cap Ptrs VII	PR8F16140002	8,154,775.23	0.02	0.00	0.75	30.20	23.23	27.25	20.97	08/01/2011
Hellman Friedman Cap Ptrs VIII	PR8F17530002	91,679,755.00	0.22	0.00	-22.81	19.38	10.14		12.43	09/01/2016
Hellman Friedman Cap Ptrs X	PR8F19020402	91,751,249.00	0.22	0.00	-2.79				-1.01	11/01/2021
Hellman Friedman Co Invest	PR8F19050602	18,592,731.00	0.04	0.00	3.17				2.10	02/01/2022
Herkules Private Equity III	PR8F16010002	17,065.97	0.00	5.90	-69.43	294.96	148.95	41.99	26.82	12/01/2008
High Road Capital Partners I	TR8F19800002	1,267,565.00	0.00	0.00	-5.91	-6.91	-7.70	-3.04	1.16	07/01/2011



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Horsley Bridge Fund IX	PR8F16920002	77,665,084.00	0.19	0.00	-25.46	33.22	22.77	22.52	12.84	03/01/2008
Horsley Bridge Fund VIII	PR8F16740002	862,586.00	0.00	1.44	-5.45	18.25	7.68	11.86	9.75	03/01/2007
Horsley Bridge Intl IV	PR8F16660002	14,010,277.00	0.03	0.00	-11.87	9.24	9.78	11.33	3.60	03/01/2007
H2 Equity Partners Fund IV	TR8F19790002	1,907,319.99	0.00	1.06	39.00	50.53	248.63	153.47	116.40	07/01/2011
Indiana Future Fund I	PR8F17110002	653,262.70	0.00	0.00	-3.28	-11.56	-20.78	-5.59	-5.42	07/01/2003
Indiana Investment Fund A	TR8F19840002	1,358,823.65	0.00	11.42	14.38	-5.39	-0.31	7.62	8.97	07/01/2011
Indiana Investment Fund I	PR8F16590002	733,424.40	0.00	13.59	-8.61	-12.04	2.54	127.85	58.97	07/01/2006
Indiana Investment Fund II	PR8F17340002	60,205,660.68	0.15	1.68	44.68	38.20	32.30	18.12	16.74	02/01/2013
iNext Fund	TR8F19850002	3,379,541.82	0.01	0.00	-28.96	-12.01	1.11	14.77	12.80	07/01/2011
INPRS Private Equity Adj	PR8F16ADJ002	0.00	0.00	0.00	0.00					07/01/2022
INPRS Project Serrano	PR8F19080602	19,000,000.00	0.05	0.00					-0.23	05/01/2023
Insight Venture Partners VI	TR8F19870002	0.01	0.00	0.00	0.00	8.68	58.68	42.06	36.67	07/01/2011
Institutional Venture Ptrs XII	TR8F19880002	1,893.00	0.00	0.00	-46.24	703.82	257.46	100.66	78.51	07/01/2011
JFM China Partnership II	PR8F16020002	3,568,716.00	0.01	0.00	8.58	-5.54	-12.12	-8.47	-2.65	01/01/2009
JFM China Partnership II	PR8F16490002	491,063.00	0.00	0.00	8.63	-9.18	-10.56	-7.66	-4.30	06/01/2010
Khosla Ventures III	TR8F19890002	1,762,261.78	0.00	0.00	60.35	29.39	56.48	33.10	31.20	07/01/2011
Khosla Ventures Seed	TR8F19900002	768,441.00	0.00	0.00	-1.93	-20.68	-12.21	-11.95	-8.42	07/01/2011
KPS Special Situations III	TR8F19910002	2,014.61	0.00	0.00	436.52	91.36	148.90	77.26	63.44	07/01/2011
Lexington Capital Partners VI	PR8F16580002	258,378.00	0.00	-3.32	-8.08	-11.85	-5.97	1.65	2.27	12/01/2005
Lexington Capital Partners VII	PR8F16420002	11,236,474.00	0.03	0.00	-9.95	14.00	9.23	10.67	11.92	07/01/2010
Lightyear Fund II	TR8F19940002	0.00	0.00							07/01/2011
Lindsay Goldberg III	PR8F16950002	0.00	0.00							08/01/2008
Lion Capital Fund II	PR8F16800002	1.10	0.00	0.92	7.84	-18.54	-24.86	-14.89	-11.49	11/01/2007
MBK Partners Fund V	PR8F18081002	58,008,550.00	0.14	0.00	26.38				30.31	03/01/2021
Merit Mezzanine Fund IV	PR8F16560002	444,896.68	0.00	0.00	41.39	26.85	474.13	175.26	73.77	01/01/2005
Mill Road Capital	PR8F16890002	2,111,619.00	0.01	0.00	-49.33	-24.41	-25.80	-10.48	-7.67	12/01/2007
Mill Road Capital II	PR8F17290002	36,571,972.11	0.09	0.00	-12.03	2.15	-1.45	4.11	5.39	12/01/2012
NB Indiana PERF Directed VC	PR8F17020002	48,137,146.00	0.12	0.00	-33.75	2.49	6.13	7.97	4.64	05/01/2008
New Enterprise Associates XIII	TR8F19980002	3,377,914.45	0.01	0.00	-26.42	21.23	28.49	16.12	18.45	07/01/2011
New Mountain Partners III	PR8F16770002	2,725,468.00	0.01	0.00	-17.99	153.29	78.23	46.38	26.48	08/01/2007

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New Mountain Partners IV	PR8F17520002	25,679,921.00	0.06	0.00	-17.92	6.86	13.95		15.89	12/01/2014
New Mountain Partners VI	PR8F18093002	53,405,644.00	0.13	0.00	12.42				-13.58	03/01/2021
New Mountain SEF Co-Invest I	PR8F18085002	18,149,425.00	0.04	0.00	25.30				17.21	03/01/2021
New Mountain SEF I	PR8F18084002	49,590,301.00	0.12	0.00	14.16				12.22	03/01/2021
NMP III Continuation Fund	PR8F19020302	12,075,684.00	0.03	0.00	3.21				21.19	11/01/2021
Oak Hill Capital Partners II	TR8F20000002	11,521.98	0.00	0.00	-8.98	-0.72	0.14	2.74	3.63	07/01/2011
Oak Hill Capital Partners III	TR8F20570002	0.01	0.00	0.00						07/01/2011
Oak Investment Partners XI	TR8F20580002	22,179.59	0.00	-65.58	-91.16	-66.50	-50.97	-26.80	-24.14	07/01/2011
Oak Investment Partners XII	TR8F20030002	87,782.11	0.00	-5.71	26.83	-13.32	-10.01	-8.59	-6.21	07/01/2011
Oak Investment Partners XIII	PR8F16270002	19,927,960.94	0.05	-2.65	-14.59	15.99	6.48	3.87	4.43	09/01/2010
Oaktree Opportunities VIII	PR8F16440002	150,576.96	0.00	-7.16	-41.58	3.77	-1.25	4.17	6.01	04/01/2010
Oaktree Opportunities VIIIb	PR8F16450002	6,841,125.05	0.02	-0.84	36.24	41.77	19.60	13.23	12.13	08/01/2011
Oaktree Opportunities XI	PR8F18096002	97,626,956.45	0.24	1.55	7.40	18.65			18.65	08/01/2020
OCM Asia Principal Opp Fund	PR8F16620002	69,510.00	0.00	-1.29	19.67	5.89	7.01	-1.74	-3.45	10/01/2006
OCM Opportunities Fund VII	PR8F16750002	289,822.00	0.00	-0.34	2.22	20.16	7.64	3.56	4.62	03/01/2007
OCM Opportunities Fund VIIb	TR8F20100002	991.08	0.00	1.64	29.55	13.77	3.76	0.70	3.07	07/01/2011
Opus Capital Venture Ptrs V	TR8F20120002	3,610,836.00	0.01	0.00	-27.99	7.34	11.69	5.82	6.41	07/01/2011
Opus Capital Venture Ptrs VI	TR8F20130002	609,109.58	0.00	0.00	-32.00	1.15	5.95	2.42	-2.83	07/01/2011
Pacven Walden Ventures VI	PR8F16670002	3,565,209.00	0.01	0.00	-1.75	22.00	14.40	25.03	13.61	02/01/2007
Parthenon Investors IV	PR8F17190002	81,712,453.58	0.20	0.00	20.72	29.77	42.19	37.83	27.72	04/01/2012
Parthenon Investors IV-MTC	PR8F17650002	1.00	0.00	0.00	0.00					11/01/2015
Parthenon Investors IV-MTC Agg	PR8F18041002	24,174,405.92	0.06	0.00	0.00	10.43			10.55	05/01/2019
Parthenon Investors V	PR8F17730002	107,673,485.91	0.26	0.00	13.01	32.41	31.47		19.77	01/01/2017
Peninsula Fund V	TR8F20140002	1,165,450.00	0.00	0.00	38.67	36.61	23.59	16.61	14.77	07/01/2011
Platinum Equity Cap Ptrs II	TR8F20160002	718,863.00	0.00	0.00	7.17	50.34	36.36	12.40	12.89	07/01/2011
Rho Ventures V	TR8F20170002	578,211.00	0.00	0.00	-25.45	-11.42	-10.20	-9.46	-10.44	07/01/2011
Rho Ventures VI	TR8F20180002	4,184,908.31	0.01	0.00	-37.75	8.91	7.09	2.87	2.04	07/01/2011
RJD Private Equity Fund II	TR8F20190002	0.01	0.00	0.00	0.00	8.45	-5.43	-12.46	-9.18	07/01/2011
SAIF Partners IV	PR8F16430002	80,033,844.00	0.19	0.00	-18.61	-4.96	-1.02	4.41	3.06	08/01/2010
Samson Brunello I	PR8F19020002	11,370,880.00	0.03	14.69	42.25				37.92	02/01/2021



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Samson Hockey 1	PR8F19010902	12,091,210.00	0.03	0.00	21.27				39.56	12/01/2020
Samson Shield 1	PR8F19010802	23,699,215.00	0.06	0.00	3.06				9.72	12/01/2020
Sankaty Credit Opps IV	TR8F20230002	35,672.94	0.00	0.00	-20.44	21.84	12.10	9.34	8.42	07/01/2011
Scale Venture Partners III	PR8F17070002	5,631,391.00	0.01	0.00	4.14	19.32	21.50	18.39	18.88	05/01/2009
Silver Cup Partners IV	TR8F20240002	335,181.04	0.00	0.00	-8.95	-2.57	-14.60	-8.49	-4.63	07/01/2011
Silver Lake Partners II	TR8F20250002	0.07	0.00	0.00	0.00					07/01/2011
Silver Lake Partners III	PR8F16730002	3,476,287.00	0.01	0.00	7.40	1.56	0.03	14.72	9.37	08/01/2007
SL SPV II	PR8F15180002	25,087,463.12	0.06	0.00	-3.73	21.40			17.26	04/01/2019
Solera Co-Invest	PR8F17680002	51,331,608.72	0.12	0.00	0.00	22.23	16.59		13.37	02/01/2016
Stride Consumer Fund I Co Inv	PR8F19010602	4,831,651.38	0.01	0.00	4.96				3.70	04/01/2022
Stride Consumer Partners I	PR8F19010502	21,100,714.14	0.05	0.00	4.45				-58.33	02/01/2021
Sumeru EP Heartland III Co-Inv	PR8F18080002	22,001,667.11	0.05	0.00	43.09	46.92			45.40	07/01/2020
Sumeru EP Heartland IV Co Inv	PR8F19040502	15,441,320.88	0.04	0.00	3.00				2.39	05/01/2022
Sumeru Eq Ptrs	PR8F17620002	97,277,815.06	0.24	0.00	-10.13	33.52	35.72		23.79	09/01/2015
Sumeru Eq Ptrs II - Buildium	PR8F17780002	284,548.00	0.00	-0.69	-20.26	-14.02	373.61		237.98	11/01/2016
Sumeru Eq Ptrs III	PR8F20040002	90,531,795.56	0.22	0.00	3.93	16.91			9.08	04/01/2019
Sumeru Eq Ptrs IV	PR8F19040402	29,794,432.33	0.07	0.00					-9.43	09/01/2022
Sun Capital Partners V	TR8F20270002	434,353.00	0.00	0.00	-30.96	2.86	-12.99	-6.67	-3.45	07/01/2011
TA Subordinated Debt Fund III	TR8F20290002	183,724.00	0.00	5.38	20.43	47.59	36.72	28.73	24.43	07/01/2011
TA XI	TR8F20310002	869,994.00	0.00	5.70	1.59	62.81	47.95	39.65	33.89	07/01/2011
TCG Co Investment	PR8F19030102	3,442,012.81	0.01	0.00	-57.88				-49.93	05/01/2022
TCG 3.0 A	PR8F19030002	46,276,325.00	0.11	0.00	-9.86				-9.06	11/01/2021
TCW Crescent Mezzanine Ptrs V	TR8F20330002	80,309.40	0.00	0.00	39.65	60.43	37.16	22.29	20.34	07/01/2011
Tech Crossover Ventures VII	TR8F20320002	229,277.33	0.00	0.00	7.89	51.83	33.70	37.20	33.23	07/01/2011
Terra Firma Capital Ptrs III	PR8F16700002	1.27	0.00	1.60	8.55					06/01/2007
Third Cinven Fund	TR8F20360002	32,518.51	0.00	1.06	7.39	-2.94	-1.62	10.16	6.99	07/01/2011
TowerBrook Investors III	PR8F16990002	182,516.00	0.00	0.00	0.00	-28.47	-23.73	-10.20	-4.68	08/01/2008
TowerBrook Investors IV	PR8F17320002	39,380,954.90	0.10	0.00	-12.26	20.48	14.69		-8.97	10/01/2013
TowerBrook Investors V	PR8F18020002	77,533,138.22	0.19	0.00	9.21	7.17			2.03	03/01/2020
TowerBrook Struc Opps II	PR8F18030002	32,888,994.00	0.08	0.00	16.56	13.16			11.47	03/01/2020



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TPG Partners IV	TR8F20380002	9,829.00	0.00	0.00	-14.96	-0.45	-22.62	-9.49	-6.24	07/01/2011
TPG Partners V	TR8F20390002	6,011.00	0.00	0.00	-3.78	-2.96	-13.54	-0.48	1.51	07/01/2011
TPG Partners VI (10)	TR8F20400002	147,293.14	0.00	0.00	-27.22	-10.57	-9.43	0.69	2.67	07/01/2011
TPG Partners VI (20)	TR8F20410002	294,041.99	0.00	0.00	-27.26	-8.76	-8.71	1.19	3.34	07/01/2011
Trilantic Capital Partners IV	TR8F20420002	253,536.17	0.00	1.93	23.04	7.64	-6.50	0.39	5.31	07/01/2011
Trinity Ventures X	TR8F20440002	1,431,710.30	0.00	0.00	-50.50	-16.78	-15.66	-2.96	0.99	07/01/2011
Triton Fund III	PR8F16060002	945,385.98	0.00	1.06	-17.00	-13.91	-11.40	8.64	5.10	12/01/2009
True Ventures I	TR8F20450002	2,455,090.74	0.01	0.00	-8.54	17.72	9.86	8.32	9.71	07/01/2011
True Ventures II	TR8F20460002	1,382,915.63	0.00	0.00	-19.68	-9.76	2.44	11.61	13.28	07/01/2011
TSG6	PR8F17160002	5,479,472.00	0.01	0.00	-46.52	16.13	10.74	21.52	19.86	07/01/2012
TSG7 A	PR8F17630002	57,721,506.00	0.14	0.00	-23.57	29.15	20.74		12.07	03/01/2016
TSG7 B	PR8F17640002	13,219,114.00	0.03	0.00	-11.77	22.38	11.66		-1.72	01/01/2016
Veritas Capital IV	TR8F20370002	275,493.00	0.00	0.00	-13.29	13.47	15.64	18.68	19.09	07/01/2011
Veritas Capital V	PR8F17510002	159,133,692.00	0.39	0.00	-15.07	16.80	24.21		19.39	06/01/2015
Veritas Capital V - Verisk	PR8F17750002	97,552,241.00	0.24	0.00	-17.68	7.23	34.14		36.91	05/01/2016
Veritas Capital Vantage Fund	PR8F19020602	23,404,833.00	0.06	0.00	14.55				-3.20	07/01/2021
Veritas Capital VI	PR8F17810002	147,796,929.00	0.36	0.00	-3.61	42.09	40.40		25.19	06/01/2017
Veritas Capital VII	PR8F18073002	132,004,738.00	0.32	0.00	-5.74	-24.37			-22.23	04/01/2020
Veritas Capital VIII	PR8F19050702	51,884,284.00	0.13	0.00	-10.77				-9.98	07/01/2022
Vestar Capital Partners V	TR8F20470002	9,848.26	0.00	0.00	-30.84	-5.51	-4.89	1.86	0.56	07/01/2011
Vintage Venture Partners III	TR8F20480002	1,122,594.00	0.00	0.00	-38.54	20.89	15.08	10.79	12.01	07/01/2011
Vision VII	TR8F20490002	265,210.28	0.00	1.06	-14.03	-11.14	-15.06	-6.19	-3.72	07/01/2011
Vista Co-Investment Fund	PR8F17430002	162,098,245.00	0.39	0.00	5.41	10.83	6.76		9.12	08/01/2014
Vista Equity Partners Fund III	PR8F16810002	1,240,232.00	0.00	0.00	27.90	12.67	-10.19	0.12	9.12	10/01/2007
Vista Equity Partners Fund IV	PR8F17150002	35,569,625.00	0.09	0.00	-4.97	7.72	2.22	10.79	9.16	11/01/2011
Vista Equity Partners Fund V	PR8F17480002	66,686,352.00	0.16	0.00	2.86	16.76	18.71		16.25	09/01/2014
Vista Equity Partners Fund VI	PR8F17690002	103,219,008.00	0.25	0.00	0.27	26.18	22.41		16.44	06/01/2016
Vista Foundation Fund II	PR8F17380002	23,273,693.00	0.06	0.00	-4.03	15.24	9.71		9.64	12/01/2013
Vista Foundation Fund III	PR8F17700002	74,850,713.00	0.18	0.00	-1.07	32.08	26.98		15.23	07/01/2016
Vista Foundation Fund IV	PR8F19010002	73,628,029.00	0.18	0.00	-3.37	-41.46			-39.78	06/01/2020



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VSS Structured Capital II	TR8F20510002		0.01	0.00	1.12	20.59				07/01/2011
Warburg Pincus Private Eq X	PR8F16710002	1,102,891.58	0.00	0.00	3.00	69.62	43.08	26.31	14.70	10/01/2007
WLR Recovery Fund IV	PR8F16840002	30,293.79	0.00	0.00	-76.40	-28.07	-29.13	-13.83	-7.44	11/01/2007
Xenon V	TR8F20560002	176,738.77	0.00	1.06	44.69	-39.58	-26.39	-10.59	-6.71	07/01/2011
York Opp III Prairie	PR8F56020002	5,799,826.00	0.01	0.00	30.53				23.76	05/01/2022
York Special Opportunities	PR8F16930002	1.00	0.00	0.00	-84.05	-45.23	-30.89	-20.22	-12.13	08/01/2008
York Special Opportunities II	PR8F17400002	63,329,709.00	0.15	0.00	2.46	27.37	11.02		11.91	06/01/2014
York Special Opportunities III	PR8F56010002	47,645,504.00	0.12	0.00	-1.43	7.96			7.33	05/01/2020
TOTAL PRIVATE CREDIT	PR8G10910000	1,924,547,378.32	4.66	-0.07	5.36	10.08	8.49		9.89	10/01/2017
Private Credit Custom PME	PR8GX0903PCC			1.07	3.50	13.63	7.04			10/01/2017
Excess Return				-1.14	1.86	-3.55	1.45			10/01/2017
Apollo Origination Partnership	PR8F19050802	117,973,460.20	0.29	0.00	8.96				3.44	04/01/2022
Carlyle CDL 2018-1	PR8F18000002	326,039,434.00	0.79	0.00	8.12	10.55	8.07		7.80	06/01/2018
Crescent Euro Specialty Len II	PR8F18071002	64,533,141.00	0.16	0.00	7.97	11.16			6.47	02/01/2019
Goldman Sachs West St Sols I	PR8F18097002	55,693,084.00	0.13	0.00	4.26				9.70	12/01/2020
HPS Brickyard Direct Lending	PR8F17950002	144,738,092.37	0.35	1.98	8.72	12.98	3.52		3.40	06/01/2018
HPS Brickyard SLF	PR8F19070502	17,304,004.92	0.04	3.08					3.08	04/01/2023
HPS Special Situation Opp II	PR8F19070602	7,312,920.33	0.02	0.00					-3.94	03/01/2023
HPS Specialty Loan Fund V	PR8F18083002	66,908,418.47	0.16	0.00	4.95				18.56	10/01/2020
HPS Specialty Loan Inst Fund	PR8F17920002	35,577,240.66	0.09	0.00	5.31	9.13	8.38		10.36	10/01/2017
ICG Revolving Cr Facilities	PR8F17093002	0.00	0.00							11/01/2019
ICG Senior Debt Partners	PR8F17094002	109,461,817.00	0.26	1.27	8.73	8.18			7.96	10/01/2019
INPRS Private Credit Adj	PR8F18ADJ002	0.00	0.00	0.00	0.00					07/01/2022
INPRS Sixth Street TAO 5 0	PR8F19080802	3,069,956.00	0.01	0.00					0.00	06/01/2023
INPRS SVB Innovation CRT FD IX	PR8F19080002	56,113,726.00	0.14	0.00	4.65				3.92	07/01/2022
Kennedy Lewis Cap Ptrs III	PR8F19040002	42,193,075.00	0.10	0.00	10.25				7.32	11/01/2021
Kennedy Lewis III Co	PR8F19050002	18,868,370.00	0.05	0.00					1.09	11/01/2022
KKR Real Estate Credit Opps II	PR8F17095002	97,790,189.44	0.24	0.00	4.16	6.87			5.71	04/01/2020
Pathlight Capital I	PR8F70080002	66,541,985.00	0.16	0.00	11.54	11.38			9.72	03/01/2019
Pathlight Capital II	PR8F19020102	80,899,903.00	0.20	0.00	11.23				8.24	03/01/2021



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Pathlight Capital III	PR8F19060502	64,278,107.00	0.16	0.82					1.31	09/01/2022
SCP Private Corporate Lending	PR8F17096002	40,085,054.31	0.10	0.00	6.60	13.55			11.51	12/01/2019
SCP Specialty Finance Debt	PR8F17097002	25,364,982.10	0.06	0.00	6.55				13.68	03/01/2021
TSSP TAO Contingent	PR8F18010202	47,718,673.00	0.12	0.00	4.55	15.95				08/01/2019
TSSP TAO 4	PR8F18010102	18,393,310.00	0.04	0.00	3.30	12.43			10.32	01/01/2019
Waterfall Victoria Fund	PR8F18091002	130,218,052.00	0.32	-4.16	-8.13	3.15			2.98	06/01/2020
352 Capital ABS Fund	PR8F19020502	111,031,913.61	0.27	0.00	5.12				4.43	03/01/2021
400 Capital Asset Based II	PR8F15790002	100,649,242.92	0.24	0.00	0.59	15.17			15.17	08/01/2020
400 Capital Asset Based III	PR8F19030802	75,789,225.99	0.18	0.00	4.40				4.22	02/01/2022
TOTAL REAL ASSETS	PR8GI7200000	3,335,197,052.87	8.07	-0.34	-0.42	11.12	9.08	9.74	6.68	02/01/2005
Real Asset Custom Bmk	PR8GX0903REA			0.78	-9.30	6.03	5.85	5.18	6.77	02/01/2005
Excess Return				-1.12	8.88	5.09	3.23	4.56	-0.09	02/01/2005
TOTAL REAL ESTATE	PR8GI0700000	2,512,103,331.08	6.08	-0.87	-3.91	9.98	8.40	9.40	6.69	08/01/2005
Real Estate Custom PME	PR8GX0903REC			0.46	-11.49	4.90	5.17	4.84	6.47	08/01/2005
Excess Return				-1.33	7.58	5.08	3.23	4.56	0.22	08/01/2005
TOTAL CORE EQ (INCL PUBLIC RE)	PR8GI7010000	1,269,861,909.39	3.07	-1.93	-4.76	10.28	9.48	9.91	6.86	12/01/2005
Angelo Gordon Net Lease IV	PR8F18072002	70,524,321.00	0.17	0.00	4.63	5.09			5.87	09/01/2019
Blackstone BioMed Life Sci	PR8F19010202	38,132,394.59	0.09	-1.19	-1.11				10.71	11/01/2020
Blackstone Property Partners	PR8F17540002	143,288,640.00	0.35	0.00	-10.50	6.10	5.80		7.06	12/01/2014
Carlyle Property Investors	PR8F18090002	160,644,518.27	0.39	0.00	-1.40	15.31			12.31	07/01/2019
Harrison St Core Property Fund	PR8F17260002	137,389,555.00	0.33	0.44	1.34	7.86	7.66	9.25	8.79	02/01/2013
LONGPOINT SPEC GROCER FUND I	PR8F19080202	19,668,636.00	0.05	0.00					-0.55	04/01/2023
One North Capitol Building	TR8F17070002	11,715,496.79	0.03	0.72	8.22	11.90	9.30	9.49	11.69	12/01/2009
Prologis Targeted USLF	PR8F18075002	184,707,654.30	0.45	-5.97	-1.29	22.08			18.34	01/01/2020
RELATED AFFORDABLE HOUSING	PR8F19080102	28,919,300.00	0.07	0.00					-3.62	05/01/2023
Rockpoint Growth Income RE II	PR8F17790002	35,430,510.00	0.09	0.00	-19.13	1.51	5.25			03/01/2017
Stockbridge Smart Markets Fund	PR8F17270002	343,418,839.79	0.83	-3.79	-9.05	9.88	8.08	9.38	9.33	12/01/2012
TA Realty Core Prop	PR8F19050302	96,022,043.65	0.23	-1.01	-3.98				-3.00	04/01/2022
TOTAL VALUE ADD EQUITY	PR8GI7020000	386,487,095.30	0.94	0.00	3.84	21.50	17.22	18.95	14.85	05/01/2004



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ABACUS MULTI FAMILY PTRS VI	PR8F19070002	12,389,841.40	0.03	0.00					-40.38	09/01/2022
Abacus Multi-Family Ptrs III	PR8F17570002	74,578.00	0.00	0.00	-80.46					03/01/2015
Abacus Multi-Family Ptrs IV	PR8F17840002	6,666,055.95	0.02	0.00	31.36	41.21	28.11		21.58	06/01/2017
Abacus Multi-Family Ptrs V	PR8F18076002	63,613,328.12	0.15	0.00	3.22					12/01/2020
Asana Partners Fund III	PR8F19040602	12,197,547.77	0.03	0.00	-23.57				-32.75	04/01/2022
Bain Capital Real Estate II-A	PR8F19030202	52,954,340.00	0.13	0.00	-2.95				7.92	09/01/2021
BCRE Hickory CI LP	PR8F19090002	8,674,588.00	0.02	0.00	-8.69				-8.69	08/01/2022
Centersquare Co Investment	PR8F19050902	6,384,453.00	0.02	0.00	6.41				4.77	04/01/2022
CenterSquare Value-Added V	PR8F19030602	9,904,844.41	0.02	0.00	11.44				13.25	09/01/2021
Exeter Industrial Value III	PR8F17460002	1,413,806.40	0.00	0.00	-7.47	64.92	42.96		79.35	09/01/2014
Exeter Industrial Value V	PR8F18078002	73,199,975.81	0.18	0.00	1.22				25.94	10/01/2020
Harrison St Real Estate Ptrs	PR8F16470002	167,065.00	0.00	0.00	-4.49	36.97	0.25	9.46	8.92	10/01/2010
Harrison St Real Estate Ptrs V	PR8F17550002	42,548,123.00	0.10	0.00	-0.52	9.99	10.38		7.89	03/01/2015
Noble Hospitality IV Income	PR8F17910002	25,308,651.00	0.06	0.00	19.88	5.77			-29.46	10/01/2018
Noble Hospitality IV Value Add	PR8F17900002	20,409,812.00	0.05	0.00	14.14	12.98			-31.27	10/01/2018
Related Co-Investment	PR8F19010102	25,625,699.00	0.06	0.00	0.00				0.00	08/01/2021
Stockbridge Value Fund II	PR8F17420002	878,021.79	0.00	0.00						01/01/2015
Stockbridge Value Fund III	PR8F17850002	24,076,364.65	0.06	0.00	5.15	22.95	14.27		12.52	04/01/2018
TOTAL OPPORTUNISTIC EQUITY	PR8GI7030000	590,639,092.05	1.43	0.47	-3.02	12.47	8.08	11.06	-6.03	02/01/2004
Ambrose Fund IV LP	PR8F19090302	8,783,125.00	0.02	0.00					-3.45	06/01/2023
Asana Partners Fund II	PR8F18042002	43,857,642.70	0.11	0.00	-0.54	12.67			-15.32	04/01/2019
BLACKSTONE RE PARTNERS X	PR8F19060702	3,370,163.97	0.01	-10.75					-34.20	03/01/2023
Blackstone RE Partners IX	PR8F18070002	88,508,334.64	0.21	0.00	0.24	26.91			21.04	09/01/2019
Blackstone RE Partners VI	PR8F16900002	1,288,289.13	0.00	0.00	-29.19	-5.35	-0.08	7.98	-6.53	02/01/2008
Blackstone RE Partners VII	PR8F17200002	18,757,334.09	0.05	0.00	-13.15	5.81	3.12	10.59	12.30	04/01/2012
Blackstone RE Partners VIII	PR8F17580002	56,953,768.23	0.14	0.00	-6.29	21.27	15.87		15.01	08/01/2015
Carlisle Euro Fund II Co Inv	PR8F19070202	45,797,141.41	0.11	1.06					8.43	12/01/2022
China Car Parks Investment II	PR8F17970002	44,810,971.00	0.11	0.00	-14.87	4.35	5.77		7.32	01/01/2018
Hackman Cap Ptrs Studio Co Inv	PR8F19040802	18,570,346.00	0.04	0.00	-6.42				-4.35	12/01/2021
Hackman Cap Ptrs Studio Fund	PR8F19040702	55,741,946.00	0.13	0.00	1.07				-2.66	12/01/2021



Total Performance Summary

Report ID: IPM0005

TOTAL NET OF FEES

Reporting Currency: USD

07/31/2023

				Annualized						
Account Name Benchmark Name	Account Number Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
JDM Partners Opportunity I	TR8F17090002	27,178,393.00	0.07	7.30	7.51	17.76	7.55	4.93	8.11	04/01/2010
Related Real Estate Fund II	PR8F17610002	20,326,727.00	0.05	0.00	-7.39	10.97	10.02		5.23	12/01/2015
Related Real Estate Fund III	PR8F18079002	26,977,997.00	0.07	3.22	7.68	16.89			16.89	08/01/2020
Rockpoint Real Estate Fund V	PR8F17660002	29,701,437.00	0.07	0.00	-20.31	2.96	2.89		6.59	01/01/2016
Rockpoint Real Estate Fund VI	PR8F18043002	44,961,300.00	0.11	0.00	-2.27	16.67				09/01/2019
Walton Street Real Estate VI	PR8F17050002	32,677,847.00	0.08	0.00	14.01	11.61	4.76	6.57	-10.60	04/01/2009
Walton Street Real Estate VII	PR8F17220002	22,376,328.88	0.05	0.00	-3.22	0.64	-2.97	4.94	4.85	06/01/2013
TOTAL CORE DEBT	PR8GI7110000	144,912,839.07	0.35	0.00	-6.02	3.76	4.30	4.76	6.77	04/01/2009
ICG Sale and Leaseback Fund I	PR8F18074002	87,116,993.30	0.21	0.00	-16.69	5.43			14.11	10/01/2019
ICG SALE AND LEASEBACK II	PR8F19060602	57,795,845.77	0.14	0.00	-2.39				-2.05	06/01/2022
TOTAL VALUE ADD DEBT	PR8GI7120000	33,587,475.25	0.08	0.44	-20.42	-2.28	-0.44	2.87	4.95	12/01/2009
Mack Claros Mortgage Trust	PR8F18050002	671,440.00	0.00	7.77	-27.56	-6.70			-1.09	09/01/2018
Mesa West RE Income Fund IV	PR8F17760002	32,916,034.25	0.08	0.00	-13.56	0.17	3.17		2.80	03/01/2017
West River Capital	TR8F17050002	1.00	0.00	0.00						04/01/2010
TOTAL OPPORTUNISTIC DEBT	PR8GI7130000	86,614,920.02	0.21	0.00	3.91	14.74	6.28	2.87	6.71	08/01/2008
Kayne Anderson Debt Invest Veh	PR8F18089002	84,824,033.00	0.21	0.00	3.89				6.47	02/01/2021
Lone Star Fund VI	PR8F16280002	1,790,887.02	0.00	0.00	4.87	37.30	20.66	9.47	13.35	12/01/2009
TOTAL INFRASTRUCTURE	PR8GI7300000	823,093,721.79	1.99	1.29	12.18				5.96	07/01/2021
Global Property Res Index	PR8GX0903GPR			1.91	-3.08				1.97	07/01/2021
Excess Return				-0.62	15.26				3.99	07/01/2021
Ardian Americas Infra Fund V	PR8F19050102	14,377,348.95	0.03	0.00	-5.47				-26.24	02/01/2022
Ardian Co Inv Veh	PR8F19050202	24,954,815.00	0.06	0.00					0.83	12/01/2022
DigitalBridge Co Investment	PR8F19040102	26,868,658.00	0.07	1.58	11.45				4.52	10/01/2021
DigitalBridge Partners II	PR8F19020802	96,944,350.00	0.23	0.00	6.79				5.06	07/01/2021
EnCap Energy Capital Fund IX	PR8F17310002	29,835,480.58	0.07	2.63	29.40	60.65	11.25	12.78	6.29	01/01/2013
EnCap Energy Capital Fund VIII	PR8F16540002	11,702,059.03	0.03	-1.67	3.76	49.54	5.75	-0.72	1.48	02/01/2011
EnCap Energy Capital Fund X	PR8F17590002	50,833,060.72	0.12	0.00	13.84	54.29	21.15		11.66	04/01/2015
EnCap Energy Capital Fund XI	PR8F17870002	49,570,527.47	0.12	3.96	18.96	33.65	6.37		-2.55	07/01/2017
EnCap Flatrock Midstream II	PR8F17250002	5,283,767.00	0.01	-0.04	5.76	-1.00	-7.82	11.77	4.92	07/01/2012
EnCap Flatrock Midstream III	PR8F17470002	38,390,036.60	0.09	0.10	24.50	15.47	8.04		7.50	07/01/2014

TOTAL NET OF FEES

07/31/2023

					Annualized					
Account Name	Account Number									
Benchmark Name	Benchmark Number	Market Value	% of Total	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
EnCap Flatrock Midstream IV	PR8F17960002	41,353,525.84	0.10	1.86	7.59	9.03	8.55		4.37	02/01/2018
EnCap Flatrock Midstream-MODA	PR8F17600002	1,650,541.47	0.00	-0.11	1.64	8.33	11.91		4.83	06/01/2015
Energy Capital Partners II	PR8F16240002	0.01	0.00	0.00						09/01/2009
First Reserve Fund XII	TR8F19680002	18,288.00	0.00	0.00	-95.90	-73.97	-61.40	-43.40	-36.18	07/01/2011
GSO Energy Select Opp Fund	PR8F17092002	5,280,091.00	0.01	0.00	53.66	43.95	16.39		16.71	11/01/2015
GSO Energy Select Opp Fund II	PR8F18040002	15,168,738.00	0.04	3.31	6.47	34.06			17.08	03/01/2019
HIG INFRASTRUCTURE FUND	PR8F19060902	8,134,882.00	0.02	0.00					-28.54	12/01/2022
ICON INFRASTRUCTURE PTRS VI	PR8F19060402	12,282,709.44	0.03	0.00					-43.23	12/01/2022
InfraVia V	PR8F19040202	34,365,899.16	0.08	8.70	22.99				-8.45	02/01/2022
INPRS Infrastructure Adj	PR8F20ADJ002	0.00	0.00	0.00	0.00					07/01/2022
KKR Div Core Infrastructure	PR8F19020902	103,580,273.97	0.25	0.00	3.44				3.09	04/01/2022
KKR Project Aqueduct Co-Invest	PR8F19030502	26,435,551.11	0.06	0.00	-0.45				-0.37	12/01/2021
KKR PROJECT QUARTZ CO INVEST	PR8F19090102	10,000,000.00	0.02	0.00					0.00	03/01/2023
KKR PROJECT THOR CO INVEST	PR8F19060102	10,070,085.15	0.02	0.00	2.59				1.94	04/01/2022
Natural Gas Partners IX	PR8F16910002	99,808.00	0.00	0.00	-37.31	10.91	29.67	17.77	11.50	03/01/2008
Panda Power Fund II	PR8F17360002	0.01	0.00	0.00						08/01/2013
Panda Power Gen Infrastructure	PR8F16480002	102,271.00	0.00	0.00						06/01/2010
Warwick Bacchus	PR8F17890002	27,040,447.12	0.07	2.68	24.42	1.72	6.93		11.94	07/01/2017
Warwick Partners III	PR8F17710002	66,559,078.16	0.16	4.77	11.52	10.53	3.75		8.65	04/01/2016
White Deer Energy	PR8F16230002	747,300.00	0.00	0.00	-59.13	-24.40	-21.32	-15.87	-22.03	10/01/2009
White Deer Energy II	PR8F17350002	34,168,736.00	0.08	0.00	14.89	34.17	2.33	-3.14	-7.29	03/01/2013
White Deer Energy III	PR8F17930002	53,600,695.00	0.13	0.00	1.55	18.29	10.61		9.46	03/01/2018
White Deer Energy III NEP Co	PR8F17980002	23,674,698.00	0.06	0.00	8.38	7.24	22.90		20.96	03/01/2018
TOTAL CASH AND OVERLAY	PR8GCASH0000	1,152,781,585.38	2.79	0.44	-2.44	-5.95	-0.25	2.09	1.98	07/01/2012
<i>Cash and Overlay Benchmark</i>	<i>PR8GX0903CCO</i>			<i>1.53</i>	<i>0.39</i>	<i>2.64</i>	<i>4.37</i>	<i>4.17</i>	<i>3.76</i>	<i>07/01/2012</i>
Excess Return				-1.09	-2.83	-8.60	-4.61	-2.08	-1.78	07/01/2012
Parametric Overlay	PR8F12330002	146,088,840.25	0.35	0.52	-43.29				-46.95	09/01/2020
Reallocation	PR8F12210002	999,139,796.97	2.42	0.43	4.20	1.50	1.61	1.10	2.78	01/01/1997
Securities Lending Income	PR8F10040002	7,552,948.16	0.02	0.74	53.63	63.66	72.72			07/01/2005

Consolidated returns prior to and including June 30, 2011 are calculated based on BNY Mellon using the monthly market values supplied by the prior custodian along with BNY Mellon calculated beginning adjusted market values. The beginning adjusted market values assume all cash flows occurred on the first day of the month. Doing so provides a reasonably accurate depiction of the historical return streams. All history through 12/31/2011 represents composite returns for the legacy TRF and PERF Plans combined using dynamic market weights each month and will be reported under the single Total CRIF Structure going forward.

All history through 12/31/2011 represents composite returns for the legacy TRF and PERF asset class composites combined using dynamic market weights each month and will be reported under the single Total CRIF structure going forward. The composite return streams for the legacy TRF and PERF Global Equity Components began 1/2008 (TRF) and 4/2010 (PERF) and the blended history created using these two composite return streams has an inception date of 1/2008 to represent the data that was provided by the prior custodian.

Total Commodities custom benchmark is an equal weighted blend of the Bloomberg Commodity Excess Return Index and Bloomberg Gold Excess Return.

The Private Equity custom public market equivalent is made up of the following components lagged one quarter: 60% Russell 2000, 20% EAFE Small Cap, 15% CS High Yield, and 5% CS Western European High Index (Hedged) plus a 300 bps premium.

The Private Credit custom public market equivalent is made up of the following components lagged one quarter: 50% CS Leverage Loan Index, 33% Wells Fargo BDC Index, and 17% CS Western European Leveraged Loan Index plus a 150 bps premium.

The Real Estate custom public market equivalent is made up of the following components lagged one quarter: 70% FTSE NAREIT All Equity REITS and 30% Bloomberg CMBS.



All Weather Discussion

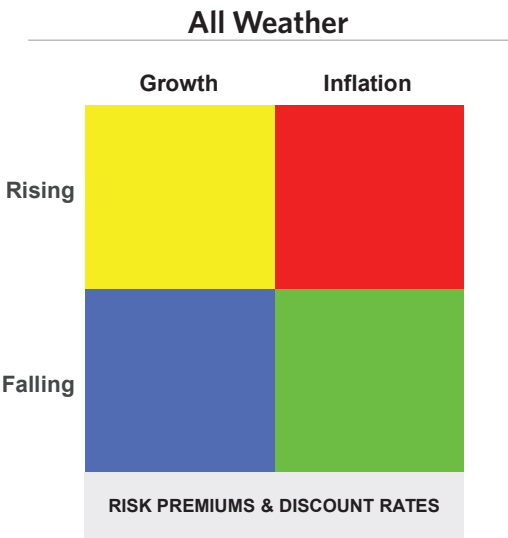
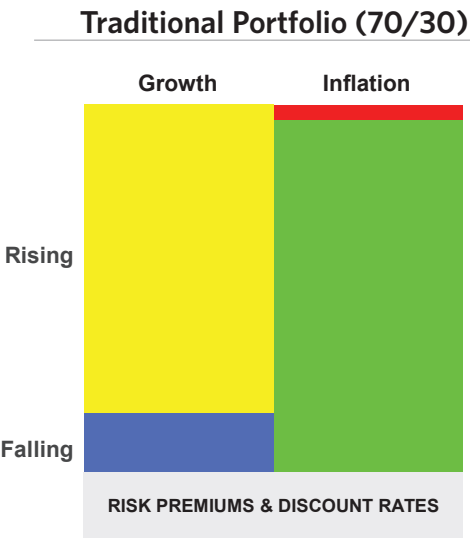
September 2023

One Nyala Farms Road
Westport, CT 06880
(203) 226-3030
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EXECUTIVE SUMMARY

- ◆ All Weather increases long-term portfolio efficiency by avoiding the vulnerabilities created by dependency on any one asset class, economic environment or region.
- ◆ Asset mixes that do include such dependencies will have different returns than All Weather (AW) at each point in time; they can look better when the asset or country they depend on outperforms the average asset or average country - and vice versa.
- ◆ While the AW approach generates better risk adjusted returns than more equity-centric, US-centric asset mixes (i.e., 70/30) over most 10yr periods, it won't do so during every decade because sometimes US equities will be the best performing asset class.
- ◆ The recent decade was one of those times because it was characterized by unusually consistent non-inflationary growth, especially in the US, which made US equities the best performing asset class
- ◆ Both logic and historical stress testing show that investors shouldn't rely on one environment, asset class, or region to repeat as best performer over multiple decades. Reducing dependencies is a more reliable approach to compounding returns over the long term.

ALL WEATHER AVOIDS ENVIRONMENTAL CONCENTRATION...

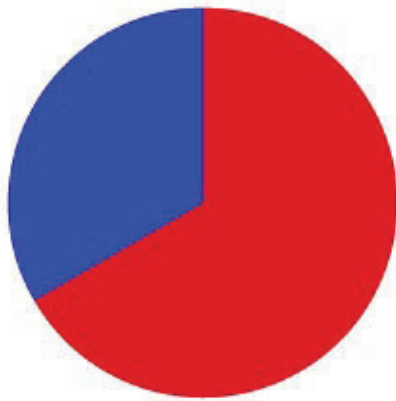


For illustrative purposes only. The global 70/30 is comprised of 70% global equities and 30% hedged global nominal government bonds. There can be no guarantee that any expected performance can or will be achieved and expected performance should not be solely relied upon in making any investment decision. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

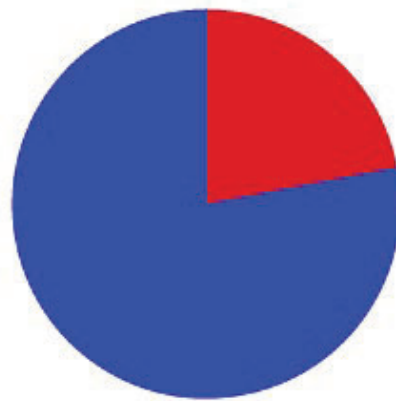
...AND GEOGRAPHIC CONCENTRATION

Geographic Risk Exposure of the Balanced Portfolio vs Global 70/30

■ US ■ Other



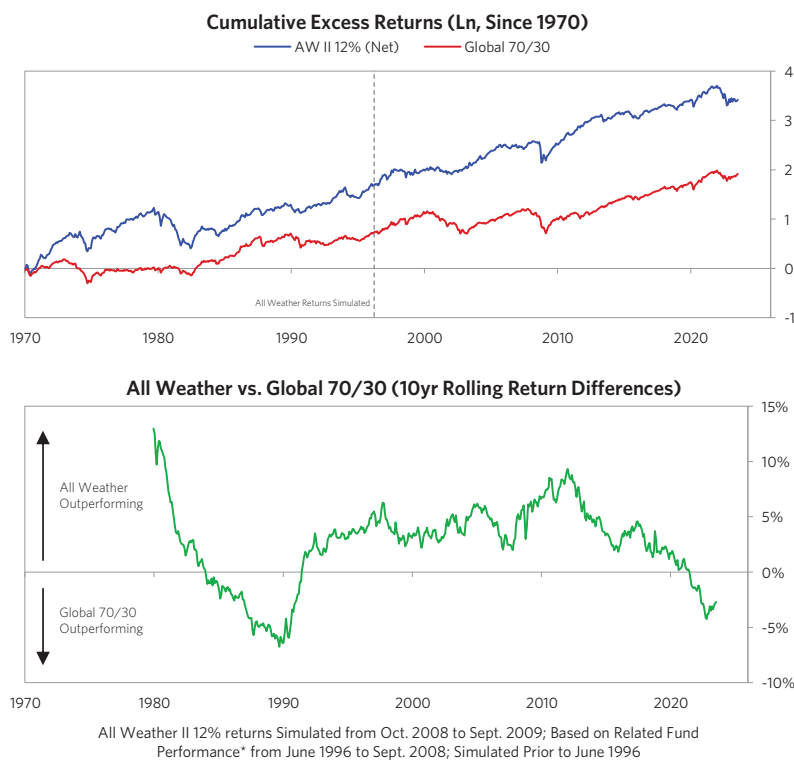
Global 70/30



Balanced Portfolio

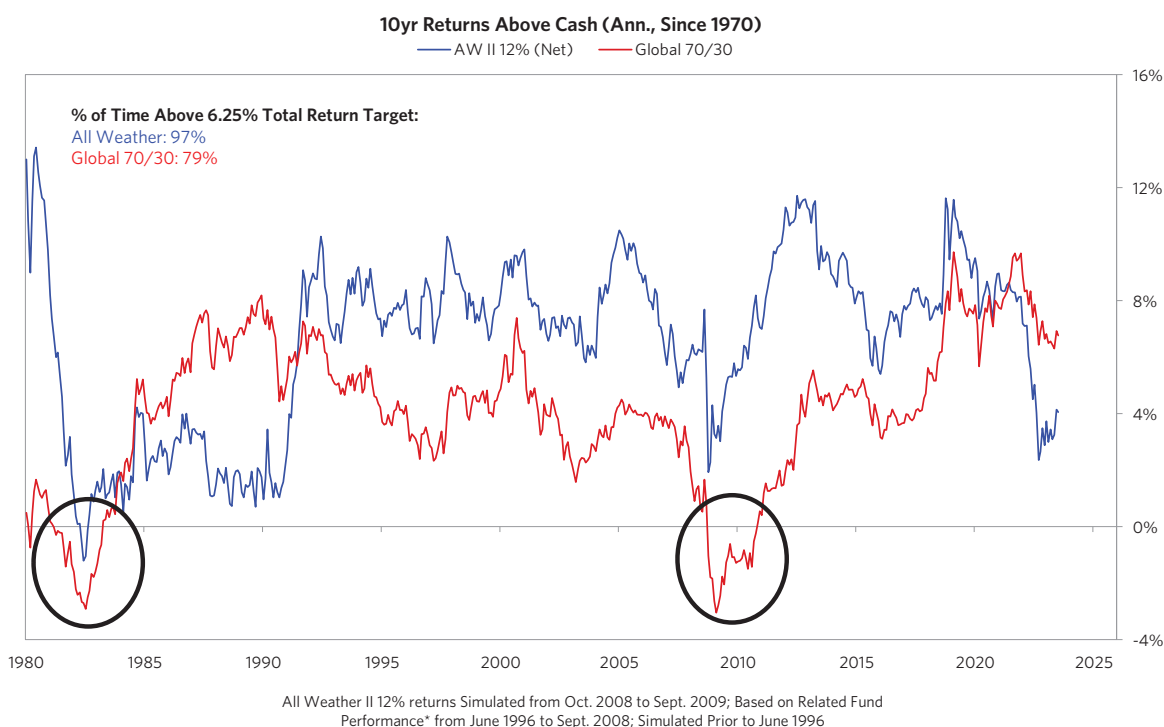
The global 70/30 is comprised of 70% hedged global equities and 30% hedged global nominal government bonds. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

SINCE 1970, DIVERSIFICATION OUTPERFORMED CONCENTRATION IN 78% OF TRAILING 10-YEAR PERIODS



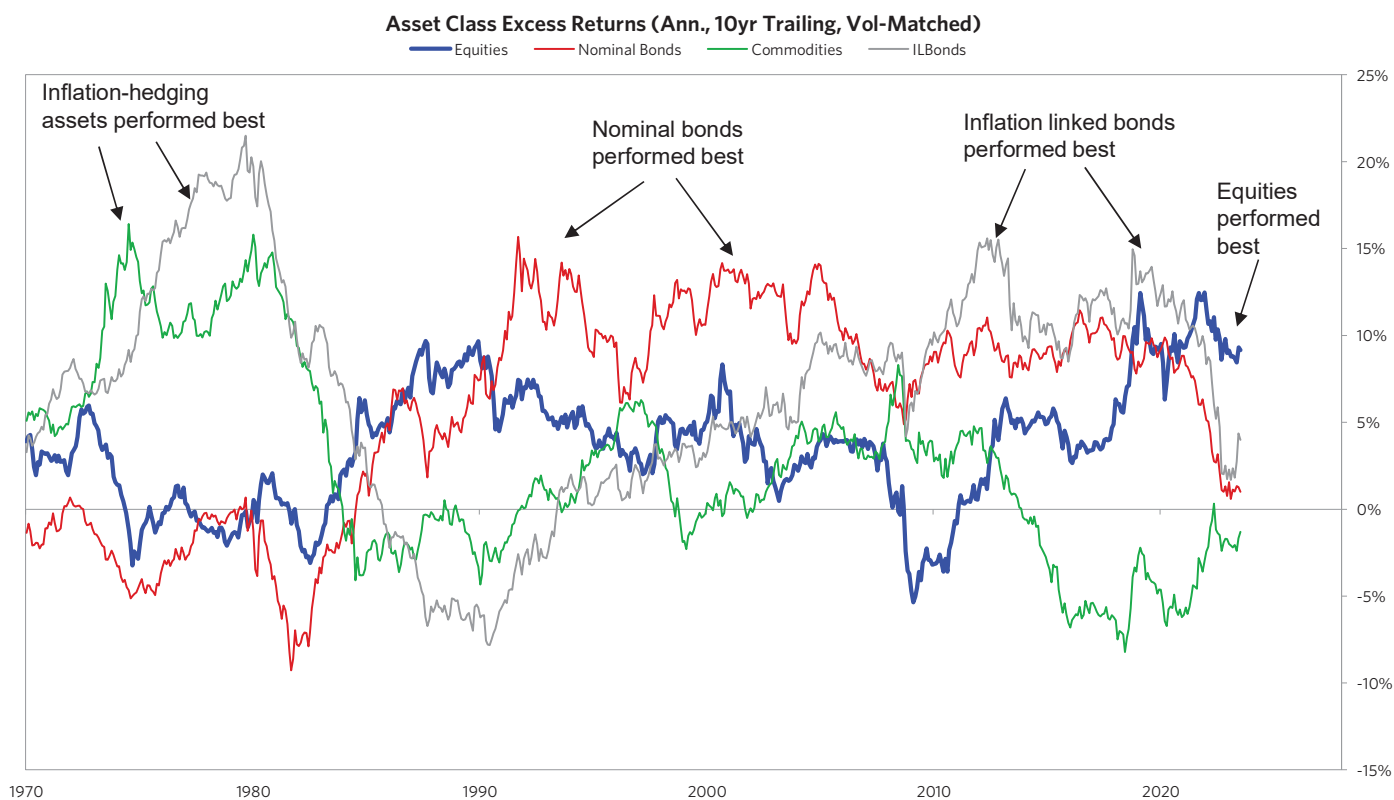
Returns estimated through Jul 2023. AWII 12% represents the returns of All Weather II 10% scaled to 12% volatility. The global 70/30 is comprised of 70% hedged global equities and 30% hedged global nominal government bonds. AWII returns simulated from Oct. 2008 to Sept. 2009; related fund performance from Jun. 1996 to Sept. 2008 is based on the returns of the All Weather strategy. Before June 1996, returns are simulated using the Balanced Portfolio, as described in the "Balanced Portfolio Disclosure." It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

THE DIVERSIFIED APPROACH ACHIEVES THE GOAL MORE OFTEN AND HAS FEWER “LOST DECADES”



Returns are net excess and estimated through Jul 2023. The global 70/30 is comprised of 70% hedged global equities and 30% hedged global nominal government bonds. AWW II 12% represents the returns of All Weather II 10% scaled to 12% volatility. AWW II returns simulated from Oct. 2008 to Sept. 2009; related fund performance from Jun. 1996 to Sept. 2008 is based on the returns of the All Weather strategy. Before June 1996, returns are simulated using the Balanced Portfolio, as described in the "Balanced Portfolio Disclosure." It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

WHICH ASSET PERFORMS BEST VARIES A LOT – CHOOSING CONCENTRATION IS TO PREDICT THE FUTURE OF THIS CHART

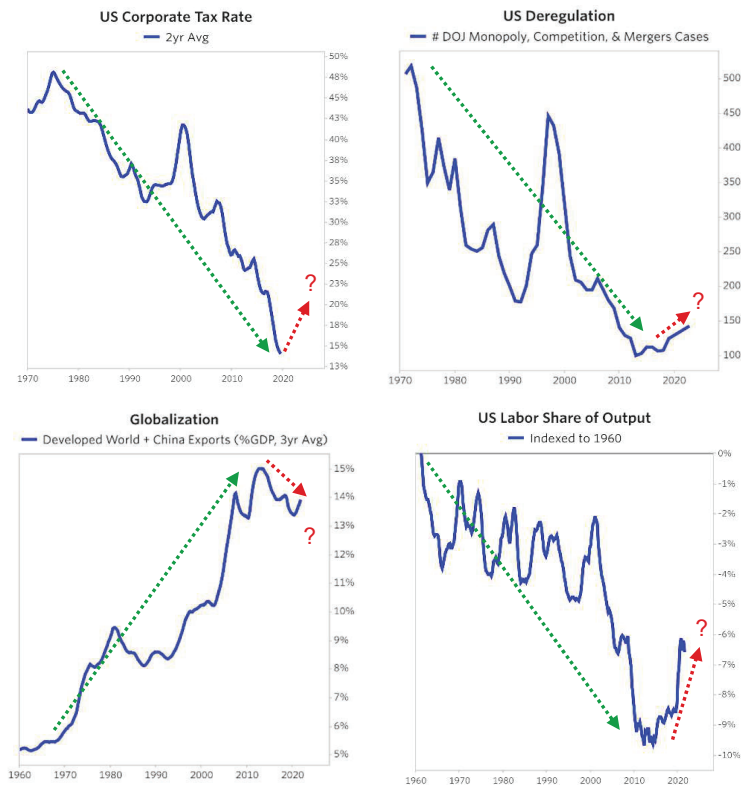


Returns are shown through July 2023. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

IMPORTANT SECULAR FORCES THAT HELPED CREATE THE GREAT EQUITY RUN ARE FADING

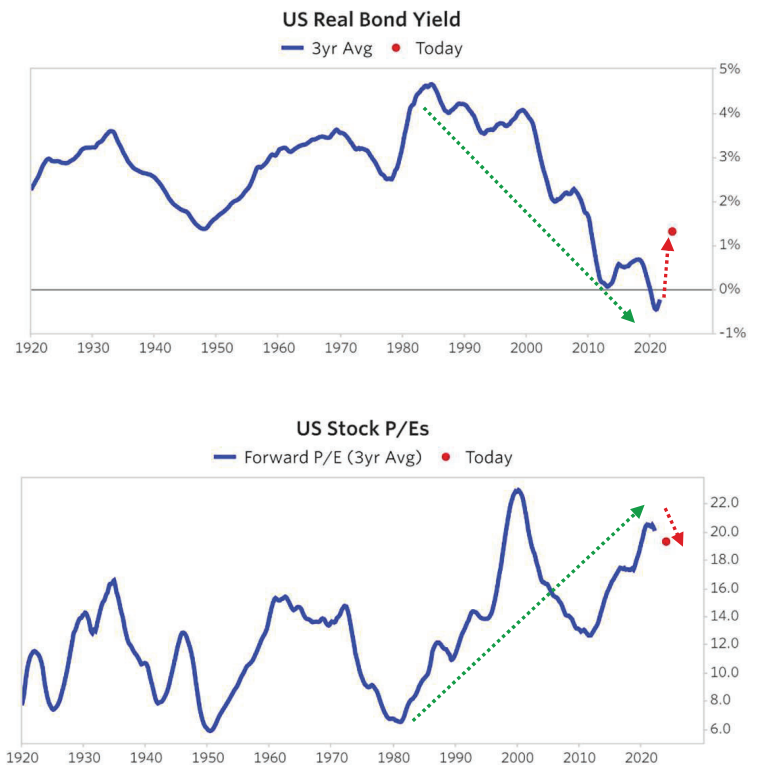
Earnings

Secular supports to margins are unlikely to repeat and have the potential to reverse



Discounting

Falling yields have supported rising valuations while stimulus disproportionately supported markets



Bond yield and P/E data through Aug-2023. Please review the "Important Disclosures and Other Information" located at the end of this document.

US EQUITIES PERFORMED BEST IN THE 2010s, BUT THERE IS NOTHING PERMANENT ABOUT THAT RANKING

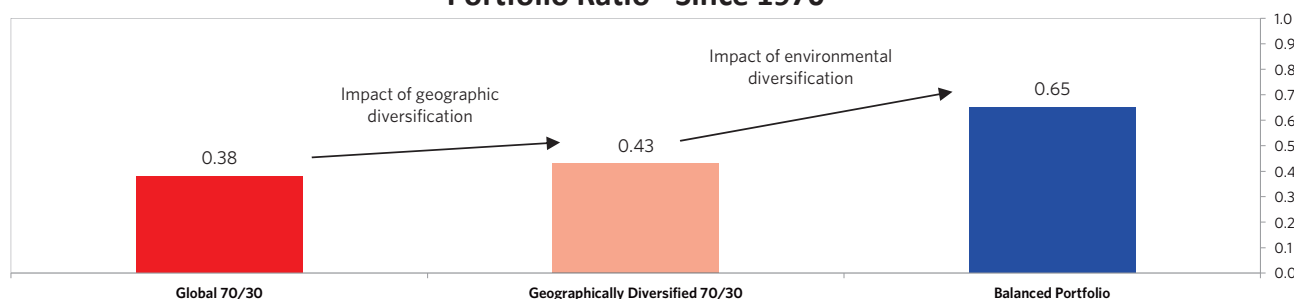
Rankings of Equity Excess Returns By Decade											
1900s		1910s		1920s		1930s		1940s		1950s	
USA	83%	USA	10%	Equal Weight	249%	GBR	6%	ESP	140%	DEU	739%
Equal Weight	9%	FRA	-35%	DEU	178%	DEU	2%	Equal Weight	138%	JPN	662%
FRA	9%	GBR	-44%	USA	170%	CAN	-9%	AUS	132%	ITA	484%
DEU	9%	Equal Weight	-54%	CAN	134%	Equal Weight	-10%	USA	122%	FRA	484%
RUS	-7%	DEU	-92%	GBR	87%	USA	-12%	GBR	117%	Equal Weight	384%
GBR	-34%			ESP	72%	SWE	-22%	CAN	115%	USA	376%
				FRA	41%	FRA	-54%	SWE	100%	AUS	277%
				SWE	24%	ESP	-61%	FRA	-19%	GBR	270%
								DEU	-35%	SWE	240%
										CAN	222%
										ESP	98%
Avg Correl	19%	3%		26%		37%		17%		20%	
Best - Worst	116%	102%		225%		68%		176%		641%	

1960s		1970s		1980s		1990s		2000s		2010s	
ESP	312%	KOR	456%	SWE	503%	CHE	231%	NOR	48%	USA	182%
AUS	148%	JPN	66%	KOR	354%	USA	217%	BRZ	45%	NZL	149%
Equal Weight	75%	CAN	30%	JPN	310%	SWE	190%	CAN	42%	SWE	146%
JPN	74%	Equal Weight	10%	ESP	188%	FRA	117%	AUS	36%	JPN	105%
CAN	71%	GBR	8%	Equal Weight	185%	GBR	110%	KOR	22%	DEU	99%
USA	41%	CHE	-5%	DEU	179%	ESP	96%	ESP	17%	CHE	97%
SWE	31%	AUS	-12%	GBR	173%	DEU	92%	Equal Weight	1%	FRA	92%
GBR	28%	USA	-17%	ITA	169%	AUS	59%	NZL	-3%	GBR	83%
DEU	21%	FRA	-20%	FRA	158%	Equal Weight	53%	CHE	-4%	NOR	78%
ITA	-1%	SWE	-22%	CHE	96%	CAN	52%	SWE	-13%	Equal Weight	74%
FRA	-6%	DEU	-31%	USA	96%	ITA	40%	TAI	-23%	TAI	55%
		ESP	-69%	AUS	39%	NOR	2%	GBR	-23%	CAN	54%
		ITA	-74%	NOR	23%	NZL	-6%	USA	-27%	AUS	41%
				CAN	-4%	JPN	-47%	FRA	-32%	KOR	27%
						TAI	-49%	ITA	-35%	ITA	20%
						KOR	-66%	DEU	-36%	ESP	11%
								JPN	-41%	BRZ	-26%
Avg Correl	26%	38%		46%		50%		74%		65%	
Best - Worst	319%	530%		507%		296%		89%		209%	

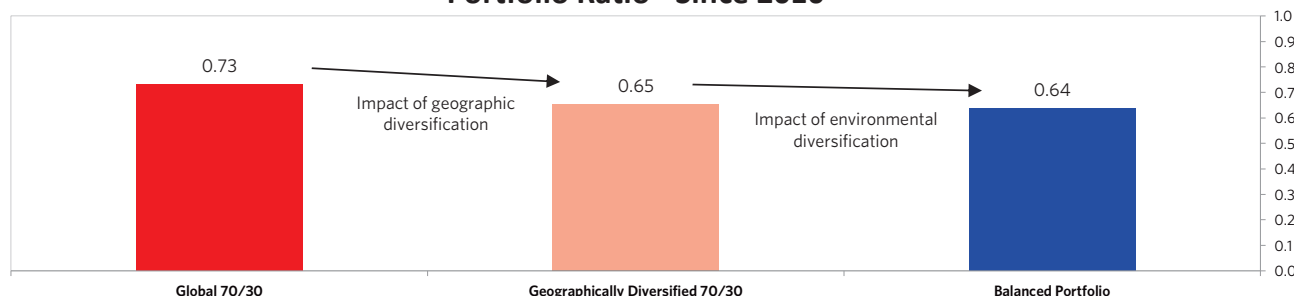
Analysis as of Feb. 2019. Please review the "Important Disclosures and Other Information" located at the end of the presentation.

DIVERSIFYING AWAY FROM U.S. DEPENDENCY AND EQUITY DEPENDENCY HELPS LONG TERM BUT DIDN'T RECENTLY

Portfolio Ratio - Since 1970



Portfolio Ratio - Since 2010



Data as of July 2023. Performance shown gross of fees. "Global 70/30" and "Geographically Diversified 70/30" represent 70% world equities and 30% world government bonds. "Geographically Diversified 70/30" represents geographic weights of equities and bonds based on the Balanced Portfolio. The "Impact of Geographic and Environmental Diversification" ratio is simulated using the Balanced Portfolio, as described in the "Balanced Portfolio Disclosure". It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

WE HAVE SHIFTED FROM AN EXCEPTIONAL ENVIRONMENT FOR EQUITIES TO ONE THAT POSES RISKS

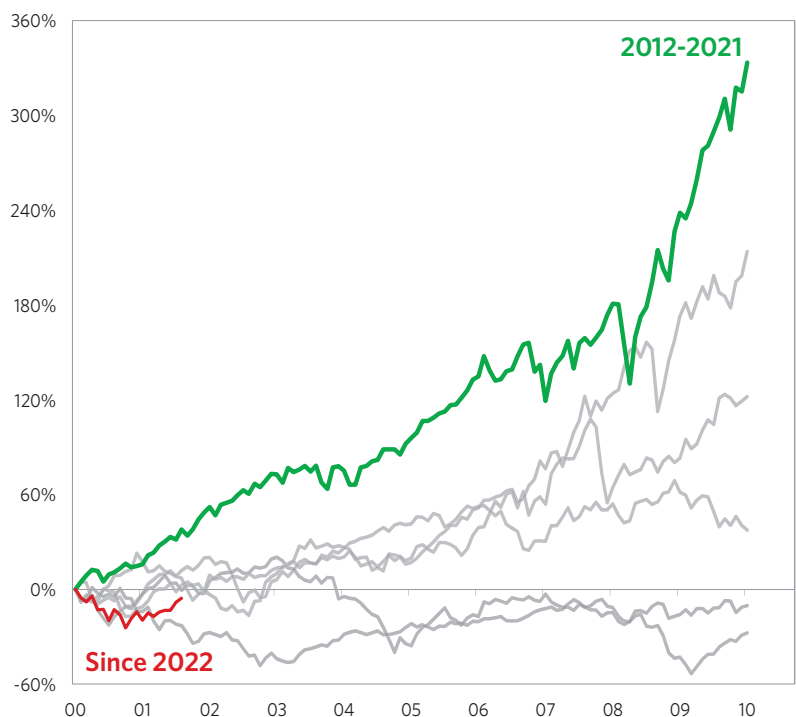
2012 - 2021

- ✓ Improving growth
- ✓ Low inflation
- ✓ Cheap starting valuations
- ✓ Unlimited money printing

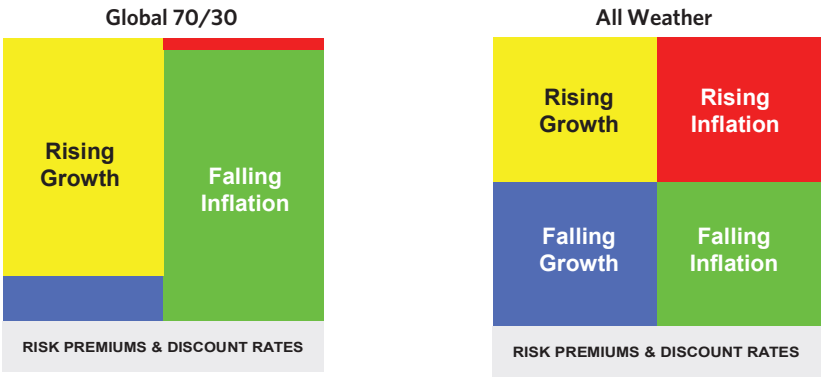
Today

- ? Risks to growth
- ? Elevated inflation
- ? Expensive starting valuations
- ? Policy tightening

US Stock Performance by Decade
Cumulative Excess Returns

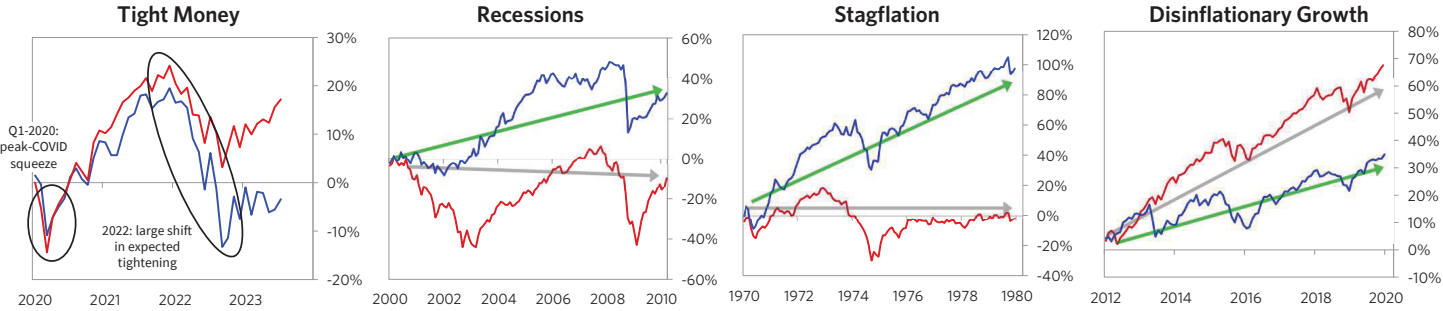


BALANCE IS THE BEST WAY TO PREPARE FOR WHAT COMES NEXT



Cumulative Excess Returns (ln)

— All Weather (Net, Simulated before June 1996) — Global 70/30 (Gross)



Data estimated through July 2023. Before June 1996, returns are simulated using the All Weather Strategy Simulation, as described in the "All Weather Strategy Simulation Disclosure." It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. The "5 Worst Completed Drawdowns" analysis does not include the ongoing 2022 drawdown. The global 70/30 is comprised of 70% hedged global equities and 30% hedged global nominal government bonds. Returns are cumulative excess returns above cash, shown gross of fees. It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. Attribution is based on Bridgewater analysis and is approximated based on Bridgewater's views of how to assess the performance of different segments of our portfolio. There could be other methods of attributing performance, however any other method would result in the same total portfolio returns. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

Appendix

LONG-TERM PERFORMANCE VS. EXPECTATIONS

Bridgewater All Weather II Strategy scaled to 12% TE

Gross Cumulative Excess Return vs. Expectations (ln)

(Returns Simulated from Oct. 2008 to Sept. 2009; Based on Related Fund Performance from June 1996 to Sept. 2008)

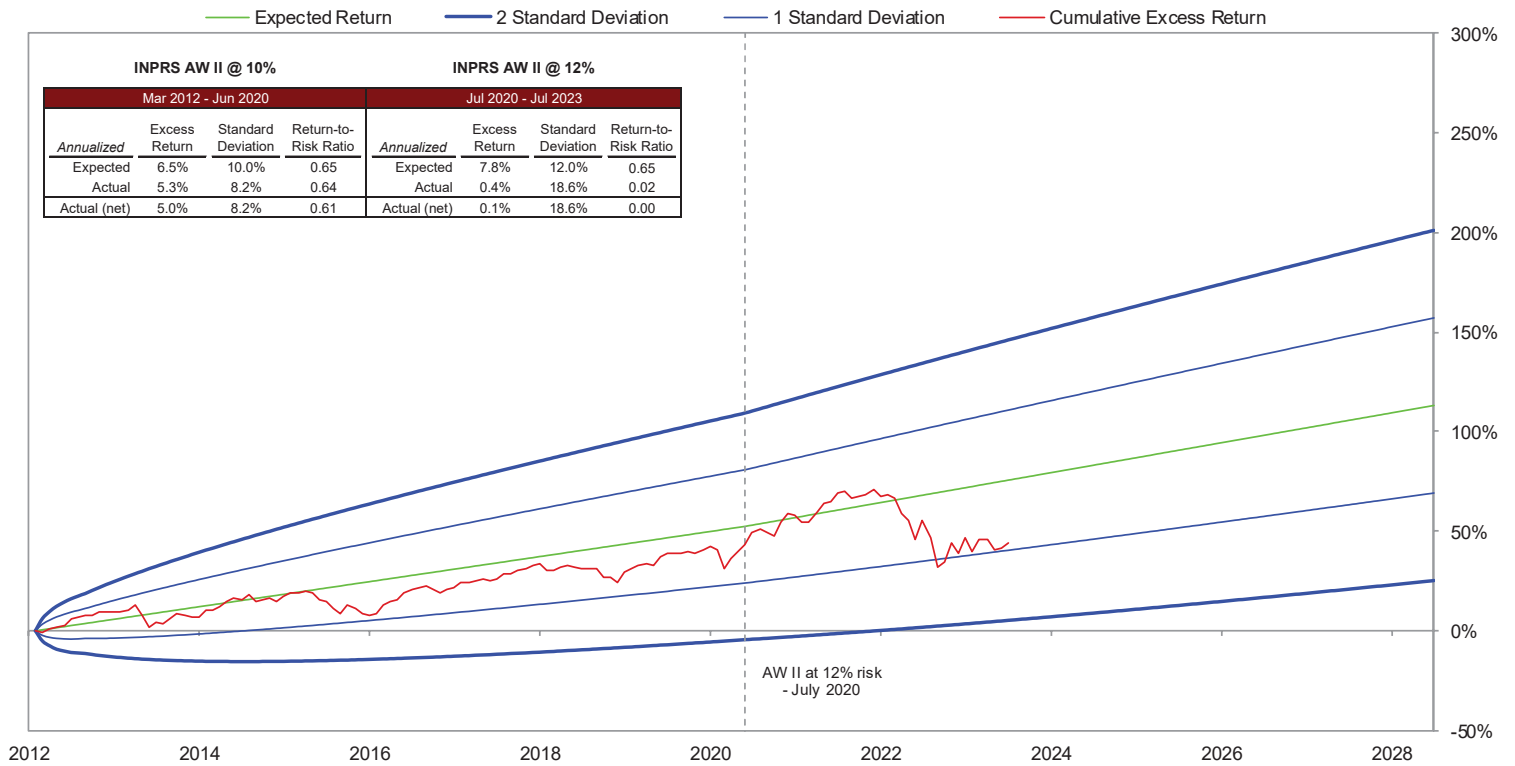


Standard deviation is calculated using gross of fees excess returns. There can be no guarantee that any expected performance can or will be achieved and expected performance should not be solely relied upon in making any investment decision. Returns simulated from Oct. 2008 to Sep. 2009; "Related Fund Performance" from Jun. 1996 to Sep. 2008 is based on the returns of the All Weather strategy. Net of fees performance is calculated using a representative management fee of 0.60% (standard 0.50%, scaled to target volatility). HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

Please review the "Important Disclosures and Other Information" located at the end of this presentation.

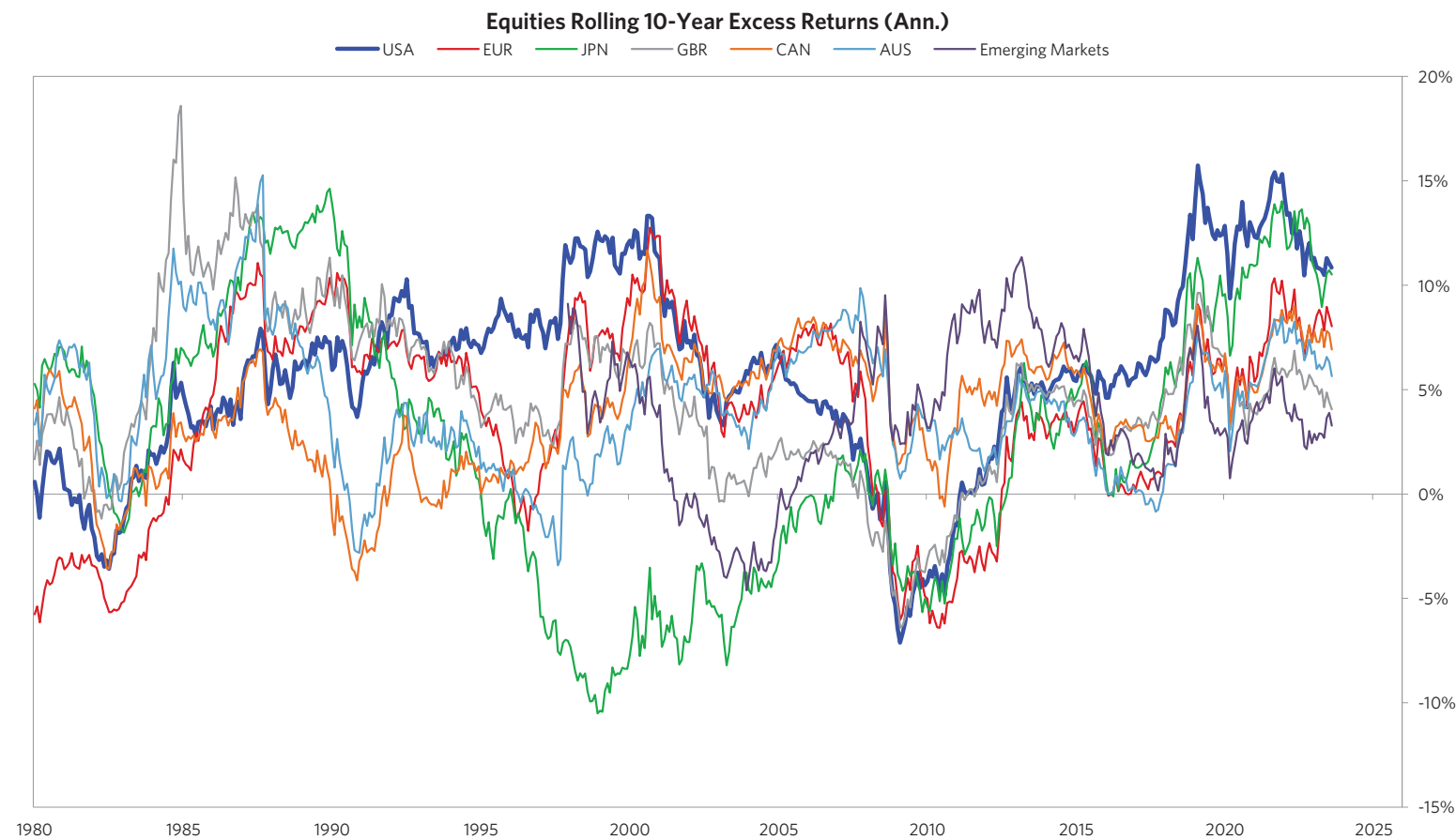
PERFORMANCE VS. EXPECTATIONS

Gross Cumulative Excess Return vs. Expectations (In)



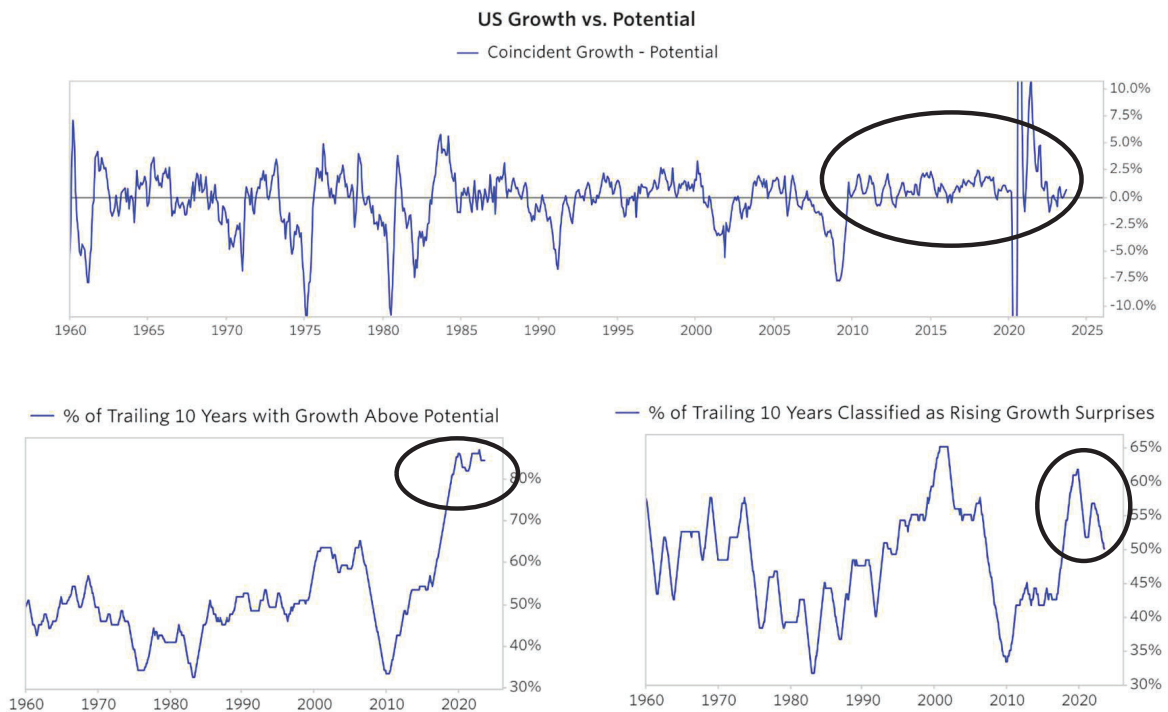
Standard deviation is calculated using gross of fees excess returns. There can be no guarantee that any expected performance can or will be achieved and expected performance should not be solely relied upon in making any investment decision. Inception of the mandate was March 2012. Effective July 2020, your account transitioned from All Weather Portfolio II to an SMA structure targeting approximately 12% tracking error, consisting of a 60% account value investment in Bridgewater All Weather Portfolio II and a 40% account value investment in Bridgewater All Weather Portfolio II @ 15%. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

WITHIN EQUITIES, SOMETIMES US EQUITIES PERFORM BEST BUT THIS IS NOT RELIABLE EITHER



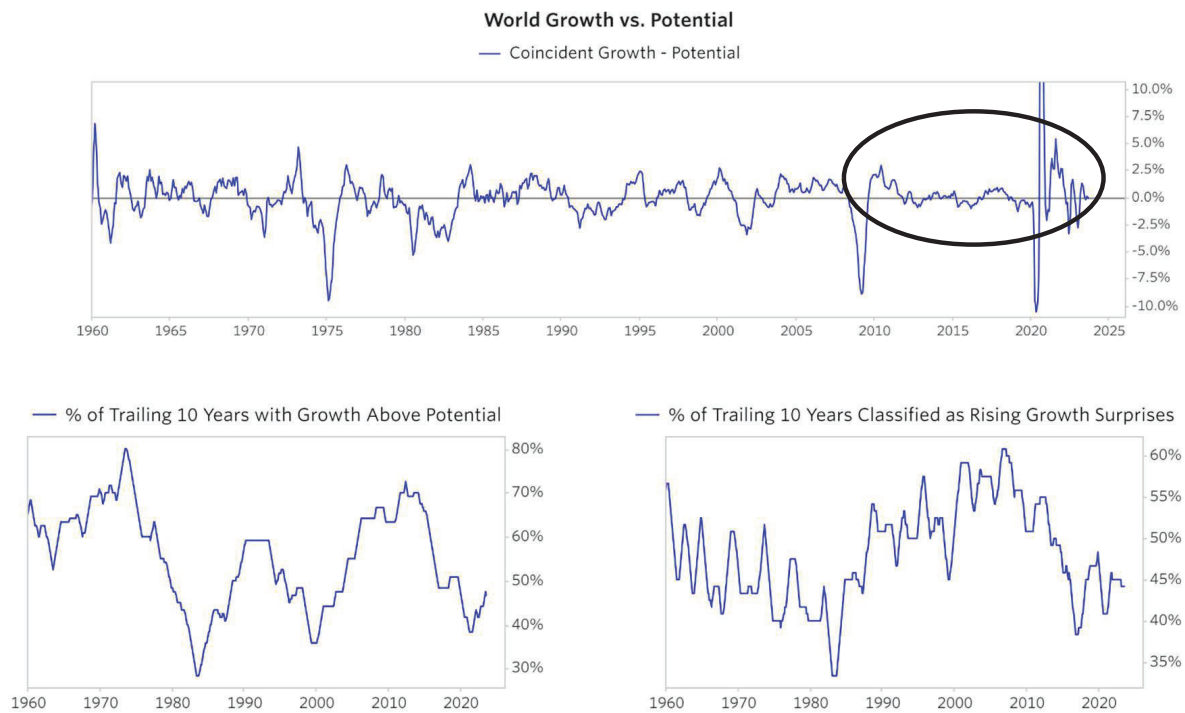
Returns are shown through July 2023. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

WHY DID THIS HAPPEN? IN THE US, WEAKENING GROWTH WAS RARE AND SHORT-LIVED OVER THE LAST DECADE



Data as of Jul-2023. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

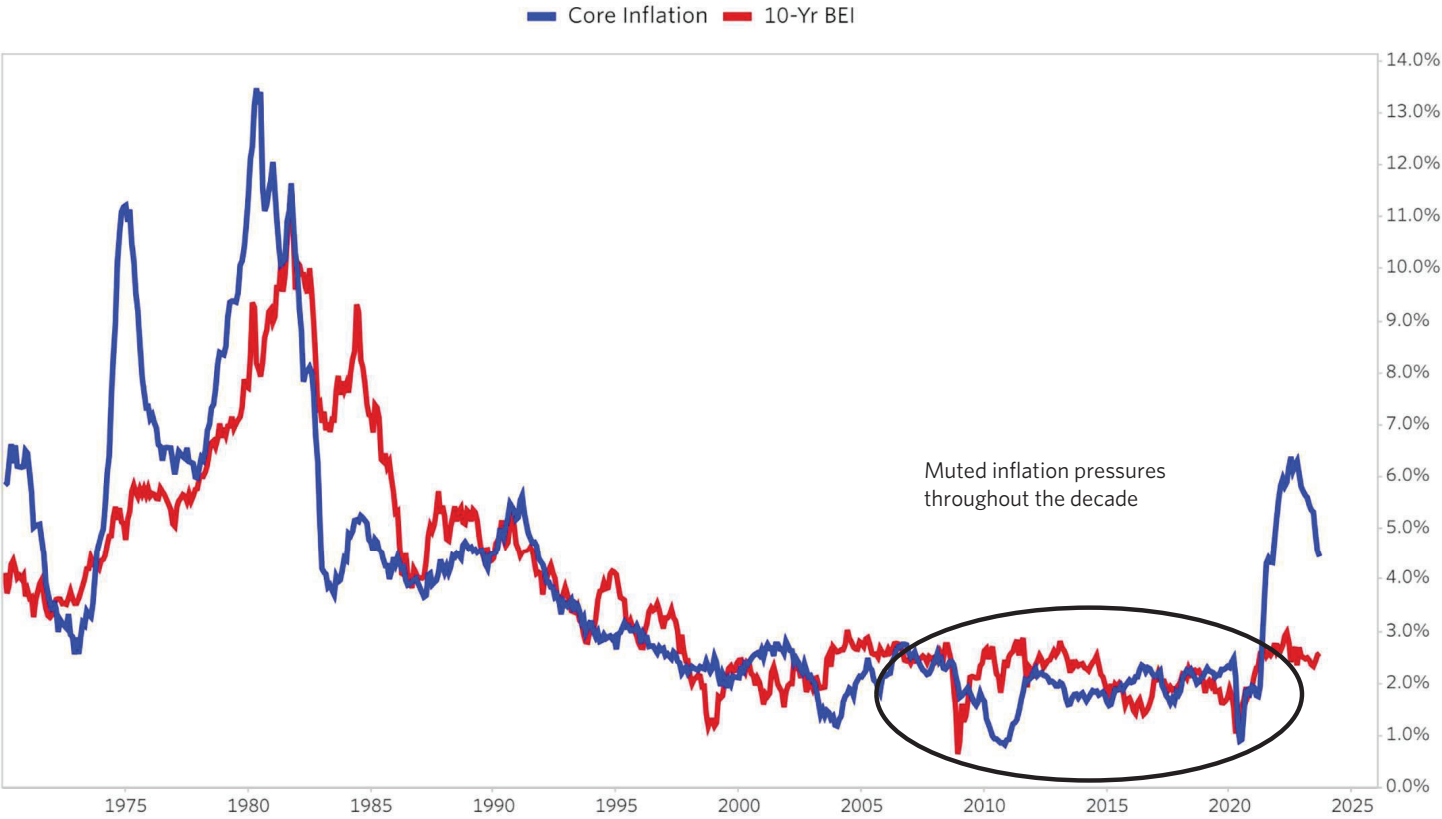
GLOBALLY THE PICTURE WAS MORE MIXED, BUT STILL NOT MANY PROLONGED GROWTH DOWNTURNS



Data as of Jul-2023. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

LOW-INFLATION AMID THAT GROWTH ALSO CONTRIBUTED TO EQUITY OUTPERFORMANCE (POLICY COULD STAY SUPPORTIVE)

USA: Inflation and Expectations



As of Jul-2023. Estimates based on Bridgewater analysis. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

SURPRISES DRIVE ASSET CLASS RETURNS, AND OVER THE LAST THREE YEARS GROWTH HAS MOSTLY SURPRISED TO THE UPSIDE

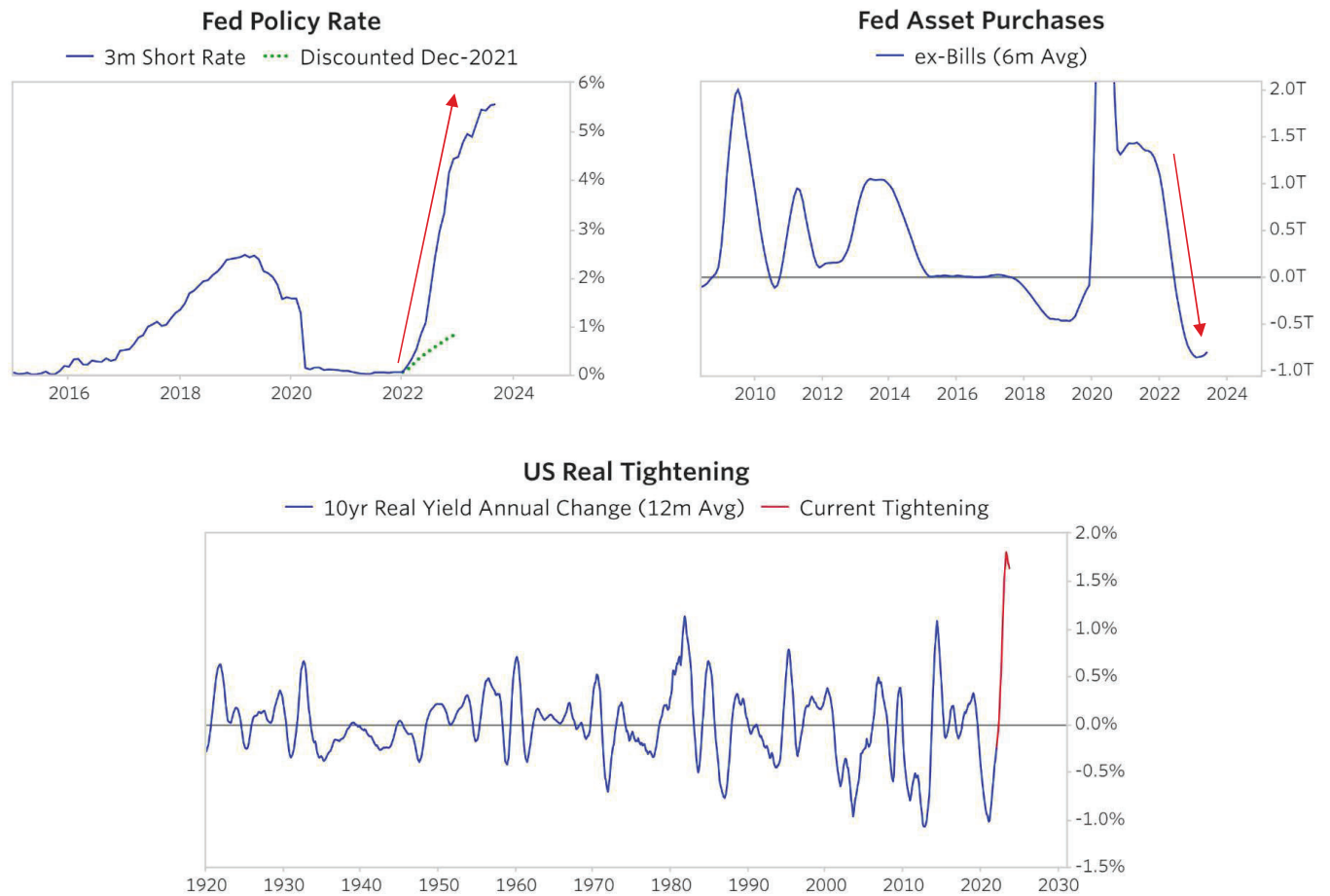
Growth Sensitive Asset Performance vs. Growth Surprises

— All Weather Lens: Discounted US Growth — USA Economic Statistics Surprise Gauge



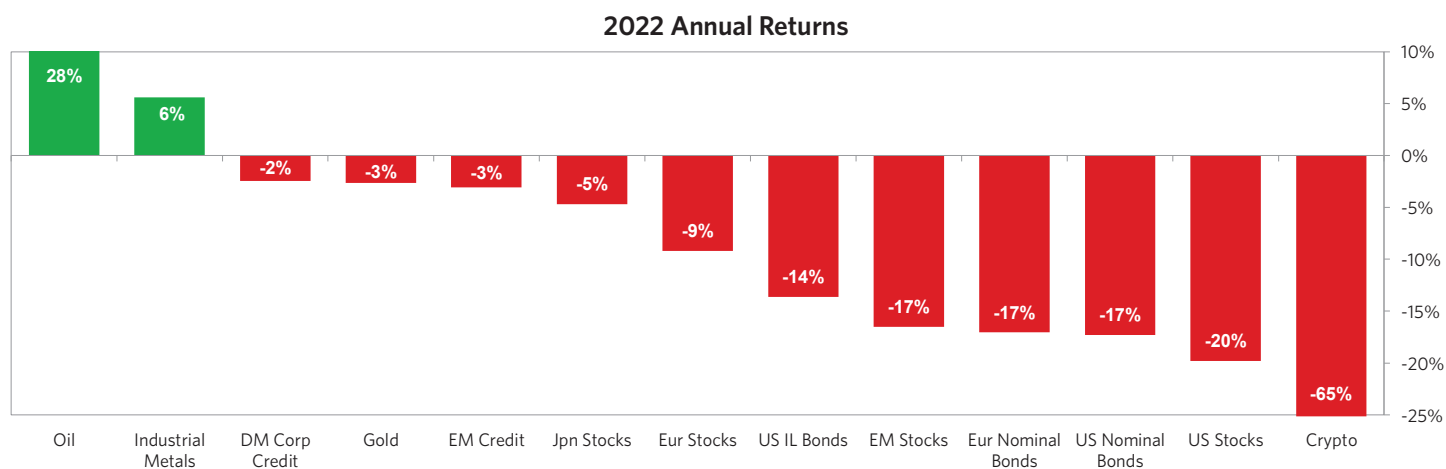
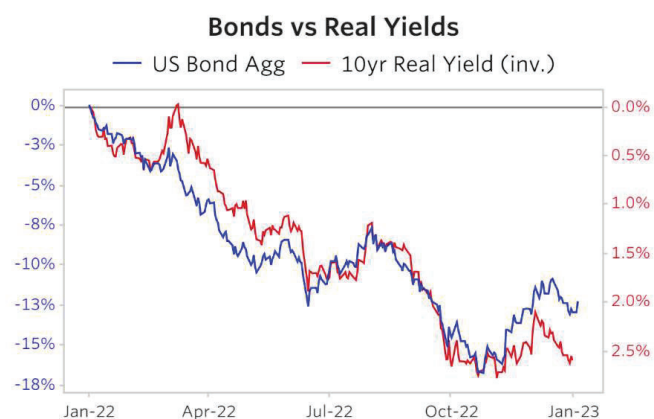
Data shown as of Jul-2023. Where shown, the All Weather Lens is an analytical approach to assess the behavior of the major drivers of asset performance and their impact on markets during any given period, based on Bridgewater's understanding of global financial markets. Information shown is the result of analyses of actual and simulated market data. Please review the "Important Disclosures and Other Information" located at the end of the presentation.

RECAPPING 2022: A HISTORIC TIGHTENING



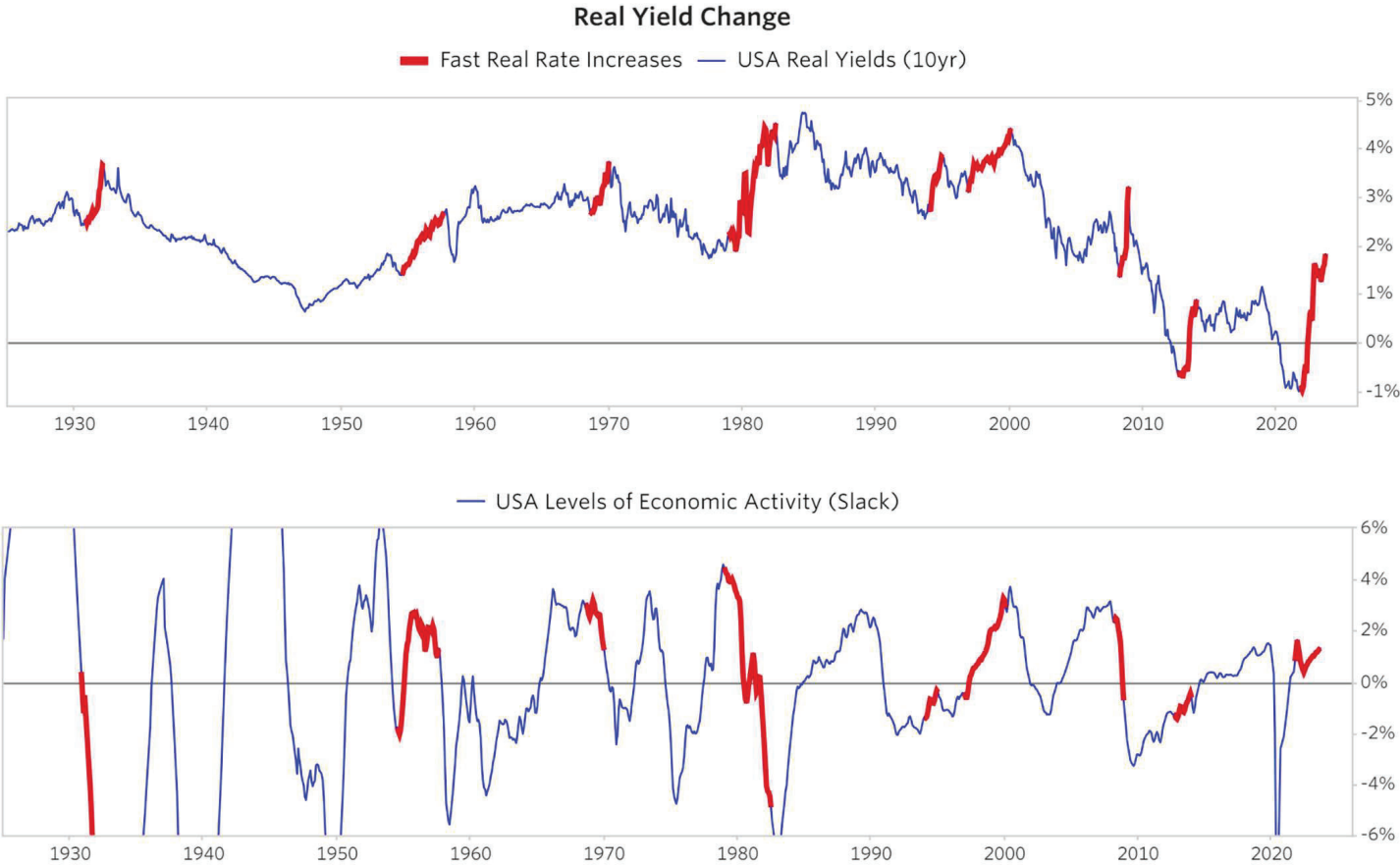
Estimates are based on Bridgewater analysis. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

REAL RATES WERE THE DOMINANT DRIVER OF MARKETS IN 2022



YTD returns through 12/30/2022. Estimates based on Bridgewater analysis. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

LARGE REAL RATE MOVES ARE UNSUSTAINABLE



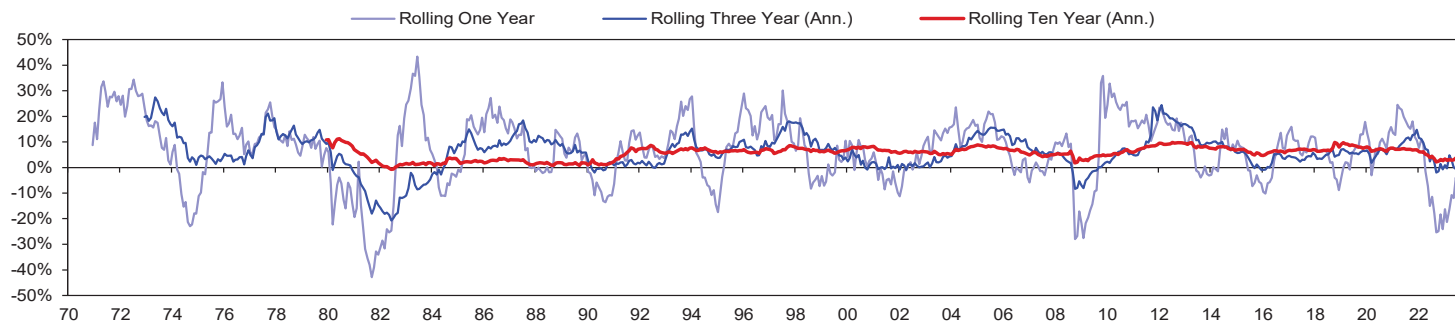
Estimates based on Bridgewater analysis. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

ALL WEATHER PERFORMANCE DRIVEN BY THE RELATIVE ATTRACTIVENESS OF CASH VS. ASSETS

- ◆ Shifts in the relative attractiveness of cash vs. assets result from:
 - Changes in the expected return of cash based on actual or discounted central bank action;
 - Changes in the risk premium above cash that investors demand as compensation for parting with their cash.
- ◆ The ups and downs of All Weather's returns in the short-term normalize over longer periods as investors must be compensated for taking risk.

All Weather II Excess Returns (Net of Fees)

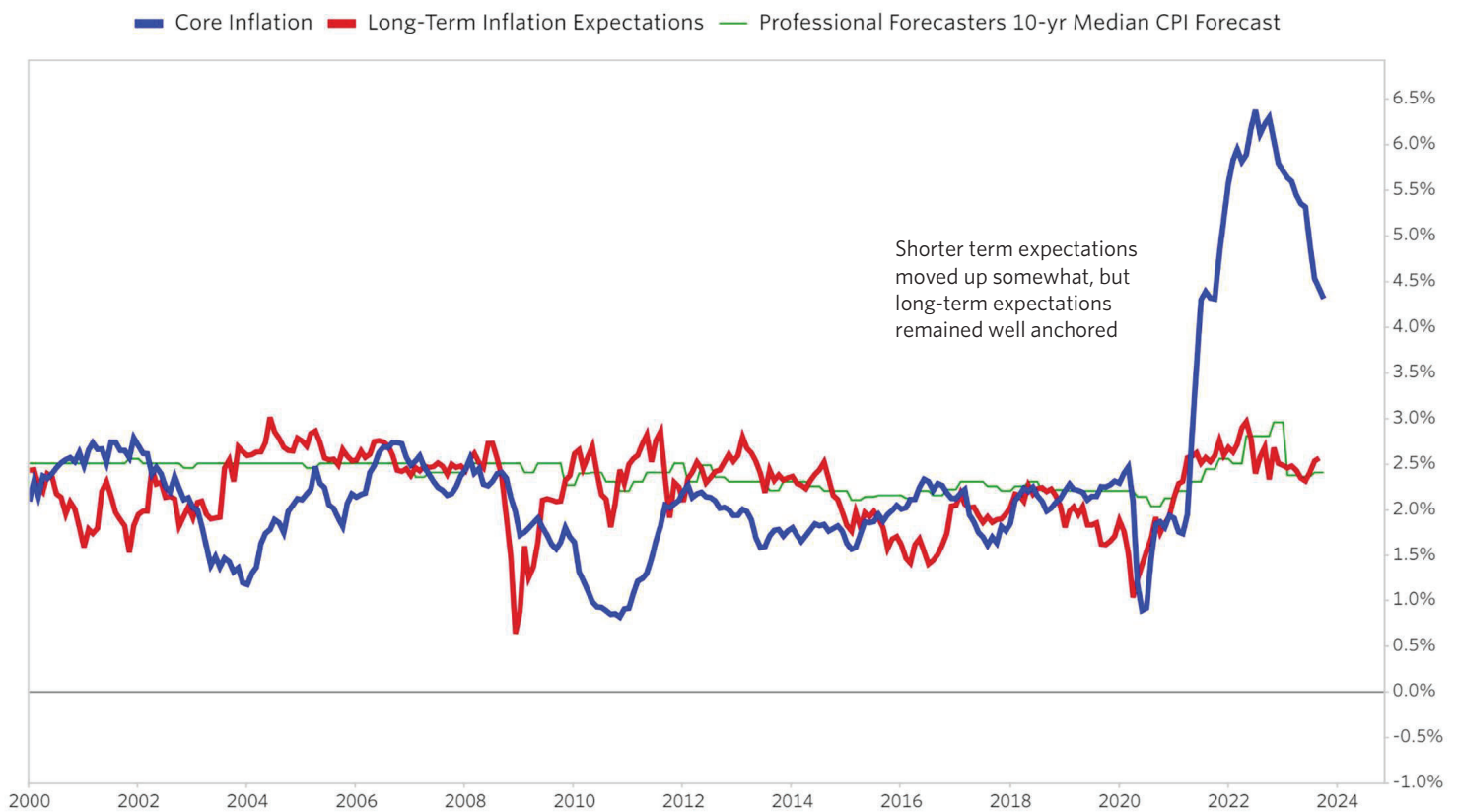
(Returns Simulated From Oct. 2008 to Sep. 2009; Based on Related Fund Performance* from June 1996 to Sep. 2008; Simulated prior to June 1996)



Returns are shown through July 2023. *Returns simulated from Oct. 2008 to Sep. 2009; related fund performance from Jun. 1996 to Sep. 2008 is based on the returns of the All Weather strategy. Before June 1996, returns are simulated using the Balanced Portfolio, as described in the "Balanced Portfolio Disclosure." It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. Starting in October 2009 performance is shown for the All Weather II Strategy. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

DESPITE HIGH INFLATION, LONG-TERM INFLATION EXPECTATIONS DIDN'T CHANGE MUCH

USA: Inflation and Expectations



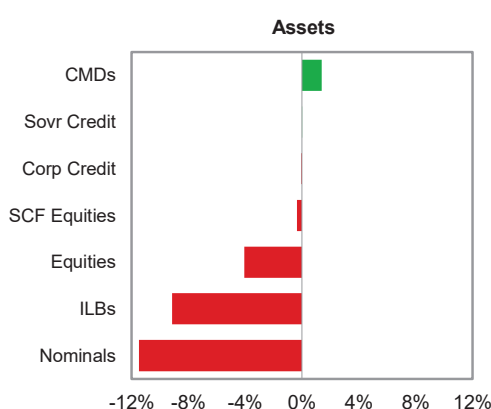
As of Jul-2023. Long-term inflation expectations represent 10yr BEI. Estimates based on Bridgewater analysis. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

2022 ALL WEATHER PERFORMANCE

All Weather Attribution

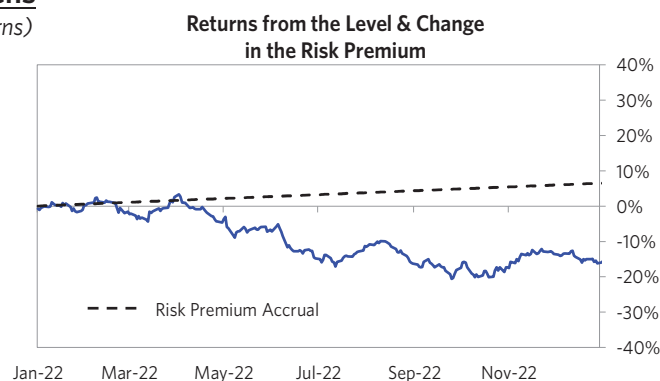
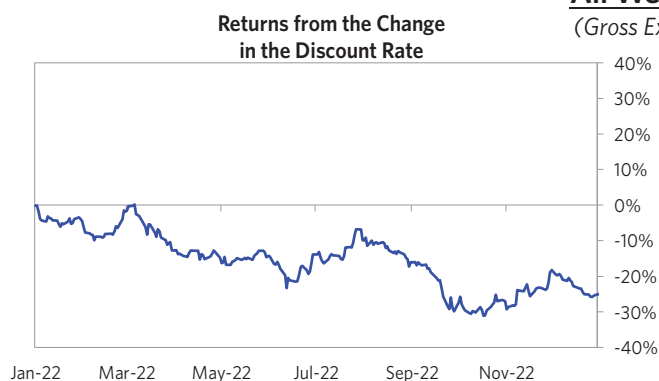
(Gross Excess Returns)

	Growth	Inflation
Rising	-0.4%	-3.6%
Falling	-10.6%	-9.1%
Risk Premiums & Discount Rates		-23.7% Gross Excess Return
Net Excess Return: -24.1%		



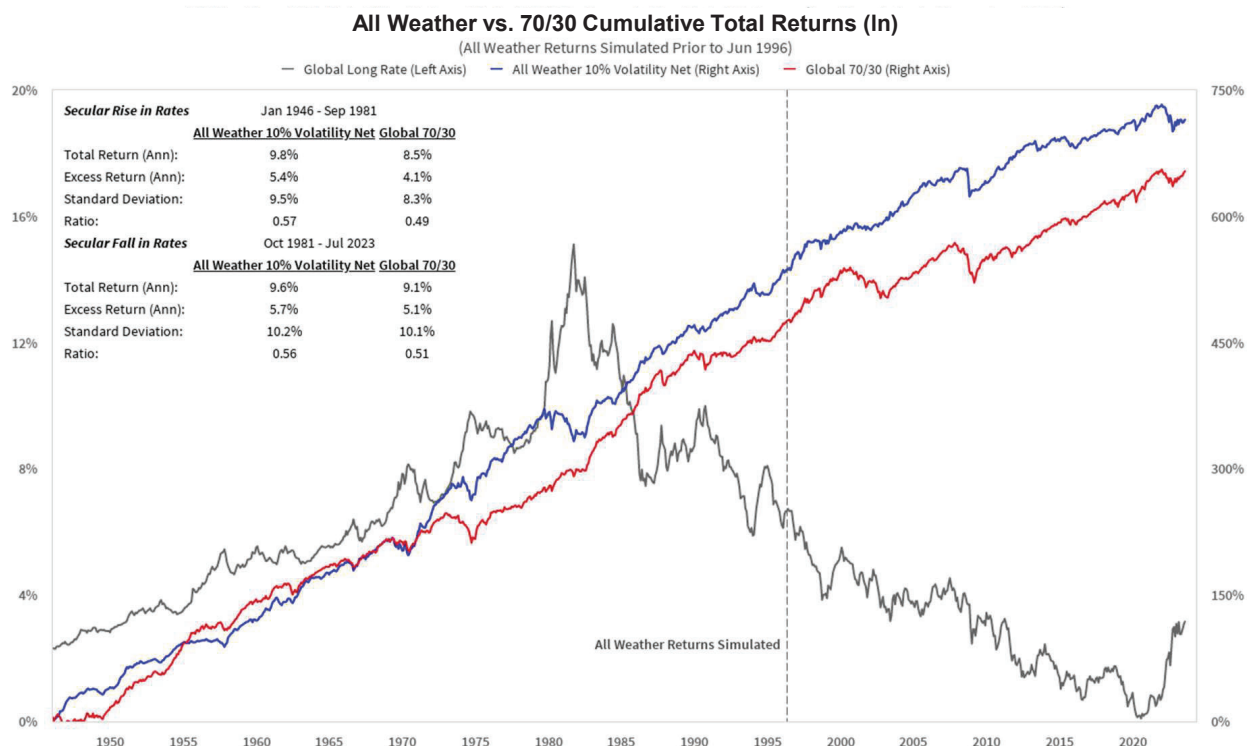
All Weather Lens

(Gross Excess Returns)



Returns through 12/30/22. Where shown, the All Weather Lens is an analytical approach to assess the behavior of the major drivers of asset performance and their impact on markets during any given period, based on Bridgewater's understanding of global financial markets. Information shown is the result of analyses of actual and simulated market data. All Weather returns estimated and will not reconcile with client reports. Attribution is based on Bridgewater analysis and is approximated based on Bridgewater's views of how to assess the performance of different segments of our portfolio. There could be other methods of attributing performance; however, any other method would result in the same total portfolio returns. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

ALL WEATHER AND GLOBAL 70/30 PORTFOLIO'S SENSITIVITY TO SECULAR MOVES IN YIELDS



Performance through Jul 2023. Simulated All Weather performance hedged to USD. The returns shown for All Weather are simulated prior to June 1996 using the All Weather Strategy Simulation (see All Weather Strategy Simulation Disclosure). The global 70/30 is comprised of 70% hedged global equities and 30% hedged global nominal government bonds. Prior to 1970, the global long rate is based on the US 10-year Treasury yield and after 1970 it is based on a GDP-weighted average of US, Germany, Japan, UK, Canada and Australia 10-year yields. It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. Past results are not necessarily indicative of future results. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

Important Disclosures and Other Information

Please read carefully the following important disclosures and other information as they provide additional information relevant to understanding the assumptions, research and performance information presented herein. Additional information is available upon request except where the proprietary nature of the information precludes its dissemination.

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Certain information contained herein constitutes forward-looking statements (including projections, targets, hypotheticals, ratios, estimates, returns, performance, opinions, activity and other events contained or referenced herein), which can be identified by the use of terms such as "may," "will," "should," "expect," "anticipate," "project," "estimate," "intend," "continue" or "believe" or other variations (or their negatives) thereof. Due to various risks, assumptions, uncertainties and actual events, including those discussed herein and in the OM, actual results, returns or performance can differ materially from those reflected or contemplated in such forward-looking statements. As a result, prospective investors should not rely on such forward-looking statements in making their investment decisions. While Bridgewater believes that there is a sound basis for these forward-looking statements, no representations are made as to their accuracy, and there can be no assurance that such results will be achieved. Any forward-looking statements contained herein reflect Bridgewater's current judgment and assumptions which may change in the future, and Bridgewater has no obligation to update or amend such forward-looking statements.

Bridgewater's investment process seeks to understand the cause and effect linkages that drive markets over time. To assess and refine its understanding of these linkages, Bridgewater performs historical stress tests across a wide range of timeframes and market environments. From these stress tests, Bridgewater is able to simulate how its strategies would have performed prior to their inception. Bridgewater has the ability to run multiple simulations and select the simulation with the best results, returns or performance. For strategies that include active decision making, Bridgewater often "humbles" its simulated alpha returns (by systematically adjusting downward the simulated results that Bridgewater's current alpha investment logic produces) to account for the possibility that it could be wrong. Because this stress testing is a core component of Bridgewater's investment process, it shares these simulations with current and prospective investors to demonstrate its thinking. However, because they do not demonstrate actual results, these simulations are hypothetical, and inherently limited and should not be relied upon to make an investment decision.

The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream.

All hypothetical performance is subject to revision and provided solely as a guide to current expectations. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. Hypothetical performance results can provide insight into the level of risk that a strategy will seek with respect to its investments, with higher hypothetical performance results generally reflecting greater risk. Some or all results may be substantially lower than these hypothetical results and, as with any investment, there is a risk of loss of the entire investment.

Hypothetical performance results rely on numerous criteria, assumptions, risks and limitations and are inherently uncertain. There are multiple assumptions and possible adjustments Bridgewater may make in its underlying calculations that are reasonable, but other criteria, assumptions, methodologies and adjustments could also be reasonable and could lead to materially different and lower actual results and higher risks than those presented. In addition, the hypothetical performance results may prove to be invalid, inaccurate, incomplete or change without notice. Variation in any of these factors (or factors or events that are unknown or unaccounted for) could cause actual returns to substantially differ. In constructing hypothetical returns and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream. Furthermore, any hypothetical or mathematical calculations or data might contain errors, and could rely on third-party inputs, which Bridgewater believes to be reliable but whose accuracy cannot be guaranteed.

While Bridgewater believes that there is a sound basis for these hypothetical performance results, no representations are made as to their accuracy, and there can be no assurance that such results will be achieved. This presentation will not be updated or amended even if there are changes in the information or processes upon which they rely.

IMPORTANT DISCLOSURES

Bridgewater believes that a particular return stream should be evaluated against its expected performance or its benchmark. To that end, Bridgewater demonstrates whether its strategies are operating as expected via a cone chart, which shows the performance of a particular strategy over time relative to the strategy's benchmark and also within bands of standard deviation from that benchmark. Separately, to demonstrate the impact of market conditions on the strategies it manages, Bridgewater explains the macro-economic pressures and market conditions that effected performance in the context of client letters, account reviews, or other publications that Bridgewater provides to each current and prospective investor on a regular basis. Additional information about how Bridgewater thinks about setting expectations for its strategies via a benchmark is available upon request.

Any tables, graphs or charts relating to past performance, whether hypothetical, simulated or actual, included in this presentation are intended only to illustrate the performance of indices, strategies, or specific accounts for the historical periods shown. When creating such tables, graphs and charts, Bridgewater may incorporate assumptions on trading, positions, transactions costs, market impact estimations and the benefit of hindsight. For example, transaction cost estimates used in simulations are based on historical measured costs and/or modeled costs, and attribution is derived from a process of attributing positions held at a point in time to specific market views and is inherently imprecise. Such tables, graphs and charts are not intended to predict future performance and should not be used as a basis for making any investment decision. Bridgewater has no obligation to update or amend such tables, graphs or charts.

Statements regarding target performance or target ratios related to assumed risk budgets, liabilities, volatility, target volatility, tracking error or other targets are hypothetical in nature and should not be considered a guarantee that such results can or will be achieved. For example, Bridgewater may adjust returns to match, for instance, the annualized standard deviation of two or more return series but this adjustment does not suggest that the returns or assets are similar with respect to other aspects of the risk such as liquidity risk. Any statements with respect to the ability to risk match or risk adjust in the future are not a guarantee that the realized risks will be similar and material divergences could occur. All performance and risk targets contained herein are subject to revision by Bridgewater and are provided solely as a guide to current targets.

Discussions related to the risk controlling capabilities of low risk portfolios, diversification, passive investing, risk management, risk adjusting, and any other risk control theories, statements, measures, calculations and policies contained herein should not be construed as a statement that Bridgewater has the ability to control all risk or that the investments or instruments discussed are low or will lower any risk. Active trading comes with a monetary cost and high risk and there is no guarantee the cost of trading will not have a materially adverse impact on any account, fund, portfolio or other structure. Bridgewater manages accounts, funds and strategies not referred to herein. For such accounts, funds and strategies, and, even where accounts, funds or strategies are traded similarly, performance may materially diverge based on, among other factors, timing, the approved instruments, markets, and target risk for each strategy or market. The price and value of the investments referred to in this presentation and the income, if any, derived therefrom may fluctuate.

Bridgewater uses different types of performance in its materials. Unless otherwise indicated, such types of performance can be understood as follows:

Hypothetical Performance refers to any return stream that is not actual performance. Hypothetical performance includes, for example, Simulated Performance and Related Fund or Related Share Class Performance.

Simulated Performance refers to hypothetical performance that shows the returns of a Bridgewater strategy prior to its inception date. Simulated performance does not reflect actual trading by Bridgewater and is constructed by applying Bridgewater's investment management process to available market data.

Related Fund or Related Share Class Performance refers to actual performance that has been adjusted to account for volatility and/or currency differences. Because it is based on actual performance, Related Fund or Related Share Class Performance does reflect actual trading by Bridgewater, which has been adjusted on the basis of currency, volatility, or both and is thus hypothetical. Note that the terms Related Fund or Related Share Class Performance are not being used in the same way that the term 'Related Performance' is used in the Securities and Exchange Commission's Marketing Rule.

Statistical and mathematical measures of performance and risk measures based on past performance, market assumptions or any other input should not be relied upon as indicators of future results. While Bridgewater believes the assumptions and possible adjustments it may make in making the underlying calculations are reasonable, other assumptions, methodologies and adjustments could have been made that are reasonable and would result in materially different results, including materially lower results. Where shown, targeted performance and the abilities and capabilities of the active and passive management approaches discussed herein are based on Bridgewater's analysis of market data, quantitative research of the underlying forces that influence asset classes as well as management policies and objectives, all of which are subject to change. The material contained herein may exhibit the potential for attractive returns, however it also involves a corresponding high degree of risk. Targeted performance, whether mathematically based or theoretical, is considered hypothetical and is subject to inherent limitations such as the impact of concurrent economic or geo-political elements, forces of nature, war and other factors not addressed in the analysis, such as lack of liquidity. Please see additional discussions of hypothetical performance herein for important information on the risks and limitations thereof. There is no guarantee that the targeted performance for any fund or strategy shown herein can or will be achieved. A broad range of risk factors, individually or collectively, could cause a fund or strategy to fail to meet its investment objectives and/or targeted returns, volatilities or correlations.

Where shown, information related to markets traded may not necessarily indicate the actual historical or current strategies of Bridgewater. Markets listed might not be currently traded and are subject to change without notice. Markets listed are used for illustrative purposes, may not represent the universe of markets traded or results available and may not include actual trading results of Bridgewater. Other markets or trading, not shown herein, can have had materially different results. Attribution of performance or designation of markets and the analysis of performance or other performance with respect to scenario analysis or the determination of biases is based on Bridgewater's analysis. Statements made with respect to the ability of Bridgewater, a fund, a strategy, a market or instrument to perform in relation to any other market, instrument or manager in absolute terms or in any specific manner in the future or any specified time period are not a guarantee of the desired or targeted result.

IMPORTANT DISCLOSURES

Bridgewater research utilizes data and information from public, private and internal sources, including data from actual Bridgewater trades. Sources can include, Arabesque ESG Book, Bloomberg Finance L.P., Bond Radar, Candeal, Capital Economics, CBRE, Inc., CEIC Data Company Ltd., Clarus Financial Technology, Conference Board of Canada, Consensus Economics Inc., Corelogic, Inc., Cornerstone Macro, Dealogic, DTCC Data Repository, Ecoanalitica, Empirical Research Partners, Entis (Axioma Qontigo), EPFR Global, Eurasia Group, Evercore ISI, Factset Research Systems, The Financial Times Limited, FINRA, GaveKal Research Ltd., Global Financial Data, Inc., Harvard Business Review, Haver Analytics, Inc., Institutional Shareholder Services (ISS), The Investment Funds Institute of Canada, ICE Data, ICE Derived Data (UK), IHSMarkit, Investment Company Institute, International Institute of Finance, JP Morgan, MarketAxess, Medley Global Advisors, Metals Focus Ltd, London Stock Exchange Group, Moody's ESG Solutions Group, MSCI, Inc., National Bureau of Economic Research, OAG Aviation, Organisation for Economic Cooperation and Development, Pensions & Investments Research Center, Refinitiv, Rhodium Group, RP Data, Rystad Energy, S&P Global Market Intelligence, Sentix GmbH, Shanghai Wind Information, Sustainalytics, Swaps Monitor, Totem Macro, Tradeweb, United Nations, US Department of Commerce, Verisk Maplecroft, Visible Alpha, Wells Bay, Wood Mackenzie Limited, World Bureau of Metal Statistics, World Economic Forum, YieldBook. While we consider information from external sources to be reliable, we do not assume responsibility for its accuracy.

None of the information related to a fund or strategy that Bridgewater provides is intended to form the basis for any investment decision with respect to any retirement plan's (or any investor's) assets. Any information Bridgewater provides should be independently and critically evaluated based on whatever other sources are deemed appropriate, including legal and tax advice; it is also not intended to be impartial investment information or advice as Bridgewater can recommend one or more Bridgewater products in connection with such information, which would result in additional fees being paid to Bridgewater. Bridgewater's status as an ERISA fiduciary with respect to the management of any existing or future Bridgewater product(s) in which you invest would be (or continue to be) set forth in that product's applicable governing instruments. You are responsible for ensuring that your decision to invest in any Bridgewater product does not violate the fiduciary or prohibited transaction rules of ERISA, the U.S. Internal Revenue Code or any applicable laws or regulations that are similar. On and after June 9, 2017, the information provided herein is being made available only to "independent fiduciaries with financial expertise" (within the meaning of the Definition of the Term "Fiduciary"; Conflict of Interest Rule – Retirement Investment Advice, 81 Fed. Reg. 20,946 (Apr. 8, 2017), available at <https://www.gpo.gov/fdsys/pkg/FR-2016-04-08/pdf/2016-07924.pdf>), and this presentation should not be accepted by any person who does not meet such requirements.

This presentation was written in connection with the promotion or marketing of a Bridgewater fund or strategy, and it was not intended or written to be used and cannot be used by any person for the purpose of avoiding penalties that may be asserted under the U.S. Internal Revenue Code.

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ALL WEATHER STRATEGY DISCLOSURE

All Weather Strategy 10% Volatility Net
(Net Total Returns from Jun 1996 through Jul 2023)

1996	20.4%	2007	11.8%	2018	-5.1%
1997	15.0%	2008	-20.2%	2019	16.6%
1998	-1.8%	2009	9.4%	2020	9.5%
1999	15.6%	2010	17.6%	2021	11.6%
2000	9.9%	2011	18.1%	2022	-22.1%
2001	-6.0%	2012	14.7%	2023 YTD	7.2%
2002	10.2%	2013	-3.9%		
2003	16.7%	2014	7.5%		
2004	17.7%	2015	-6.9%	Avg Annual	6.8%
2005	15.5%	2016	9.9%	StDev	10.7%
2006	1.2%	2017	11.8%	Ratio	0.43

Past results are not necessarily indicative of future results.

Average annual returns and Sharpe ratio are calculated using net of fees performance, while the standard deviation is calculated using gross of fees performance.

Bridgewater All Weather Strategy Performance Disclosure:

For the period June 1996 (the inception of the strategy) through August 2001 the performance is based on the total return of the Bridgewater All Weather strategy as implemented for Bridgewater's principals and their affiliates and was not fully hedged to the US Dollar. The All Weather strategy is structured to be fully hedged, and the performance reflected after August 2001 includes these hedging transactions. For the period of August 2001 through present the performance shown is the actual total returns of the longest running fully funded All Weather account. For the entire history, excess returns are calculated by subtracting an approximation of a US cash rate from the total returns described above. Of note, the All Weather strategy's target leverage, volatility and return, as well as the asset mix varied from June 1996 to July 2005. From August 2005 through the present the strategy has targeted 10% volatility. Bridgewater manages additional All Weather portfolios not included in this performance history.

Gross of fees performance is gross of management and performance fees and includes the reinvestment of interest, gains, losses, expenses and taxes. Returns will be reduced by the investment advisory fees that will be incurred in the management of the account.

Net of fees performance has been calculated using a model fee based on our standard fee schedule for a minimum size account, which are the highest standard fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A.

No representation is being made that any account will or is likely to achieve returns similar to those shown. Trading in futures is risky and can result in losses as well as profits. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Performance as of the current month is estimated and subject to change.

ALL WEATHER STRATEGY SIMULATION DISCLOSURE

All Weather Strategy Simulation Net (Net Total Returns from Jan 1970 through Jul 2023) (Annualized Total Returns in USD)

Last 1 Year	-4.4%
Last 3 Years	-0.1%
Last 5 Years	6.0%
Last 7 Years	5.1%
Last 10 Years	5.9%
Avg Annual	11.7%
StdDev	10.9%
Ratio	0.65

Average annual returns and Sharpe ratio are calculated using net of fees performance, while the standard deviation is calculated using gross of fees performance. Past results are not necessarily indicative of future results. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream.

All Weather Strategy Simulation Performance Disclosure

Performance of the Bridgewater All Weather Strategy Simulation is based on simulated, hypothetical performance and not the actual returns of Bridgewater's All Weather Strategy or any managed portfolio. Bridgewater's investment selection and trading strategies are systematic and rules-based. However, they are not fully automated and they do include human input. As a result, simulated returns are designed based on assumptions about how Bridgewater would have implemented the All Weather Strategy through time. These assumptions are intended to approximate such implementation, but are inherently speculative.

The simulated performance for the All Weather Strategy Simulation was derived by applying Bridgewater's current investment systems and portfolio construction logic to historical market returns across the markets selected for the All Weather Strategy Simulation. A list of the markets used appears below. We use actual market returns when available as an input for our hypothetical returns and otherwise use Bridgewater Associates' proprietary estimates, based on other available data and our fundamental understanding of asset classes. In certain cases, market data for an exposure which otherwise would exist in the simulation can be omitted if the relevant data is unavailable, deemed unreliable, immaterial or able to be accounted for using proxies. Proxies are assets that existed and for which data is available, which Bridgewater believes would approximate returns for an asset that did not exist or for which reliable data is not available. For example, before reliable commodity futures returns data can be found Bridgewater estimates futures returns by using the spot commodity returns and their typical relationship to futures returns. Examples of omitted markets or accounted for using proxies include, but are not limited to, emerging market equities, emerging market debt, and certain commodities. The mix and weightings of markets traded for All Weather Strategy Simulation are subject to change in the future.

The All Weather Strategy Simulation includes periodic adjustments that are made to the All Weather Strategy Simulation's desired strategic asset allocation and level of risk pursuant to Bridgewater's systematic strategic management process. Such strategic management is based on a systematic process that assesses whether the assumptions underlying the All Weather Strategy (for example, that assets will outperform cash, and that assets can be reasonably balanced against each other) are under threat, and systematically adjusts or reduces exposures accordingly. When applicable, the returns of the All Weather Strategy Simulation reflect adjustments based on this systematic strategic management process.

Simulated asset returns are subject to considerable uncertainty and potential error, as a great deal cannot be known about how assets would have performed in the absence of actual returns. The All Weather Strategy Simulation is an approximation of our current process but not an exact replication and can have differences including but not limited to the precise mix of markets used and the weights applied to those markets. It is expected that the simulated performance will periodically change as a function of changes in our investment process and refinements to our simulation methodology (including the addition/removal of asset classes) / underlying market data. There is no guarantee that previous results would not be materially different. Future strategy changes could materially change previous simulated returns in order to reflect the changes accurately across time.

Net of fees performance includes (i) a model management fee and other operating fees, (ii) reinvestment of interest, gains and losses and (iii) modeled transaction costs. Transaction costs are accounted for and are estimates themselves based on historical measured costs and/or modeled costs. Actual transaction costs experienced could have been higher or lower than those reflected. Where noted, the All Weather Strategy Simulation net of fees returns have been calculated using a model fee based on our standard fee schedule for a minimum size account, which are the highest standard fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A. Gross of fees performance (i) excludes the deduction of management fees, and other operating expenses (the "fees and expenses") and (ii) includes the reinvestment of interest, gains and losses. Including the fees and expenses would lower performance. There is no guarantee regarding the All Weather Strategy Simulation's ability to perform in absolute returns or relative to any market in the future, during market events not represented or during market events occurring in the future. Market conditions and events vary considerably, are unpredictable and can have unforeseen impacts resulting in materially adverse results. ACCORDINGLY, PLEASE REACH OUT TO YOUR CLIENT ADVISOR IF YOU HAVE ANY QUESTIONS ABOUT THIS SIMULATION.

Markets included in the All Weather Strategy Simulation

The All Weather Strategy Simulation includes returns from the following markets: global nominal interest rates, global inflation linked bonds, emerging market credit spreads, corporate credit spreads, global equities, and commodities.

ALL WEATHER II STRATEGY DISCLOSURE

All Weather II Strategy 10% Volatility Net
(Net Total Returns from Jun 1996 through Jul 2023)

1996	20.4%	2007	11.8%	2018	-7.0%
1997	15.0%	2008	-15.3%	2019	20.1%
1998	-1.8%	2009	19.6%	2020	16.3%
1999	15.6%	2010	18.4%	2021	10.8%
2000	9.9%	2011	17.8%	2022	-22.0%
2001	-6.0%	2012	15.3%	2023 YTD	7.3%
2002	10.2%	2013	-3.0%		
2003	16.7%	2014	7.3%		
2004	17.7%	2015	-6.2%	Avg Annual	7.9%
2005	15.5%	2016	12.8%	StdDev	11.3%
2006	1.2%	2017	13.0%	Ratio	0.50

Past results are not necessarily indicative of future results. Returns Simulated from October 2008 to September 2009; Based on Related Fund Performance from June 1996 to September 2008.

Average annual returns and Sharpe ratio are calculated using net of fees performance, while the standard deviation is calculated using gross of fees performance.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream.

Bridgewater All Weather II Strategy Performance Disclosure

For the period June 1996 (the inception of the strategy) through August 2001 the performance is based on the total return of the Bridgewater All Weather strategy as implemented for Bridgewater's principals and their affiliates and was not fully hedged to the US Dollar. The All Weather strategy is structured to be fully hedged, and the performance reflected after August 2001 includes these hedging transactions. For the period of August 2001 through September 2008 the performance shown is the actual total returns of the longest running fully funded All Weather account. Of note, the All Weather strategy's target leverage, volatility and return, as well as the asset mix varied from June 1996 to July 2005. From August 2005 through present the strategy has targeted 10% volatility. From October 2008 through September 2009, returns are simulated based on the Balanced Portfolio as constructed at the time, which maintained the desired strategic asset allocation and level of risk even during this time of extreme market conditions. From October 2009 through present the performance shown is the actual returns of the fully funded All Weather II Account (which maintains the target level of risk regardless of market conditions but will make adjustments to the strategic allocation based on the subset of our systematic strategic management process that adjusts exposures as needed to maintain our implementation of balance). For the entire history, excess returns are calculated by subtracting an approximation of a US cash rate from the total returns described above. Bridgewater manages additional All Weather portfolios not included in this performance history.

Gross of fees performance is gross of management and performance fees and includes the reinvestment of interest, gains, losses, operating expenses and taxes. Returns will be reduced by the investment advisory fees that will be incurred in the management of the account.

Net of fees performance has been calculated using a model fee based on our standard fee schedule for a minimum size account, which are the highest standard fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A.

No representation is being made that any account will or is likely to achieve returns similar to those shown. Trading in futures is risky and can result in losses as well as profits. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Performance as of the current month is estimated and subject to change.

BALANCED PORTFOLIO DISCLOSURE

Balanced Portfolio Net
(Net Total Returns from Jan 1970 through Jul 2023)
(Annualized Total Returns in USD)

Last 1 Year	-6.5%
Last 3 Years	-0.6%
Last 5 Years	5.6%
Last 7 Years	4.8%
Last 10 Years	5.7%
Avg Annual	11.6%
StDev	11.4%
Ratio	0.60

Average annual returns and Sharpe ratio are calculated using net of fees performance, while the standard deviation is calculated using gross of fees performance. Past results are not necessarily indicative of future results. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream.

Balanced Portfolio Simulation Performance Disclosure

Where shown all performance of the Bridgewater Balanced Portfolio is based on simulated, hypothetical performance and not the returns of Bridgewater's All Weather strategy or any managed portfolio. Bridgewater's investment selection and trading strategies are systematic and rules-based. However, they are not fully automated and they do include human input. As a result, simulated returns are designed based on assumptions about how Bridgewater would have implemented the Balanced Portfolio through time. These assumptions are intended to approximate such implementation, but are inherently speculative.

The simulated performance for the Balanced Portfolio was derived by applying Bridgewater's current investment systems and portfolio construction logic to historical market returns across the markets selected for the Balanced Portfolio. A list of the markets used appears below. We use actual market returns when available as an input for our hypothetical returns and otherwise use Bridgewater Associates' proprietary estimates, based on other available data and our fundamental understanding of asset classes. In certain cases, market data for an exposure which otherwise would exist in the simulation can be omitted if the relevant data is unavailable, deemed unreliable, immaterial or able to be accounted for using proxies. Proxies are assets that existed and for which data is available, which Bridgewater believes would approximate returns for an asset that did not exist or for which reliable data is not available. For example, before reliable commodity futures returns data can be found Bridgewater estimates futures returns by using the spot commodity returns and their typical relationship to futures returns. Examples of omitted markets or accounted for using proxies include, but are not limited to, emerging market equities, emerging market debt, and certain commodities. The mix and weightings of markets traded for Balanced Portfolio are subject to change in the future. The Balanced Portfolio includes periodic adjustments that are made to the Balanced Portfolio desired strategic asset allocation pursuant to a subset of Bridgewater's systematic strategic management process. This process systematically adjusts exposures as needed to maintain our implementation of balance. The Balanced Portfolio maintains the target level of risk regardless of market conditions. Accordingly, the Balanced Portfolio does not alter the target level of risk based on the strategic management process employed in the All Weather Strategy. When applicable, the returns of the Balanced Portfolio reflect adjustments based on this systematic strategic management process.

Simulated asset returns are subject to considerable uncertainty and potential error, as a great deal cannot be known about how assets would have performed in the absence of actual returns. The Balanced Portfolio is an approximation of our current process but not an exact replication and can have differences including but not limited to the precise mix of markets used and the weights applied to those markets. It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology (including the addition/removal of asset classes) and the underlying market data. There is no guarantee that previous results would not be materially different. Future strategy changes could materially change previous simulated returns in order to reflect the changes accurately across time.

Net of fees performance includes (i) a model management fee and other operating fees, (ii) reinvestment of interest, gains and losses and (iii) modeled transaction costs. Transaction costs are accounted for and are estimates themselves based on historical measured costs and/or modeled costs. Actual transaction costs experienced could have been higher or lower than those reflected. Where noted, the Balanced Portfolio net of fees returns have been calculated using our standard fee schedule for a minimum size account, which are the highest standard fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A. Gross of fees performance (i) excludes the deduction of management fees, and other operating expenses (the "fees and expenses") and (ii) includes the reinvestment of interest, gains and losses. Including the fees and expenses would lower performance. There is no guarantee regarding the Balanced Portfolio's ability to perform in absolute returns or relative to any market in the future, during market events not represented or during market events occurring in the future. Market conditions and events vary considerably, are unpredictable and can have unforeseen impacts resulting in materially adverse results. ACCORDINGLY, PLEASE REACH OUT TO YOUR CLIENT ADVISOR IF YOU HAVE ANY QUESTIONS ABOUT THIS SIMULATION.

Markets included in the Balanced Portfolio Simulation

The Balanced Portfolio Simulation includes returns from the following markets: global nominal interest rates, global inflation linked bonds, emerging market credit spreads, corporate credit spreads, global equities, and commodities.

US TRADITIONAL PORTFOLIO

This page contains the allocation information for the historical simulation of the US Traditional portfolio, as well as forward looking assumptions for alpha volatility and alpha ratio used in this analysis. The portfolio capital allocation weights (illustrated below) are estimates based either upon Bridgewater Associates' understanding of standard asset allocation (which may change without notice) or information provided by or publicly available from the recipient of this presentation. Asset class returns are actual market returns where available and otherwise a proxy index constructed based on Bridgewater Associates understanding of global financial markets. Information regarding specific indices and simulation methods used for proxies is available upon request (except where the proprietary nature of information precludes its dissemination). Results are hypothetical or simulated and gross of fees unless otherwise indicated. "Gross of fees" in this context means results that do not include advisory fees or expenses, which would reduce the figures shown. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. The recipient should not solely rely upon these hypothetical performance results in making an investment decision. In constructing hypothetical performance and determining their appropriateness for use in materials, Bridgewater has an incentive to do so in a manner that shows beneficial characteristics of a given, hypothetical return stream.

Asset Type	Benchmark	Nominal Exposure	Fx Exposure	Alpha Volatility	Alpha Ratio
Equities	U.S. Equities	15.0%	---	---	---
Equities	U.S. Equities	15.0%	---	5.0%	0.25
Equities	Dev. World Equities Ex-US	18.0%	Unhedged	5.0%	0.30
Equities	Emerging Market Equities	3.0%	Unhedged	5.0%	0.30
Nominal Bonds	U.S. Gov't Bonds	4.5%	---	---	---
Nominal Bonds	U.S. Gov't Bonds	4.5%	---	2.0%	0.25
Corporate Bonds	U.S. Corporate Bonds	5.0%	---	3.0%	0.25
MBS	U.S. MBS	6.0%	---	2.0%	0.25
IL Bonds	U.S. IL Bonds	1.0%	---	---	---
IL Bonds	U.S. IL Bonds	1.0%	---	1.0%	0.25
High Yield Bonds	U.S. High Yield	2.0%	---	4.0%	0.25
Nominal Bonds	World Gov't Bonds Ex-US	2.0%	Hedged	2.0%	0.30
Equities	U.S. PE / VC	9.0%	---	10.0%	0.25
Real Estate	U.S. Real Estate	5.0%	---	6.0%	0.25
Real Estate	World Real Estate	2.0%	Unhedged	6.0%	0.30
Commodities	Bloomberg Commodity Index	2.0%	---	---	---
Hedge Fund	Cash	5.0%	---	7.0%	0.70

Investment Policy Statement Change

Investment Policy Statement (“IPS”) and Suggested Modification

- Section 11 Real Assets Investment Guidelines, 11.3.5: General Partner Diversification

*“The RA Program’s combined commitment to any partnership and any parallel partnership shall not represent more than **25%** of the total combined target capital commitments to the partnership and any parallel partnership without Board approval. At any applicable closing, the RA Program’s combined commitment to any partnership and any parallel partnership shall not represent more than **50%** of the total combined cumulative capital commitments to the partnership and any parallel partnership without Board approval.”*

- Similar language also exists within Section 10 Private Markets Investment Guidelines
- The highlighted language would be increased to **75%**

Change Rationale

- INPRS’s Investments Team has been presented advantageous investment opportunities that offer substantially lower fees and the ability to establish favorable legal terms with smaller funds
- IPS risk mitigation already in place:
 - No active investment manager > 15% of the System’s assets
 - < 20% of Real Assets portfolio (15% of Private Markets) may be invested with any manager
 - Board approval needed on initial investment in Real Assets or Private Markets fund > 0.75% of the System’s assets

➤ **INPRS’s Investments Team recommends an IPS change in which the investment limitation for Private Markets and Real Assets is increased from 25% to 75% of any partnership.**





FY23 – A Look Back

September 8, 2023

FY 2023 in Review

INPRS's managed pension plans remain well-funded

- Overall estimated aggregate funded status increased from 74.8% to 82.2%
- Estimated aggregate funded status of the prefunded defined benefit plans decreased from 89.6% to 89.1%
 - Lower than assumed investment return (5 year return of 5.69% versus 6.25% target)
 - Larger than assumed salary increases
 - PERF, EG&C and PARF funded status increased due to contributions exceeding the ADC
- Preliminary results indicate that the PERF contribution rate will likely remain unchanged, TRF '96 and '77 Fund contribution rates will likely increase, and the EG&C contribution rate will likely decrease in 2025
- Teacher Pre-'96 Pay-Go plan improved from significant incremental appropriations in FY23 (+\$3.2B)
 - Funded status increased from 37.5% to 63.6%
 - Approximately \$5.0B in unfunded liabilities remain
 - On track to reach 100% funded status for the base pension benefits in 2030, however actual timing will be primarily driven by future investment returns



Funded Status as of June 30, 2023

Indiana Public Retirement System (INPRS)¹

(dollars in thousands)

Pre-Funded Defined Benefit Retirement Plans	Actuarial Valuation as of June 30, 2023				Actuarial Valuation as of June 30, 2022			
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status
PERF DB	\$18,415,248	\$15,727,094	\$2,688,154	85.4%	\$18,002,194	\$15,275,804	\$2,726,390	84.9%
TRF '96 DB	8,832,827	8,172,655	660,172	92.5%	8,154,991	7,716,351	438,640	94.6%
'77 Fund	8,796,329	8,191,843	604,486	93.1%	8,281,865	7,844,324	437,541	94.7%
JRS	728,137	674,399	53,738	92.6%	676,859	651,415	25,444	96.2%
EG&C	194,827	186,551	8,276	95.8%	187,505	177,046	10,459	94.4%
PARF	126,749	86,019	40,730	67.9%	122,474	82,211	40,263	67.1%
LE DB	2,676	3,165	(489)	118.3%	2,835	3,184	(349)	112.3%
Total Pre-Funded DB Retirement Plans	\$37,096,793	\$33,041,726	\$4,055,067	89.1%	\$35,428,723	\$31,750,335	\$3,678,388	89.6%
TRF Pre-'96 DB	13,703,295	8,711,977	4,991,318	63.6%	14,059,122	5,273,369	8,785,753	37.5%
Total DB Retirement Plans	\$50,800,088	\$41,753,703	\$9,046,385	82.2%	\$49,487,845	\$37,023,704	\$12,464,141	74.8%



1. Results are preliminary and subject to change

Funded Status as of June 30, 2023

Indiana Public Retirement System (INPRS)¹

(dollars in thousands)

Defined Benefit Retirement Plans	Actuarial Valuation as of June 30, 2023				Actuarial Valuation as of June 30, 2022			
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status
PERF DB	\$18,415,248	\$15,727,094	\$2,688,154	85.4%	\$18,002,194	\$15,275,804	\$2,726,390	84.9%
TRF Pre-'96 DB	13,703,295	8,711,977	4,991,318	63.6%	14,059,122	5,273,369	8,785,753	37.5%
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77 Fund	8,796,329	8,191,843	604,486	93.1%	8,281,865	7,844,324	437,541	94.7%
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1. Results are preliminary and subject to change

Funded Status as of June 30, 2023

Indiana Public Retirement System (INPRS)¹

(dollars in thousands)

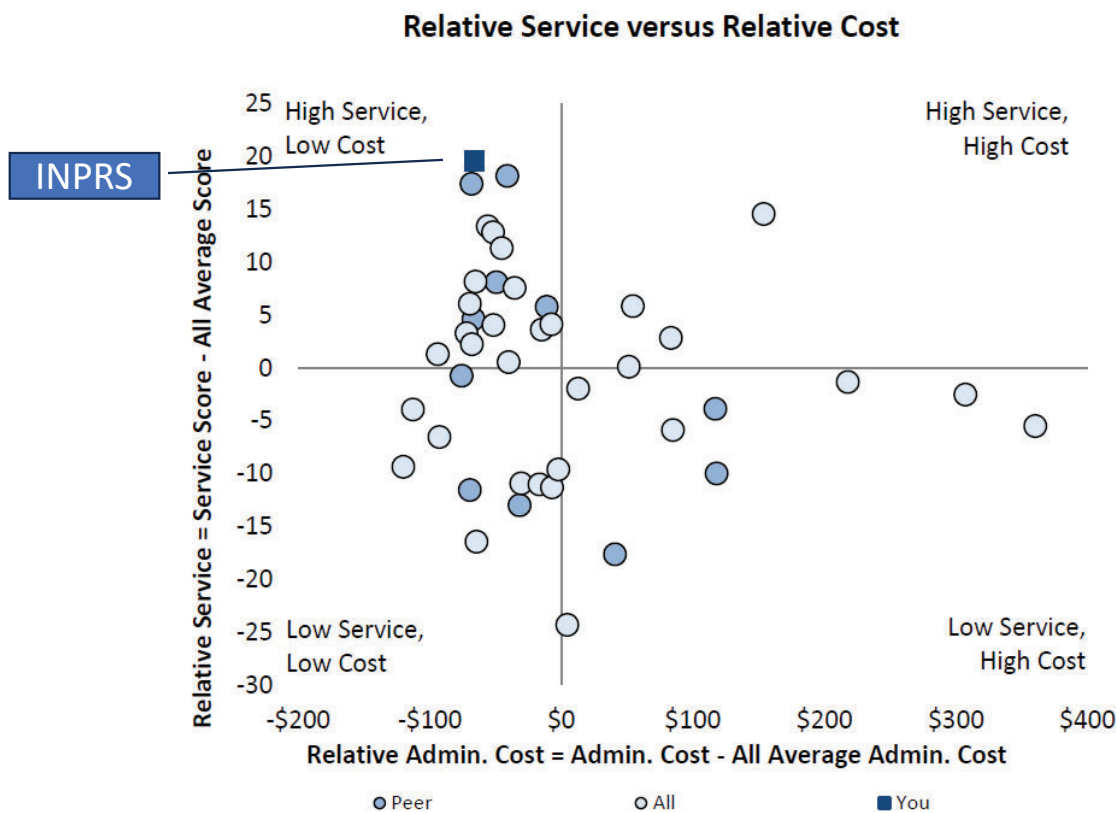
	Actuarial Valuation as of June 30, 2023				Actuarial Valuation as of June 30, 2022			
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Actuarial Funded Status
State Defined Benefit Retirement Plans								
PERF DB	\$5,773,167	\$4,930,433	\$842,734	85.4%	\$5,643,675	\$4,788,951	\$854,725	84.9%
TRF Pre-'96 DB	13,703,295	8,711,977	4,991,318	63.6%	14,059,122	5,273,369	8,785,753	37.5%
TRF '96 DB	82,241	76,094	6,147	92.5%	75,929	71,845	4,084	94.6%
JRS	728,137	674,399	53,738	92.6%	676,859	651,415	25,444	96.2%
EG&C	194,827	186,551	8,276	95.8%	187,505	177,046	10,459	94.4%
PARF	126,749	86,019	40,730	67.9%	122,474	82,211	40,263	67.1%
LE DB	2,676	3,165	(489)	118.3%	2,835	3,184	(349)	112.3%
Total State DB Retirement Plans	\$20,611,092	\$14,668,638	\$5,942,454	71.2%	\$20,768,400	\$11,048,021	\$9,720,379	53.2%
Local PSD Defined Benefit Retirement Plans								
PERF DB	\$12,642,081	\$10,796,661	\$1,845,420	85.4%	\$12,358,519	\$10,486,853	\$1,871,666	84.9%
TRF '96 DB	8,750,586	8,096,561	654,025	92.5%	8,079,062	7,644,506	434,556	94.6%
77 Fund	8,796,329	8,191,843	604,486	93.1%	8,281,865	7,844,324	437,541	94.7%
Total Local PSD DB Retirement Plans	\$30,188,996	\$27,085,065	\$3,103,931	89.7%	\$28,719,446	\$25,975,683	\$2,743,763	90.4%



1. Based on preliminary actuarial results as of June 30, 2023. Only includes funds where the State of Indiana is the sole employer, is the sole non-employer contributing entity, or represents only the GASB 68 proportionate share of the assets and liabilities of the INPRS pension funds. State and other local employers are divided according to the proportionate share methodology in GASB Statement No. 68 as of June 30, 2022.

CEM Benchmarking: Low Cost and High Service

Peer Comparison As Measured By Independent Global Benchmarking Firm CEM



FY23 Year End Year Over Year Performance

Customer and Financial			Process			Portfolio Performance		
Funded Status -- Prefunded plans			Benefits Paid on Time			DB Rate of Return		
Employer Contributions			Annual Employer Satisfaction			Fees Below Peer Median		
Actuarial Determined Contributions			Cost per Member			Minimum Investment Return		
Member Satisfaction: Website			Performance to Budget			DC - Investment Options		
Member Satisfaction: Counseling			Unmodified Audit Opinion			Manage Enterprise Risk		
Member Satisfaction: Workshops			Pending Code Changes			Audit Remediation Timeframe		
Member Satisfaction: Call Center			Projects on Time			Compliance		
Member Satisfaction: Recent Retirees			Learning & Growth					
Benchmark (CEM) Service Score			Employee Engagement					
			Voluntary Turnover					



FY22 Strategic Plan Execution

Vision & Mission

INPRS Vision

- Engaged members able to realize their retirement dreams

INPRS Mission

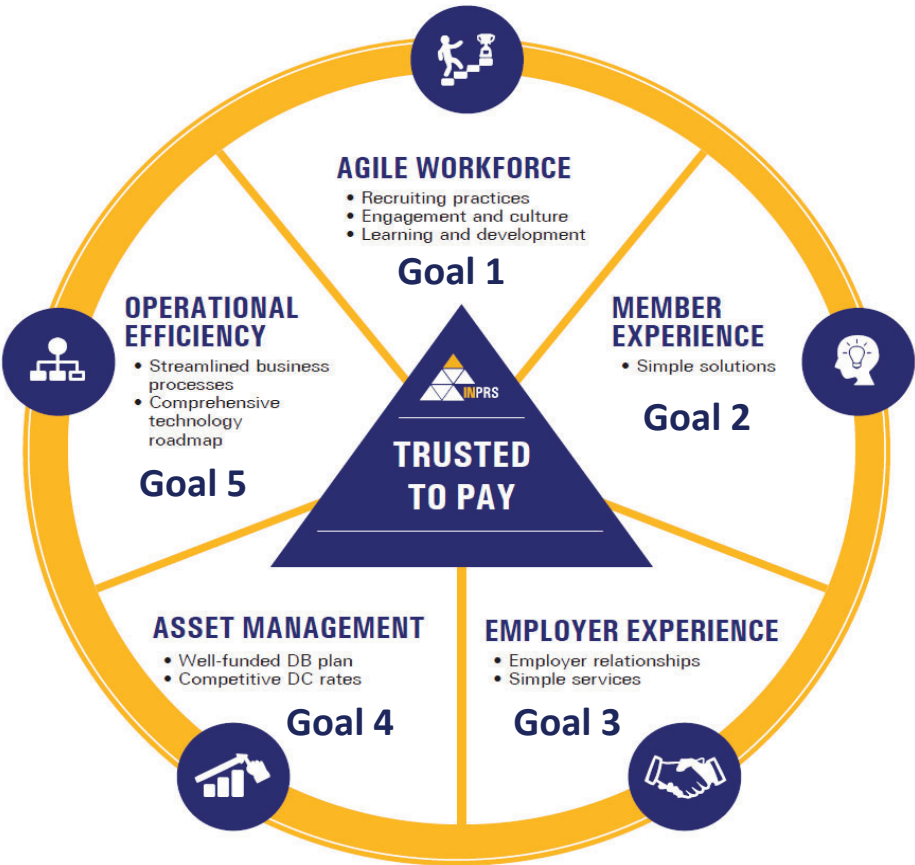
- As fiduciaries, educate stakeholders, collect necessary contributions, and prudently manage member assets to deliver promised DB and DC benefits and services

FY2023 Strategic Goals

The Consolidated Strategic Plan:

- 9 Goals/36 Objectives in FY22 to 5 Goals/10 Objectives in FY23
- Established Clear Strategic Focus on Top Priorities
- Balanced Key Operational Requirements with Important and Critical Strategic Items
- Clarified Personnel Alignment and Accountability
- Enables Realistic Planning for Execution and Management of Priorities, Resources and Technology Dependencies
- Aligns with Industry and Peer Best Practice

FY 2023 – 2025 Strategy Map



FY 2023 – 2025 Strategic Goals & Objectives

Goal 1: Promote an engaged, high performing, and agile workforce.		
Objective #	Objective	Overall Status
A	Enhance hiring practices to attract and hire high-quality and culturally fit talent to maintain an annual onboarding satisfaction score of 90% or greater	ON TRACK
B	Foster and maintain an engaged workforce and a positive workplace culture to increase the annual employee engagement score year over year	ON TRACK
C	Support employee skill expansion and leadership readiness by implementing a formal enterprise learning and development program and allocating 10 hours of training per fiscal year per employee	ON TRACK
Goal 2: Deliver a quality member experience.		
Objective #	Objective	Overall Status
A	Develop simple solutions that provide an accurate and personalized member experience resulting in overall satisfaction score of 90% or greater	ON TRACK
Goal 3: Deliver a quality employer experience.		
Objective #	Objective	Overall Status
A	Improve employer policy decision maker plan awareness score year over year	ON TRACK
B	Deliver simple, timely and accurate services to employers to achieve an annual employer satisfaction score of 87% or greater	ON TRACK

FY 2023 – 2025 Strategic Goals & Objectives

Goal 4: Manage a financially secure retirement system.

Objective #	Objective	Overall Status
A	Effectively manage and invest assets to ensure well-funded defined benefit plans by meeting or exceeding the approved DB Rate of Return and Actuarial Defined Contribution Rate for each plan	ON TRACK
B	Offer a simple and diversified menu of competitive investment options for the defined contribution plans that meet or exceed associated benchmarks	ON TRACK

Goal 5: Reduce complexity and optimize operational efficiency across the enterprise.

Objective #	Objective	Overall Status
A	Streamline business processes to improve employee experiences and productivity, operational efficiencies, and generate the highest value to cost ratio	ON TRACK
B	Define a comprehensive technology roadmap to transform business and service delivery, enhance data management and integrity, and advance the information security infrastructure	ON TRACK

83% of our Strategic Initiatives were completed on time or on schedule as planned

17% of our Strategic Initiatives were rescheduled to start in FY24 due to resource constraints

100% Key Operational Requirements (KORs) were executed and completed as planned



FY2023 Key Accomplishments and Results

Goal 1: Promote an engaged, high performing, and agile workforce.

- 100% of employees completed our Culture Behavior Training: Five Behaviors of a Cohesive Team
- Completed Employee Engagement Survey
 - Views on the INPRS cultures have improved 25.9%
 - Trust between senior management and employees improved 27.6%
- 64% of INPRS employees completed 10+ hours of professional development training
- 15% of the workforce participated in the programs Professional Credentials and Tuition Reimbursement
- INPRS Compensation Study completed

FY2023 Key Accomplishments and Results

Goal 2: Deliver a quality member experience

- Call Center Service Level is above target of 80%
- Outreach Service Level is above target of 92.5%
- Average days to first payment is above target of 45 days
- Retiree satisfaction is above target of 80%

Goal 3: Deliver a quality employer experience

- Employer satisfaction is above target of 87%
- Call and Contact Quality Service Level is above target of 90%

FY2023 Key Accomplishments and Results

Member and Employer Experience Working Groups

- Established a governance framework to identify, evaluate, and prioritize improvement initiatives
 - Improved cross functional collaboration, communication, decision making, and project execution
 - Completed approximately 65 small to medium improvement initiatives
- Completed future state vision workshops to identify best in class customer experience
- Collected data and measurements to assist in identifying gaps, issues, and future projects
- Project and process improvements contributed to a meaningful cost avoidance measures
 - \$300K saved on Accenture engagement: Gap Analysis / Vision Output / Journey Mapping (Realized)
 - \$84K projected cost avoidance due to reduction of FRAs
 - \$53K projected cost avoidance and 10% reduction of complaints due to governance process to address complaints systemically.
 - \$25K projected cost avoidance due to having a defined process to address potential fraud situations

FY2023 Key Accomplishments and Results

Goal 4: Manage a financially secure retirement system

- The Board approved the recommended employer contribution rates and appropriation amounts based on the June 2022 actuarial valuations, keeping INPRS on track to improve the overall funded status.
- The Indiana General Assembly approved an additional \$3.2 Billion in contributions for the TRF Pre-'96 Fund, having a positive impact to the funded status.
- Completed active vs. passive research on how best to allocate US ex-S&P500 public equity portfolios and ex-US public equity portfolios to help inform short- and long-term priorities.

FY2023 Key Accomplishments and Results

Goal 5: Reduce complexity and optimize operational efficiency across the enterprise.

- Identified KPI requirements for the Member and Employer Working Groups
- Identified and prioritized improvement opportunities
- Improved organizational transparency and access to operational and strategic performance data
- Engaged with Accenture to assist in defining the strategic business function and technology roadmaps, which was input into the FY24 Strategic Plan
- Conducted IT risk assessment
- Engaged with KPMG to complete a Master Data Management assessment
 - MDM Roadmap completed
 - Data Strategy approved
- Executed the transition plan from the current pension payment partner, State Street Bank, to BNY Mellon – Transition testing in progress
- CEM score of 95 is the highest amongst our pension peers for high service to our members at a low cost.
- Annual cost per member score is well above target and performance to budget is favorable

APPENDIX

Key Operational Requirements (KORs)

Agile Workforce KORs

- Continuously assess staffing needs and complete recruiting of the required staff
- Complete an annual employee survey and create action plans to ensure employee engagement
- Review and refresh the succession plan and position risk assessment to address retention and developmental plans

Member Experience KORs

- Distribute timely and accurate payments to members
 - Monthly payroll
 - Weekly payroll
 - Retirements
 - Disability
 - Death
 - Defined Contribution Account
 - Distribute accurate 1099-R documents by January 31 of every year
 - Maintain ongoing Voice of Customer (VOC) surveys and research
 - Provide required reports to the Legislature including the Pension Management Oversight (PMO) Committee
 - Maintain a formal process to incorporate stakeholder insights into the strategic plan
 - Continue to adapt and deliver a financial and investment education strategy to enhance member retirement readiness as measured by member engagement metrics
-



Employer Experience KORs

- Request pension relief information from employers
- Provide annual contribution rate notification to employers
- Track and report the timeliness of employer contributions
- Track employers that are habitually late and request the Auditor of State to intercept funds from these employers
- Annually obtain actuarial valuation reports for the defined benefit plans
- Establish annual employer contribution rates at or above the actuarially determined contribution (ADC) rates
- Perform an experience study of the defined benefit plans to update the actuarial assumptions, and review the actuarial methods for any necessary changes

Asset Management KORs

- Achieve the DB investment metrics
- Complete the annual Investment Policy Statement (IPS) Review
- Conduct an annual review of DB investment management fees, including benchmarking fees as compared to other public pension funds
- Complete and assess a short term and long-term liquidity analysis of the DB portfolio
- Ensure the DB allocation to each asset class is within the Board-approved range
- Assess the most productive mix of passive and active management across the DB portfolio
- Monitor securities litigation and opportunistically participate in domestic and/ or international cases to maximize INPRS's loss recovery

Asset Management KORs - Continued

- Achieve the DC investment metrics
- Conduct an annual review of DC investment management fees, including benchmarking fees as compared to other public pension funds
- Perform an annual review of DC investment options, including glide path (asset allocation) assumptions for the target date funds
- Assess the most productive mix of passive and active management across the DC investment options
- Complete quarterly reviews of the external annuity provider's performance, claims paying ability, creditworthiness, and fees charged
- Conduct periodic meetings with business partners to benchmark our DC options and services
- Set and communicate the DC administration fee

Asset Management KORs - Continued

- Obtain an annual unmodified opinion from the external auditor
- Publish the INPRS ACFR annually by December month end and obtain the Government Finance Officers Association (GFOA) certification
- Annually publish audited Government Accounting Standards Board (GASB) #68 related schedules for employers
- As issued, determine if new GASB pronouncements have an impact on INPRS
- Establish an operating budget to be approved by the Board no later than June 30 of each year
- Report financial performance to the budget at every Board meeting
- Monitor the compliance matrix for the Investment Policy Statement (IPS)
- Complete an analysis of the actuarial-related risks faced by INPRS
- Complete a peer review and replication of the actuarial valuation results

Operational Efficiency KORs

- Maintain a strategic plan on a three-year time horizon to be updated annually (SWOT, Strategy Map, Strategic Plan)
 - Participate in the annual Cost Effectiveness Measurement (CEM) surveys (Administration Cost, DB Performance and Fee Structure, and DC Performance and Fee Structure). Coordinate all survey responses and follow the improvement process to develop and implement an INPRS cost and service improvement plan
 - Maintain a Balanced Scorecard that contains a comprehensive set of measures for senior executives to assess INPRS progress towards meeting its strategic goals. Reevaluate all measures and target performance levels on an annual basis (end of fiscal year)
 - Determine appropriate Board education and implement annually
 - Provide consistent guidelines and processes that define the creation, review, approval, distribution, tracking and updating of policies and procedures used by INPRS
-



Operational Efficiency KORs - Continued

- Conduct performance reviews with business owners of vendors to ensure that key vendors are providing services according to expectations outlined in the contract
- Complete an annual benchmarking assessment to be utilized in the strategic planning process
- Conduct ongoing continuous improvement training to Improve operational efficiencies across INPRS by fostering a culture of continuous improvement
- Ensure that any audit findings or control issues identified in the annual external audit have action plans developed to correct the deficiency or material weakness within 30 days after the close of the audit
- Complete a risk assessment of the strategic plan, prioritize risks, and development improvement plans for all risks above the approved thresholds

Operational Efficiency KORs - Continued

- Ensure member, employer and staff security by performing IT security access control audits
 - Hold an IT disaster recovery test to validate capabilities for timely recovery of application systems
 - Complete a risk assessment of the organization and develop an annual audit plan
 - Complete the biennial review of Board governance documents
 - Enhance the comprehensive INPRS compliance program to ensure compliance with all federal and state requirements
 - Maintain and improve information security through execution of the information security program
 - Conduct business continuity and disaster recovery (BCDR) tabletop exercise to ensure all critical processes are operating in accordance with the Business Continuity Plan (BCP)
-



Operational Efficiency KORs - Continued

- Annually, provide actuarial review and OPEB reporting for the SOI OPEB plans (SPD, ISP, EG&C, Legislators)
- Maintain and improve the INPRS' Enterprise Risk Management program
- Maintain and improve information and data quality through execution of the information management program
- Conduct a review of Indiana Code for changes needed to achieve INPRS' mission and strategic goals at least annually in advance of the Pension Management Oversight (PMO) Committee annual meetings
- Provide all reports as required by Indiana Code to the Administrative and Legislative branches of Indiana State government
- Complete a monthly review of the nature of member benefit appeals and complaints to assess the need for change to existing code, policies, processes and procedures



Operational Efficiency KORs - Continued

- Respond to requests from the Legislative Services Agency (LSA) within timeframes mutually agreed upon between INPRS and LSA to enable appropriate review and response
- Provide financial and actuarial support during the legislative sessions to INPRS staff for legislators and LSA



Benefits Update

Matt Ackerman

Chief Benefits Officer

September 8, 2023

(844) GO-INPRS
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Key Successes & Challenges

Successes

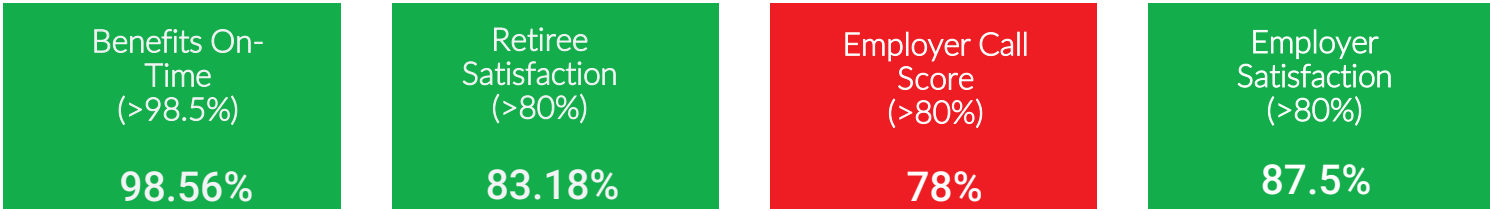
- Peak benefit processing season completed successfully – benefits paid on time metric exceeded benchmark for FY23
- Retirement satisfaction remains consistently above 80% benchmark with fewer days to 1st payment a strong driver
- Retirement Automation continues to progress, and a quality sampling criteria tool is now available
- Employer satisfaction remains above 80% benchmark

Challenges

- Data quality impacting automation and need for manual re-work including additional final retirement analyses
- Incoming volume and staffing levels impacting call performance for employer advocate team



FY23 Key Operational Performance Indicators



81.05% Employer Service Score

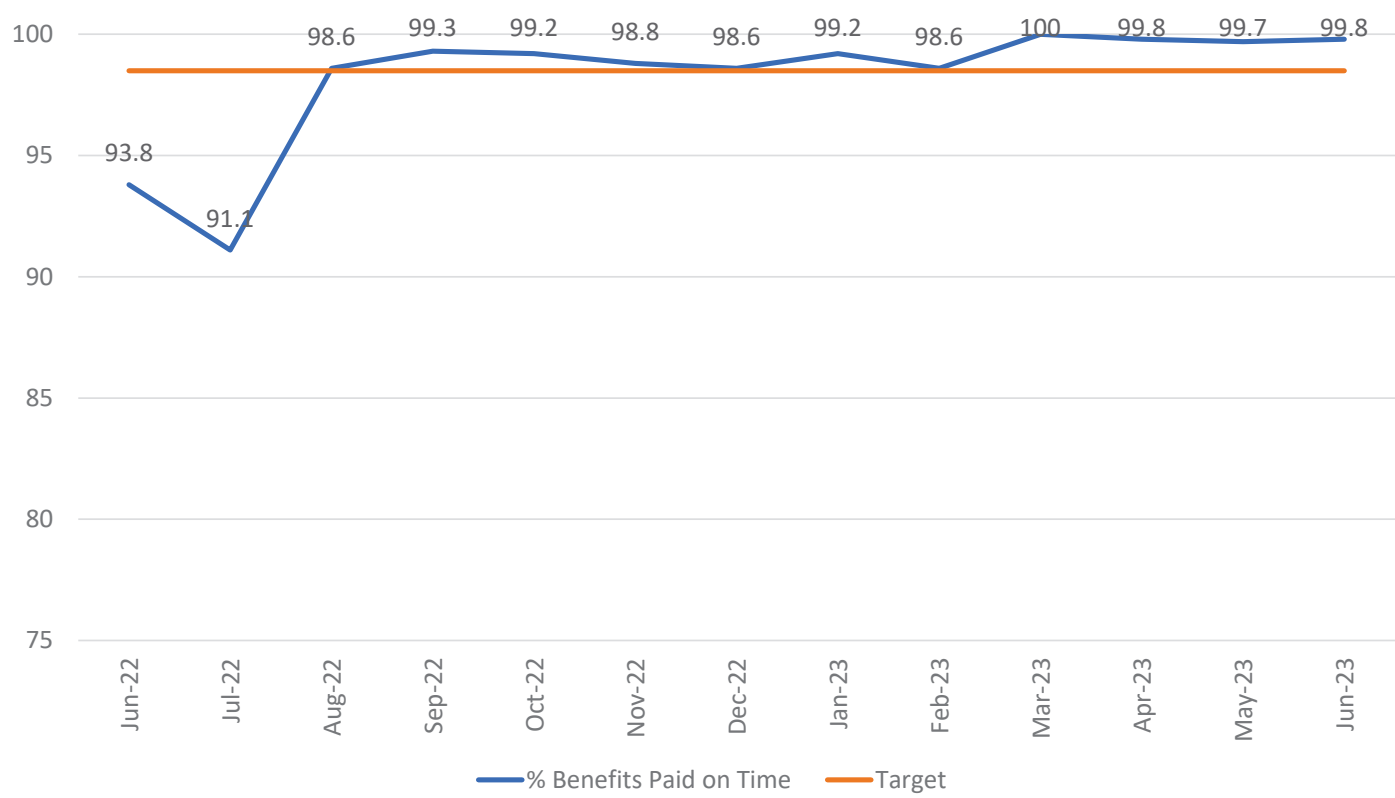
Employer Service
(> 80%)



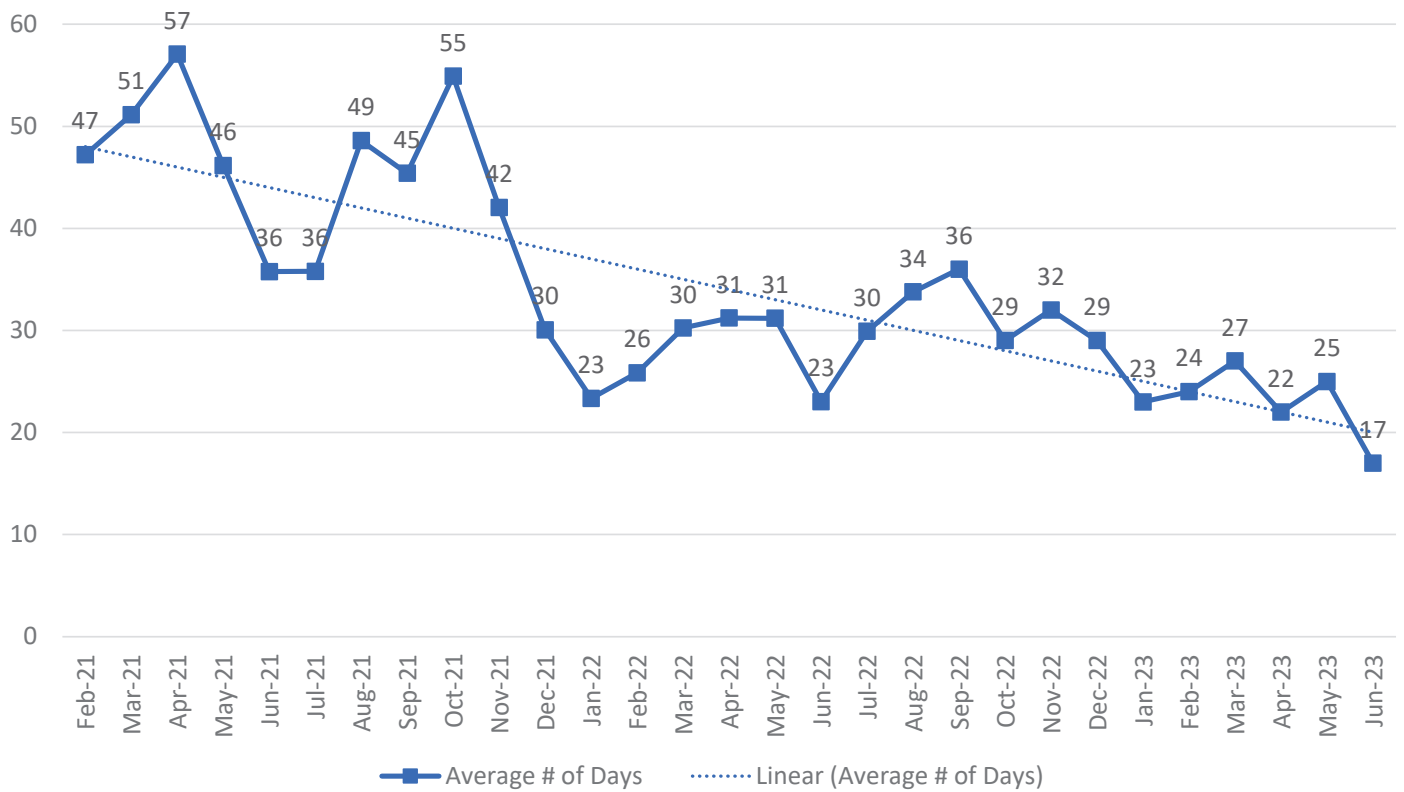
FY22: 43% processed within 1-10 days
FY23: 70% processed within 1-10 days

1977 Fund Baselines

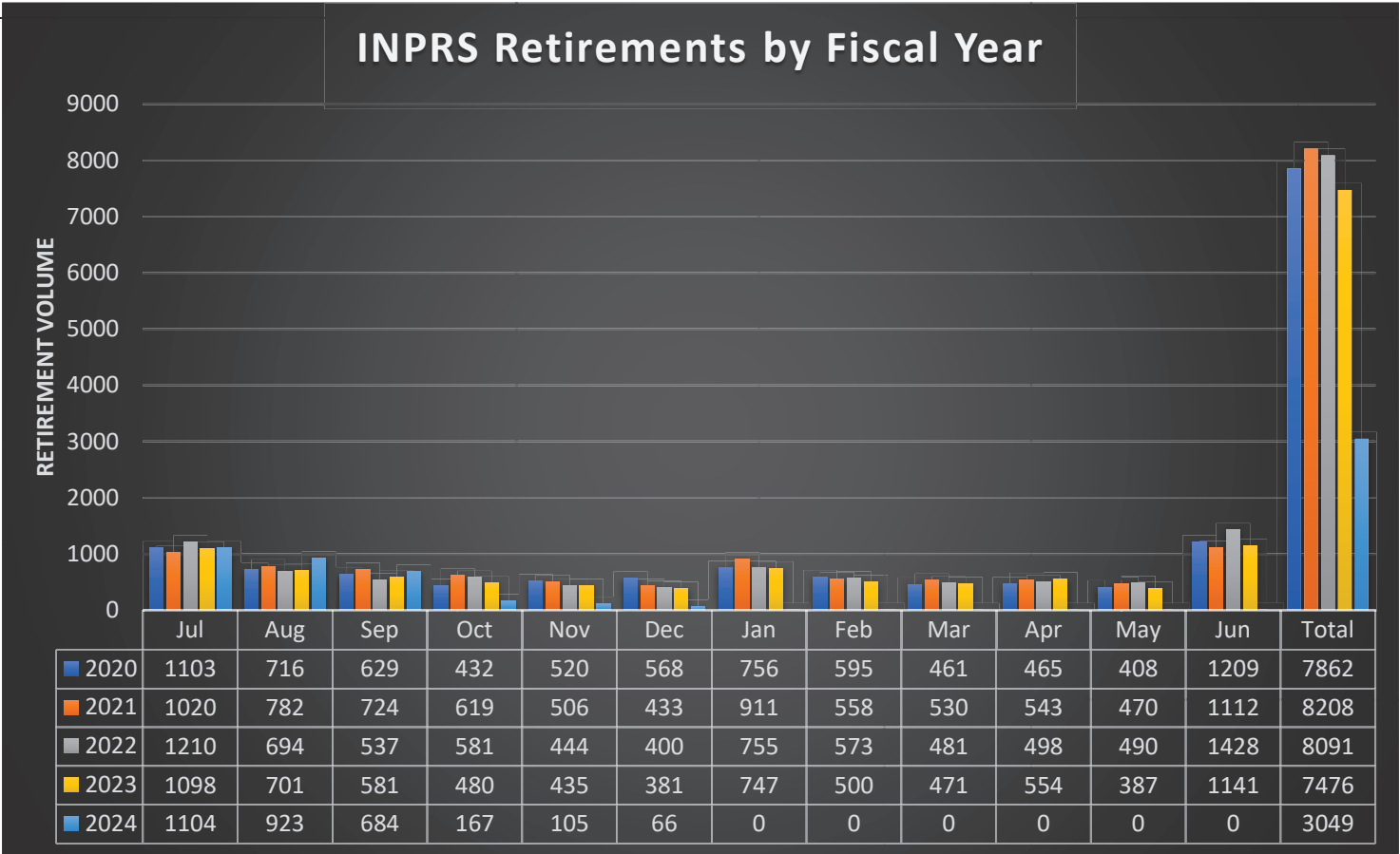
Member Benefits Paid on Time



Days to First Payment – All Retirements

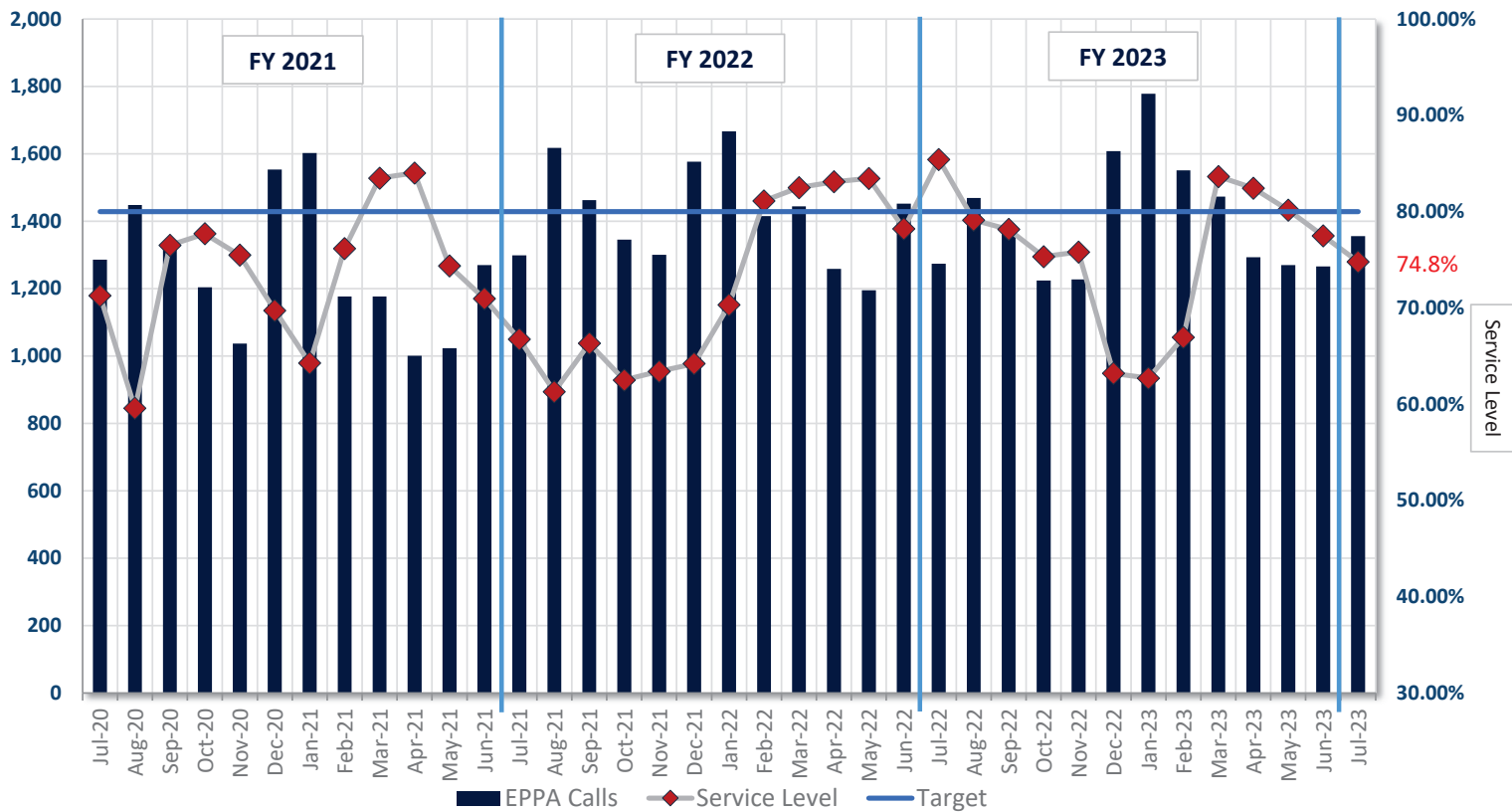


Historical Retirement Volume

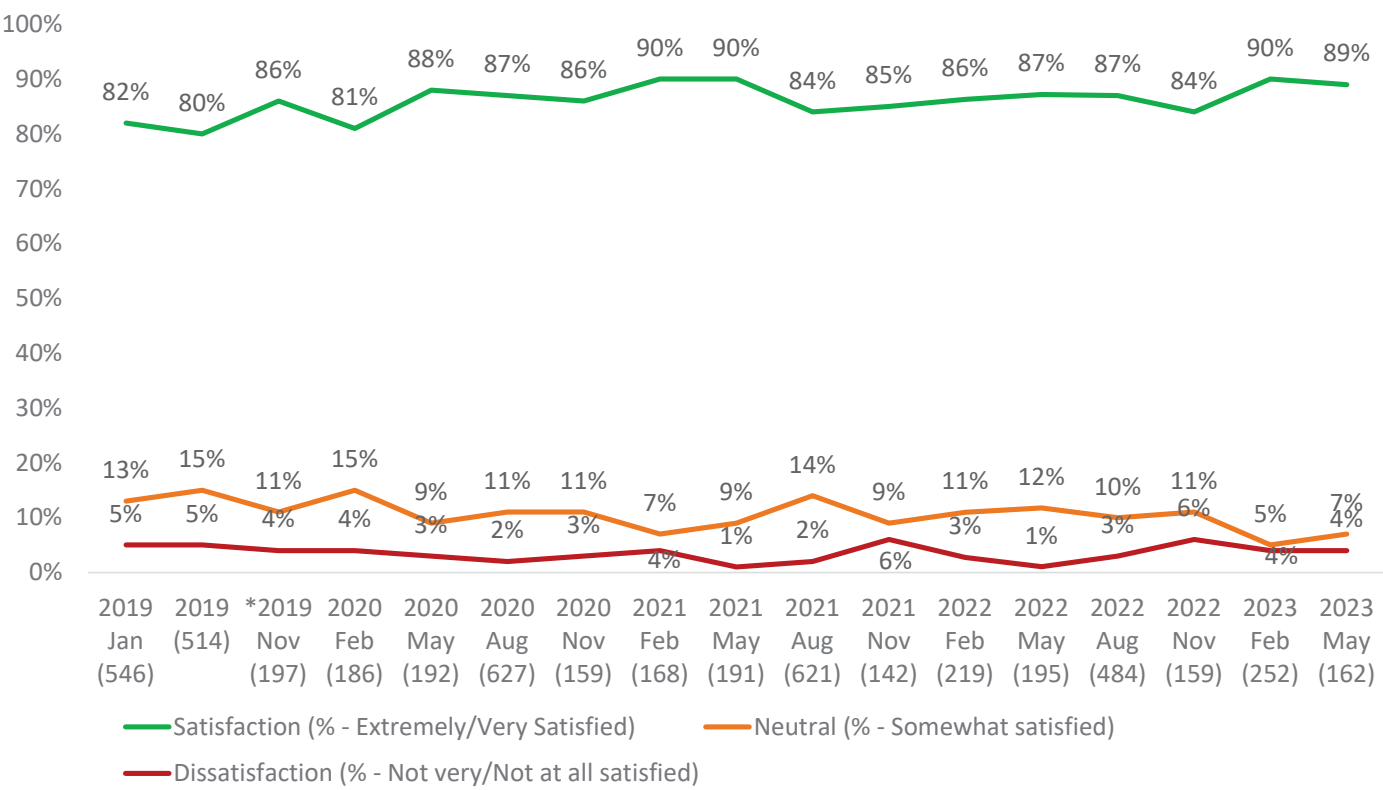


Employer Advocate Call Center Volume & Service Level

Call Center Calls & Combined Service Level (Employer Advocate)



Employer Satisfaction



• *November 2019 first survey that used a random sample rather than a census survey.



INPRS

Customer Profile

 **368,436**

Participant Accounts with a Balance



Average Income Replacement



Average Savings Rate

 **\$46,157**

Median Participant Salary



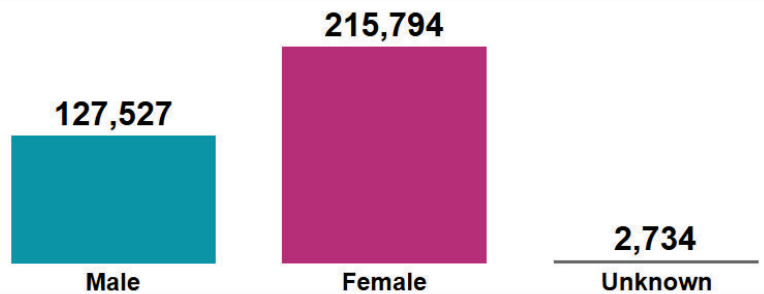
45

Average Participant Age

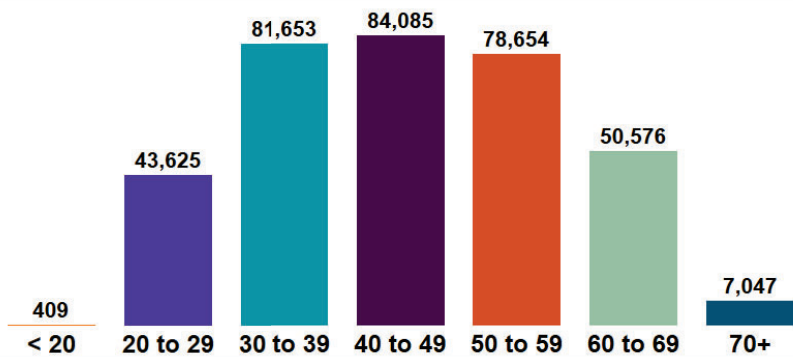
 **\$20,323**

Average Savings Balance

Unique Participants with a Balance by Gender



Unique Participants with a Balance by Age Group



Data as of 6/30/2023

Data includes retirement plan sponsored business. RPS, IRA, HRA, NQ in Pen-Cal, and ReliaStarSEP/IRA policies are not included.

PLAN | INVEST | PROTECT

FY24 Benefits Areas of Focus

➤ Enhance Employer Experience

- Simplify timeline and process for employer reporting required for retirement benefit processing
- Moving the experience bar up: Increased metrics focused on performance that increases employer satisfaction
 - End to end process optimization and expanded employer engagement

➤ Enhance Member Experience

- Increase data quality for better and faster retirement planning and processing
- Increase members' self-service to core DB and DC data

➤ Retirement Automation

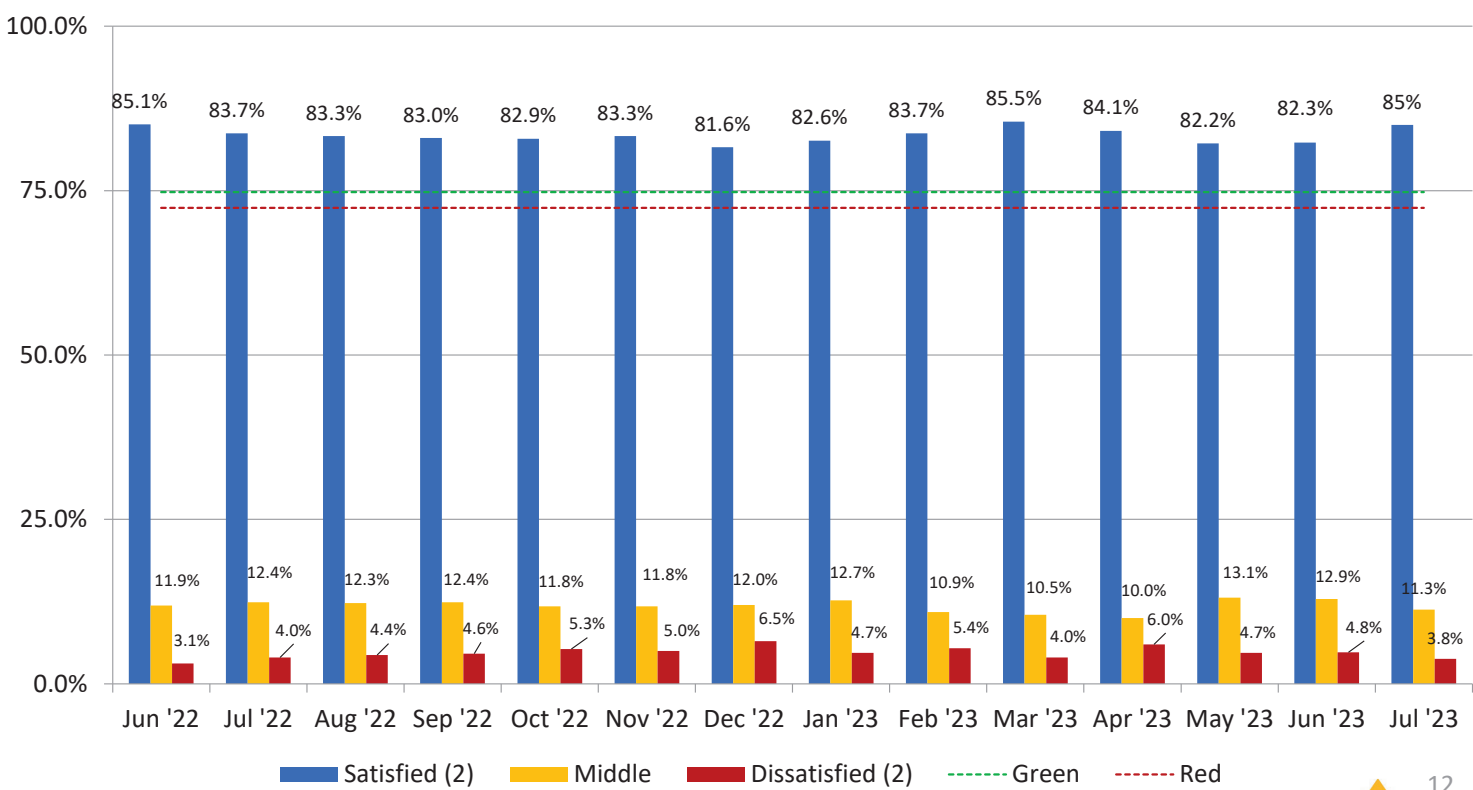
- Launch sampling program to increase automation volume and quality
- Increase % of retirements fully automated





Appendix

Overall Satisfaction: Recent Retirees



Line-of-Duty Deaths By Year

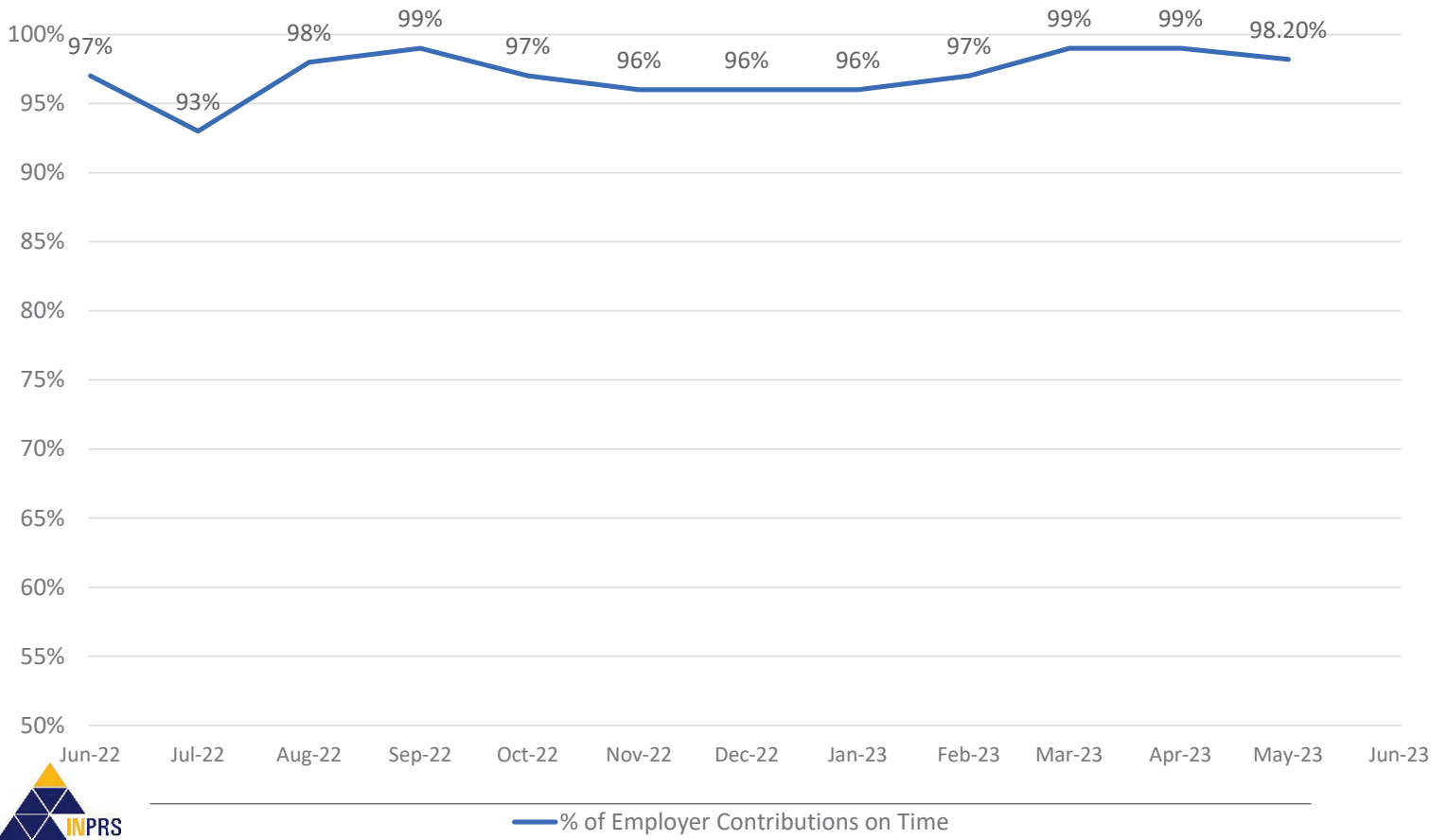
2020	2021	2022	2023
(9) Applications received, (7) approved, (2) denied	(16) Applications received, (15) approved. (1) denied	(7) Applications received and approved	(5) Applications received and approved

FY23 - Employer New Units and Enlargements

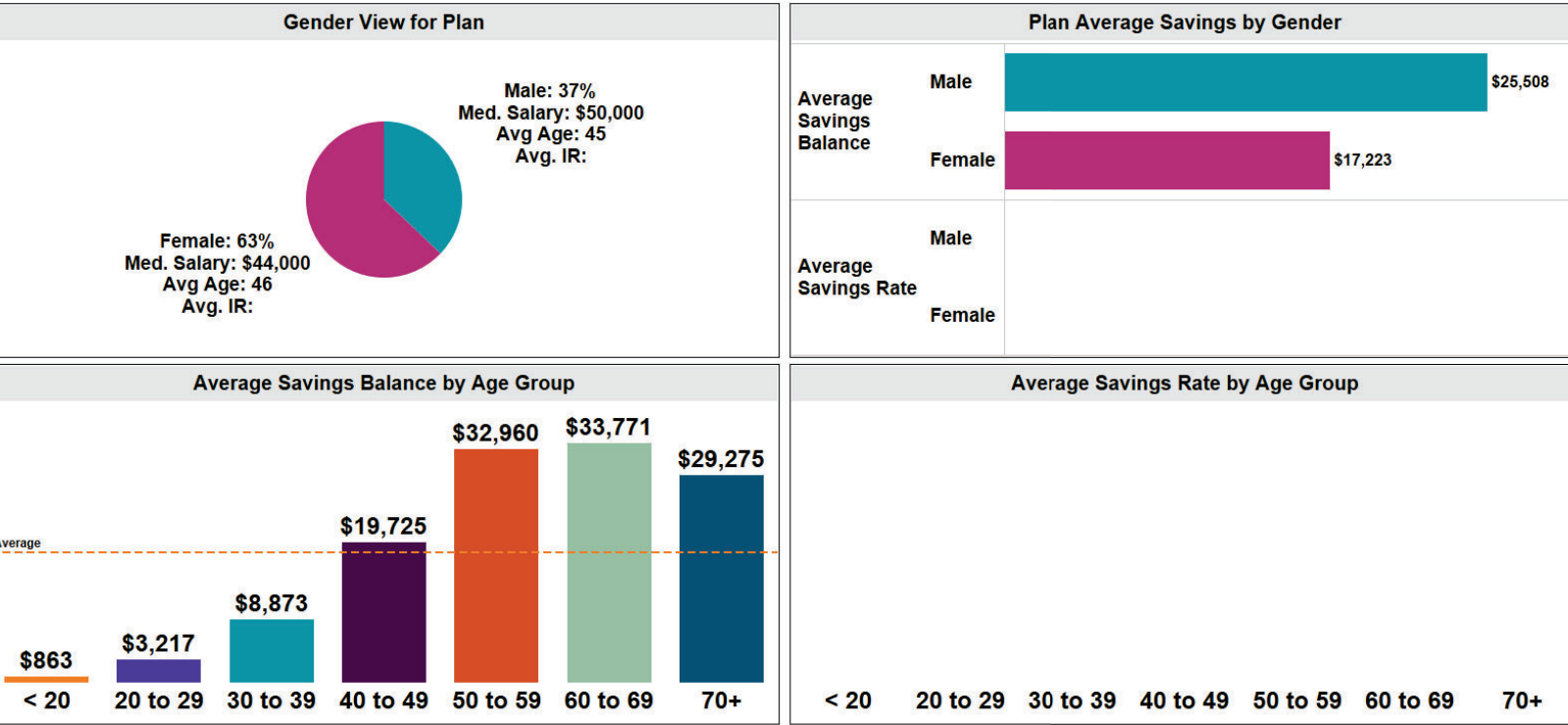
	PERF	TRF	1977
New Units	6	2	2
Enlargements	14	NA	NA

Employer Contributions

% of Employer Contributions on Time



Savings



Data as of 6/30/2023

Data includes retirement plan sponsored business. RPS, IRA, HRA, NQ in Pen-Cal, and ReliaStarSEP/IRA policies are not included.



Financial Results

June 2023

Financial Results

(dollars in millions)	Year to Date					
	DB	DC	OPEB/ Custodial	Total	vs Budget Fav / (Unfav)	
					\$	%
Fiduciary Net Position - Beginning of Period	\$ 35,982	\$ 5,998	\$ 431	\$ 42,411		
Change in Fiduciary Net Position:						
Contributions	5,458	374	236	6,068	\$ 24	0.4 %
Other Additions	21	—	—	21	1	3.3
Net Investment Income	958	577	3	1,538	(2,201)	(58.9)
Benefit Payouts and Expenses	(2,755)	(426)	(236)	(3,417)	9	0.3
Inc/(Dec) in Net Position	\$ 3,682	\$ 525	\$ 3	\$ 4,210	\$ (2,168)	(34.0)%
Fiduciary Net Position - End of Period	\$ 39,664	\$ 6,523	\$ 434	\$ 46,621		
Change in Net Position %	10.2 %	8.8 %	0.7 %	9.9 %		

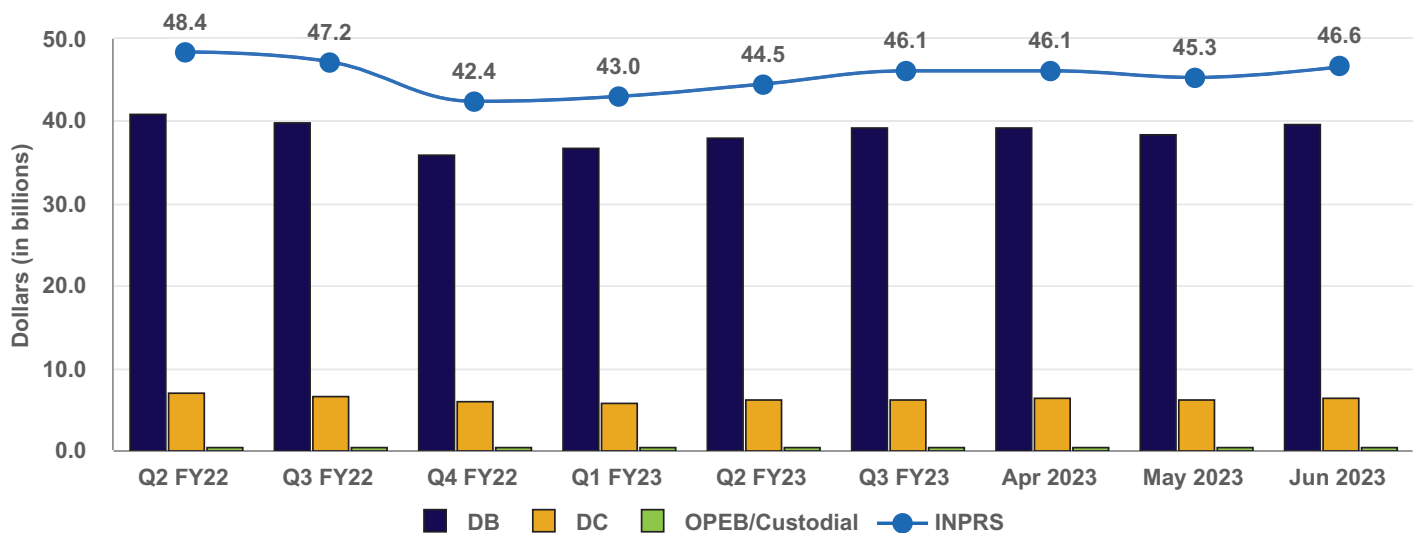
Contributions include appropriations and tax revenues of \$4.49b (DB \$4.25b and OPEB/Custodial \$0.24b), and are comparable to budget. Included in DB appropriations is \$2.5b in state excess reserves received in September 2022, and \$700 million received in June 2023.

Net Investment Income reflects a total return for DB funds of 2.18% YTD compared to a budget return of 6.25% YTD. The DC YTD return was 9.68%. Yields are preliminary. Performance returns have a different pricing cutoff than the accounting records.

Benefit payouts and expenses were comparable to budget.



Fiduciary Net Position Detail



INPRS year to date Fiduciary Net Position increased 9.9% or \$4.2b since the prior year end.

Defined Benefit year to date Fiduciary Net Position Restricted increased 10.2% or \$3.7b primarily due to Contributions.

Defined Contribution year to date Fiduciary Net Position Restricted increased 8.8%, or \$525.0m, primarily due to Contributions and Net Investment Income.

OPEB/Custodial year to date Fiduciary Net Position Restricted increased 0.7% or \$3.0m primarily due to Net Investment Income.



Supplemental Reserve Accounts

(dollars in thousands)

	Year to Date					
	PERF DB	TRF Pre-'96 DB	TRF '96 DB	EG&C	LE DB	SRA Total
Fiduciary Net Position - Beginning of Period	\$ 112,995	\$ 148,239	\$ 24,165	\$ 1,080	\$ 28	\$ 286,507
Change in Fiduciary Net Position:						
Contributions:						
Employer	40,503	—	8,529	336	—	49,368
Lottery	—	30,000	—	—	—	30,000
Total Contributions	40,503	30,000	8,529	336	—	79,368
Net Investment Income/(Loss)	3,330	3,858	712	32	—	7,932
Benefit Payouts and Expenses	(8,032)	(10,193)	(1,535)	(77)	(4)	(19,841)
Inc/(Dec) in Net Position	35,801	23,665	7,706	291	(4)	67,459
Fiduciary Net Position - End of Period	<u>\$ 148,796</u>	<u>\$ 171,904</u>	<u>\$ 31,871</u>	<u>\$ 1,371</u>	<u>\$ 24</u>	<u>\$ 353,966</u>
Employer Contribution Rates:						
Jan 2023 - Dec 2023	0.66%	N/A	0.21%	1.00%	N/A	
Jan 2022 - Dec 2022	0.72%	N/A	0.21%	0.94%	N/A	

Note: TRF Pre-'96 DB receives \$2.5m each month from the Lottery. If additional postretirement benefit increases are enacted, the necessary funds will be allocated to the other SRAs before benefits can be paid.



Administrative and Investment Expenses

(dollars in millions)		Total Fiscal Year 2023			
Expenses	Actual	vs Budget Fav/(Unfav)		vs Forecast Fav/(Unfav)	
		\$	%	\$	%
Administrative	\$ 49.2	\$ 1.1	2.1 %	\$ 0.5	1.0 %
Investment:					
Management Fees	219.3	67.1	23.4	3.2	1.4
General Expenses	13.6	2.4	15.1	0.1	0.6
Total Investment	232.9	69.5	23.0	3.3	1.4
Total Expenses	\$ 282.1	\$ 70.6	20.0 %	\$ 3.8	1.3 %

Administrative expenses are favorable to budget primarily due to professional services, data processing, computer services and training savings.

Investment Expenses:

Management fees are \$67.1m favorable to budget primarily due to timing of management fees reported in Private Markets and Real Assets. Absolute Return and Fixed Income - Inflation-Linked are favorable primarily due to underperformance by a manager resulting in a return of performance fees.

General Expenses are \$2.4m favorable primarily due to brokerage commissions, software and licenses, legal fees, personnel, and travel.



Administrative and Investment Expenses - Detail

(dollars in thousands)

	Month to Date		Fiscal 2023 Year to Date		
	Actual	Fav/(Unfav) vs Budget	Actual	Fav/(Unfav) vs Budget	Fav/(Unfav) vs Prior Year
Administrative Expenses					
Personnel Services	\$ 3,576	\$ (159)	\$ 25,954	\$ (732)	\$ (3,755)
Professional Services:					
Actuarial Services	123	(57)	434	95	(89)
Outside Counsel	10	3	63	92	4
Benefit Processing	212	(13)	2,073	81	6
Professional Services	864	(83)	3,298	451	(1,345)
DC Record Keeping Fees	539	24	6,605	155	37
Total Professional Services	1,748	(126)	12,473	874	(1,387)
IT Services	685	264	8,284	578	(704)
Communications	58	59	875	142	(53)
Operations:					
Training and Travel	88	(34)	393	184	(108)
Facility / Building	63	(9)	575	(6)	(30)
Miscellaneous	15	9	347	24	41
Depreciation / Amortization	21	—	249	—	32
Total Operations	187	(34)	1,564	202	(65)
Total Administrative Expenses	6,254	4	49,150	1,064	(5,963)
Investment Expenses					
External Investment Services:					
DC/RMBA Investment Mgr Fees	632	97	8,137	626	177
DB/SDBF Investment Mgr Fees	20,053	3,067	211,191	66,492	53,925
Outside Service Fees	1,024	(221)	8,710	1,075	(97)
Total External Investment Services	21,709	2,943	228,038	68,193	54,005
Internal Investment Services:					
Staff and Related Expense	715	295	4,881	1,351	(129)
Total Investment Expenses	22,424	3,238	232,919	69,544	53,877
Total Expenses	\$ 28,678	\$ 3,242	\$ 282,069	\$ 70,608	\$ 47,914





Financial Results

July 2023

Financial Results

(dollars in millions)

	Year to Date				vs Budget	
	DB	DC	OPEB/ Custodial	Total	Fav / (Unfav) \$	%
Fiduciary Net Position - Beginning of Period	\$ 39,664	\$ 6,523	\$ 434	\$ 46,621		
Change in Fiduciary Net Position:						
Contributions	1,147	28	158	1,333	\$ (5)	(0.4)%
Other Additions	2	—	—	2	—	—
Net Investment Income	645	144	1	790	367	86.6
Benefit Payouts and Expenses	(233)	(54)	(1)	(288)	18	6.0
Inc/(Dec) in Net Position	\$ 1,561	\$ 118	\$ 158	\$ 1,837	\$ 380	26.0 %
Fiduciary Net Position - End of Period	\$ 41,225	\$ 6,641	\$ 592	\$ 48,458		
Change in Net Position %	3.9 %	1.8 %	36.4 %	3.9 %		

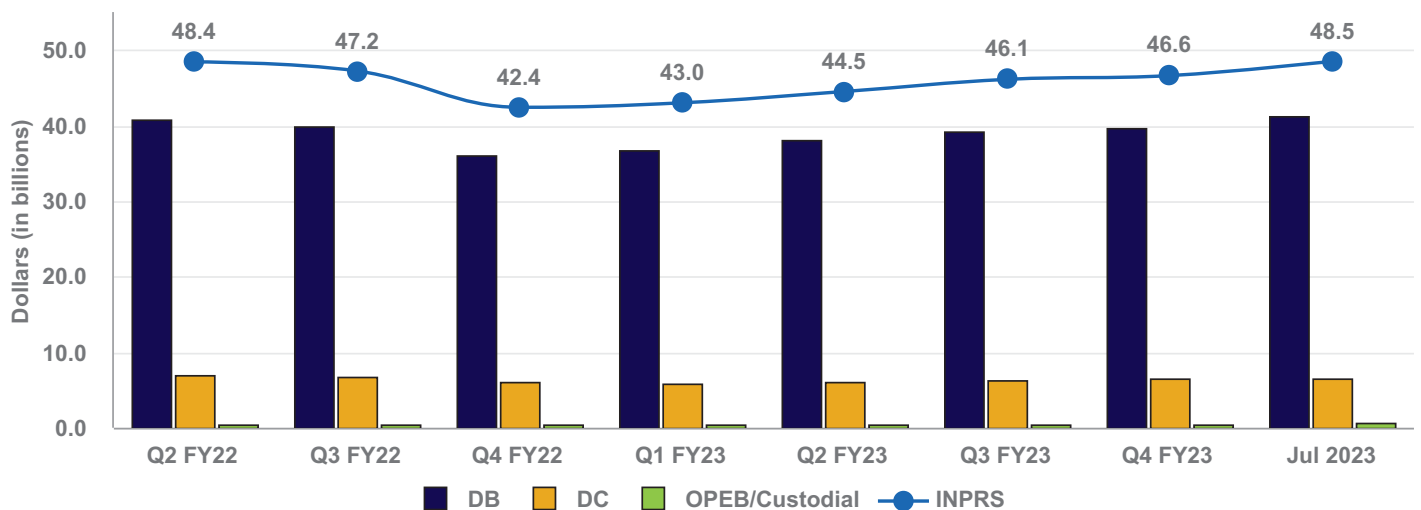
Contributions include appropriations and tax revenues of \$1.21b (DB \$1.05b and OPEB/Custodial \$0.16b), and are comparable to budget.

Net Investment Income reflects a total return for DB funds of 1.62% YTD compared to a budget return of 0.52% YTD (6.25% long-term rate of return, divided by 12 months, times 1 months). The DC YTD return was 2.22%. Yields are preliminary. Performance returns have a different pricing cutoff than the accounting records.

Benefit payouts and expenses were favorable \$18m primarily due to lower than anticipated distributions of contributions and interest for TRF DC.



Fiduciary Net Position Detail



INPRS year to date Fiduciary Net Position increased 3.9% or \$1.8b since the prior year end.

Defined Benefit year to date Fiduciary Net Position Restricted increased 3.9% or \$1.6b primarily due to Contributions and Net Investment Income.

Defined Contribution year to date Fiduciary Net Position Restricted increased 1.8%, or \$118.0m, primarily due to Net Investment Income.

OPEB/Custodial year to date Fiduciary Net Position Restricted increased 36.4% or \$158.0m primarily due to Contributions.



Supplemental Reserve Accounts

(dollars in thousands)

	Year to Date					
	PERF DB	TRF Pre-'96 DB	TRF '96 DB	EG&C	LE DB	SRA Total
Fiduciary Net Position - Beginning of Period	\$ 148,796	\$ 171,904	\$ 31,871	\$ 1,371	\$ 24	\$ 353,966
Change in Fiduciary Net Position:						
Contributions:						
Employer	2,886	—	641	31	—	3,558
Lottery	—	2,500	—	—	—	2,500
Total Contributions	2,886	2,500	641	31	—	6,058
Net Investment Income/(Loss)	2,417	2,744	519	23	1	5,704
Benefit Payouts and Expenses	(660)	(838)	(127)	(6)	—	(1,631)
Inc/(Dec) in Net Position	4,643	4,406	1,033	48	1	10,131
Fiduciary Net Position - End of Period	<u>\$ 153,439</u>	<u>\$ 176,310</u>	<u>\$ 32,904</u>	<u>\$ 1,419</u>	<u>\$ 25</u>	<u>\$ 364,097</u>

Employer Contribution Rates:

Jan 2023 - Dec 2023	0.66%	N/A	0.21%	1.00%	N/A
Jan 2022 - Dec 2022	0.72%	N/A	0.21%	0.94%	N/A

Note: TRF Pre-'96 DB receives \$2.5m each month from the Lottery. If additional postretirement benefit increases are enacted, the necessary funds will be allocated to the other SRAs before benefits can be paid.



Administrative and Investment Expenses

(dollars in millions)		Year to Date		Fiscal Year
Expenses	Actual	vs Budget Fav/(Unfav)		Budget
		\$	%	
Administrative	\$ 2.0	\$ 0.5	19.5 %	\$ 56.4
Investment:				
Management Fees	19.3	4.2	17.9	\$ 283.7
General Expenses	1.2	(0.1)	(10.3)	17.2
Total Investment	20.5	4.1	16.6	300.9
Total Expenses	\$ 22.5	\$ 4.6	16.9 %	\$ 357.3

Administrative expenses are favorable to budget primarily due to software and license, professional services, TPCs, and communications.

Investment Expenses:

Management fees are \$4.2m favorable to budget primarily due to timing of management fees reported in Private Markets and Real Assets. Risk Parity is unfavorable primarily due to timing of management fees and Fixed Income - Ex Inflation - Linked is unfavorable primary due to higher than expected accrual.

General Expenses are comparable to the budget.



Administrative and Investment Expenses - Detail

(dollars in thousands)

	Month to Date		Fiscal Year 2023	
	Actual	Fav/(Unfav) vs Budget	Budget	vs Prior Year
Administrative Expenses				
Personnel Services	\$ 530	\$ 73	\$ 27,562	\$ (1,607)
Professional Services:				
Actuarial Services	22	13	476	(43)
Outside Counsel	(2)	12	115	(52)
Benefit Processing	103	1	2,291	(217)
Professional Services	61	119	5,986	(2,688)
DC Record Keeping Fees	536	(2)	6,406	200
Total Professional Services	720	143	15,274	(2,800)
IT Services	542	177	9,689	(1,406)
Communications	77	35	1,524	(649)
Operations:				
Training and Travel	99	(34)	870	(477)
Facility / Building	(2)	65	831	(256)
Miscellaneous	(21)	18	429	(82)
Depreciation / Amortization	21	—	249	—
Total Operations	97	49	2,379	(815)
Total Administrative Expenses	1,966	477	56,428	(7,277)
Investment Expenses				
External Investment Services:				
DC/RMBA Investment Mgr Fees	555	193	9,044	(907)
DB/SDBF Investment Mgr Fees	18,778	4,008	274,649	(63,458)
Outside Service Fees	826	(21)	10,280	(1,571)
Total External Investment Services	20,159	4,180	293,973	(65,936)
Internal Investment Services:				
Staff and Related Expense	363	(91)	6,957	(2,076)
Total Investment Expenses	20,522	4,089	300,930	(68,012)
Total Expenses	\$ 22,488	\$ 4,566	\$ 357,359	\$ (75,290)





July 2023

Balanced Scorecard (BSC)

Key Performance

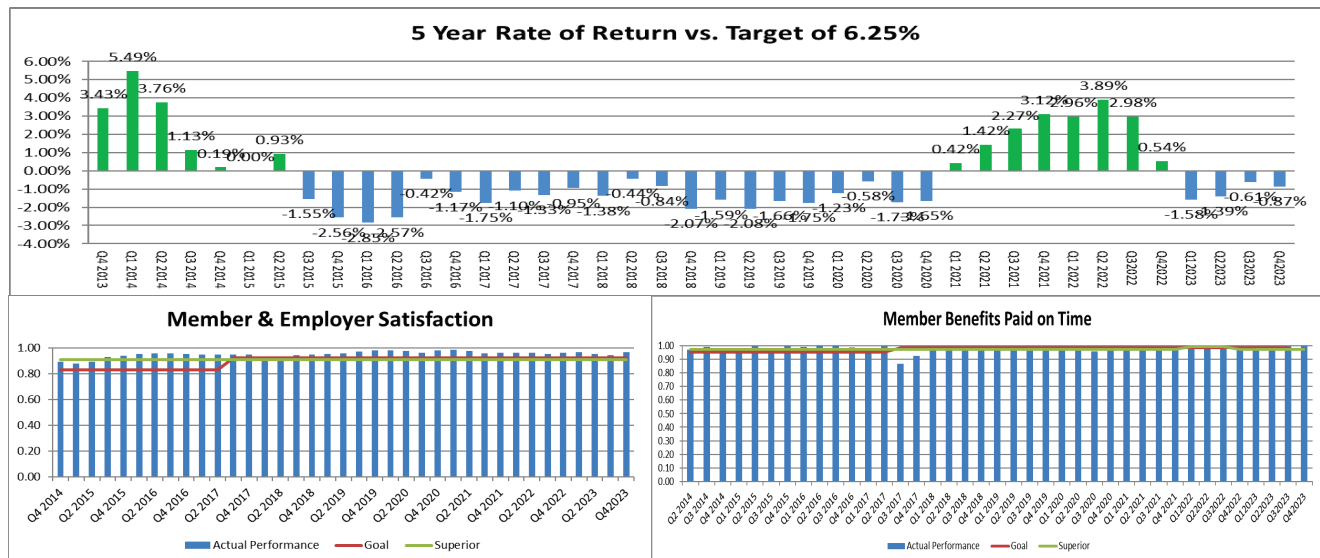
5-year Rate of Return: Defined benefit portfolio return is below the 6.25% target

Member Benefits Paid on Time: Q4 of FY2023 continued to perform above target

Member & Employer Satisfaction: Annual Employer Satisfaction is green; Quarterly Member Satisfaction is also green

Actuarial Determined Contributions (ADC) Status: Employers paid above target: FY23 104.5%, FY22 111.6%, FY21 111.5%, FY20 112.4%

Funded Status—Prefunded Plans: Stable funded status: FY23 89.1%, FY22 89.7%, FY21 88.7%, FY20 90.6%



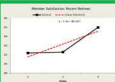
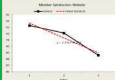
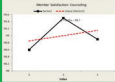
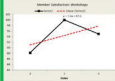
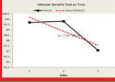
Escalated Measures

➤ Benefits Paid on Time

- 32 Employer pending accounts (4 Non-PERF & 28 PERF/TRF) resulting in delay in processing.
- Summer is peak season for retirements. Historically, this is the only time target is missed.

INPRS Working Balanced Scorecard

Date: Aug 25, 2023
Reporting Period: July 2023

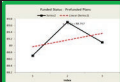
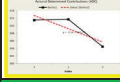
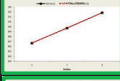
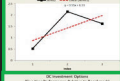
Strategic Goal	E-Staff Champion	Type	Measure	Target	Actual & Escalation Status	Trend (Last 3 Reporting Periods)	FYE 2023	FYE 2022	FYE 2021	Update Frequency
Customer										
Goal 2: Deliver a quality member experience	D. Benson	Lag	Member Satisfaction: Call Center	>76.1	85.9%		81.48%	82.50%	79.5%	Monthly
	D. Benson	Lag	Member Satisfaction: Recent Retiree	>74.8	85.0%		83.18%	85.10%	81.5%	Monthly
	D. Benson	Lag	Member Satisfaction: Website	>83.2	88.6%		89.48%	92.00%	92.5%	Monthly
	D. Benson	Lag	Member Satisfaction: Counseling	>93.3	98.9%		98.68%	97%	100.0%	Monthly
	D. Benson	Lag	Member Satisfaction: Workshops	>90.0	95.0%		92.31%	88.60%	93.9%	Monthly
	M. Ackerman	Lag	Member Benefits Paid on Time	> 98.5%	97.1%		98.56%	93.80%	99.30%	Monthly
	M. Ackerman	Lag	Annual Employer Satisfaction	>80%	87.0%		85.50%	84%	85%	Annually
	M. Ackerman	Lag	Quarterly Employer Satisfaction	>80%	88.9%		87.52%	87.20%	90.1	Quarterly



INPRS Working Balanced Scorecard

Date: Aug 25, 2023

Reporting Period: July 2023

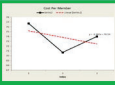
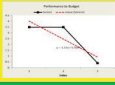
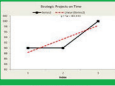
Strategic Goal	E-Staff Champion	Type	Measure	Target	Actual & Escalation Status	Trend (Last 3 Reporting Periods)	FYE 2023	FYE 2022	FYE 2021	Update Frequency
Financial										
Goal 4: Manage a financially secure retirement system	R. Come	Lag	Funded Status -- Prefunded Plans	Positive Trend & ≥ 80%	89.1%		89.10%	89.70%	88.7%	Annually
	R. Come	Lag	Employer Contributions	≥ 95%	97.1%		97.17%	97%	98%	Monthly
	R. Come	Lag	Actuarial Determined Contributions (ADC)	100%	104.5%		104.50%	111.70%	111.50%	Annually
	S. Davis	Lag	Defined Benefit Rate of Return Since 2012	Within 1 Std. Dev.	92.84%		85.41%	86.22%	95.1% Within 1 Std.Dev	Monthly
	S. Davis	Lead	Minimum FY Investments Return	Levels to keep employer contributions: PERF -25%; TRF96 -19%; 77 Fund -18%	1.62%		-0.02%	-6.34%	23.12%	Monthly
	S. Davis	Lag	DC Investment Options (Five Year Performance Relative to Benchmark)	≥ 82%	94.12%		94.12%	94%	94%	Quarterly
	S. Davis	Lag	DB Liquidity	≥ 2.25	2.27%	N/A				Quarterly
	S. Davis	Lag	DB Investment Costs vs CEM Benchmark	Lower Cost	TBD	N/A				Annually
	S. Davis	Lag	DC Investment Costs vs CEM Benchmark	Below Custom peer-based benchmark	Cost Below Peers	N/A				Annually



INPRS Working Balanced Scorecard

Date: Aug 25, 2023

Reporting Period: July 2023

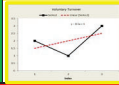
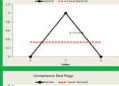
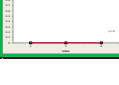
Strategic Goal	E-Staff Champion	Type	Measure	Target	Actual & Escalation Status	Trend (Last 3 Reporting Periods)	FYE 2023	FYE 2022	FYE 2021	Update Frequency
Process										
Goal 5: Reduce complexity and optimize operational efficiency across the enterprise	R. Corne	Lag	Cost per Member	< 50th Percentile	32nd Percentile \$74.00		\$72.35	\$74.00; 32nd Percentile	\$70.73; 36th Percentile	Annually
	C. Harding	Lag	CEM Survey Score	≥ 75th Percentile	94		95	94	95	Annually
	R. Corne	Lag	Performance to Budget	Favorable Variance ≥ \$0	\$0.40		\$2.3M	\$5.1M	\$2.8M	Monthly
	C. Harding	Lag	Strategic Projects on Time	≥ 85%	100.0%		93.33%	98%	89%	Monthly
	J. Gill	Lag	Impact of Pending Code Changes	Low	Low		Low	Low	Low	Monthly



INPRS Working Balanced Scorecard

Date: Aug 25, 2023

Reporting Period: July 2023

Strategic Goal	E-Staff Champion	Type	Measure	Target	Actual & Escalation Status	Trend (Last 3 Reporting Periods)	FYE 2023	FYE 2022	FYE 2021	Update Frequency
Learning & Growth										
	J. Smith	Lead	Voluntary Turnover	3	3		2.33	85.5	3	Monthly
Risk										
Internal Enterprise Risk Management	K. Hall	Lag	Unmodified Audit Opinion from External Auditor	Yes	Yes		Yes	Yes	Yes	Annually
	K. Hall	Lead	Audit Remediation Timeframe	0	0		1.67	3	0	Monthly
	J. Gill	Lag	Compliance Red Flags	0	0		0	0	0	Quarterly



DRAFT ORDER OF BUSINESS
Board of Trustees Meeting
Indiana Public Retirement System
1 North Capitol, Indianapolis, IN 46204
1st Floor Conference Room

October 27, 2023
10:00 A.M. – 2:00 P.M.

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- | | | | |
|--------------|---|-----------------|-------------|
| I. | Approve Minutes From September 8, 2023
Board of Trustees Meeting | (Tab 1) | Vote |
| II. | Unfinished Business | | |
| III. | Required Business | | |
| | • Defined Contribution Fee Review & CY24 Fee | (Tab 2) | Vote |
| | • Actuarial Valuation & Contribution Rates | (Tab 3) | Vote |
| IV. | New Business | | |
| | • Proposed Investment Policy Statement Updates | (Tab 4) | |
| | • Financial Update | (Tab 5) | |
| | • CEM Investment Benchmarking Review | (Tab 6) | |
| | • Investments Update | (Tab 7) | |
| | • Executive Director Report | (Tab 8) | |
| V. | Other business as requested by the Board | | |
| VI. | Preliminary Agenda for December 8, 2023 Meeting | (Tab 9) | |
| VII. | Preliminary 2024 Board Meeting Schedule | (Tab 10) | |
| VIII. | Adjournment | | |