2021 Audit Wrap Up Presentation and Discussion

Employees' Retirement Fund Fund of the City of Dallas

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Team in Attendance

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Partner,
Employee Benefit Plans

- **18+ years** of public accounting experience
- Practice emphasis in auditing employee benefit plans, including government pensions
- Dallas office

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- **9+ years** of public accounting experience
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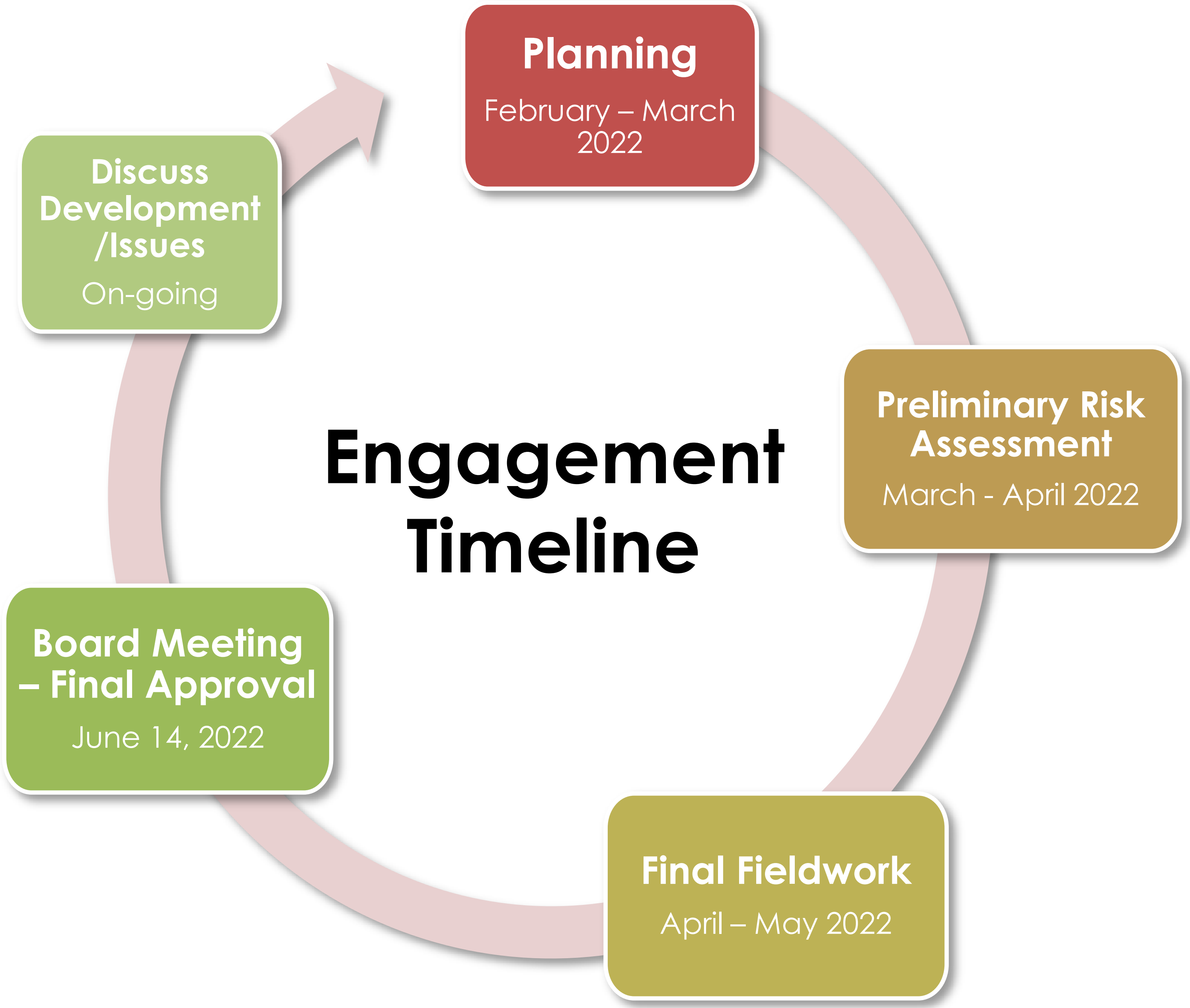
Engagement Timeline
Planning
February – March 2022
Preliminary Risk Assessment
March - April 2022
Final Fieldwork
April – May 2022
Board Meeting – Final Approval
June 14, 2022
Discuss Development /Issues
On-going

Audit Testing

Our audit process is a risk-based approach in which we identified potential areas of risk that could lead to material misstatement of the financial statements.

Financial Statement Level Risk	Procedures Performed
Management override of internal controls	- tested approval of journal entries - agreed disclosures to support - tested estimates for reasonableness
Audit Areas of Focus	**Procedures Performed**
Investments	- Confirmation with Plan's custodian (Northern Trust) and investment managers - Recalculation of net asset value from audited financial statements for private equity, real estate, and collective investment funds - Use of third party database, Interactive Data Services to test fair values of level 1 and 2 investments

Audit Testing (continued)

Our audit process is a risk-based approach in which we identified potential areas of risk that could lead to material misstatement of the financial statements.

Audit Areas of Focus	Procedures Performed
Participant Benefit Payments	- Examination of benefits on a test basis - Tested eligibility of participants - Recalculated benefits in accordance with plan provisions - Compared recurring payments year over year and inquired of any differences outside of expectations
Participant Data and Census	- Reconciled census from actuary to underlying payroll information - Tested a sample of key participant data to underlying HR records - Recalculated employee and employer contributions
Actuarial Valuation	- Reviewed assumptions and methodology used by actuary - Reviewed related disclosures

Financial Audit Results

Type of Report:	**UNMODIFIED**
Internal control over financial reporting:	
Any material weakness(es) identified?	**NO**
Any significant deficiencies that are not material weaknesses?	**NO**

Required Communications to Those in Charge of Governance

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Communication	Results
Auditor's responsibility under generally accepted auditing standards (GAAS)	The financial statements are the responsibility of the Plan. Our audit was designed in accordance with GAAS in the U.S. and provide for reasonable rather than absolute assurance that the financial statements are free of material misstatement. Our responsibility is to express an opinion about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities. The audit of the fiscal year 2021 financial statements is complete and we plan to issue an unmodified opinion.

Required Communications to Those in Charge of Governance

Communication	Results
Unusual transactions and the adoption of new accounting principles	The significant accounting policies used by the Plan are reasonable We noted no transactions entered into by the Plan during the year for which there is a lack of authoritative guidance or consensus.

Required Communications to Those in Charge of Governance

Communication	Results
Fraud and illegal acts	No material errors, irregularities, or illegal acts were noted.
Material weakness in internal control	No material weaknesses noted.
Other information contained in documents containing audited financial statements	No such items.
Management consultations	We are not aware of management consulting with other accountants for a second opinion.

Required Communications to Those in Charge of Governance

Communication	Results
Difficulties encountered	No difficulties or disagreements arose during the course of our audit.
Management representations	We will request certain representations from management that will be included in the management representation letter
Auditor independence	No independence issues noted.
Other information contained in documents containing audited financial statements	We performed limited procedures on the Management's Discussion and Analysis (MD&A) and Required Supplementary Information (RSI). We did not provide any assurance on this information and other supplementary information.
Management judgments and accounting estimates	Management's estimates of investment fair values; investment classifications; and net pension liability actuarial valuation were evaluated and determined to be reasonable in relation to the financial statements as a whole.

Required Communications to Those in Charge of Governance

Communication	Results
Audit adjustments and Passed adjustments	Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. There were no passed adjustments during the audit. In addition, there were no uncorrected misstatements identified as a result of our audit procedures.
Other material written communications between Weaver and Tidwell, L.L.P., and the Plan	Nothing to note. No going concern issues identified or subsequent events.

Use of Other Auditors

Specialists
Weaver uses a third party pricing service for level 1 and level 2 investments
Subcontractor
As part of our commitment to participate of minority-owned firms, we engaged Fernandez & Company, P.C. to perform audit procedures under our direction and supervision

DISCUSSION

Contact Us

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EMPLOYEES' RETIREMENT FUND OF THE CITY OF DALLAS

Financial Statements
As of December 31, 2021 and 2020
With Independent Certified Public Accountant's Report Thereon

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

(Required Supplementary Information)

MANAGEMENT’S DISCUSSION AND ANALYSIS (UNAUDITED)

The Management’s Discussion and Analysis of the Employees’ Retirement Fund of the City of Dallas (“ERF” or “the Plan”) financial performance provides an overview of the financial activities and funding conditions for the fiscal years ended December 31, 2021, 2020, and 2019. The intent of this discussion and analysis is to give a narrative overview and analysis of the Plan’s financial performance as a whole. For more detailed information regarding performance, readers should also review the Financial Statements, Notes to the Financial Statements, and Required Supplementary Information in order to enhance their understanding of the Plan’s financial performance.

FINANCIAL STATEMENTS

The Plan is a defined benefit plan that provides retirement, disability, and death benefits to permanent full-time and part-time civilian employees of the City of Dallas (“the City”). The Plan has two basic Financial Statements:

- A Statement of Fiduciary Net Position that provides information about the fair value and composition of plan assets, plan liabilities, and fiduciary net position; and
- A Statement of Changes in Fiduciary Net Position that provides information about the year-to-year Changes in Fiduciary Net Position.

There are also notes to the Financial Statements that include a brief Plan description, a summary of significant accounting policies, and information about contributions, legally required reserves, investment concentrations, and the Net Pension Liability. The report also contains required supplementary information in addition to the basic financial statements. Collectively, this information presents the Net Position Restricted for Pension Benefits and summarizes the Changes in Net Position for those benefits.

FINANCIAL HIGHLIGHTS

Fiscal year 2021 experienced an increase in investments. The Plan’s Financial Highlights for fiscal year ended December 31, 2021, are as follows:

- The Plan had a return of 16.4% for the year, a 5-year return of 9.4% and a 10-year return of 9.1%.
- The Net Position Restricted for Pension Benefits was $4.1 billion as of December 31, 2021. This amount reflects an increase of $386 million from last year. This growth is primarily the result of net increases in investments.
- Total contributions for fiscal year 2021 were $122.8 million, an increase of approximately $2.9 million from last fiscal year. This is primarily attributed to a merit pay increase for civilian employees.
- Pension benefits paid to retirees and beneficiaries increased $9.1 million in 2021 compared to 2020, bringing the total benefit payments to $297 million. Refunds of contributions paid to former members after termination of employment were $10 million for 2021 and $7 million for 2020.
- Net Investment Income (net appreciation/(depreciation) in the fair value of investments, plus interest and dividend income, less investment expenses) increased $349 million compared to last fiscal year.
- Administrative Expenses of $6.5 million in 2021 were higher than 2020 by $848 thousands due to an increase in data processing expenses.

CONDENSED FINANCIAL INFORMATION

($ in thousands)

As of and for the FY Ended December 31,	2021	2020	2019
Fiduciary Net Position			
Assets	$4,745,318	$4,376,675	$4,325,968
Liabilities	652,103	669,922	667,880
Fiduciary Net Position Restricted for Pension Benefits	$4,093,215	$3,706,753	$3,658,088
Changes in Fiduciary Net Position			
Additions:			
Employer contributions	$63,584	$61,615	$62,177
Employee contributions	59,256	58,358	58,314
Investment & other income/(loss), net	578,010	229,105	551,243
Deductions:			
Benefit payments	296,587	$287,465	$278,007
Refund of contributions	10,452	6,857	10,436
Administrative expenses	6,547	5,699	7,513
Depreciation expense	802	392	3
Change in Fiduciary Net Position Restricted for Pension Benefits	$386,462	$48,665	$375,775
Net Position Restricted for Pension Benefits:			
Beginning of Year	3,706,753	3,658,088	3,282,313
End of Year	$4,093,215	$3,706,753	$3,658,088

FINANCIAL POSITION AND RESULTS OF OPERATIONS

The Plan's total investment return for fiscal year 2021 was 16.4% as compared to 5.8% in 2020 and 17.6% in 2019. The one-year return was above the policy benchmark of 15.4%. The Plan has performed well over longer time periods. The Plan's 5-year return is 9.4% which is slightly below the policy benchmark of 9.5%. The 10-year return is 9.1%, which is above the policy benchmark of 9%.

Dallas ERF has a global, diversified investment program. The best performing asset class in 2021 was Private Equity. Dallas ERF's Private Equity portfolio earned 39.7%. US Equities generated a return of 29.6% during the current fiscal year, exceeding a custom benchmark of 26.7%. Global listed infrastructure earned 32.2% for the year, underperforming its benchmark of 33.8%
The Fund's real estate investments consist of real estate investment trust, core and value-add real estate funds. Real Estate earned 29.27% for the fiscal year ended December 31, 2021.

Changes to the Plan's Fiduciary Net Position consist of employer and employee contributions and investment income. The Plan's Fiduciary Net Position increased from $3.707 billion in fiscal year 2020 to $4.093 billion in 2021, an increase of approximately $386 million. This growth is primarily due to higher investment income and which resulted in increases to almost all asset classes. City and employee contributions for fiscal year 2021 were $64 million and $59 million, respectively. Total contributions for 2021 were $122.80 million compared to $119.90 million in 2020 and $120.40 million in 2019.

Net investment income/(loss) is presented net of investment expenses and is comprised of interest, dividend income, gains/(losses) from the sale of investments, net unrealized appreciation/(depreciation) in the fair value of investments, and net income from securities lending activities. For fiscal year 2021, the Plan had a net investment income of $578 million, (excluding non-investment Other Income of $81 thousand) compared to a net investment income of $229 million in fiscal year 2020 and a net investment income of $551 million in 2019.

Fiscal year 2021 liabilities of $652 million showed a decrease of 3% from fiscal year 2020 liabilities of $670 million. Liabilities for 2020 increased by $218 million or .3% over 2019. The decrease in 2021 was primarily due to a decrease in the use of currency contracts by the managers to hedge against changes in foreign currency rates in accordance with the managers' investment strategies and goals. Year-end balances for securities purchased were $2 million in 2021, $11 million in 2020 and $15 million in 2019. Foreign currency contracts at year-end were $287 million in 2021, $406 million in 2020 and $433 million in 2019. The changes were due to investment managers' portfolio management.

Deductions from Fiduciary Net Position are largely from benefit payments. During fiscal year 2021, the increase in deductions is attributable to new retirements, as was the increase between 2019 and 2020.

New retirements were 320, 309 and 376, respectively, for fiscal years 2021, 2020 and 2019. Cost of Living Adjustments ("COLA") were 1.4% in 2021, 1.6% in 2020 and 2.7% in 2019. A COLA is granted effective January 1 of each year if there is an increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers ("CPI-W") based on the greater of either a) the change from October of the prior year to October of the current year; b) the monthly average change; or c) zero. During fiscal year 2021, refunds of contributions amounted to $10 million (641 refunds), compared to 2020 refunds of $6.9 million (456 refunds) and 2019 refunds of $10.4 million (726 refunds). The fiscal year 2021 refund amount reflects an increase in the number of members requesting refunds as compared to fiscal year 2020. Administrative expenses of approximately $6.5 million represent approximately 2.1% of total deductions for the year.

CAPITAL ASSETS

The Plan's investment in capital assets as of December 31, 2021, amounts to approximately $7 million (net of accumulated depreciation). This investment in capital assets includes $39 thousand in Furniture and Fixtures, and $7 million in Intangible Assets. The total net decrease in capital assets for the current fiscal year was -6% compared to last year due to depreciation expense.

Additional information on the Plan's Capital Assets can be found in Note 9 of this report.

CURRENT ENVIRONMENT

Plan membership for active members decreased during fiscal year 2021 from 7,244 to 7,175 members, a decrease of 1%. For 2021, the number of new retirements was 320 compared to 309 in 2020. The trend of benefit payments continues to increase. Similar to most mature plans, benefit payments exceed the level of contribution revenue received, and cash generated from investments is needed in order to meet benefit payments.

An actuarial valuation of the Plan's assets and benefit obligations is performed annually by an independent firm, Gabriel, Roeder, Smith & Company ("GRS"). Based on the actuarial value of assets, the funded ratio of the Plan increased from 75.96% in 2020 to 76.14% in 2021 primarily due to investment returns. The Unfunded Actuarial Accrued Liability ("UAAL") increased from $1,186 million as of December 31, 2020, to $1,222 million as of December 31, 2021. Based on accounting principles generally accepted in the United States of America ("GAAP"), the Plan Fiduciary Net Position as a percentage of the Total Pension Liability was 80.35% in 2020 as compared to 59.69% in 2020 and 64.65% in 2019. This is due to a blended discount rate of 7.25% in 2021. See Note 10 (c) for more information.

CONTACTING THE PLAN'S FINANCIAL MANAGEMENT

This financial report is designed to provide a general overview of the Plan's finances. Questions and requests for additional information should be addressed to the Employees' Retirement Fund of the City of Dallas, 1920 McKinney Avenue, 10th Floor, Dallas, TX 75201.

EMPLOYEES' RETIREMENT FUND OF
THE CITY OF DALLAS

	2021	2020
ASSETS:		
Cash and short-term investments	$ 117,258	$ 89,190
Collateral on loaned securities	349,348	239,533
	466,606	328,723
Capital Asset:		
Construction In Progress	6,971	7,403
Furniture and Fixtures, net	39	11
Total capital assets (net)	7,010	7,414
Receivables:		
Currency contracts	287,389	406,360
Accrued dividends	4,872	5,006
Accrued interest	7,238	8,761
Accrued real estate income	1,185	1,158
Accrued securities lending	63	46
Securities sold	1,784	6,142
Employer contributions	2,445	466
Employee contributions	702	439
Total receivables	305,678	428,378
Investments, at fair value:		
Commingled index funds	239,274	208,318
Domestic equities	1,570,109	1,419,539
United States and foreign government fixed income securities	139,741	204,816
Domestic corporate fixed-income securities	851,306	772,004
International equities	489,039	468,520
Investments, at estimated fair value:		
Private equities	384,761	316,237
Real estate	291,794	222,726
Total investments	3,966,024	3,612,160
Total assets	4,745,318	4,376,675
LIABILITIES:		
Accounts payable	9,006	8,482
Payable for securities purchased	2,177	11,421
Investment fees payable	3,573	3,515
Currency contracts	287,389	406,360
Currency contract losses	610	611
Securities lending collateral	349,348	239,533
Total liabilities	652,103	669,922
NET POSITION		
Net Investment in capital assets	7,010	7,414
Unrestricted	4,086,205	3,699,339
Net position RESTRICTED for PENSION benefits	$ 4,093,215	$3,706,753

(A Schedule of Changes in Net Pension Liability is presented in the Required Supplementary Information)

	2021	2020
Additions:		
Contributions:		
Employer	$ 63,584	$ 61,615
Employee	59,256	58,358
Total contributions	122,840	119,973
Net investment income:		
Dividends	47,202	45,461
Interest	35,184	41,006
Real estate dividend income	5,633	5,316
Net appreciation/(depreciation) in fair value of investments	510,013	153,972
Securities lending rebates paid by borrowers	194	(480)
Securities lending income	777	1,661
Total investment income/(loss)	599,003	246,936
Less investment expenses:		
Investment management fees	(20,260)	(16,971)
Custody fees	(125)	(125)
Consultant fees	(495)	(583)
Securities lending management fees	(194)	(236)
Total investment expenses	(21,074)	(17,915)
Net investment income/(loss)	577,929	229,021
Other income	81	84
Total additions	700,850	349,078
Deductions:		
Benefit payments	296,587	287,465
Refund of contributions	10,452	6,857
Administrative expenses	6,547	5,699
Depreciation expense	802	392
Total deductions	314,388	300,413
Net increase/(decrease) in net position restricted for pension benefits	386,462	48,665
Net position RESTRICTED FOR PENSION benefits		
Beginning of year	3,706,753	3,658,088
End of year	$4,093,215	$3,706,753

1) Description of the Plan

a) General

The Employees' Retirement Fund of the City of Dallas ("ERF" or the "Plan") is a single-employer defined benefit pension plan that provides retirement, disability, and death benefits to its members, and is sponsored by the City of Dallas, Texas (the "City"). All employees of the City are members in the Plan, except police officers, firefighters, elected officers, non-salaried appointee members of administrative boards or commissions, part-time employees working less than one-half time, temporary employees, individuals working under contract, and individuals whose salaries are paid in part by another government agency. Members are entitled to retirement benefits after five years of service and to survivor benefits after two years of service or at the date of eligibility for retirement. The Plan was established and derives its authority to continue in operation from Chapter 40A of the Dallas City Code ("Chapter 40A"). The description of the Plan provisions in this report is for financial disclosure only. It is not intended to create or reduce legal rights. The rights and responsibilities of the Board of Trustees, the Plan, the members and the retirees are governed by the Plan as set forth in Chapter 40A. As of December 31, 2021 and 2020, the Plan's membership consisted of:

	2021	**2020**
Retirees and beneficiaries currently receiving benefits and inactive members entitled to benefits but not yet receiving them	9,636	9,262
Current members:		
Vested	4,312	4,340
Non-vested	2,863	2,904
Total current members	7,175	7,244
Total membership	16,811	16,506

b) Plan Administration

The Plan is governed by seven Board members, consisting of three members appointed by the City Council who may be Council members, three employee members of the Plan (elected by the membership) and the City Auditor (serving ex officio). The Board has general powers and duties to administer the Plan, including appointing an administrator to carry out the business of the Board, investing the assets of the Plan, making expenditures from the Plan, and determining members' eligibility for benefits.

Based on a Plan amendment passed by the voters of the City of Dallas in November 2004, the Board annually increases or decreases contribution rates in a ratio where the City pays 63% and the employee pays 37% of the contribution rate as determined by the actuarial valuation. The Plan requires notice to the City of the contribution rates and provides procedures by which the City may review and challenge those rates; codifying the Board's policies and procedures relating to the Plan's actuarial process and the City's participation in the selection of an actuarial firm to perform a peer review/audit; increasing the Board from five members to seven by adding another employee-elected representative and another council-appointed representative effective March 1, 2005; increasing from three to four the number of Board members required to constitute a quorum; increasing the terms of the employee-elected representatives from two to three years; requiring Council approval before the Board may grant temporary or permanent discretionary adjustments to retirement benefits over and above the regular cost-of-living increases; correcting section references to the term “qualified recipient”; and authorizing either the Council or the Board to propose amendments to Chapter 40A, subject to approval by the Board, the Council, and the voters of the City.

Based on a Plan amendment passed by the voters of the City of Dallas in November 2016, a new tier of benefits was added to the Plan (Tier B), effective January 1, 2017. Benefits provided to each tier of membership are outlined below.

The Plan may be terminated only by ordinance recommended by the Board, adopted by the City Council, and approved by a majority of the voters of the City voting in a general or special election. The Plan does not address allocation of the net position in the event of termination.

c) Pension Benefits

Tier A

Members of the Plan hired before January 1, 2017, are entitled to pension benefits equal to 2.75% of the average monthly earnings for each year of credited service. Average monthly earnings are based on the most beneficial to the member and are determined based on the member’s earnings for the highest three calendars years, last 6,240 hours of credited services, or the length of credited service if less than three years. Normal retirement age is 55 if credited service began before May 9, 1972 or age 60.

Tier A members are also eligible to retire at age 50 if the sum of the member’s age and credited service is equal to or greater than 78. Members who have completed 30 years of credited service may alternatively elect retirement before age 50; however, the pension benefits will be actuarially reduced based on the member’s age at retirement.

Tier B

Members of the Plan hired on or after January 1, 2017, are entitled to pension benefits equal to 2.5% of the average monthly earnings of the member for each year of credited service. Average monthly earnings are based on the most beneficial to the member and are determined based on the member’s earnings for the five highest calendar years, last 10,400 hours of credited service, or the length of credited service if less than five years. Normal retirement age is 65 with five years of credited service.

Tier B members who have completed 40 years of credited service may elect retirement at any age and are entitled to full pension benefits. Members who elect retirement before age 65 are entitled to an actuarially reduced pension benefits depending upon the age of the member. Active members may also elect to retire with actuarially reduced benefit once a combination of their age and years of credited service equal at least 80.

d) Cost of Living Adjustments

Cost of living adjustments for retirees are made each year on the first of January by adjusting the pension base by the percentage change of the Consumer Price Index ("CPI"), not to exceed 5% for Tier A and 3% for Tier B members. The cost of living adjustment effective January 2021 was 1.35% and 1.64% effective January 2020.

e) Disability and Death Benefits

Members who become totally and permanently disabled may qualify for a service-connected disability with no minimum service requirement, or a non-service connected disability with five or more years of credited service. Non-service connected benefits are based on actual credited service or a minimum of 10 years. Service-connected benefits are equal to normal retirement benefits or a minimum of $1,000.

Upon the death of an active married member with less than 15 years of service, the joint and one-half survivor option is the automatic death benefit.

If an active married member has at least 15 years of service and is eligible to retire or has reached normal retirement age, the member may elect the joint and full survivor option. Under this option, the member receives a reduced base pension payment which is actuarially computed based on the member's age, average monthly earnings, years of credited service at retirement, and the relative age of the spouse. Upon the death of the member, this option pays the full amount of the member's pension payment to the surviving spouse for life.

Upon the death of a member before retirement, death benefits equal to the normal retirement benefit will be paid to a qualified recipient: surviving spouse, minor child under age 18, a disabled child who became disabled before age 18, a dependent parent, or a parent over age 65. Death benefits vary depending on the beneficiary. The surviving spouse, the disabled child, or the dependent parent will receive a lifetime benefit unless the ten-year option is taken. The minor child under age 18 will receive the normal retirement benefit for ten years or until reaching age 18. If the member has less than two years of credited service, the member's contributions will be refunded.

Upon the death of a retired member, a death benefit is paid in accordance with the option selected by the member at retirement. If there are no qualified recipients at the time of death and benefits have not been paid for ten years, death benefits are paid to the designee (an estate, a person or an entity) named by the member. The designee will receive a lump-sum payment based on ten years of benefit payments when the member's death occurs before retirement. If death occurs after retirement, the designee will receive a commuted lump-sum payment representing the balance of a guaranteed ten-year period starting from the date of retirement.

If a member does not have an eligible beneficiary, death benefits will be paid to the designee or member's estate in one commuted value payment. Benefit payments will vary depending on whether death occurred before or after retirement. Upon the death of a member before retirement, the designee or member's estate will receive a lump-sum payment based on ten years of benefit payments. Upon the death of a retired member, the designee or estate will receive a commuted value lump-sum payment representing the balance of a guaranteed ten-year period starting from the date of retirement.

f) Contributions

If employment ends before attaining five years of service and before attaining eligibility for retirement, the member's contributions will be refunded upon written request to the Plan.

If a member's employment is terminated after five years of service, the member may elect a refund of contributions upon a written request, or the member may elect to receive pension benefits at normal retirement age equal to the amount accrued to the date of termination.

Based on the authorization in the Plan, the annual actuarial valuation will establish any new contribution rates for employees and the City. The new rates, which became effective October 1, 2021, are 13.32% for employees and a combined rate of 22.68% of pay for the City. The City's 22.68% is divided into 13.76% to the Plan and 8.92% for debt service payments on the pension obligation bonds. The former rates, effective October 1, 2020, were 13.32% of pay for employees and a combined rate of 22.68% of pay for the City.

The percent contributed may vary from the legally required rate as the annual required contribution is based upon covered payroll as of the actuarial valuation date, December 31, whereas contributions are calculated and paid based upon actual payrolls throughout the year. Certain factors, such as changes in benefit provisions, the size or composition of the population covered by the Plan or the actuarial assumptions used, may significantly affect the identification of trends in the amounts reported in the Schedule of Net Pension Liability and Schedule of Changes in Net Pension Liability located in the Required Supplementary Information section.

2) Summary of Significant Accounting Policies

a) Basis of Accounting

The accompanying financial statements are prepared on the economic resources measurement focus and accrual basis of accounting. Accordingly, interest earned but not received and dividends declared but not received as of the Plan's fiscal year end are recorded as accrued interest and dividends receivable, respectively. Contributions owed but not received as of the Plan's fiscal year end are recorded as contributions receivable. Benefits and refunds are recorded when paid. In addition, unsettled investment purchases and sales are accrued.

b) Administrative Expenses

Administrative expenses are paid from the Plan's contributions. The contribution rates calculated by the actuary take into consideration the expected administrative expenses.

c) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of financial statements and the reported amount of revenues and expenses during the reporting period. Actual results could differ from those estimates.

d) Investments and Investment Income

The Plan's investment policy requires that investments comply at all times with applicable local, state and federal regulations. The Plan's investment policy is based upon an asset allocation study that considers the current and expected condition of the Plan, the expected long-term capital market outlook and the Plan's risk tolerance. Unless specifically permitted in the investment manager guidelines or other governing document, the investment policy prohibits the purchase of non-negotiable securities, short sales, selling on margin, puts, calls, straddles, options, or "letter" (restricted) stock. Also, unless specifically authorized in a manager's individual guidelines, the investment policy prohibits the use of derivatives (See derivatives disclosure in footnote 3).

Marketable Securities are valued at fair value based on quoted market prices, where available. Purchases and sales of securities and any resulting gain or loss are recorded on a trade-date basis. Net appreciation/(depreciation) include the Plan's gains and losses on investments bought and sold as well as held during the year. In November 2019, the Plan modified the asset allocation. At December 31, 2021, the Plan was continuing to adjust its portfolio to align with the new asset allocation. The Plan's asset allocation is shown in the following table.

Asset Class	Allocation Percentage
US Equity	
Domestic Equity	12.5
Real Assets	12.5
REITs	2.5
Private Equity	7.5
Marketable Alternatives	2.5
Total US Equity	**37.5**
Non-US Equity	
International	12.5
Global	7.5
Global Low Volatility	12.5
Total Non-US Equity	**32.5**
Total Equity	**70.0**
Fixed Income	
Credit Opportunities	5.0
Global Investment Grade	15.0
High Yield	10.0
Total Fixed Income	**30.0**
Total Fund Allocation	**100.0**

e) Private Equity

To enhance the potential for earning higher rates of return relative to its other asset classes and to provide for broader portfolio diversification, the Plan allocates 7.5% of its total Plan portfolio to Private Equity. Recognizing that Private Equity investments have higher risk levels, this target of 7.5% is to be allocated within an acceptable range of 5.0% to 10.0% of private equity-oriented investments. Funding of committed capital in the Private Equity portfolio can occur over an extended time period and may take several years before the total allocation is fully invested. In order to reach the allocation target, a "committed" allocation up to 1.5 times the allocation is authorized. The Plan had three Private Equity managers at December 31, 2021.

Investments in these funds as a limited partner are carried at estimated fair value. Estimated fair values of investments in private limited partnerships are determined by the fund managers or general partner based on the latest investee information available, including audited financial statements and other similar data necessary to the valuation process. The Private Equity value at December 31, 2021 and December 31, 2020 was $385 million and $316 million, respectively.

f) Real Assets

The Plan is authorized to allocate 12.5% of its portfolio to Real Assets. The Plan has five managers that manage Real Assets for a total value of $292 million at December 31, 2021 and $223 million at December 31, 2020. The Plan invests in Heitman's core real estate fund, Invesco's core fund, Invesco II which manages 1900 McKinney, LLC, AEW Partners Real Estate Fund IX, L.P., and Virtus Real Estate Capital III, L.P.

Estimated fair values of investments are determined by the fund managers based on their best estimates using fair value estimation techniques substantiated, in part, by their audited financial statements and supported by the due diligence of the Plan investment staff.

g) Real Estate Investment Trust (REIT)

The Plan is authorized to allocate 2.5% of its portfolio to REITs. The plan has two managers within this category: Adelante and Center square. Investments are listed at fair value.

h) Foreign Currency Transactions

The Plan may enter into forward foreign currency exchange contracts for the purchase or sale of a specific foreign currency at a fixed price on a future date as a hedge against specific transactions or to position the portfolio to protect the Plan against adverse currency movements. Entering into these arrangements involves the risk of dealing with counterparties and their ability to meet the terms of the contracts. These contracts are valued at fair value at the financial statement date, and any realized and unrealized gains and losses are recorded when they are incurred.

Investments denominated in foreign currencies at December 31, 2021 and 2020 were converted to U.S. dollars at the foreign exchange rates quoted at December 31, 2021 and 2020. These foreign exchange gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

i) Securities Lending

The Board has authorized the Plan to enter into an agreement with The Northern Trust Company ("Northern Trust") for the lending of certain of the Plan's securities (the "Securities Lending Program" or "Program") including, but not limited to, stocks and bonds to counterparty brokers and banks ("borrowers") for a predetermined period of time and fee.

In 2009, the Board capped the securities lending exposure at $538.2 million.

j) Rate of Return

For the year ended December 31, 2021, the annual money-weighted rate of return on pension plan investment, net of investment fees, was 16.25%. The money-weighted rate of return expresses investment performance, net of investment expenses, adjusted for the changing amounts actually invested.

Schedule of Money-Weighted Investment Returns

For Year Ended December 31	Annual Investment Returns*
2014	6.52%
2015	-1.92%
2016	8.88%
2017	13.08%
2018	-4.99%
2019	17.33%
2020	5.75%
2021	16.25%

* This schedule is intended to include information for ten years. Additional years will be included as they become available.

k) Capital Assets

Capital Assets, which include furniture, fixture, and software, are reported in the Plan’s Financial Statements. Capital Assets are defined by the Plan as assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of two years. As the Plan constructs or develops additional Capital Assets each period, they are capitalized and reported at historical cost. The reported value excludes normal maintenance and repairs which are essentially amounts spent in relation to capital assets that do not increase the capacity or efficiency of the item or increase its estimated useful life.

Furniture and fixtures are depreciated using the straight line method over an estimated useful life of 5-20 years. Intangible Assets are depreciated using the straight-line method over an estimated useful life of 5-15 years. Construction in progress is not depreciated.

3) Derivatives

Derivatives are generally defined as contracts whose values depend on, or are derived from, the value of an underlying asset, reference rate, or index. The Plan has classified the following as derivatives:

a) Currency Forward Contracts

A Currency Forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during fiscal years 2021 and 2020. Currency forwards are usually traded over-the-counter. These transactions are entered into in order to hedge risks from exposure to foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Currency Forwards carry market risk resulting from adverse fluctuations in foreign exchange rates. Recognition of realized gain or loss depends on whether the currency exchange rate has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the Plan records the unrealized currency translation gain or loss based on the applicable exchange rates.

The Plan recognized a net realized loss on Currency Forward Contracts of $1.7 million dollars as of December 31, 2021 and a net realized loss of $737 thousands as of December 31, 2020. As of December 31, 2021, the Plan had a net unrealized loss on currency forward contracts of $550 thousand and a net unrealized loss of $591 thousand at December 31, 2020. These gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

Currency Forward Contracts outstanding at December 31, 2021 and 2020 were approximately $287 million and $401 million, respectively, with a market value of $287 million and $406 million, respectively ($ in thousands).

Currency	2021 Currency Forward Contracts Outstanding	2020 Currency Forward Contracts Outstanding
Australian Dollar	$14,920	$19,445
Brazilian Real	3,414	5,196
Canadian Dollar	16,436	17,950
Chile Peso	2,305	3,003
Columbian Peso	1,089	1,414
Czech Koruna	646	641
Denmark Krone	302	257
Euro	13,984	15,200
Hong Kong Dollars	3,156	5,298
Hungary Forint	667	1,437
Indonesia-Rupiahs	158	105
Indian Rupee	2,356	8,126
Israel Shekel	159	1,185
Japanese Yen	16,218	34,756
Mexican Peso	5,349	7,361
New Zealand Dollar	4,573	16,439
Norwegian Krone	6,359	9,517
Peruvian Nuevo Sol	-	8
Philippine Peso	380	72
Poland Zloty	2,386	2,033
Russia Ruble	5,308	5,125
Saudi Riyal	1,431	1,045
Singapore Dollar	1,210	560
South Africa Rand	2,302	3,498
South Korea Won	1,859	5,731
Swedish Krona	10,089	6,666
Switzerland Franc	15,167	8,849
Thailand Baht	343	226
Turkey Lira	-	1,659
Taiwan New Dollar	3	2,454
UK Pound	8,028	10,534
US Dollar	146,792	205,551
Totals	$287,389	$401,341

b) Other Forward Contracts

Forward Contracts other than Currency Forward Contracts include rights and warrants and various other contractual agreements between two parties to buy or sell an asset at a specified price on a certain future date. Forward Contracts carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during fiscal years 2021 and 2020. Forward Contracts are usually traded over the counter. These transactions are entered into in order to hedge risks from exposure to fluctuations in prices in securities, commodities, or other financial instruments. Forward Contracts carry market risk resulting from adverse fluctuations in price. Recognition of realized gain or loss depends on whether the price of the asset has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the Plan records the unrealized gain or loss based on the applicable rates.

The Plan recognized a net realized gain on Other Forward Contracts of $2 million as of December 31, 2021. As of December 31, 2021, the Plan had a net unrealized loss on Forward Contracts of $92 thousand. The gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

c) Swaps

A Swap is an agreement between two or more parties to exchange a sequence of cash flows over a period of time in the future. No principal is exchanged at the beginning of the Swap. The cash flows that the counterparties exchange is tied to a “notional” amount. The agreements provide, at predetermined future dates, the Plan pays interest based upon a notional principal amount and receives a return based upon the underlying instrument. Notional amounts represent the volume of outstanding transactions and do not represent the potential gain or loss associated with market risk or credit risk of such instruments. Risk associated with Swaps includes adverse movements in the underlying instrument.

The Plan recognized a net realized gain on Swaps of $144 thousand. As of December 31, 2021, the Plan did not recognize unrealized gain or loss on Swaps. The gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

d) Futures

Financial Futures are agreements to purchase or sell a specific amount of an asset at a specified delivery or maturity date for an agreed upon price. These derivative securities are used to improve yield, adjust the duration of the Fixed Income portfolio, circumvent changes in interest rates, or to replicate an index. Futures Contracts are standardized and traded on organized exchanges, thereby minimizing the Plan’s risk. There were no outstanding Futures Contracts at December 31, 2021 and December 31, 2020.

The Plan recognized a net realized gain of $280 thousand on futures. The gain is included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

As of December 31, 2021, and 2020 open derivatives contracts values were as follows ($ in thousands):

	12/31/2021		12/31/2020	
Derivative Type	**Total Notional Value**	**Total Fair Value**	**Total Notional Value**	**Total Fair Value**
Forward Contracts	$287,389	($550)	$401,341	($582)
Other Forwards	22,211	(92)	51,038	(223)
Swap Agreements	-	(4)	-	163
Totals	$309,600	($646)	$452,379	($642)

4) Deposit and Investment Risk Disclosures

Deposits and investments of state and local governments are exposed to risks that have the potential to result in losses. The common deposit and investment risks include custodial credit risk, credit risk, concentration of credit risk, foreign currency risk and interest rate risk. The required disclosures related to these risks and the Plan’s exposures to these risks are disclosed in the following sections.

a) Custodial Credit Risk

In the event of a failure of the counterparty, custodial credit risk is the risk that the Plan will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. The Plan’s custodial credit risk policy is set forth in Chapter 40A of the Dallas City Code and in the master custody agreement which includes the Securities Lending Program. All investments are registered in the name of Employees' Retirement Fund of the City of Dallas or in the name of the Plan’s custodian established through a master trust custodial agreement. The securities are held by the custodian in the name of the Plan.

As of December 31, 2021, the Plan had $2.3 million or 0.1% of its approximate $4 billion total investments (excluding short-term investments) exposed to custodial credit risk. The custodial credit risk exposure at December 31, 2020 was $3.6 million or 0.1% of total investments (excluding short-term investments) of approximately $3.6 billion. These exposures were uninsured and uncollateralized deposits held by custodian banks outside of the United States. The Plan has experienced no losses on these deposits during the year.

b) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of an investment in a single issuer. A concentration of investments in any one single issuer of debt securities presents a greater risk for loss in the event that the issuer fails on its obligations.

The Board has contracted with third party investment managers to manage the investment portfolio of the Plan, subject to the policies and guidelines established by the Board. The Plan's Concentration of Credit Risk Policy is communicated to individual managers in their guidelines through limitations or restrictions to securities, sectors, debt ratings, and other factors that may be applicable to a particular manager. As the Plan's custodian bank, Northern Trust has responsibility for the safekeeping of certain investments, handling of transactions based on the instructions of investment managers, and recordkeeping for the investment transactions.

The Plan had no investments that individually represent 5% or more of the net position available for Plan benefits at December 31, 2021.

c) Credit Risk

Credit Risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Credit quality ratings for the Plan's investments in Fixed Income securities as of December 31, 2021 and 2020 are included in the following schedule. Securities are rated using Standard and Poor's quality ratings as presented following in the rating scale.

The Plan's strategic Fixed Income Investment Policy allocates 30% of the total assets to Fixed Income. The Plan's Investment Policy provides for investment of up to 15% of the Fixed Income allocation in investment grade assets, up to 10% of the Fixed Income allocation in High Yield (below Investment Grade) assets, and up to 5% for Opportunistic Credit. The Investment Grade allocation also allows selected managers to invest in non-US dollar issues on an opportunistic basis up to 20% of their portfolio assets.

Long term bond ratings as of December 31, 2021 and 2020 are as follows ($ in thousands)

	2021		2020	
Quality Rating	Fair Value	Percentage of Bond Portfolio	Fair Value	Percentage of Bond Portfolio
AAA	$28,998	2.93%	$42,907	4.39%
AA+	63,850	6.44%	41,513	4.25%
AA	858	0.09%	875	0.09%
AA-	815	0.08%	948	0.10%
A+	4,810	0.49%	4,894	0.50%
A	1,089	0.11%	7,087	0.73%
A-	15,640	1.58%	18,178	1.86%
BBB+	12,753	1.29%	18,999	1.93%
BBB	9,667	0.98%	13,434	1.38%
BBB-	5,769	0.58%	5,902	0.60%
BB+	21,518	2.17%	24,763	2.54%
BB	32,534	3.28%	37,445	3.83%
BB-	43,847	4.42%	51,547	5.28%
B+	58,461	5.90%	50,102	5.13%
B	46,896	4.73%	37,104	3.80%
B-	39,116	3.95%	35,989	3.68%
CCC+	23,838	2.41%	22,082	2.26%
CCC	3,328	0.34%	7,517	0.77%
CCC-	-	-	947	0.10%
D	1,034	0.10%	1,333	0.14%
Not rated (NR)*	516,211	52.08%	436,667	44.70%
U.S. Government fixed income securities (NR)**	60,015	6.05%	116,587	11.93%
Total	$991,047	100%	$976,820	100%

* NR-Investments that are not rated.

**NR-U.S. Treasury Bonds and Notes are obligations of the U. S government or explicitly guaranteed by the US. government and therefore are not considered to have a credit risk.

d) Foreign Currency Risk

Foreign Currency Risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Plan’s Foreign Currency Risk policy is communicated to those managers who are authorized to hedge currencies in their guidelines and sets specific parameters for each manager individually.

The Plan’s investment policies limit the aggregate amount that can be invested in each class of investments. The Plan’s General Investment Policy sets an allocation of 12.5% of assets to International Equity, 7.5% of assets to Global Equity and 12.5% to Global Low Volatility Equity.

The Plan’s positions in International Equity securities, directly and through commingled funds, were 12.33% and 12.97% of invested assets at December 31, 2021 and 2020, respectively. The Plan’s position in Global Equity securities was 7.26% and 7.32% of invested assets at December 31, 2021 and 2020, respectively. The Plan’s position in Global Low Volatility Equity was 12.84% at December 31, 2021 and 12.18% at 2020. The Plan’s positions in Global Fixed Income assets were 24.99% and 27.04% of invested assets at December 31, 2021 and 2020, respectively.

Non-US Dollar denominated investments at December 31, 2021 and 2020 were as follows ($ in thousands):

	2021			2020		
	U. S. Dollars Balance of Investments			U. S. Dollars Balance of Investments		
Currency	Equities	Fixed	Currency Forward Contracts	Equities	Fixed	Currency Forward Contracts
Australian Dollar	$19,087	-	$14,920	$27,747	$455	$19,445
Brazil Real	13,024	-	3,414	10,951	-	5,196
British Pound Sterling	62,739	967	8,028	56,181	856	10,534
Canadian Dollar	51,357	-	16,436	37,476	10,277	17,950
Chile Peso	351	-	2,305	-	-	3,003
Columbia Peso	-	-	1,089	-	-	1,414
Czech Republic-Koruna	540	-	646	514	-	641
Denmark Krone	14,172	-	302	9,596	-	257
Euro	151,041	5,683	13,984	144,990	6,191	15,200
Hong Kong Dollars	56,215	-	3,156	59,299	-	5,298
Hungary-Forint	848	-	667	1,008	-	1,437
Indian Rupee	9,238	-	2,356	9,485	-	8,126
Indonesia-Rupiahs	2,827	-	158	1,919	-	105
Israel Shekel	3,289	-	159	2,981	-	1,185
Japanese Yen	101,129	-	16,218	108,376	-	34,756
Malaysia Ringgit	1,883	-	-	1,208	-	-
Mexican Peso	7,673	-	5,349	6,084	-	7,361
New Zealand Dollar	2,357	-	4,573	4,147	2,201	16,439
Norwegian Krone	9,694	-	6,359	6,603	-	9,517
Peruvian Nuevo Sol	-	-		-	-	8
Philippines-Pesos	1,260	-	380	737	-	72
Poland-Zloty	3,976	-	2,386	1,032	-	2,033
Qatar-Riyal	2,111	-	-	154	-	-
Russian Ruble	-	-	5,308	-	-	5,125
Saudi Riyal	-	-	1,431	-	-	1,045
Singapore Dollar	4,898	-	1,210	5,075	-	560
South Africa Rand	3,530	-	2,302	3,847	-	3,498
South Korea-Won	27,718	-	1,859	28,153	-	5,731
Swedish Krona	18,007	-	10,089	13,749	-	6,666
Swiss Franc	47,775	-	15,167	37,530	-	8,849
Taiwan New Dollar	7,824	-	3	6,313	-	2,454
Thailand Baht	6,629	-	343	3,686	-	226
Turkish Lira	514	-	-	3,771	-	1,659
United Arab-Dirham	250	-	-	116	-	-
Total	$644,676	$6,650	$140,597	$605,244	$19,980	$195,790

e) Interest Rate Risk

Interest rate risk is the risk that future changes in prevailing market rates of interest will have an adverse effect on the fair value of debt investments. The fair value of securities with long terms to maturity may be highly sensitive to interest rate changes.

As of December 31, 2021 and 2020 the weighted-average maturity of the bonds by bond type are as follows ($ in thousands):

	2021		2020	
Bond Category	Fair Value 12/31/2021	Weighted Average Maturity (years)	Fair Value 12/31/2020	Weighted Average Maturity (years)
Asset Backed Securities	$26,852	14.70	$48,999	11.72
Bank Loans	27,837	4.72	22,427	4.55
Commercial Mortgage-Backed	16,198	20.73	35,580	25.27
Corporate Bonds	469,268	8.24	555,303	8.80
Government Agencies	299,285	18.27	99,636	29.96
Government Bonds	117,490	10.73	103,743	10.55
Government Mortgage-Backed Securities	14,577	18.27	52,652	17.51
Index Linked Government Bonds	-	-	875	29.15
Municipal/ Provincial Bonds	6,907	25.59	24,504	19.36
Non-Government Backed CMOs	13,121	23.33	33,101	23.14
Total	$991,047		$976,820	
Portfolio weighted average maturity		8.51		12.09

Government Mortgage-Backed Securities are sensitive to changes in interest rates as their prepayments can vary significantly with interest rate changes. This change in prepayments will generally cause the duration, or Interest Rate Risk, of these securities to increase when interest rates rise and decrease when interest rates fall. These securities represent 1.5% and 5.4% of the total Fixed Income portfolio for 2021 and 2020 at year end. Their fair values at years ended 2021 and 2020 were $14,577million and $52,652 million respectively. The Plan's Interest Rate Risk policy is communicated to the Fixed Income managers through the Fixed Income Asset Policy and each manager's guidelines.

5) Appreciation or (Depreciation) of Investments

In 2021 and 2020, the Plan's investments, including investments bought, sold, and held during the year, appreciated (depreciated) in value as follows ($ in thousands):

	2021	2020
Investments, at fair value:		
Commingled index funds	$41,555	$22,646
Domestic equities	328,112	23,452
United States and foreign government fixed income securities	6,266	15,411
Domestic corporate fixed income securities	(22,193)	14,914
International equities	40,259	41,441
Short-term investments	(178)	(15,591)
Currency contracts	(1,651)	2,800
	$392,170	$105,071
Investments, at estimated fair value:		
Real assets	43,928	(3,708)
Private equity	73,915	52,607
	$510,013	$153,970

6) Fair Value Measurement

The Plan’s investments are measured and categorized according to fair value hierarchy guidelines established by Generally Accepted Accounting Principles.

The definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

These guidelines recognize a three-tiered fair value hierarchy, as follows:

- *Level 1:* Quoted prices for identical investments in active markets.
- *Level 2:* Observable inputs other than quoted market prices in active market; and,
- *Level 3:* Significant unobservable inputs.

At December 31, 2021, the Plan had the following recurring fair value measurements ($ in thousands):

	Total	Fair Value Measurements Using		
	12/31/2021	Level 1	Level 2	Level 3
Investments by Fair Value Level				
Cash and Short Term Investment:				
Short-Term Investment Fund	116,255	116,255	-	-
Total Cash and Short Term Investment	116,255	116,255	-	-
Fixed Income:				
Domestic Asset and Mortgage Backed Securities	110,763	-	110,763	-
Government and US Agency Obligations	138,140	34	138,107	-
Corporate and Taxable Municipal Bonds	520,695	-	520,695	-
Total Fixed Income	769,598	34	769,564	-
Index Commingled	9,206	9,206	-	-
	9,206	9,206	-	-
Equity:				
Domestic Common and Preferred Stock	1,285,234	1,282,969	383	1,883
International Common and Preferred Stock	477,261	477,084	177	-
Total Equity	1,762,496	1,760,053	560	1,883
Total Investments by Fair Value Level	2,657,554	1,885,548	770,124	1,883
Investments Measured at Net Asset Value				
Commingled Funds:				
Corporate bonds	221,449			
Index Commingled	230,068			
Domestic Equity and Collective Trust	284,874			
International Equity	11,777			
Total Commingled Funds	748,169			
Alternative Investments:				
Private Equity	384,761			
Real Estate	291,794			
Total Alternative Investments	676,555			
Total Investments Measured at Net Asset Value	1,424,724			

At December 31, 2020, the Plan had the following recurring fair value measurements ($ in thousands):

	Total	Fair Value Measurements Using		
	12/31/2020	Level 1	Level 2	Level 3
Investments by Fair Value Level				
Cash and Short Term Investment:				
Short-Term Investment Fund	$ 89,190	$ 89,190	$ -	$ -
Total Cash and Short Term Investment	89,190	89,190	-	-
Fixed Income:				
Domestic Asset and Mortgage Backed Securities	96,737	-	96,737	-
Government and US Agency Obligations	193,654	-	193,654	-
Corporate and Taxable Municipal Bonds	655,395	6,590	648,805	-
Index Fixed Income Funds	37,500	37,500	-	-
Total Fixed Income	983,286	44,090	939,196	-
Equity:				
Domestic Common and Preferred Stock	1,171,032	1,169,303	-	1,729
International Common and Preferred Stock	456,129	455,946	175	8
Total Equity	1,627,161	1,625,249	175	1,737
Total Investments by Fair Value Level	$ 2,699,637	$ 1,758,529	$ 939,371	$ 1,737
Investments Measured at Net Asset Value				
Private Placement Debt	$ 250			
Commingled Funds:				
Fixed Income	49,949			
Domestic Equity and Collective Trust	411,961			
International Equity	590			
Total Commingled Funds Measured at Net Asset Value	462,750			
Alternative Investments:				
Private Equity	316,237			
Real Estate	222,726			
Total Alternative Investments	538,963			
Total Investments Measured at Net Asset Value	$ 1,001,713			

Private Placement Debt

Private Placement Debt was issued close to the financial statement date of December 31, 2020 and is therefore valued at Net Asset Value (NAV) for the financial statements then ended as determined by the principal amount of the debt.

Commingled Funds

Commingled funds are fund-structure investments reported by the fund managers at NAV per share.

Neuberger Berman, Northern Trust Asset Management S&P 500 Index, Northern Trust ACWI Index, Northern Trust Aggregate Bond Index and BlackRock do not have a redemption period notice requirement. They may be redeemed at any time by the Plan. Earnest Partners has a redemption period notice requirement of 5 days.

Real Estate

Real Estate investments are held either in separate accounts, as a limited partner, or in a joint venture. These investments are illiquid and resold at varying rates, with distributions received over the life of the investments. They are typically not redeemed, nor do they have set redemption schedules. Estimated fair values of investments are determined by the fund managers based on their best estimates using fair value estimation techniques substantiated, in part, by their audited financial statements and supported by the due diligence of the Plan.

The Plan invests in:

AEW partners
Heitman’s core real estate fund
Invesco’s core fund
Invesco II
Virtus Real Estate Cap

The redemption schedule for each Real Estate investment is as follows:

AEW Partners redemption is at the sole discretion of AEW’s general partner; no limited partner of AEW has the right to cause a redemption.

Heitman’s core real estate fund does not have a redemption period notice requirement. Heitman may be redeemed quarterly at any time by the Plan.

Invesco’s core fund has a 45-day redemption period.

Invesco II manages 1900 McKinney, LLC. There is no redemption period.

Virtus Real Estate Cap’s redemption is at the sole discretion of Virtus’ general partner; no limited partner of Virtus has the right to cause a redemption.

Unfunded commitments at December 31, 2021 for real estate are as follows:
AEW Partners $39.4 million
Virtus Real Estate Cap $28.1 million

Private Equity

Private equity holdings include fund-structure investments with general partners. By their nature, these investments are illiquid and typically not resold or redeemed.

Private equity managers' expectations that the underlying assets of the funds will be liquidated in the future as follows:

Fairview Lone Star Fund: 12 years from subscription date with 3 one-year extensions.
GCM Grosvenor: 15th anniversary of subscription date with 3 one-year extensions.
Hamilton Lane: 10 -14 years after subscription date with 2 one-year extensions.

Upon initial investment with a general partner or in certain fund-structures, the Plan commits to a certain funding level for the duration of the contract. At will, the partners or fund managers may request that the Plan fund a portion of this amount. Such amounts remaining as of December 31, 2021, and 2020 for investments measured at NAV are disclosed as unfunded commitments.

Unfunded commitments at December 31, 2021 for private equity are as follows:
Fairview Lone Star Fund $39.8 million
GCM Grosvenor $52.1 million
Hamilton Lane $85.3 million

7) Securities Lending

During the year, Northern Trust lent, on behalf of the Plan, securities held by Northern Trust as Plan custodian and received cash, United States government securities, agency securities, and irrevocable bank letters of credit as collateral. Northern Trust did not have the ability to pledge or sell collateral securities absent a borrower default. Northern Trust's Core USA Collateral Section establishes requirements for participation, collateralization levels, cash and non-cash collateral guidelines, and investment guidelines for the collateral received from borrowers. Borrowers were required to put up collateral for each loan equal to: (i) in the case of loaned securities, the collateral for which is all denominated in the same currency as the loaned securities, 102% of the fair value of the loaned securities plus any accrued but unpaid distributions thereon, and (ii) in the case of loaned securities denominated in a different currency from the loaned securities, 105% of the fair value of the loaned securities plus any accrued but unpaid distributions thereon. Additionally, the guidelines set maturity/liquidity requirements for the collateral received from borrowers. The following table shows for open loans at December 31, 2021 and 2020, the type of collateral held, the fair value of the securities on loan, and the fair value of the collateral held ($ in thousands).

		12/31/2021			12/31/2020	
Type	Fair Value	Collateral Fair Value	Collateral Percentage	Fair Value	Collateral Fair Value	Collateral Percentage
Cash	$339,682	$349,348	103%	$233,499	239,533	103%

The following represents the balances relating to the Securities Lending transactions as of December 31, 2021, and 2020 ($ in thousands):

	12/31/2021			12/31/2020		
Securities Lent	Underlying Securities	Securities Collateral Value	Cash Collateral Investment Value	Underlying Securities	Securities Collateral Value	Cash Collateral Investment Value
Lent for cash collateral:						
Domestic equities	$149,060	$-	$153,300	$121,912	$-	$125,079
Domestic corporate fixed income	107,982	-	111,109	61,705	-	63,233
Global corporate fixed income	1,769	-	1,889	1,400	-	1,509
Global government fixed income	4,818	-	5,096	1,875	-	2,028
International equities	6,797	-	7,200	1,419	-	1,523
Global Agencies		-		-	-	-
US Agencies	-	-		5,793	-	5,904
US government fixed	69,256	-	70,754	39,395	-	40,257
Subtotal	$339,682	$	$349,348	$233,499	$	$239,533

Disclosure of Securities Lending income is shown gross with the associated reductions for investment expenses on the Statements of Changes in Fiduciary Net Position, and the cash collateral and associated securities lending payable is shown on the Statements of Fiduciary Net Position for December 31, 2021, and 2020. The net income from Securities Lending in 2021 was $777 thousand compared to $946 thousand in 2020.

8) Federal Income Tax Status

The Internal Revenue Service issued a determination letter dated August 15, 2016, stating that the Plan was designed in accordance with applicable Internal Revenue Code requirements as of that date. The Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code. Therefore, the Plan was qualified, and the related trust was tax-exempt as of the financial statement dates.

9) Capital Assets

Capital Assets activity for the years ended December 31, 2021 and 2020, was as follows ($ in thousands).

	Balance 12/31/2019	**Increase**	**Decrease**	**Balance 12/31/2020**	**Increase**	**Decrease**	**Balance 12/31/2021**
Capital asset not being depreciated/amortized							
Construction in Progress	5,431	2,361	(7,792)	-	366	(366)	-
Capital assets being depreciated/amortized							-
intangible assets		7,792		7,792	366		8,158
Furniture, Fixture and Equipment	18			18	32		50
							-
Less							-
Accumulated amortization intangible Assets		(389)		(389)	(798)		(1,187)
Accumulated depreciation FF&E	(4)	(3)		(7)	(4)		(11)
Total capital asset being depreciated/amortized net of accumulated Depreciation/Amortization	14	7,400	-	7,414	(404)	-	7,010
Total Capital Assets, net of Accumulated depreciation amortization	5,445	9,761	(7,792)	7,414	(38)	(366)	7,010

Schedule of Net Pension Liability

a) The components of the Net Pension Liability of the City at December 31, 2021 and 2020 respectively were as follows ($ in thousands).

Description	2021	2020
Total Pension Liability	$5,094,362	$6,209,855
Plan Fiduciary Net Position	4,093,215	3,706,753
Net Pension Liability	1,001,147	2,503,102
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	80.35%	59.69%

b) **Actuarial Methods and Assumptions**:

Valuation date	December 31, 2020 for most recent ADEC shown on Schedule of Contributions December 31, 2021 for Net Pension Liability
Actuarial cost method	Entry Age Normal
Asset valuation method	5-year smoothed market
Amortization method	The actuarially determined contribution (ADEC) is initially based on a 30-year open amortization period. As specified in City Ordinance No. 25695, the rate may not change from year to year if the calculated rate is less than 300 basis points different from the current rate
Remaining Amortization Period	Not determined, see description of amortization method
Investment rate of return	7.25%
Salary increases	3.00% to 8.25%, including inflation
Inflation	2.50% per year
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2019 valuation pursuant to an experience study of the 5-year period December 31, 2019.
Mortality	For Healthy Retirees: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively. The rates are projected from 2019 on a fully generational basis using Scale UMP. For Disabled Lives: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively, set forward 4 years for males and 3 years for females. The rates are projected from 2019 on a fully generational basis using Scale UMP. For Actives: The PubG-2010 Employee Mortality Table are used for males and females. The rates are projected from 2010 on a fully generational basis using Scale UMP

Other Information

Notes: The assumptions described above were for the most recent ADEC shown in the schedule of contributions. The assumptions used in determining the Net Pension Liability as of December 31, 2021 were those used in the actuarial valuation as of December 31, 2021

The long-term rate of return on pension plan investments was estimated using a building block methodology in which best-estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long term expected rate of return by weighting the expected future real return rates by the target asset allocation percentage and by adding expected inflation. The following table shows the best estimates of arithmetic real rates of return for each of the Plan's asset classes.

Asset Class	Long-Term Expected Real Rate of Return
Domestic Equity	5.25%
International Equity	6.25
Global Equity	5.85
Low Volatility Global Equity	5.90
Private Equity	9.10
Core Fixed Income	3.05
High Yield Fixed Income	4.65
Credit Opportunities	7.00
REITs	5.00
Private Real Estate - Core	5.75
Private Real Estate – Value Add	7.10
MLPs	7.45
Global Public Infrastructure	5.35
Cash	1.95

c) Discount rate: In Fiscal Year 2021, a single discount rate of 7.25% was used to measure the total pension liability. In Fiscal Year 2020, the discount rate was 5.27%. This single discount rate was based on the expected rate of return on pension plan investments of 7.25% and the municipal bond rate of 1.84%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions and employer contributions will be made at the projected future contribution rates assuming that the ERF annually earns 7.25% on its market value of assets and that the number of active members remains constant in the future. Based on these assumptions and the plan's funding policy, the resulting single discount rate is 7.25%.

d) Sensitivity of the Net Pension Liability to changes in the discount rate. Below is a table providing the sensitivity of the Net Pension Liability to changes in the discount rate. In particular, the table presents the plan's Net Pension Liability, if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher than the single discount rate:

Sensitivity of the Net Pension Liability
To the Single Discount Rate Assumption
($000)

1% Decrease	Current Single Discount Rate	1% Increase
6.25%	7.25%	8.25%
$1,599,681	$1,001,147	$500,887

11. Subsequent Events

The Plan has evaluated its December 31, 2021, financial statements for subsequent events through June 9, 2022, the date the financial statements were available to be issued. The Plan is not aware of any subsequent events which would require recognition or disclosure in the financial statements.

REQUIRED SUPPLEMENTARY INFORMATION

(Unaudited)

Schedule of Changes in Net Pension Liability and Related Ratios
($ in thousands)

FY ended December 31,	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability								
Service Cost	$141,653	$118,452	$124.289	$84,843	$81,178	$133,457	$78,020	$62,065
Interest on the Total Pension Liability	322,901	330,348	325,767	332,011	325,620	305,826	313,847	290,948
Difference between Expected and Actual Experience	30,791	(82,641)	(7,819)	4,793	(59,066)	(38,327)	(26,829)	(21,967)
Assumption Changes	(1,303,800)	479,292	(43,032)	1,020,969	-	(1,227,079)	1,238,431	292,137
Benefit Payments	(296,586)	(287,465)	(278,007)	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(10,452)	(6,857)	(10,436)	(8,515)	(8,156)	(5,864)	(4,854)	(4,629)
Net Change in Total Pension Liability	**(1,115,493)**	**551,129**	**110,762**	**1,170,121**	**86,042**	**(1,075,762)**	**1,363,509**	**392,940**
Total Pension Liability - Beginning	6,209,855	5,658,726	5,547,964	4,377,844	4,291,802	5,367,564	4,004,055	3,611,115
Total Pension Liability – Ending (a)	**$5,094,362**	**$6,209,855**	**$5,658,726**	**$5,547,964**	**$4,377,844**	**$4,291,802**	**$5,367,564**	**$4,004,055**
Plan Fiduciary Net Position								
Employer Contributions	$63,584	$61,615	$62,177	$60,924	$58,966	$56,130	$50,721	$45,833
Employee Contributions	59,256	58,358	58,314	56,772	55,175	53,436	50,742	46,536
Pension Plan Net Investment Income	578,010	229,105	550,942	(167,783)	413,5110	294,918	(53,344)	207,992
Benefit Payments	(296,587)	(287,465)	(278,007)	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(10,452)	(6,857)	(10,436)	(8,515)	(8,156)	(5,864)	(4,598)	(4,629)
Pension Plan Administrative Expense	(7,349)	(5,699)	(7,513)	(7,485)	(5,951)	(5,343)	(4,598)	(4,150)
Other	-	(392)	298	121	207	333	162	157
Net Change in Plan Fiduciary Position	**386,462**	**48,665**	**375,775**	**(329,947)**	**260,217**	**149,835**	**(196,277)**	**66,125**
Plan Fiduciary Net Position - Beginning	3,706,753	3,658,088	3,282,313	3,612,260	3,352,043	3,202,208	3,398,485	3,332,360
Plan Fiduciary Net Position – Ending (b)	**4,093,215**	**3,706,753**	**3,658,088**	**3,282,313**	**3,612,260**	**3,352,043**	**3,202,208**	**3,398,485**
Net Pension Liability – Ending (a)-(b)	**$1,001,147**	**$2,503,102**	**$2,000,638**	**$2,265,651**	**$765,584**	**$939,759**	**$2,165,356**	**$605,570**
Plan Fiduciary Net Position as Percentage of Total Pension Liability	80.35%	56.69%	64.65%	59.16%	82.51%	78.10%	59.66%	84.68%

Covered Payroll	$442,863	$428,824	$433,890	$423,083	$410,913	$402,077	$383,669	$363,109
Net Pension Liability as a Percentage of Covered Payroll	226.06%	583.71%	461.09%	535.51%	186.31%	233.73%	564.38%	168.95%

Notes to Schedule:
This schedule is intended to show information for ten years. Additional years' information will be displayed as it comes available.
The covered payroll is the sum of the active members' pay for valuation purposes as of the measurement date. An active member's valuation pay is the greater of their actual pay for the just completed calendar year or their current annual rate of pay.

SCHEDULE OF MONEY-WEIGHTED RATES OF RETURN

	2021	2020	2019	2018	2017	2016	2015	2014
Rate of Return	16.25%	5.75%	17.33%	-4.99%	13.08%	8.88%	-1.92%	6.52%

Note to Schedule: This schedule is intended to show information for ten years. Additional years' information will be displayed as it comes available.

Schedule of Contributions

Last 10 Fiscal Years
($ in thousands)

FY Ending December 31,	Actuarially Determined Contribution[1]	Actual Contributions[2]	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2012	$41,570	$30,363	$11,207	$319,274	9.51%
2013	56,394	37,823	18,571	340,748	11.10%
2014	61,747	45,833	15,914	353,650	12.96%
2015	64,648	50,721	13,927	383,669	13.22%
2016	84,316	56,130	28,186	402,077	13.96%
2017	86,785	58,966	27,819	410,913	14.35%
2018	90,328	60,924	29,404	423,083	14.40%
2019	87,455	62,177	25,278	433,591	14.34%
2020	93,226	61,615	31,611	434,214	14.19%
2021	99,279	63,584	35,695	452,709	14.05%

Notes to Schedule:

1. The actuarially determined employer contribution (ADEC) shown is based on employer contribution rates using a 30-year open amortization period and actual payroll.
2. The actual City contribution rate is set by City Ordinance No. 25695. The actual rate does not change from year to year unless the actuarially determined rate is at least 300 basis points higher or lower than the current contribution rate. If the actuarially determined rate is more than 300 basis points different, then the contribution rate is adjusted to halfway between the current rate and the actuarially determined rate, but the rate does not increase or decrease by more than 10% in any year. Since the City's fiscal year is October 1 to September 30 and the Fund's fiscal year is the calendar year, the contribution amounts shown above are a blend of the City's two fiscal year rates that occur during the calendar year.
3. For this exhibit, the covered payroll is the estimated payroll for the calendar year on which contributions were made.

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Wilshire

Employees' Retirement Fund of the City of Dallas

Wilshire

Employees' Retirement Fund of the City of Dallas: Diversifying Marketable Alternative Multi-Strategy Search

June 2022

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RFI Search Process

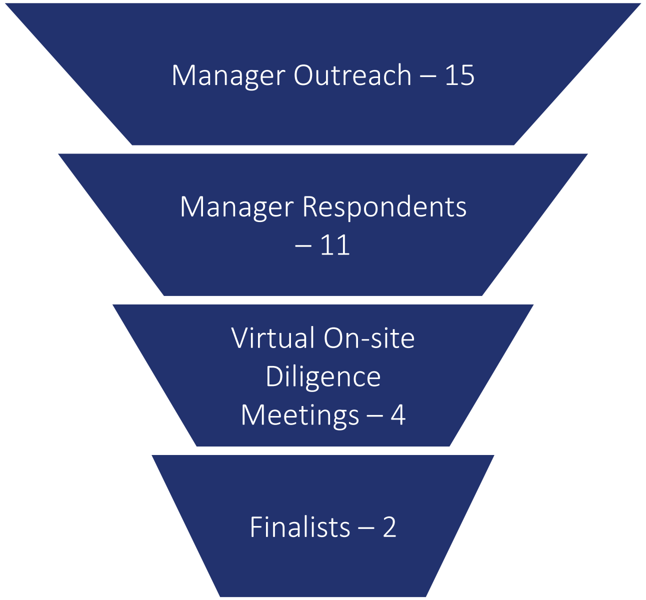
- On behalf of Dallas ERF, Wilshire reached out to 15 high quality managers for the diversifying marketable alternative multi-strategy RFI process. A total of 11 managers responded to the RFI.

- In the first round of evaluations, managers were assessed and scored across the following five dimensions: Organization (15%), Team (15%), Strategy (15%), Process (15%), Market (10%), Performance (20%) and Terms (10%).

- As a result of the evaluations, four managers were selected for virtual on-site diligence meetings. Both Staff and Wilshire participated in the meetings.

- Dallas ERF has identified two finalists to present to the Board: Davidson Kempner and Hudson Bay.

Multi-Strategy RFI



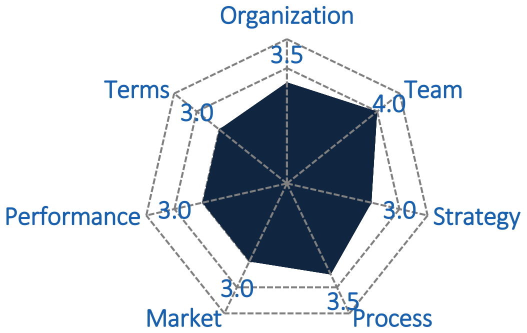
Wilshire

RFI Finalists

Davidson Kempner Multi-Strategy

Firm AUM (M)	$38,500
Fund AUM (M)	$24,600
Firm Inception	1983
Fund Inception	April 1987
Asset Class	Multi-Asset
Sector	Multi-Strategy
Geographic Focus	Global
Subscriptions	Monthly
Redemptions	Quarterly
Notice	65 Days
Lock-Up	N/A
Gate	10% (Fund level)
Management Fee	1.50%
Performance Fee	20.0%
Hurdle	NA

Wilshire Radar Assessment



Key: 5 = Top Decile; 4 = Top Quartile; 3 = Average;
2 = Bottom Half; 1 = Bottom Decile; 0 = No Information

Past performance is not indicative of future results.

Firm Overview

Davidson Kempner Capital Management LP ("Davidson Kempner" or the "Firm") is a global alternative asset management firm, founded in 1983, with a team of over 435 professionals, 148 of which are investment focused. The Firm manages approximately $38.5 billion as of January 1, 2022. The Firm's global investment approach emphasizes fundamental, bottom-up research across a variety of asset classes. The Firm is privately owned by 14 Managing Members. Davidson Kempner is headquartered in New York with additional offices in Philadelphia, London, Hong Kong, Dublin, and Shenzhen.

Investment Strategy

The Davidson Kempner Multi-Strategy Fund (the "Fund") is a multi-strategy, evergreen vehicle with an event-driven focus. The Fund invests in (i) securities and financial instruments of issuers that are experiencing financial distress, are overleveraged, are attempting to complete an out-of-court restructuring, or are involved in a bankruptcy; (ii) merger arbitrage situations; (iii) convertible arbitrage situations; and (iv) performing corporate high-yield and investment-grade bonds, credit default swaps and other debt instruments that are mispriced. In addition, the Fund also invests in equities both on a long and short basis, and can trade foreign currencies, bonds, forward contracts, derivatives and other speculative securities or investments. The strategy is industry-agnostic.

With regards to leverage, the Firm generally limits borrowing to 25% of assets (1.25x NAV). The objective of the Fund is to achieve positive returns in most market environments with lower volatility, and the Fund aims to outperform the Bloomberg Global Aggregate Bond Index over a full market cycle with less volatility.

Track Record

The Davidson Kempner Multi-Strategy Fund has outperformed relevant benchmarks on an absolute and risk-adjusted basis since the Fund's inception. Limited drawdowns, consistent returns, and a low beta to risk assets provide attractive portfolio diversification benefits.

Jan. 2008 – Mar. 2022	DKIP	60/40 Portfolio	HFRI ED: MS Index
Return	5.5%	4.4%	3.4%
Volatility	4.3%	11.2%	7.9%
Correlation	---	0.65	0.77
Beta	---	0.25	0.43
Alpha	---	4.3%	4.0%

Source: Davidson Kempner, HFRI, Bloomberg as of March 31, 2022.

Investment Merits

- Privately owned investment management firm that is led by a deep and experienced team with strong alignment
- Consistent focus on distressed investing with a sourcing advantage
- Experienced underwriting and strong reputation across multiple asset classes

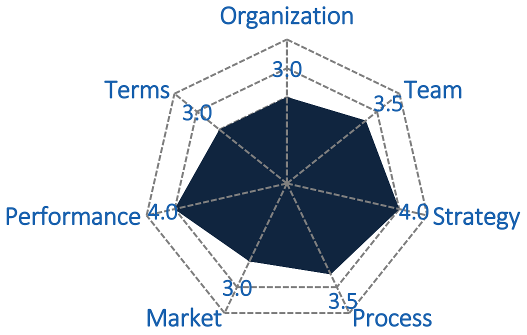
Investment Concerns

- Mature point in the lifecycle and large asset base limits the strategy's opportunistic potential
- The strategy participates in a relatively competitive space given the liquid nature of the underlying investments
- Low absolute return targets relative to the broader Alternative Investment universe

Hudson Bay Multi-Strategy

Firm AUM (M)	$16,700
Fund AUM (M)	$16,200
Firm Inception	2005
Fund Inception	January 2006
Asset Class	Multi-Asset
Sector	Multi-Strategy
Geographic Focus	North America and Europe
Subscriptions	Monthly
Redemptions	Quarterly
Notice	65 days
Lock-Up	N/A
Gate	Tranche II: 12.5% quarterly Tranche III: 6.25% quarterly
Management Fee	Tranche II: 2.00% Tranche III: 1.75%
Performance Fee	20%
Hurdle	NA

Wilshire Radar Assessment



Key: 5 = Top Decile; 4 = Top Quartile; 3 = Average;
2 = Bottom Half; 1 = Bottom Decile; 0 = No Information

Past performance is not indicative of future results.

Firm Overview

Hudson Bay Capital ("Hudson Bay" or "the Firm") is an alternative asset management firm founded in 2005 by Sander Gerber assisted by key employees of Gerber Asset Management ("GAM"), a proprietary trading business that Sander Gerber formed in 1997. Hudson Bay currently has $16.7 billion in AUM with the vast majority allocated to the Firm's multi-strategy offerings. The Firm has offices in New York and London and has recently expanded to two additional locations in Greenwich and Miami. The team is led by eight partners and is comprised of 60 business professionals and 61 investment and risk professionals, including 25 portfolio manager teams.

Investment Strategy

Hudson Bay Multi-Strategy (the "Fund") is a multi-strategy, multi-portfolio manager Fund with a focus on fundamental relative value across corporate events and catalysts. The Fund is currently comprised of 25 PM teams various sub-strategies, as well as a management book for higher-conviction trades and a direct investment book that looks to directly negotiate private transactions with public companies.

Hudson Bay allocates across five main sub-strategies: convertible arbitrage, event driven/merger arbitrage, equity long/short, volatility, and credit. Capital allocation is determined by the Firm's Risk Committee on a semi-annual basis, with opportunistic changes relative to the market environment on a more-frequent basis. The Firm is designed to be diversified across sub-strategy, PM team, and individual investment theses categorized into "deal codes." These deal codes are meant to isolate specific risk factors, hedge out unwanted market risks, and be uncorrelated to other deal codes within a portfolio manager's allocation and across the total portfolio. This framework is combined with Hudson Bay's conservative risk management philosophy to create a consistent return profile with limited downside and upside asymmetry.

Track Record

Hudson Bay has outperformed public and peer benchmarks on an absolute and risk-adjusted basis since inception, boasting a Sharpe ratio of 1.8. Additionally, the Firm has experienced a maximum drawdown of -6.1% since inception and maximum monthly loss of -3.9%.

Jun. 2006 – Mar. 2022	DKIP	60/40 Portfolio	HFRI RV: MS Index
Return	9.1%	5.7%	4.2%
Volatility	4.5%	10.6%	4.7%
Correlation	---	0.11	0.32
Beta	---	0.05	0.31
Alpha	---	8.9%	7.8%

Source: Hudson Bay, HFRI, Bloomberg as of March 31, 2022.

Investment Merits

- Internally owned firm with distributed economics across eight Firm partners
- Deep, experienced, and tenured senior management team
- Deal Code framework that emphasizes market neutrality, downside management, and limited co-movement within the portfolio
- Outperformance on an absolute and risk-adjusted basis versus multi-strategy marketable alternative peers, with superior drawdown management

Investment Concerns

- Significant growth in assets in recent years, expanding from under $3 billion in 2018 to over $16 billion in 2022.
- Firm is in mature point in lifecycle
- Expansion into less capacity-constrained strategies (equity long/short) may indicate style drift
- Competitive opportunity set across corporate securities
- Liquidity is below market, with the most liquid share class offering a 12.5% quarterly investor level gate.

Comparison Analysis

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Return and Risk Statistics – Common Period

Return Statistics Jun. 2006 – Mar. 2022	Davidson Kempner Institutional Partners	Hudson Bay International
Annualized Return	5.86%	9.06%
Annualized Volatility	4.33%	4.51%
Annual Sharpe Ratio (Rf = 0.25%)	1.29	1.95
Annual Sortino Ratio (vs Rf)	1.82	5.44
Correlation to ACWI	0.66	0.12
Correlation to Barclays Agg.	0.19	0.00
Correlation to Barclays HY	0.71	0.23
Beta to ACWI	0.18	0.03
Beta to Barclays Agg.	0.15	0.00
Beta to Barclays US HY	0.32	0.11
Max Drawdown	(13.35%)	(6.09%)
Max Monthly Loss	(8.74%)	(3.92%)

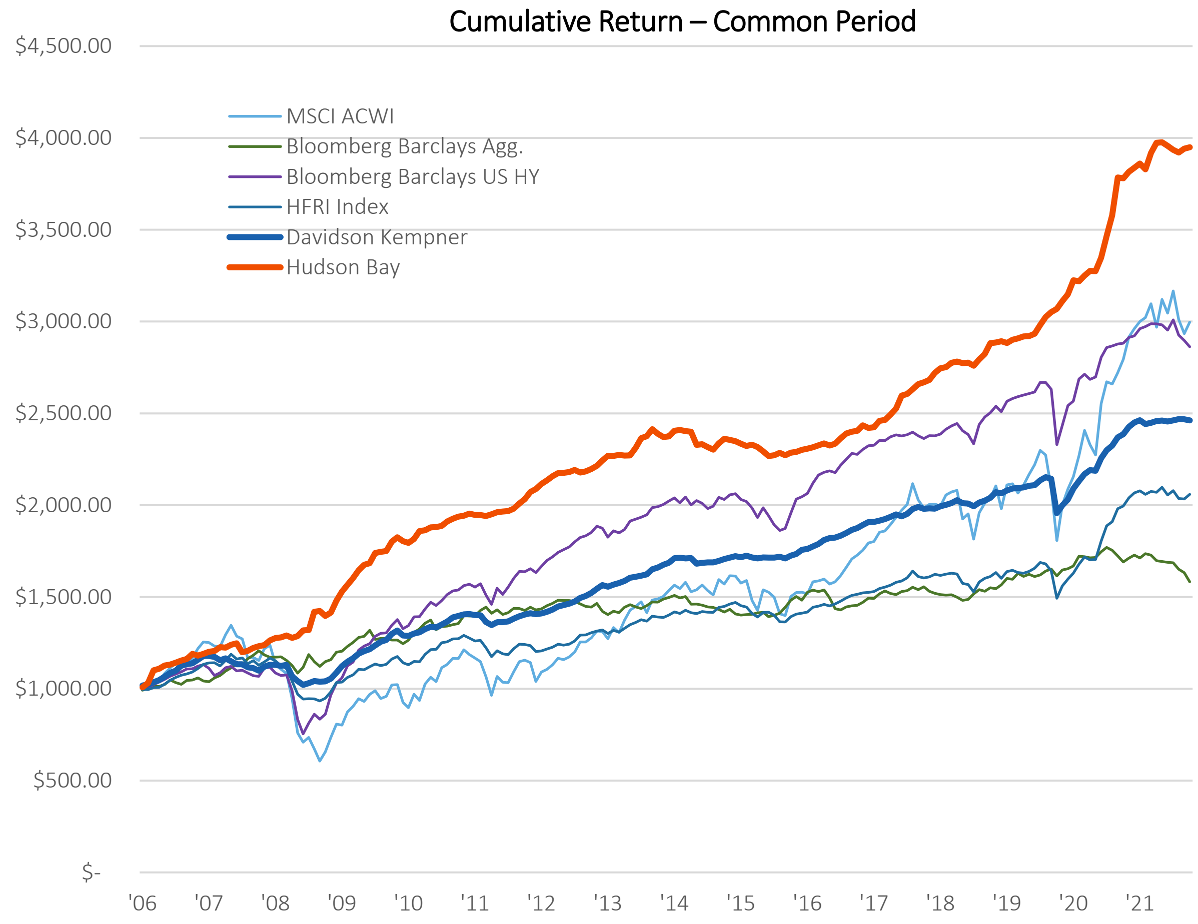
Source: Hudson Bay, Davidson Kempner, HFRI, Bloomberg as of March 31st, 2022.

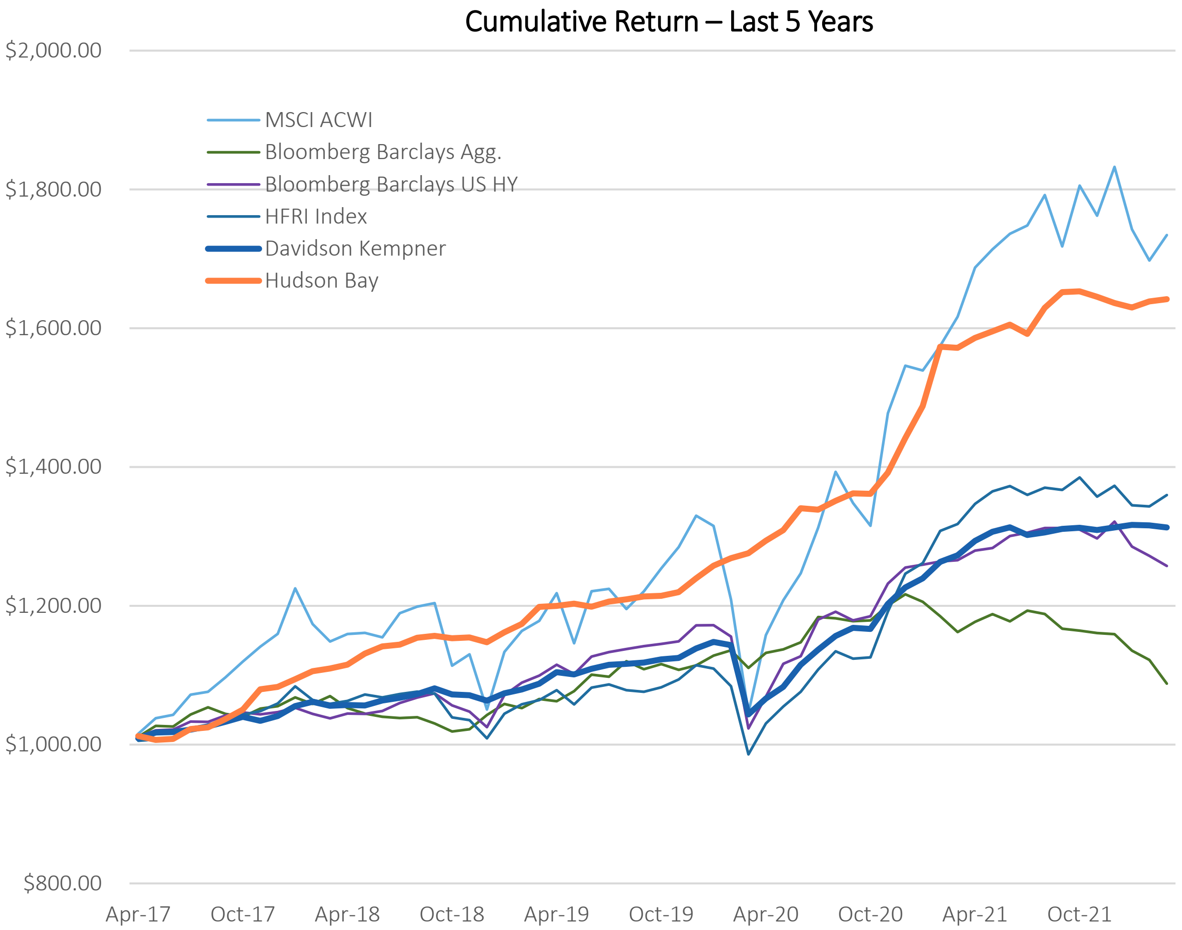
Return and Risk Statistics – Trailing 5 years

Return Statistics Apr. 2017 – Mar. 2022	Davidson Kempner Institutional Partners	Hudson Bay International
Annualized Return	5.59%	10.42%
Annualized Volatility	5.09%	3.94%
Annual Sharpe Ratio (Rf = 0.25%)	1.05	2.58
Annual Sortino Ratio (vs Rf)	1.34	14.42
Correlation to ACWI	0.70	0.23
Correlation to Barclays Agg.	0.34	(0.03)
Correlation to Barclays HY	0.85	0.17
Beta to ACWI	0.24	0.06
Beta to Barclays Agg.	0.39	(0.03)
Beta to Barclays US HY	0.57	0.09
Max Drawdown	(9.11%)	(1.41%)
Max Monthly Loss	(8.74%)	(0.83%)

Source: Hudson Bay, Davidson Kempner, HFRI, Bloomberg as of March 31st, 2022.

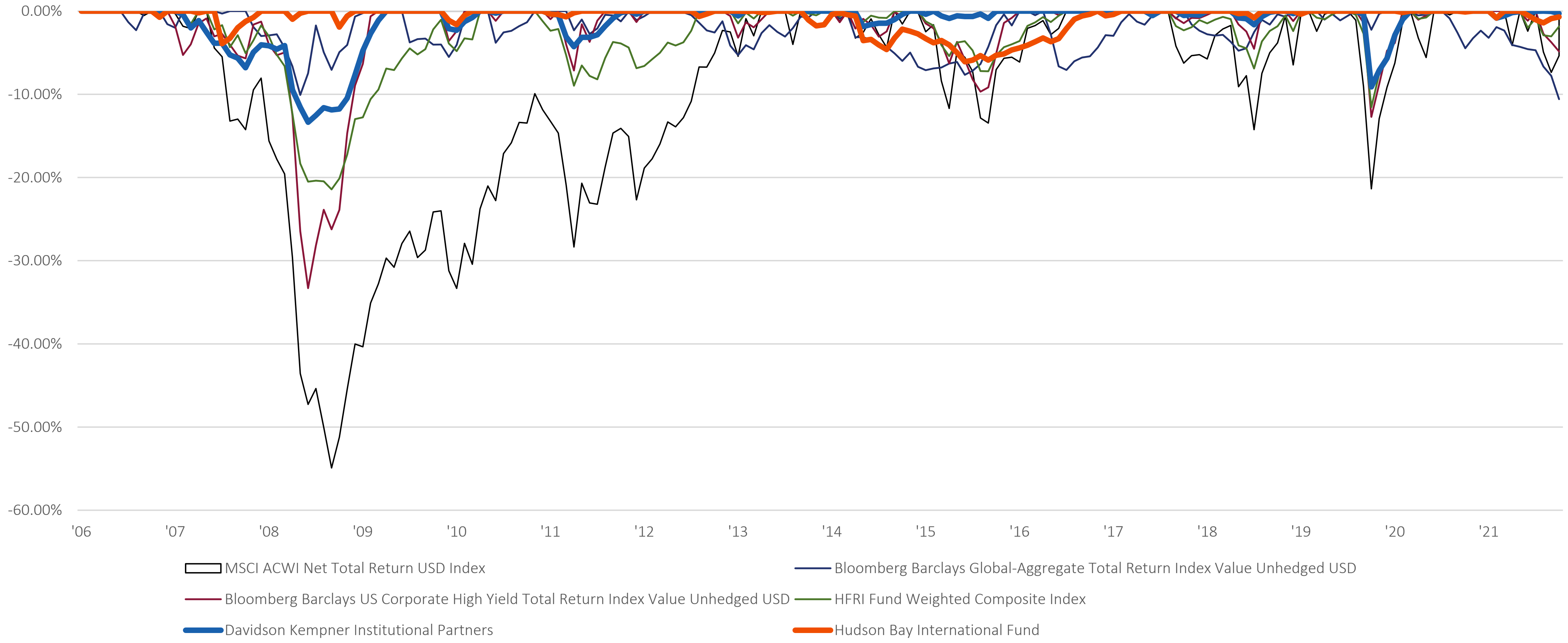
Historical Performance – Growth of $1000





Source: Hudson Bay, Davidson Kempner, HFRI, Bloomberg as of March 31st, 2022.

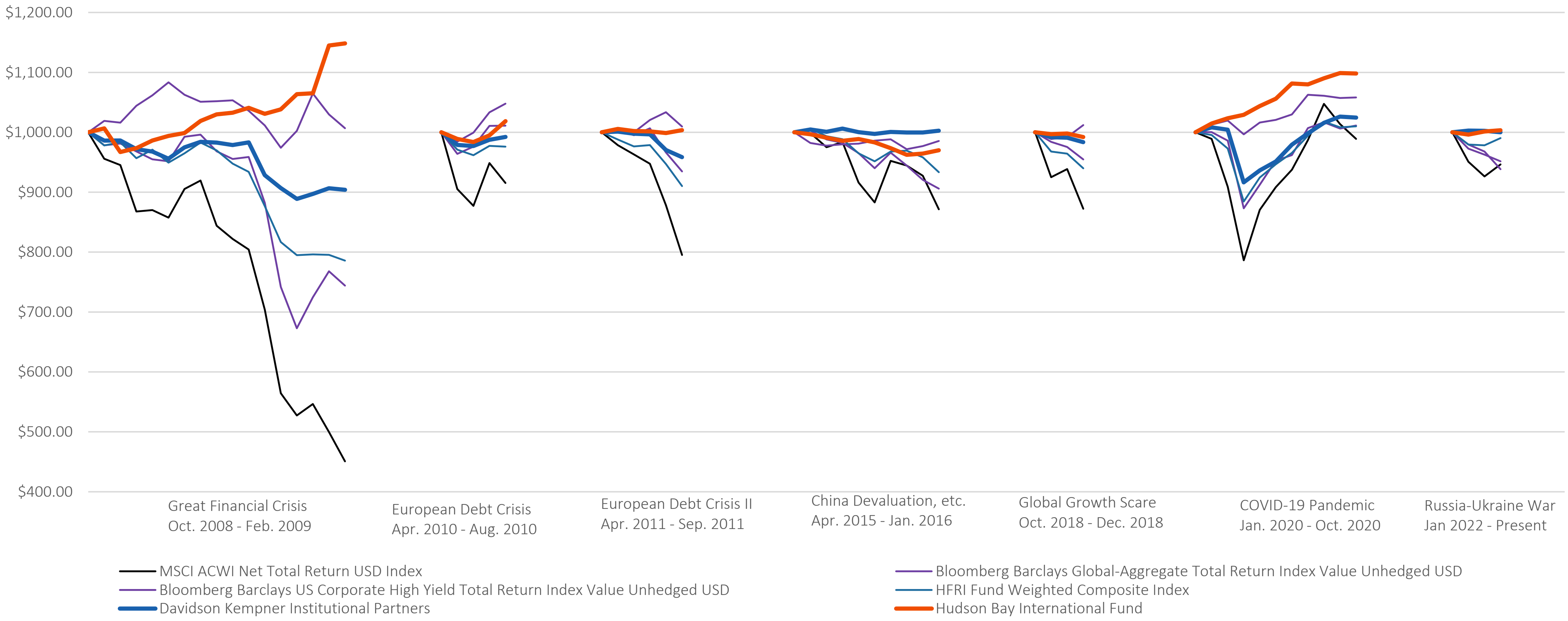
Historical Performance – Drawdown Analysis



Source: Hudson Bay, Davidson Kempner, HFRI, Bloomberg as of March 31st, 2022.

Wilshire

Historical Performance – Crisis Periods



Source: Hudson Bay, Davidson Kempner, HFRI, Bloomberg as of March 31st, 2022.

Historical Performance – Hypothetical 5% Allocations

Return Statistics Apr. 2017 – Mar. 2022	Dallas ERF Total Fund	Dallas ERF + 5% DK	Dallas ERF + 5% Hudson Bay	Dallas ERF + 5% MALTS (equal wt.)
Annualized Return	6.77%	6.74%	6.92%	6.83%
Annualized Volatility	11.21%	10.80%	10.68%	10.74%
Annual Sharpe Ratio (Rf = 0.25%)	0.58	0.60	0.62	0.61
Annual Sortino Ratio (vs Rf)	0.83	0.86	0.89	0.87
Correlation to ACWI	0.97	0.97	0.97	0.97
Correlation to Barclays Agg.	0.41	0.41	0.41	0.41
Correlation to Barclays HY	0.85	0.85	0.85	0.85
Beta to ACWI	0.68	0.66	0.65	0.65
Beta to Barclays Agg.	0.86	0.82	0.81	0.82
Beta to Barclays US HY	1.00	0.96	0.95	0.96
Max Drawdown	(42.94%)	(41.55%)	(40.79%)	(41.17%)
Max Monthly Loss	(15.99%)	(15.31%)	(15.15%)	(15.23%)

Legend
1st
2nd
3rd
4th

Source: Hudson Bay, Davidson Kempner, HFRI, Bloomberg as of March 31st, 2022. Dallas ERF + 5% MALTS is a portfolio consisting of a 2.5% allocation each to Davidson Kempner and Hudson Bay.

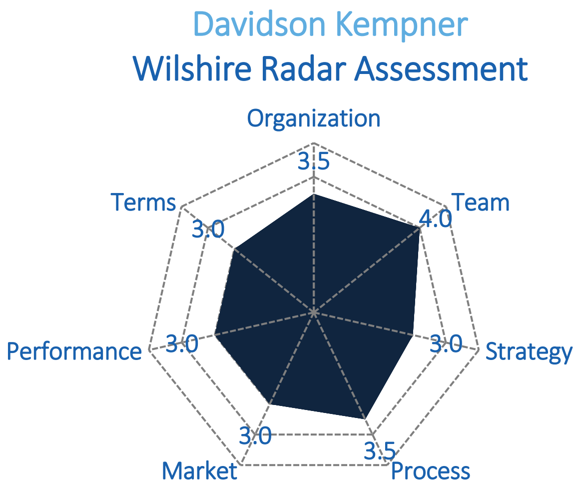
Terms Comparison

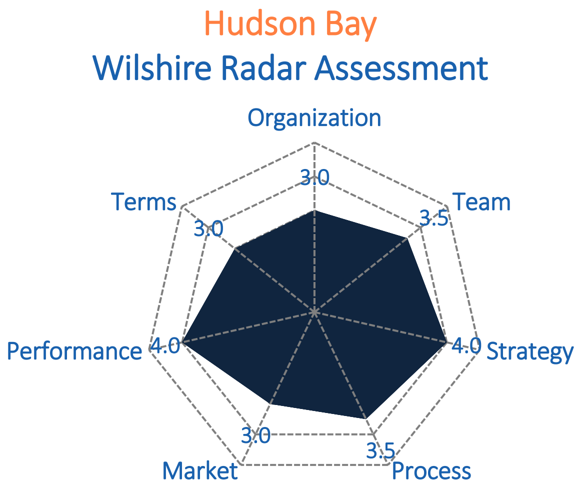
Fee Schedule and Liquidity

Fund	Management Fee	Performance Fee	Subscriptions	Liquidity	Lock-Up	Investor-Level Gate
Davidson Kempner	1.50%	20%	Monthly	Quarterly, 65-day notice	None	None
Hudson Bay	Tranche II: 2.00% Tranche III: 1.75%	20%	Monthly	Quarterly, 65-day notice	None	Tranche II: 12.5% investor level gate Tranche III: 6.25% investor level gate

*Note Brasa is currently seeking to raise the hard cap from $450 million to $470 million.

Overall Assessment & Comparison





- Finalist managers selected based on quantitative and qualitative assessments and portfolio fit
- Both finalists are high quality, institutional alternative investment firms.

Important Information

Wilshire is a global financial services firm providing diverse services to various types of investors and intermediaries. Wilshire’s products, services, investment approach and advice may differ between clients and all of Wilshire’s products and services may not be available to all clients. For more information regarding Wilshire’s services, please see Wilshire’s ADV Part 2 available at www.wilshire.com/ADV.

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Davidson Kempner
Capital Management LP

Firm Overview

As of April 1, 2022

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+353 (0) 1 553 2900

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+86 (0) 755 3690 7900

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DKCM or an affiliate has been registered as an investment adviser with the U.S. Securities and Exchange Commission (the "SEC") since 1990. Since that date, all U.S. Davidson Kempner affiliates under common control have operated on the basis of being registered and will continue to do so. The required Form ADV that DKCM files with the SEC contains extensive disclosure regarding all Davidson Kempner investment management entities. Registration with the SEC or with any state securities authority does not imply a certain level of skill or training.

Investment losses may occur, and investors could lose some or all of their investment. No guarantee or representation is made that any fund's investment program, including, without limitation, its investment objectives, diversification strategies, or risk monitoring goals, will be successful, and investment results may vary substantially over time. Nothing herein is intended to imply that an investment in any fund may be considered "conservative," "safe," "risk free" or "risk averse." Economic, market and other conditions could also cause the funds to alter their investment objectives, guidelines and restrictions. Certain information contained herein may constitute "forward-looking statements," which can be identified by the use of forward-looking terminology such as "may," "will," "should," "expect," "anticipate," "target," "project," "estimate," "intend," "continue" or "believe" or the negatives thereof or other variations thereon or comparable terminology. Due to various risks and uncertainties, including economic, market and other conditions, actual events or results or the actual performance of the funds may differ materially from those reflected or contemplated in such forward-looking statements. Davidson Kempner shall have no duty to, and may not undertake to, update or correct any such forward looking statements.

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Firm History

Total Firm Assets: $38.3 billion[1]

Total Headcount: 443

1983 Firm founded by Marvin H. Davidson

1984 Thomas L. Kempner, Jr. joined the Firm

1987 Opened to outside investment capital with launch of first Multi-Strategy Fund

1990 Registered as an investment adviser with the SEC

1999 Anthony A. Yoseloff joined the Firm

2001 London research office established

2004 Mr. Davidson retired from Davidson Kempner. Mr. Kempner became sole Executive Managing Member

2005 Launched Davidson Kempner Distressed Opportunities Funds

2010 Hong Kong office established

2011 Launched first Davidson Kempner Long-Term Distressed Opportunities Funds

2013 Launched first Davidson Kempner Special Opportunities Funds; Mr. Yoseloff became sole Deputy Executive Managing Member

2014 Dublin office established

2018 Mr. Yoseloff became Co-Executive Managing Member

2019 Philadelphia office established

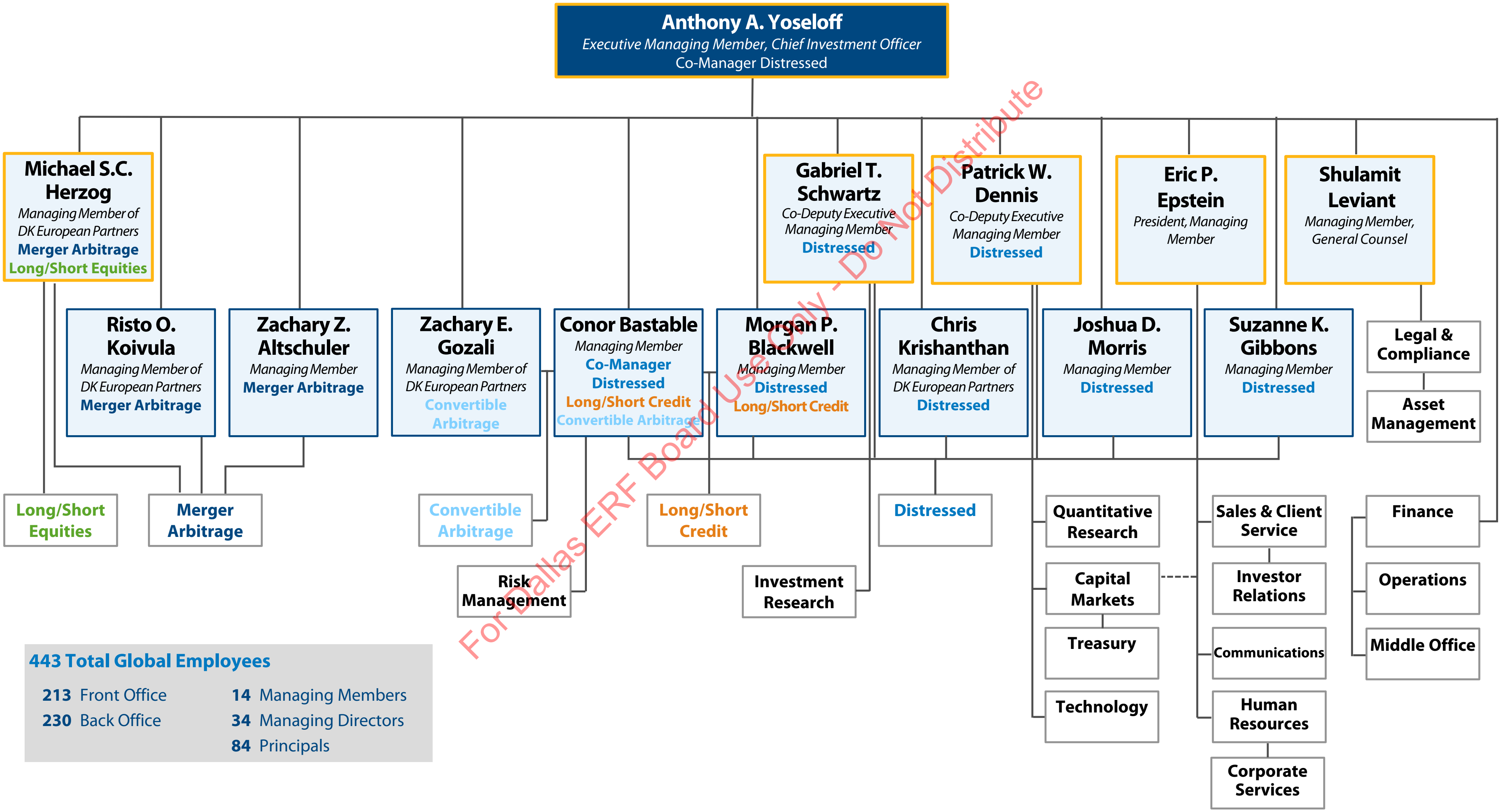
2020 Mr. Kempner retired from Davidson Kempner. Mr. Yoseloff became sole Executive Managing Member

2021 Shenzhen research office established; Launched first Davidson Kempner Income Funds

1. As of the open of business on April 1, 2022. Assets are approximate and include uncalled capital commitments.

Please see additional important disclaimers beginning on page i.

Organizational Structure Overview



443 Total Global Employees

213 Front Office
230 Back Office

14 Managing Members
34 Managing Directors
84 Principals

Management Committee members are outlined in yellow.
Please see additional important disclaimers beginning on page i.

Partnership Highlights

The senior management team's significant investment in the Firm's strategies, together with its compensation structure, promotes strong alignment of interests with the Firm's limited partners.

The Firm is
100%
privately owned by its Managing Members with no external shareholders.(1)

Ownership is redistributed every other year and, combined, no two Managing Members own more than
50%
of the Firm.

The 14 active Managing Members, as a group, comprise the Firm's largest investor and together with retired partners have over
$3.1bn(2)
invested.

The combined experience of the active Managing Members is more than 200 years and their average tenure at the Firm is approximately 17 years.

The Firm has successfully transitioned through the retirement of eight Managing Members, including its founders, Marvin Davidson and Tom Kempner.

Managing Directors and Principals participate in the Firm's profits, bringing total profit participation to approximately
30%
of personnel.

1. For purposes of this presentation, the Firm's active "Managing Members" refers to the 10 Managing Members of DKCM and 4 Managing Members of DKEP. In addition to the Managing Members, members of their immediate families, and trusts or other entities for their benefit and certain retired partners participating in the Firm's retirement plan also own a passive interest in the Firm.
2. As of December 31, 2021.

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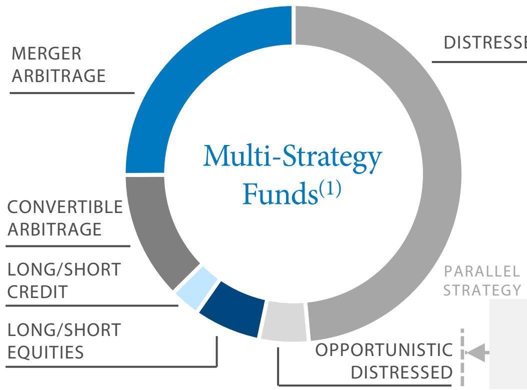
Fund Offerings



Total Firm Assets:

$38.3 billion[2]

Multi-Strategy Funds

FUND STRUCTURE: Evergreen

ASSETS UNDER MANAGEMENT: **$24.6 billion**

FUND TERMS[3]:

Lock-up: N/A

Redemption Frequency:
Semi-annual or quarterly liquidity[4]

INVESTMENT OBJECTIVE:

- Event driven funds that invest primarily in senior distressed investments and merger arbitrage with smaller allocations to long/short equities, convertible arbitrage, opportunistic distressed and long/short credit

Distressed Opportunities Funds

FUND STRUCTURE: Evergreen

ASSETS UNDER MANAGEMENT: **$3.9 billion**

FUND TERMS[3]:

Lock-up: 1 year

Redemption Frequency:
Annual liquidity

INVESTMENT OBJECTIVE:

- Event driven funds focused on distressed investing that have the flexibility to invest across the capital structure
- Higher return objective than the Multi-Strategy Funds, will take more concentrated positions

Long-Term Distressed Opportunities Funds

FUND STRUCTURE: Closed-End

AGGREGATE CAPITAL COMMITMENTS: **$8.7 billion[5]**

FUND TERMS[3]:

Investment Period: 3 years

Harvest Period: 2 years; two 1-year extensions at the option of the GP

INVESTMENT OBJECTIVE:

- Drawdown funds that target investments in less liquid and/or longer-duration distressed situations and situations resulting from capital dislocation

Income Funds

FUND STRUCTURE: Closed-End

AGGREGATE CAPITAL COMMITMENTS: **$746.1 million**

FUND TERMS[3]:

Investment Period: 3 years

Harvest Period: 2 years; one 1-year extension at the option of the GP

INVESTMENT OBJECTIVE:

- Drawdown funds focused on creating a stable income-producing credit portfolio through structured residential asset-backed lending, specialty asset lending, structured corporate lending and hard asset loans

Co-Investments

CURRENT PROGRAM: Select co-investment opportunities may be presented to select investors

SPECIAL OPPORTUNITIES FUNDS: The Firm previously offered drawdown funds that invested in "overflow" co-investments alongside other funds managed by Davidson Kempner

1. Multi-Strategy Fund allocations are shown for illustrative purposes only and reflect the 3-year monthly average allocation of assets of the Multi-Strategy Funds to each strategy from March 31, 2019 to March 31, 2022. The Multi-Strategy Funds' allocation to each strategy may vary from time to time, and there can be no assurances that the Multi-Strategy Funds' allocations to each strategy will be similar in the future to those shown herein. Please refer to the Firm's "Multi-Strategy Portfolio Allocation" disclosure sheet, which is available upon request, for historical information regarding the Multi-Strategy Funds' allocations to the relevant strategies.
2. Assets are approximate and include uncalled capital commitments.
3. The fund terms shown above are a summary only, and do not necessarily reflect the terms applicable for each individual fund within the particular strategy. Davidson Kempner may make changes to the fund terms discussed herein and other aspects of its business plan in its discretion. Investors should review the applicable confidential offering memorandum or similar disclosure document of each fund for a complete description of the terms of such fund.
4. Davidson Kempner International (BVI), Ltd. has a monthly redemption option subject to a 1.5% redemption charge.
5. Includes aggregate capital commitments as of April 25, 2022, the date of the second closing for Davidson Kempner Long-Term Distressed Opportunities Funds VI.

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Fund Offerings

Multi-Strategy Funds	Inception	Approximate Assets[1]
Davidson Kempner Partners	April 1987	$4.31 billion
Davidson Kempner Institutional Partners, L.P.	January 1991	$9.32 billion
Davidson Kempner International (BVI), Ltd.	September 1995	$10.29 billion

Distressed Opportunities Funds	Inception	Approximate Assets[1]
Davidson Kempner Distressed Opportunities Fund LP	April 2005	$1.51 billion
Davidson Kempner Distressed Opportunities International (Cayman) Ltd.	April 2005	$2.41 billion

Long-Term Distressed Opportunities Funds	Inception	Capital Commitments
Davidson Kempner Long-Term Distressed Opportunities Funds	July 2011	$462.4 million
Davidson Kempner Long-Term Distressed Opportunities Funds II	February 2013	$805.4 million
Davidson Kempner Long-Term Distressed Opportunities Funds III	December 2014	$1.30 billion
Davidson Kempner Long-Term Distressed Opportunities Funds IV	August 2017	$1.76 billion
Davidson Kempner Long-Term Distressed Opportunities Funds V	August 2019	$3.11 billion
Davidson Kempner Long-Term Distressed Opportunities Funds VI	January 2022	$1.30 billion[2]

Special Opportunities Funds[3]	Inception	Capital Commitments
Davidson Kempner Special Opportunities Funds II	July 2014	$800.0 million
Davidson Kempner Special Opportunities Funds III	August 2015	$1.04 billion
Davidson Kempner Special Opportunities Funds IV	July 2017	$709.5 million

Income Funds	Inception	Capital Commitments
Davidson Kempner Income Funds	July 2021	$746.1 million

1. As of the open of business on April 1, 2022.
2. Reflects aggregate capital commitments as of April 25, 2022, the date of the second closing.
3. Davidson Kempner Special Opportunities Fund I launched in August 2013 with aggregate capital commitments of approximately $150.6 million and was dissolved in 2019. Davidson Kempner Special Opportunities Funds III-A launched in July 2016 with aggregate capital commitments of approximately £109.3 million and was dissolved in 2020.

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Investment Strategies[1]

Distressed

- Investments in stressed or distressed companies as well as opportunistic investments resulting from events and/or value propositions
- Investments may include, among other things, corporate credit, corporate equities, liquidations, litigations, restructurings, asset-backed and structured products, real estate, private lending, hard assets, claims of any type, other opportunities in distressed investments and situations resulting from capital dislocations
- Global mandate

EXPECTED INVESTMENT DURATION	TEAM SIZE
6 months - 4+ years	103

Merger Arbitrage

- Investments in the securities of companies that are the subject of announced or anticipated acquisition attempts, exchange offers, cash tender offers or corporate reorganizations or restructurings
- The majority of the portfolio is typically invested in announced transactions, including hostile takeover situations, with the ability to invest in special situations
- Global mandate with no use of leverage

EXPECTED INVESTMENT DURATION	TEAM SIZE
3 - 18+ months	25

Long/Short Credit

- Long and short investments in performing corporate high-yield and investment-grade debt instruments
- Focused mainly on relative value and event-driven opportunities with catalysts for credit improvement or deterioration
- Investments are made primarily in North America and Europe, as well as opportunistically in other regions

EXPECTED INVESTMENT DURATION	TEAM SIZE
6 - 12 months	5

Convertible Arbitrage

- Investments that seek to extract value from the options "embedded" in convertible securities when such options appear mispriced relative to similar standalone options, historical volatility levels or other financial metrics
- Global mandate that may use third-party leverage

EXPECTED INVESTMENT DURATION	TEAM SIZE
2 - 18 months	7

Long/Short Equities

- Fundamental bottom-up long and short investments, primarily in public equities
- Investments are made primarily in North America, Europe, Asia and Australia as well as opportunistically in other regions

EXPECTED INVESTMENT DURATION	TEAM SIZE
6 - 18 months	13

1. The descriptions of the Firm's investment strategies set forth herein are high-level summaries, and may be changed from time to time by Davidson Kempner. In addition, the expected investment durations set forth above are targets and may be changed, modified or exceeded from time to time by Davidson Kempner in its discretion.

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Investment Approach

Bottom-up, fundamental method of investing with an event-driven emphasis, primarily in distressed investments and merger arbitrage.(1)

Event Analysis

Detailed analysis of the event and its potential impact on business and financial conditions of relevant company

Investment Process

Analyze processes surrounding event, determine how anticipated outcome of event may affect trading prices

Valuation

Purchase securities at a discount to expected value upon consummation of anticipated event

Execution

Seek to deploy capital where we believe there are best risk-adjusted opportunities

1. This is a stylized representation of a complex process. The descriptions of Davidson Kempner's investment approach is intended to be representative, but the investment approach may be changed from time to time by Davidson Kempner, and Davidson Kempner may not perform certain steps, or may perform additional steps, in its discretion.

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Firm Oversight

The Firm has rigorous processes in place to monitor risk at both the investment and Firm level.[1]

Investment Risk

Risk Limits

- Daily measuring and monitoring of different risks to the portfolio
- Various mechanisms for risk control, including:
  - Maximum position size
  - Positions sized according to downside risk versus upside potential
  - Diversified portfolio
  - Limited use of leverage

Strategy Risk Committees

- Meet regularly to review portfolio positioning and strategy-specific risks

Risk Management Team

- Chief Risk Officer with 25+ years' experience leads a team of six dedicated professionals

Management Committee

- Generally meets weekly to discuss firm-wide business and organizational matters and initiatives

Investment Committee

- Generally meets bi-weekly to discuss portfolio performance, cash management, investing environment and strategy allocations, among other matters

Back Office

Operating Committee

- Generally meets weekly and oversees cross-departmental projects and fosters collaboration across the Firm's back office.

Infrastructure

- The Firm is supported by a comprehensive global infrastructure and back office that includes 230 employees in finance, operations, middle office, legal, compliance, asset management, human resources, corporate services and information technology

1. This is a stylized representation of a complex process. The descriptions of Davidson Kempner's oversight process is intended to be representative, but the oversight process may be changed from time to time by Davidson Kempner, and Davidson Kempner may not perform certain steps, or may perform additional steps, in its discretion.

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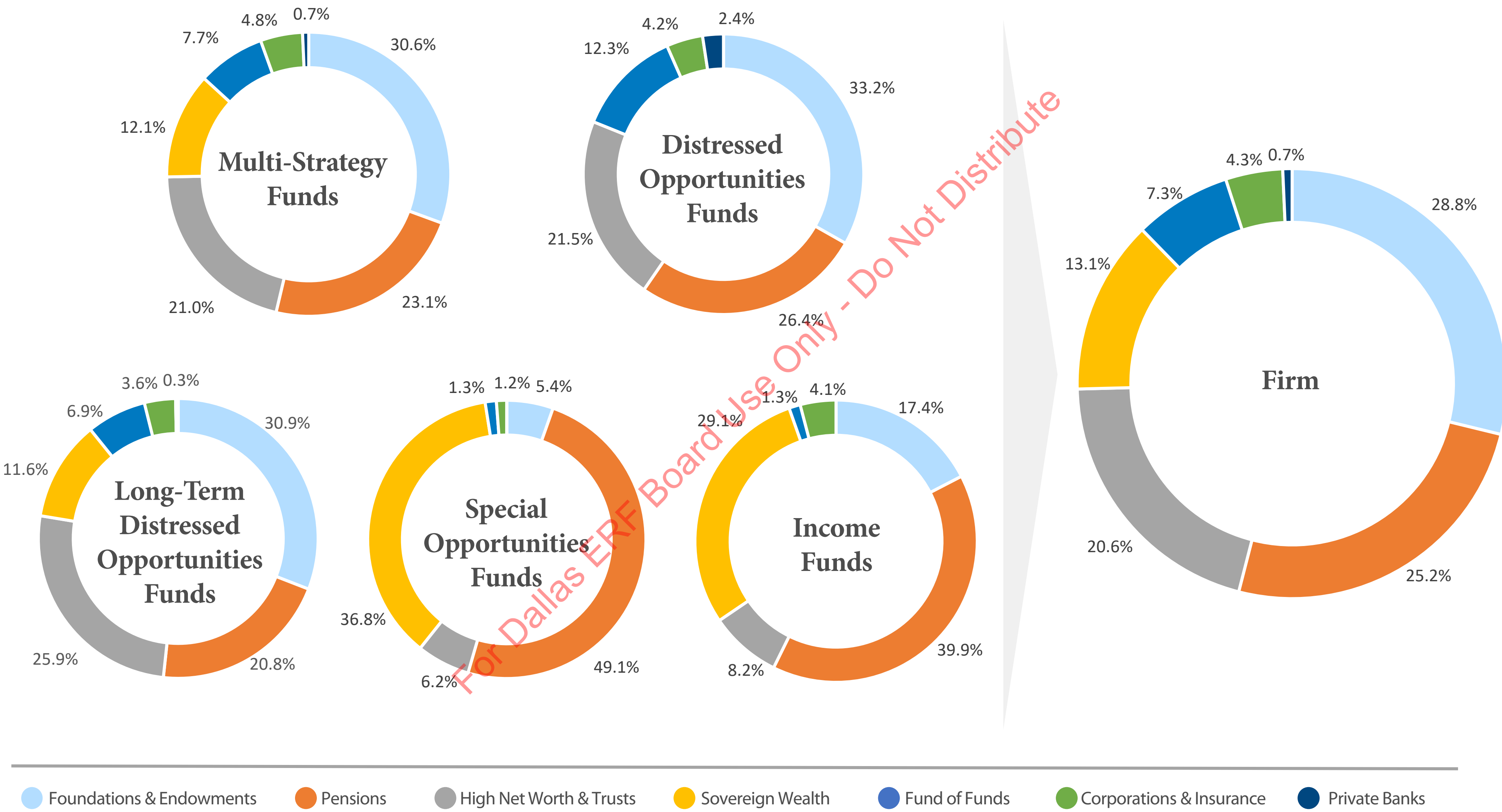
Investor Breakdown[(1)]



1. Investor breakdowns are estimated, based on unaudited data and subject to change. Investor breakdowns are calculated as a percentage of assets under management as of the date hereof for the Multi-Strategy Funds and Distressed Opportunities Funds and as a percentage of aggregate capital commitments for the Long-Term Distressed Opportunities Funds, Special Opportunities Funds and Income Funds, in each case excluding capital invested by DKCM and its affiliates. For the purpose of this presentation, assets under management include redemptions and withdrawals effective as of the date hereof. Firm figures take into account the Multi-Strategy Funds, Distressed Funds, Long-Term Distressed Opportunities Funds, Special Opportunities Funds and Income Funds. The Davidson Kempner Long-Term Distressed Opportunities Funds VI are not reflected in the investor breakdowns because the funds had not had final closings as of March 31, 2022.

Please see additional important disclaimers beginning on page i.

Business Principles and Core Values

We are an independent
GLOBAL
investment management firm committed to excellence in all that we do — our research and investments, service to investors, and operation of our business.

Our highest priority is the best interests of
OUR INVESTORS.

Our economic interests are
ALIGNED
with that of our investors. Our partners, managing directors, principals and employees, as a group, are substantial investors in each of our funds.

We hold ourselves to the highest
ETHICAL STANDARDS
of professional and personal conduct.

We have a strong
COMMITMENT
to compliance that is part of the ethos of the Firm.

We value
DIVERSITY.
Diversity in thought, background and experience drives better outcomes.

We believe in teamwork based on
MUTUAL RESPECT.

We are opportunistic and entrepreneurial investors with a
DISCIPLINED
investment process driven by in-depth research and rigorous risk management.

Our firm rewards people based on merit. The strength and resilience of
OUR PEOPLE
differentiate us and are our greatest assets.

We are dedicated to maintaining an
INCLUSIVE CULTURE
that values every person and fosters equity, empowerment and opportunity.

Please see additional important disclaimers beginning on page i.

Davidson Kempner Institutional Partners, L.P.

(As of May 1, 2022)

Fund Information

Summary	Low volatility, multi-strategy hedge fund with an event driven emphasis, utilizing a bottom-up, fundamental method of investing in primarily distressed investments and merger arbitrage.
Fund Inception	January 1991
Fees	1.5% / 20%
Redemption Frequency	Quarterly
Redemption Notice	65 days' prior written notice
Administrator	Citco Fund Administration (Cayman Islands) Limited
Auditor	PricewaterhouseCoopers
Contact Details	DKIR@dkp.com

Portfolio Composition* (%)

	Long	Short
Merger Arbitrage	23.9	8.1
Long / Short Equities	6.5	5.3
Distressed Investments	51.3	0.7
Opportunistic Distressed	4.6	0.0
Long / Short Credit	2.7	2.1
Convertible Arbitrage	13.8	3.2
Total Investment Exposure	**102.8**	**19.4**

Number of Positions*	**772**	**377**

Five Largest Long Positions* (%)

		Long
1. SPACs	Merger Arbitrage	4.6
2. Shipping Loan Portfolio	Distressed	3.0
3. Atlantia	Merger Arbitrage	2.4
4. US Sales & Marketing Company	Distressed	1.4
5. Structured Products # 24	Distressed	1.3
Total		**12.6**

Ten Largest Long Positions*	**18.2%**

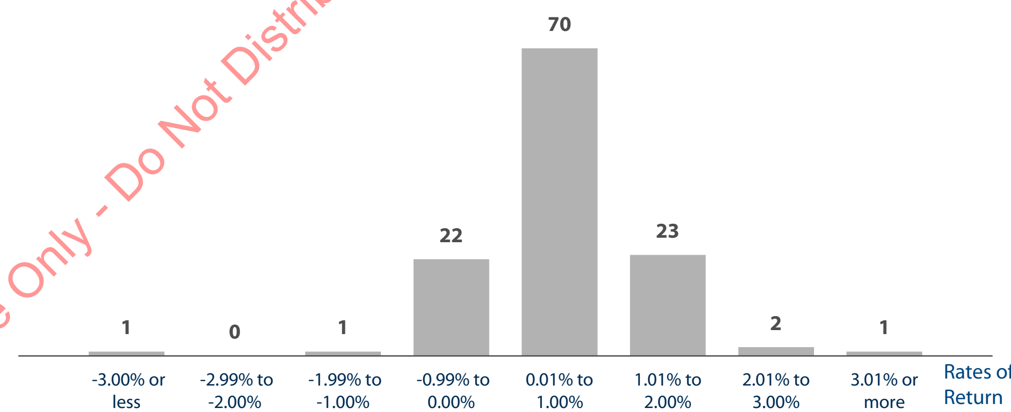
Assets Under Management (millions)

Davidson Kempner Institutional Partners, L.P.	$9,322
Total Multi-Strategy Funds	$24,639
Firm Assets Under Management	$38,964

Performance (period ended 04/30/2022) (%)

MTD	QTD	YTD
-0.17	-0.17	-0.06

Distribution of Monthly Returns (10 years ended 04/30/22) (number of months)



Performance Measures (period ended 04/30/2022) (%)

	1 Year	3 Years	5 Years	10 Years
Annualized Return	1.43	5.91	5.39	5.72
Standard Deviation	1.53	6.30	5.05	3.86

Geographic Breakdown* (%)

	Long	Short
North America	56.5	12.0
Europe	27.5	6.3
Asia Pacific / Middle East	18.1	1.0
Other Geographic Regions	0.7	0.0
Total Investment Exposure	**102.8**	**19.4**

Please see the following page for historical returns and important information regarding the calculation of the data presented in this presentation.

Davidson Kempner Institutional Partners, L.P.

(As of May 1, 2022)

Monthly Returns (as of month-end) (%)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2022	0.30	0.01	-0.21	-0.17									-0.06
2021	1.07	1.93	0.74	1.64	1.01	0.50	-0.84	0.28	0.39	0.11	-0.23	0.27	7.05
2020	0.83	-0.40	-8.74	2.18	1.58	2.94	1.95	1.75	1.02	-0.15	3.09	1.97	7.71
2019	1.00	0.52	0.77	1.53	-0.30	0.73	0.53	0.13	0.16	0.40	0.19	1.22	7.09
2018	1.36	0.59	-0.53	0.11	-0.06	0.67	0.36	0.51	0.76	-0.81	-0.10	-0.74	2.11
2017	0.78	0.92	0.54	0.91	0.81	0.07	0.35	0.44	0.65	0.69	-0.54	0.67	6.45
2016	0.30	-0.53	0.86	0.57	1.31	0.22	0.83	0.69	1.24	0.60	0.11	0.59	7.01
2015	-0.01	0.45	0.63	0.45	0.47	-0.38	0.53	-0.58	-0.30	0.32	-0.08	0.00	1.50
2014	0.44	1.75	0.58	0.85	0.68	1.46	0.15	-0.20	0.09	-1.74	0.24	0.17	4.51
2013	1.37	0.70	1.09	1.48	1.30	-0.57	0.74	0.57	0.70	1.07	0.34	0.36	9.52
2012	1.08	0.95	0.67	0.48	-0.36	0.35	0.61	0.87	1.13	0.53	0.54	0.79	7.90
2011	1.21	1.68	0.55	0.61	0.12	-0.35	-0.12	-2.62	-1.23	1.17	0.00	0.32	1.28
2010	1.63	0.72	2.65	1.42	-2.11	-0.19	1.06	0.49	1.37	0.90	-0.24	1.18	9.16
2009	1.06	-0.30	0.12	1.46	3.13	3.15	2.19	1.61	2.16	1.19	0.87	1.71	19.91
2008	-1.46	-0.42	-1.23	1.99	0.95	-0.13	-0.42	0.45	-5.56	-2.32	-2.01	0.26	-9.65

*Other than cash, cash equivalents (including U.S. Treasury bills) and currency hedges.

The extraordinary market dislocation caused by COVID-19 has had (and is expected to continue to have) a significant effect on markets generally and some asset classes in particular. The short-term and long-term impact of COVID-19 on the operations of Davidson Kempner and the performance of the Fund is difficult to predict. These potential impacts, while uncertain, could adversely affect the performance of the Fund and the Fund's ability to source new investments. Davidson Kempner will provide further information upon request.

All data except for performance figures are presented as of the open of business on the first day of the month. Portfolio information is presented as a percentage of assets under management. Assets under management are approximate and include uncalled capital commitments. Assets under management are not an indication of the Fund's performance. All performance figures and portfolio information (except for year-end returns prior to 2022) are estimated, based on unaudited data and subject to change. All performance figures are net of expenses, management fees and incentive allocations and include income from new issue investments. Performance is net of a 1.5% management fee. All performance figures are based on an investment made as of January 1 of the relevant year, except that performance figures for 2009 are based on an investment made as of January 1, 2008. Performance figures are calculated including performance attributable to Special Investments held from December 1, 2008 through November 30, 2009. Only investors in the Fund as of December 1, 2008 participated in such Special Investments.

A single position may be comprised of more than one security or financial instrument where such securities or financial instruments provide exposure to the same issuer or type of issuer. Past performance is not necessarily indicative of future results. Actual investor results may vary. The specific securities identified and described do not represent all of the securities purchased or sold during the period represented. You should not assume that investments in the securities identified were or will be profitable. This communication and the information contained herein are confidential and may not be disclosed in whole or in part to anyone other than the intended recipients. Unauthorized reproduction, distribution, transmission, display or publishing of all or any part of this material or the information contained herein in any form is strictly prohibited. The information contained herein does not constitute an offer to sell or a solicitation of any offer to buy any securities and may not be used or relied upon for making an investment decision. Any offer or solicitation will be made only by means of a confidential private offering memorandum and the related subscription agreement. Please refer to the Confidential Private Offering Memorandum of the Fund for important disclosure regarding the risks and potential conflicts of interest associated with an investment in the Fund.

"Total Investment Exposure" reflects the Fund's portfolio market exposure as of the open of business on the date above. In calculating exposure relating to equity total return swaps (TRS), where the Fund enters into an equity TRS as the receiver of the equity total return, exposure is reported as a long exposure to the underlying equity security. Where the Fund enters into an equity TRS as the payor of the equity total return, exposure is reported as a short exposure to the underlying equity security. In calculating exposure relating to credit default swaps (CDS), where the Fund has sold credit default protection, exposure to the CDS is reported as a long exposure to the underlying bond. Where the Fund has purchased credit default protection, exposure to the CDS is reported as a short exposure to the underlying bond. The Investment Manager believes that this methodology of calculating exposure to equity TRS and CDS positions is representative of the Fund's market exposure to these instruments. Exposure to options is reported based on the delta adjusted value. Exposure to other swaps and derivative positions is also reported on the basis of risk exposure. Where the Fund holds positions in the equity security, the equity option and/or the equity TRS providing exposure to the same underlying equity security, the Fund's long and short exposure to that security is netted and is reported as a single exposure. In addition, exposure to a particular position is calculated net of asset-level financing that is non-recourse to the Fund and, in certain circumstances, net of offsetting market exposure. These methods may not be in accordance with U.S. generally accepted accounting principles.

HUDSON BAY CAPITAL

Time-Tested Team, Market-Tested System

Hudson Bay Capital
Multi-Strategy Funds

Hudson Bay Capital Management LP

Disclaimers

This presentation contains general information on Hudson Bay Capital Management LP ("Hudson Bay") and multi-strategy funds managed by Hudson Bay (the "Funds"). This presentation is not an offer to sell nor a solicitation of an offer to purchase an interest in any Fund. Offers and sales of interests in the Funds will be made only pursuant to the Confidential Offering Memorandum or Private Placement Memorandum (each an "Offering Memorandum," and collectively, the "Offering Memoranda") for the applicable Fund and other relevant documentation for the relevant Fund and in accordance with the applicable securities laws. This presentation is qualified in its entirety by reference to such documentation, including the Risk Factors and Conflicts of Interest disclosure set forth therein. This presentation is strictly confidential and intended exclusively for the use of the person to whom it was delivered by Hudson Bay. This presentation may not be reproduced or redistributed in whole or in part. Hudson Bay disclaims any obligation to update this document to reflect subsequent developments. All information provided herein is current as of March 31, 2022, unless otherwise indicated. Hudson Bay reserves the right to change any terms of the offering of the Funds at any time subject to applicable law. Securities and futures trading is speculative and may result in losses. Past performance is not a guarantee of future performance and the information contained herein is not a guarantee of Hudson Bay's performance. Any projection, forecast or return on investment illustrations delivered by or on behalf of Hudson Bay is for illustrative purposes only and actual results may vary materially from anticipated returns. An investment in the Funds may not be suitable for all investors and prospective investors should consult their own professional advisors as to the suitability, legal, tax, economic and other consequences of an investment in the Funds. There can be no assurance that the Funds' investment objectives will be achieved. Investors could lose some or all of their investment.

See additional important disclaimers and information in the attached Appendix: "General Disclosures".

Hudson Bay's Multi-Strategy Approach

Value Proposition

- **Skill vs. Beta:** Aiming to Deliver Positive Returns Regardless of Market Direction
- **Portfolio Construction Edge:** Hudson Bay's Deal Code System Powers Diversification
- **Opportunistic** Deployment of Capital
- **Cross Fertilization of Ideas** across Strategies
- **Why Now?**

HUDSON BAY CAPITAL

Who We Are

Investment Focus

Skill-Based Returns

Alpha Generation through a diverse set of **absolute return strategies** that are intended to be **uncorrelated** to each other and to major market indices powered by our proprietary **Deal Code System**

- *Convertible Arbitrage*
- *Credit*
- *Event/Merger*
- *Long/Short*
- *Volatility Trading*

Facts and Figures

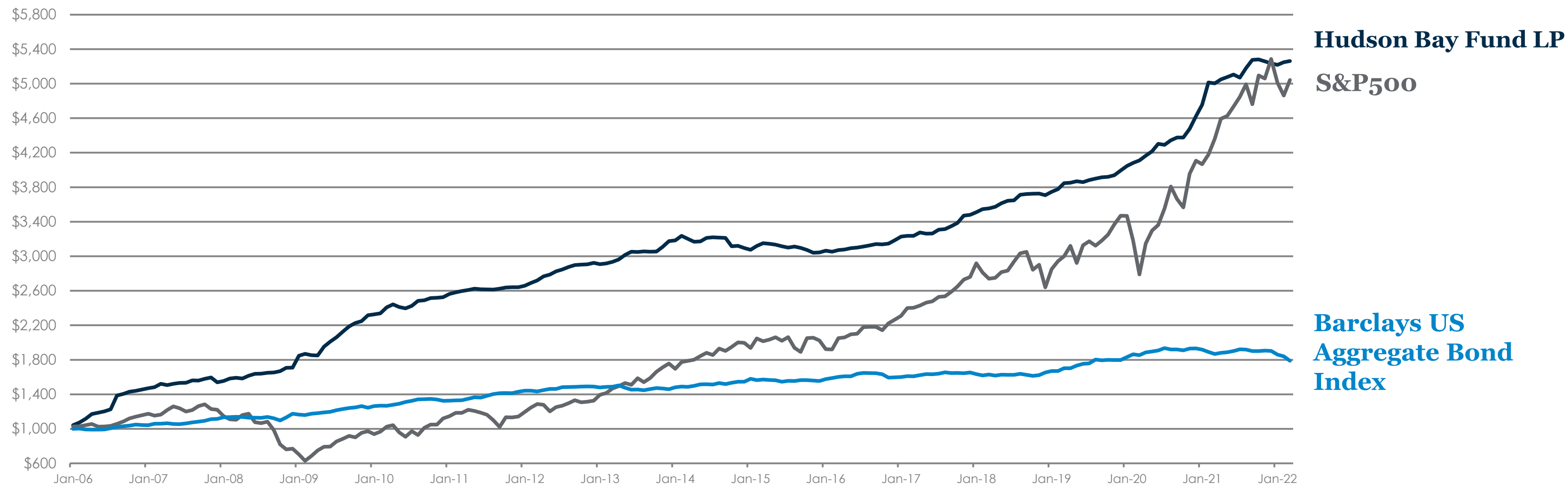
- ~$17bn AUM*
- 25 Portfolio Teams
- 134 employees
  - *70 investment/risk professionals*
- Offices in Greenwich, New York, Miami and London

Firm and Founder History

- *Equity Options Floor Trader* - American Stock Exchange: 1991
- *Personal Proprietary Trading Firm:* 1995
- *Gerber Asset Management*: 1997
- *Creation of Deal Code System*: 1998
- *Hudson Bay Capital Management*: December 2005

*As of 4/30/2022

Absolute Return Generation



Hudson Bay Fund LP Annualized Return: 10.76%

Correlation	Beta	Compound Annualized ROR
0.04 to the S&P 500 since inception	**0.01** to the S&P 500 since inception	10.76% Hudson Bay vs. 10.47% S&P 500 vs. 3.65% Barclays Ag

See the paragraphs titled, "Fund Performance Figures" and "Information Concerning Comparative Indices" in the Assumptions and Additional Disclosures at the end of this presentation for important information concerning calculation of the Fund performance and the selection of the above referenced indices for inclusion in this slide.

The S&P 500 Index is a capitalization-weighted index designed to measure the performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The S&P 500 Index is not included for comparative purposes, but rather to illustrate market factors that existed during the time period covered in the performance tables and graphs. The S&P 500 is unmanaged and does not utilize investment techniques such as short sales or hedging. The investment performance of Hudson Bay Fund LP or Hudson Bay International Fund Ltd. may differ substantially from the S&P 500 Index. The results shown for the S&P 500 Index are based on the numbers reported by Bloomberg, and Hudson Bay Capital Management LP (along with its affiliates, "Hudson Bay Affiliates") assumes no responsibility for their accuracy. It is not possible to invest directly in the S&P 500 Index.

The Bloomberg Barclays US Agg Total Return Value Unhedged USD ("LBUSTRUU") is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS and CMBS (agency and non-agency). The results shown for the LBUSTRUU are based on the numbers reported by Bloomberg, and Hudson Bay Affiliates assume no responsibility for their accuracy. It is not possible to invest directly in the LBUSTRUU.

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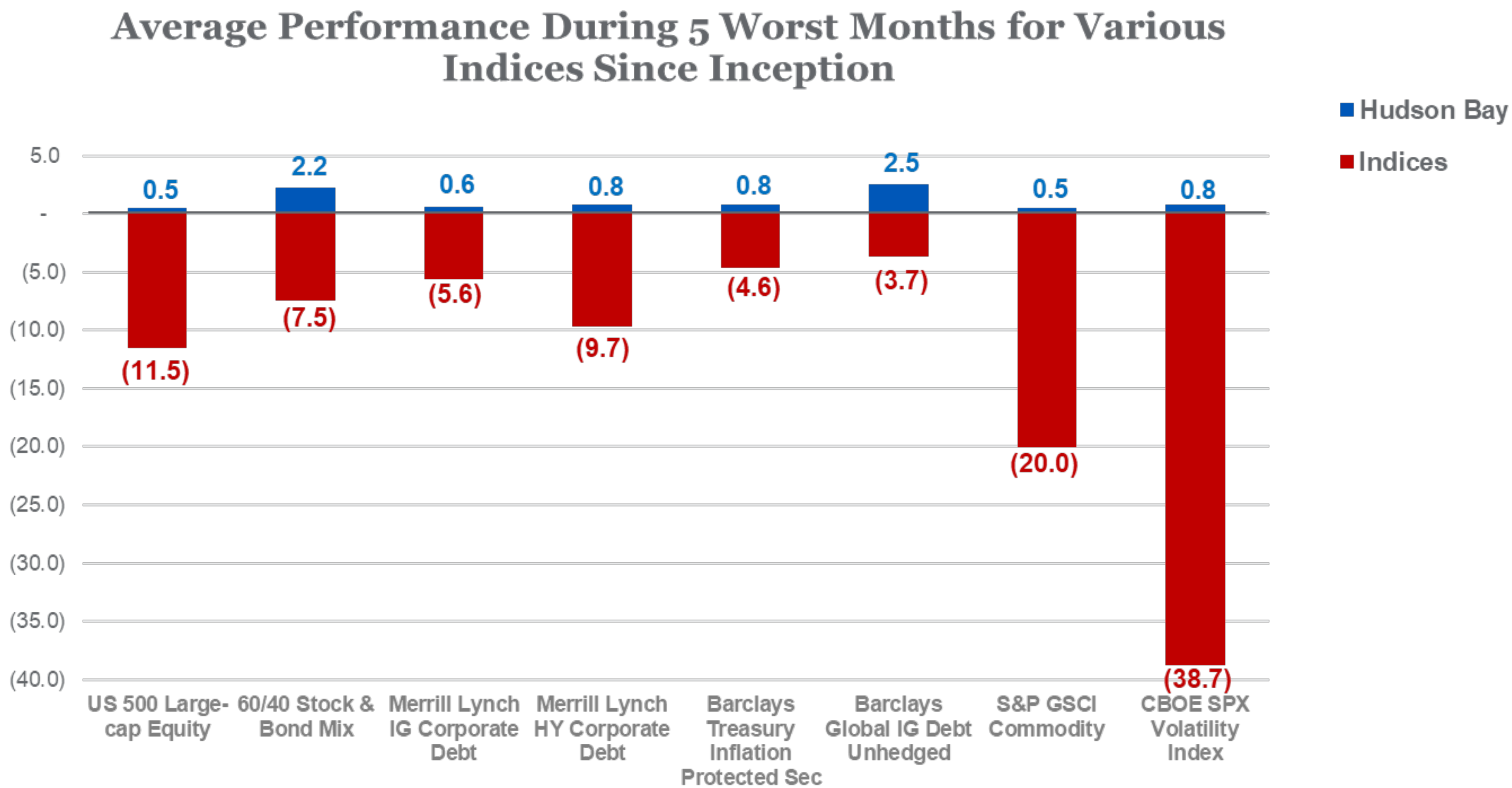
Past performance is not necessarily indicative of future performance.

HUDSON BAY CAPITAL

Like a Bridge Over Troubled Waters

A Low Vol Fund that Makes Money In Volatile Markets



The above chart shows the net rate of return of Hudson Bay Fund LP (in blue) compared to the net rate of return of each of the referenced indices for the worst performing month of each index for the period January 2006 (Hudson Bay Fund LP's date of inception) through the date of this presentation. The rate of return for the referenced indices is based on data reported by Bloomberg.

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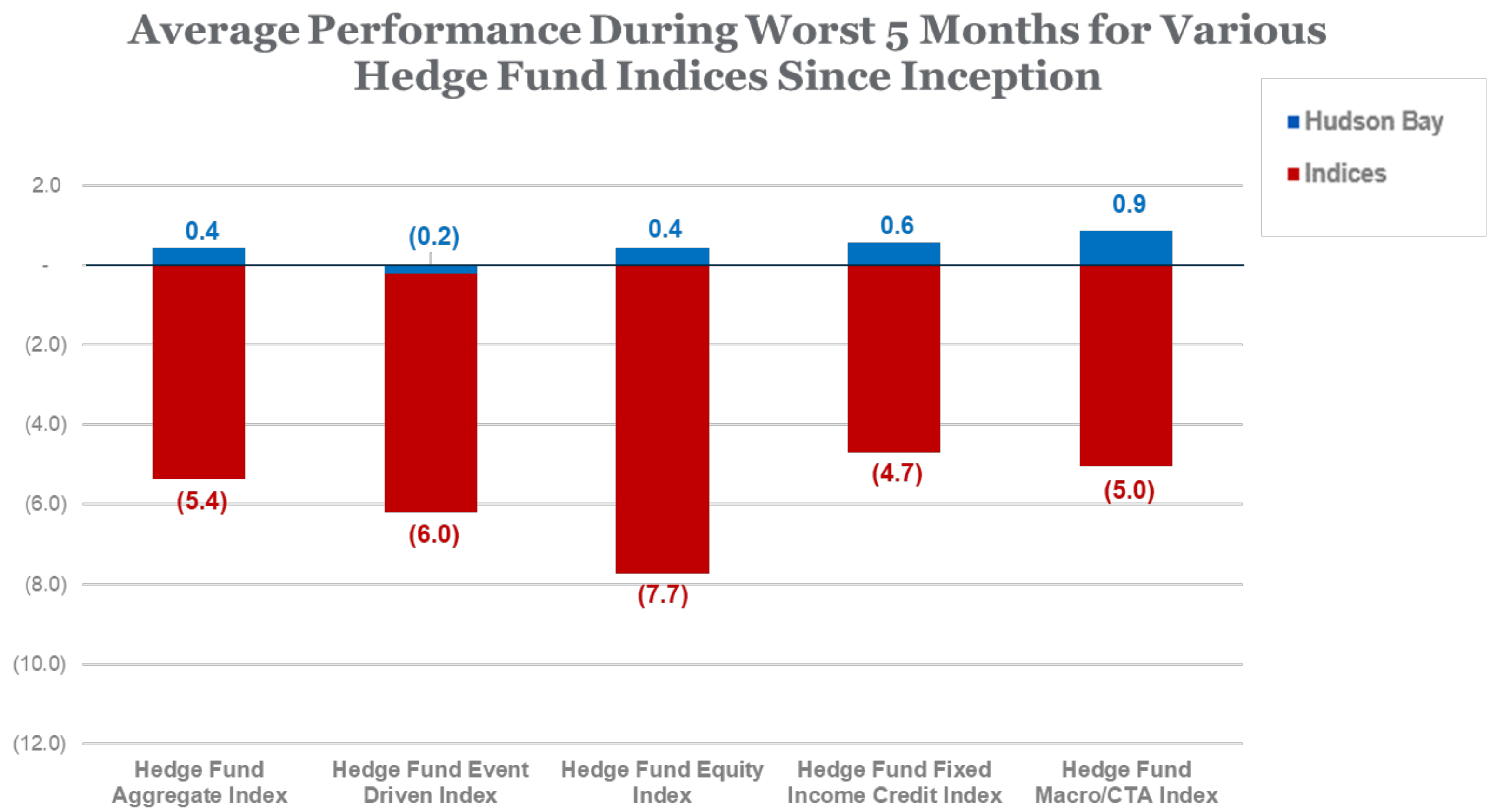
HUDSON BAY CAPITAL

Antidote to Hedge Fund Beta

Hudson Bay Makes Money in Times of Stress



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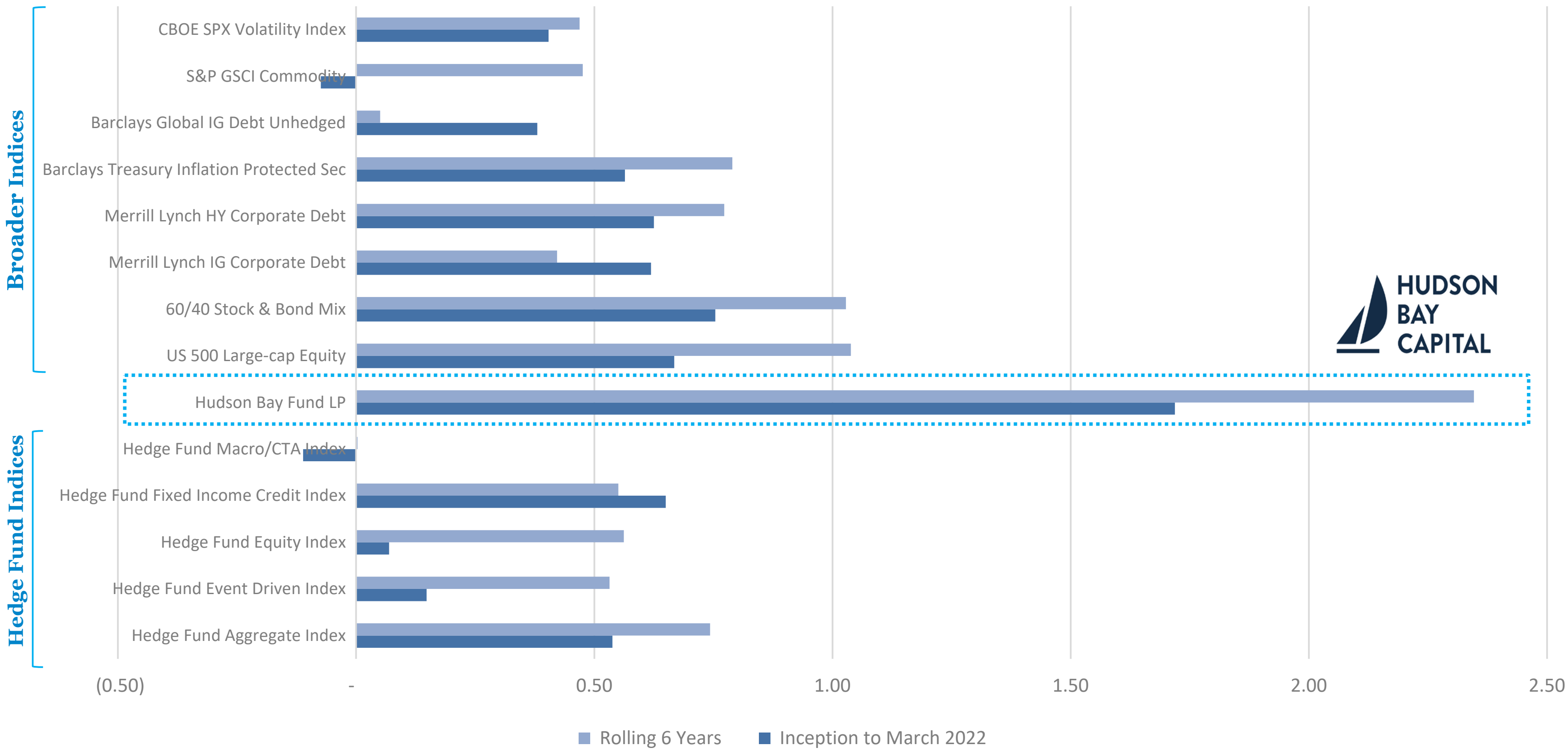
HUDSON BAY CAPITAL

A Sharpe View: Hudson Bay vs Various Indices



This slide is updated through the date of this presentation.

See the paragraph "Information Concerning Comparative Indices" in the Assumptions and Additional Disclosures at the end of this presentation for important information concerning selection of the above referenced indices for inclusion in this slide. This data was compiled by examining the consistency of Sharpe ratios for the period beginning with the inception of the referenced Fund (2006) as well as the year 2015 through the date of this presentation.

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HUDSON BAY CAPITAL

Hudson Bay's Multi-Strategy Approach

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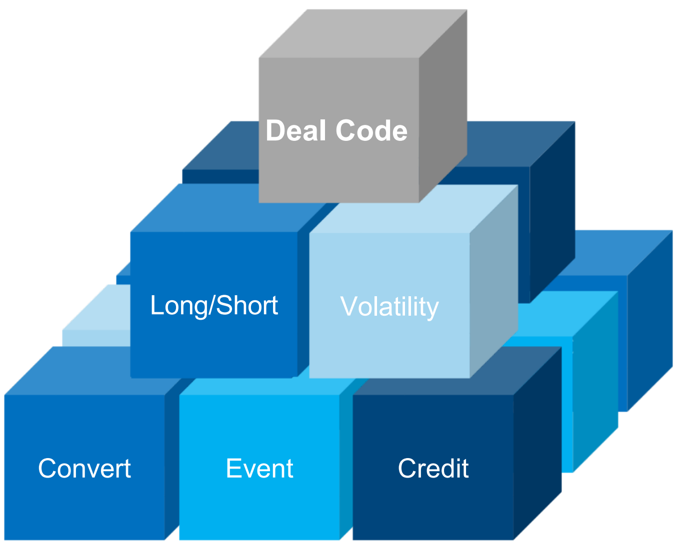
- **Cross Fertilization of Ideas across Strategies**

- **Why Now?**

HUDSON BAY CAPITAL

Portfolio Construction

A Deal Code represents a distinct investment idea and includes the core position(s) and related hedges, if any



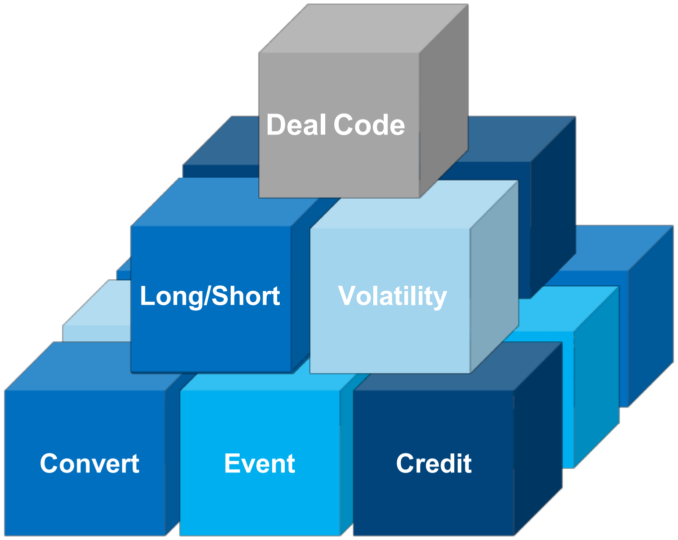
Deal Code	Investment Thesis	Instrument	Investment	Description
9525	XYZ	Convertible Bond	Long	XYZ CORP 2.125 09/01/26
9525	XYZ	Common Stock	Hedge	XYZ CORP STK
9525	XYZ	CDS	Hedge	CDS XYZ CORP BP 500 09/20/22
9525	XYZ	CDS	Hedge	CDS XYZ CORP BP 500 12/20/22
9525	XYZ	Future	Hedge	US TSY NOTE 10 YR DEC 17

The foregoing "Deal Code 9525" is just one example of a Deal Code composition as used in Hudson Bay's portfolio construction. Other Deal Codes have different components and the composition of Deal Code 9525 is not necessarily indicative, or even representative, of the composition of such other Deal Codes. While most Deal Codes contain a core position and related hedges, not all Deal Codes may contain hedges.

HUDSON BAY CAPITAL

Skill-Based Investing through the Deal Code System

Deal Codes are "Alpha Packets"



Deal Codes:

- Form the **building blocks** for portfolio construction
- Create a **scalable, repeatable** investment process
- Anchor **risk mitigation** at the position level
- Promote **diversification** within the portfolio
- Provide for **granular control** over the portfolio

Skill-Based Investing through the Deal Code System

Building Blocks to Absolute Return Investing

Integrated Risk Framework

Convert | Credit | Event | Long/ Short | Volatility

Position Level Hedging

Seek to create market-neutral alpha packets

Size Deal Code for Limited Loss

Look to prevent concentration and promote capital preservation

High Conviction: Win/Loss Ratio

Measure performance through win/loss ratio, driving opportunistic allocation of risk capital to strategies/Portfolio Managers

HUDSON BAY CAPITAL

Disciplined Risk Framework Tailored to Each Strategy and Portfolio Manager

PM Specific Guidelines at both the Position and Portfolio Level, including:

- Deal Code Loss
- Portfolio Loss
- Sector Exposure
- Liquidity

Portfolio Level Risk Mitigation, including:

- Diversification Monitoring
- Leverage and Liquidity Management
- Market and Factor Stress Tests

Firm Level Oversight, including:

- Weekly Portfolio Manager/Risk Meeting
- Risk Committee Meetings

Equity Long/Short PM Risk Exposure Summary

PM	Guide	PM
$ Capital		$200
Long Cash MV		$14
Short Cash MV		($13)
Cash GMV		$26
Net Cash / Capital	25%	1%
Long Delta-Adj MV	-	$14
Short Delta-Adj MV	-	($13)
Delta-Adj GMV	-	$26
Net Delta-Adj / Capital	10%	1%
Long Beta MV	-	$12
Short Beta MV	-	($14)
Beta GMV	-	$27
Net Beta Exp / Capital	10%	-1%
Long Vol MV	-	$12
Short Vol MV	-	($16)
Vol GMV	-	$28
Gross Delta-Adj Leverage		13%
Vol-Adjusted Leverage		14%
Gross Midcap		
Net Midcap ($1-		
Gross Smallcap (		
Net Smallcap ($0.2		
Gross Microcap		
Net Microcap (<$		
Gross > 20%		
Gross > 50%		
Max Long /		
Max Short /		
Top 5 Longs /		
Top 10 Longs /		
Top 5 Shorts /		
Top 10 Shorts /		
# of Issue		
% of GMV From		

PM	Guide	PM
Largest GIC Sector Gross	-	Consumer 29%
2nd Largest GIC Sector Gross	-	Financials 10%
3rd Largest GIC Sector Gross	-	Information 9%
Largest GIC Sector Net / Capital	10%	Consumer -2%
2nd Largest GIC Sector Net / Capital	10%	Industrials -1%
3rd Largest GIC Sector Net / Capital	10%	Health Care 1%
Largest GICS Ind Group Gross	40%	Retailing 13%
2nd Largest GIC Ind Group Gross	40%	Diversified Financials 10%
3rd Largest GIC Ind Group Gross	40%	Consumer Services 6%

Highest % ADV Names	% ADV	Cash Notional	Total Notional
NA	0.8%	-0.4	-0.4
NA	0.8%	-0.5	-0.5
NA	0.7%	-0.4	-0.4
NA	0.7%	-0.5	-0.5
NA	0.5%	0.4	0.4
NA	0.5%	-0.1	-0.1
NA	0.5%	-0.4	-0.4
NA	0.5%	-0.2	-0.2
NA	0.5%	-0.2	-0.2

Highest % Float Names	% Float	Cash Notional	Total Notional
NA	0.02%	0.4	0.4
NA	0.01%	-0.1	-0.1
NA	0.01%	-0.5	-0.5
NA	0.01%	-0.5	-0.5
NA	0.01%	-0.4	-0.4
NA	0.01%	-0.2	-0.2
NA	0.01%	-0.1	-0.1

Equity-Linked Manager Guideline Summary - Portfolio and Deal Code P&L Guidelines

	Manager Type	Equity Long/Short
	Primary Allocation / Base For Calcs	**Capital**
Portfolio Loss	First Cut Guideline	5% + 1/2 of YTD $ PL
	Subsequent Cut Guideline	7.5% of Original Capital + 1/2 of YTD $ PL, then 10% of Original Capital + 1/2 of YTD $ PL
	*** First and Subsequent Cut Guideline set in $ space on Jan 1st of each year, and managed to this level regardless of capital increases (if you are allocated more capital, you don't get to risk losses on it)**	
	% Cut Schedule [expressed as % of Original Capital]	1st Cut: 25% 2nd Cut: 50% 3rd Cut: 100%
	Redeployment of Capital	Recovery of Loss as % of Allocated Capital
Deal Code Loss	Dealcode Loss	2.0% + 1/2 of YTD $ PL
	Dealcode % Cut Guideline	Full Dealcode Cut unless Exception Granted

Sample Portfolio Manager Snapshot

Last 12m

Biggest Winners / Losers

Deal ID	Holding Period	Period PL ($k)	Period Ret (% Avg Capital)	% of Total Win / Loss
12147 - ATC NA	6m+	$11,967	2.5%	21%
13054 - CELG	6m+	$6,246	1.3%	11%
13736 - AGN	6m+	$4,799	1.0%	8%
13688 - ACEL	6m+	$3,571	0.7%	6%
13050 - AABA	6m+	$3,438	0.7%	6%
9011 - GOOGL	6m+	($1,035)	-0.2%	-2%
12037 - TAKEDA	6m+	($1,093)	-0.2%	-2%
13065 - TSLA	6m+	($2,001)	-0.4%	-3%
13017 - LGF	6m+	($2,056)	-0.4%	-4%
14379 - CBB	< 3m	($2,070)	-0.4%	-4%

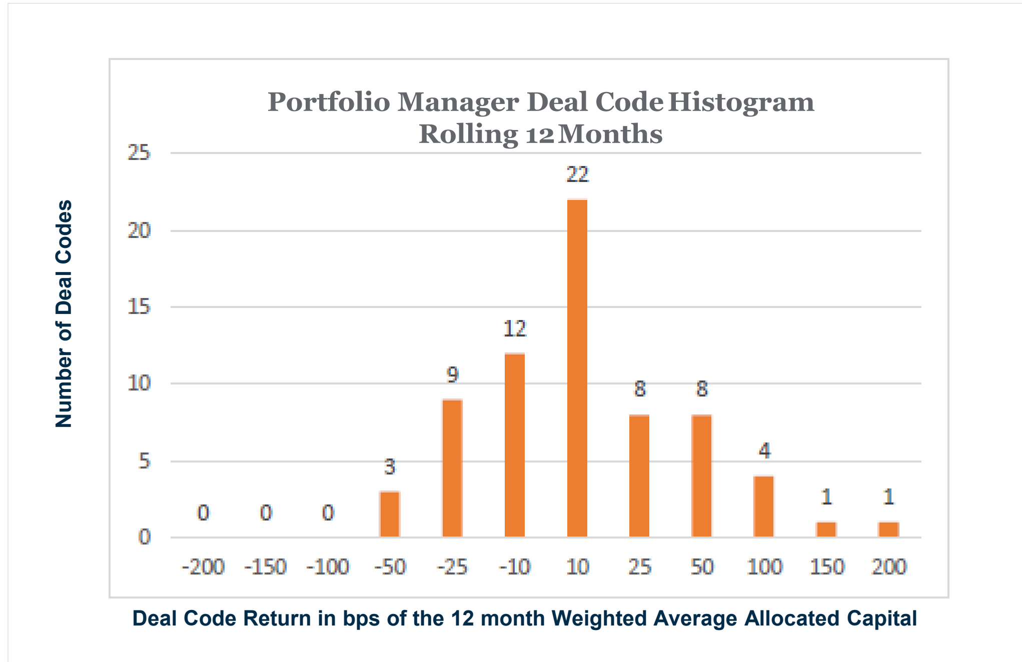
Win / Loss Statistics

$k	All		Adjusted*	
	Win	Loss	Win	Loss
Total #	59	36	22	12
Total %	62%	38%	65%	35%
Avg $	$978	($439)	$2,414	($1,107)
Median $	$261	($158)	$1,627	($918)
Best/Worst	$11,967	($2,070)	$11,967	($2,070)
2nd Best/Worst	$6,246	($2,056)	$6,246	($2,056)

*excludes Pub Offering, Port Hedges, < 10bp Ann Ret

%	All		Adjusted*	
	Win	Loss	Win	Loss
Total #	59	36	22	12
Total %	62%	38%	65%	35%
Avg $	0.2%	-0.1%	0.5%	-0.2%
Median $	0.1%	0.0%	0.3%	-0.2%
Best/Worst	2.5%	-0.4%	2.5%	-0.4%
2nd Best/Worst	1.3%	-0.4%	1.3%	-0.4%

*excludes Pub Offering, Port Hedges, < 10bp Ann Ret



The Portfolio Manager Deal Code Histogram reflected above is based on trades of both the Master and onshore funds; trades by the onshore funds are not directly applicable to investors in the offshore fund.

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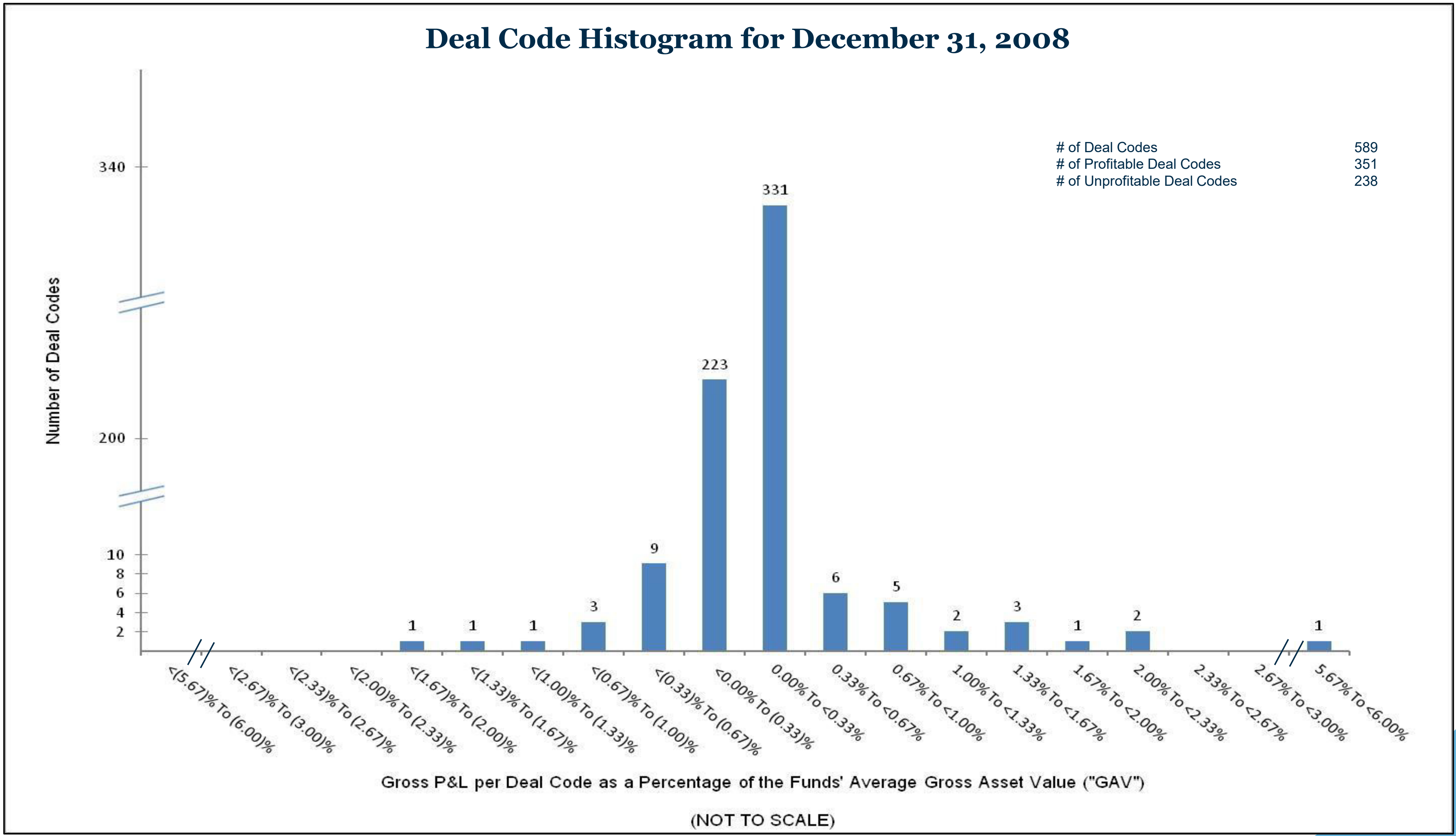
HUDSON BAY CAPITAL

How Did We Make +10% in 2008?



The Distribution of Deal Code P&L reflected above is based on trades of both the Master and onshore funds; trades by the onshore funds are not directly applicable to investors in the offshore fund.

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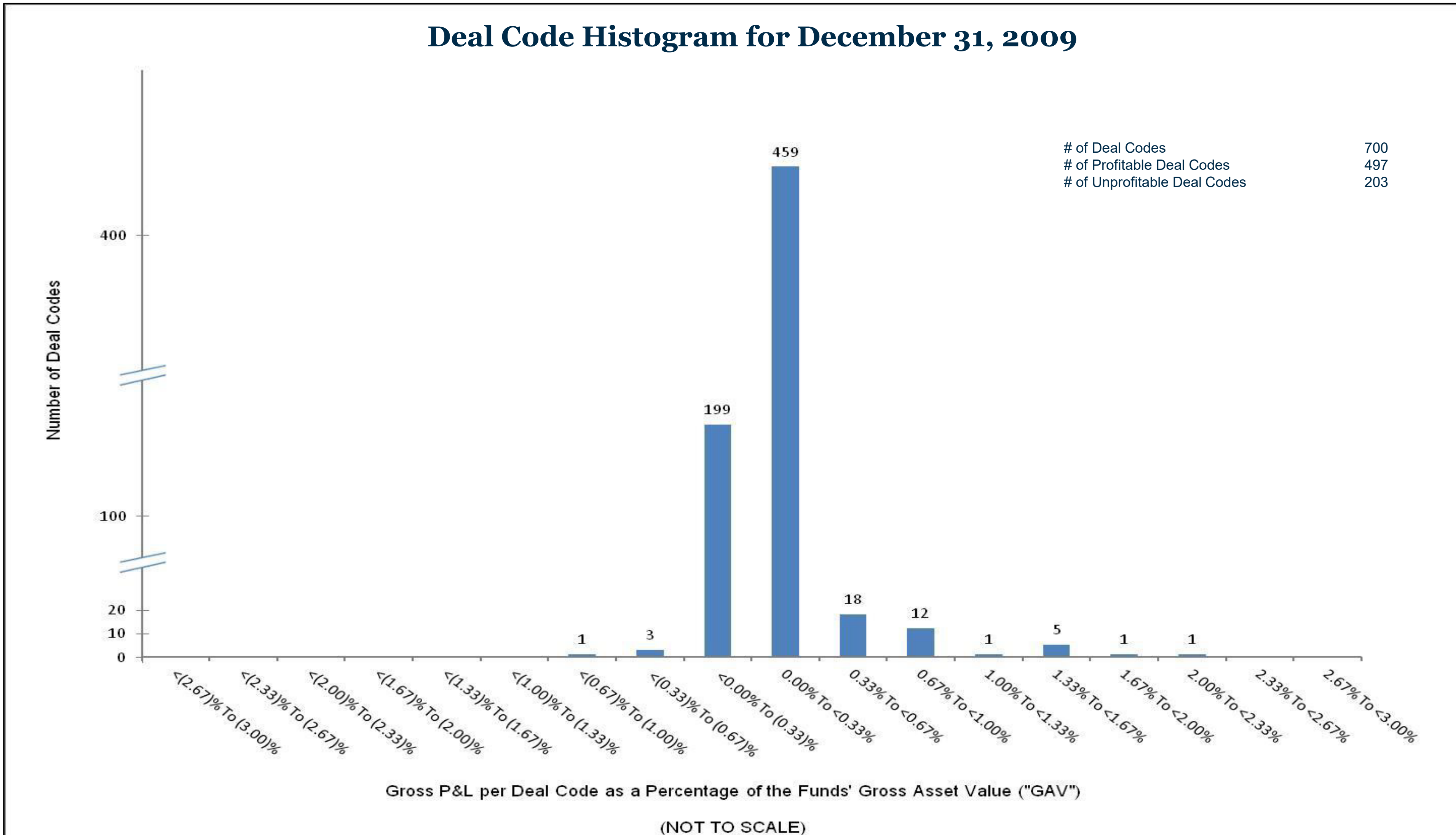
HUDSON BAY CAPITAL

How Did We Make +32% in 2009?



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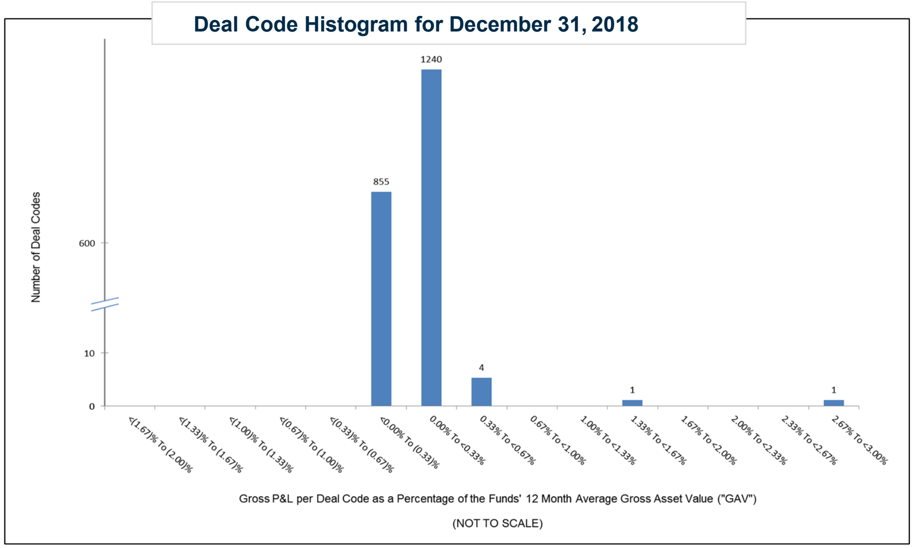
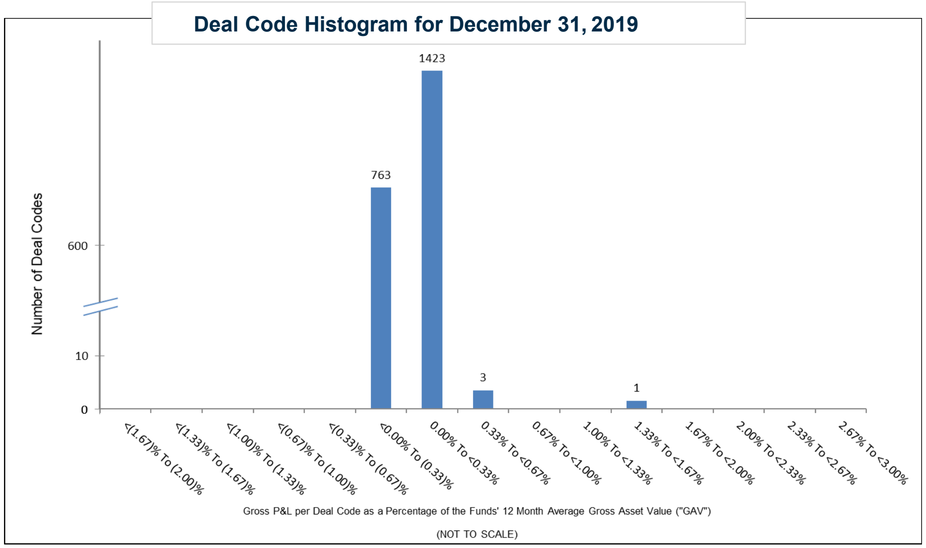
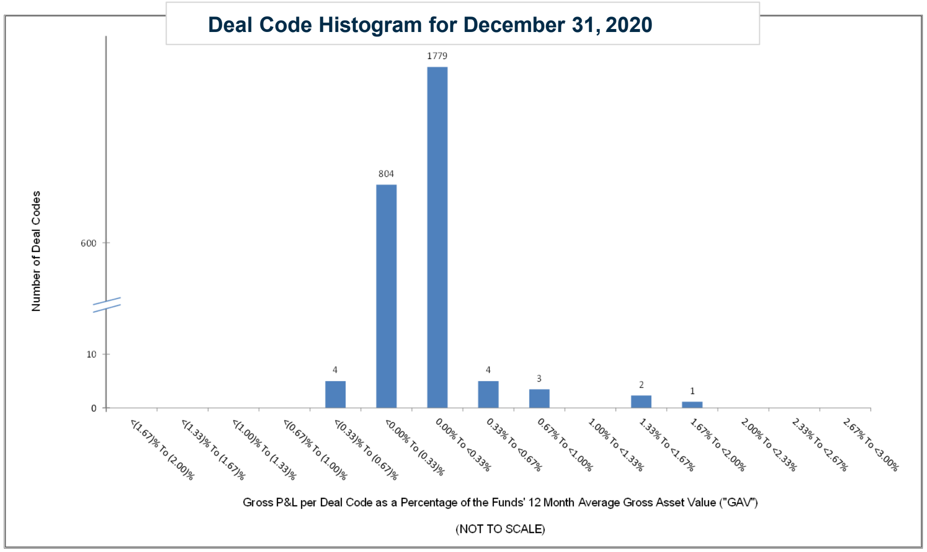
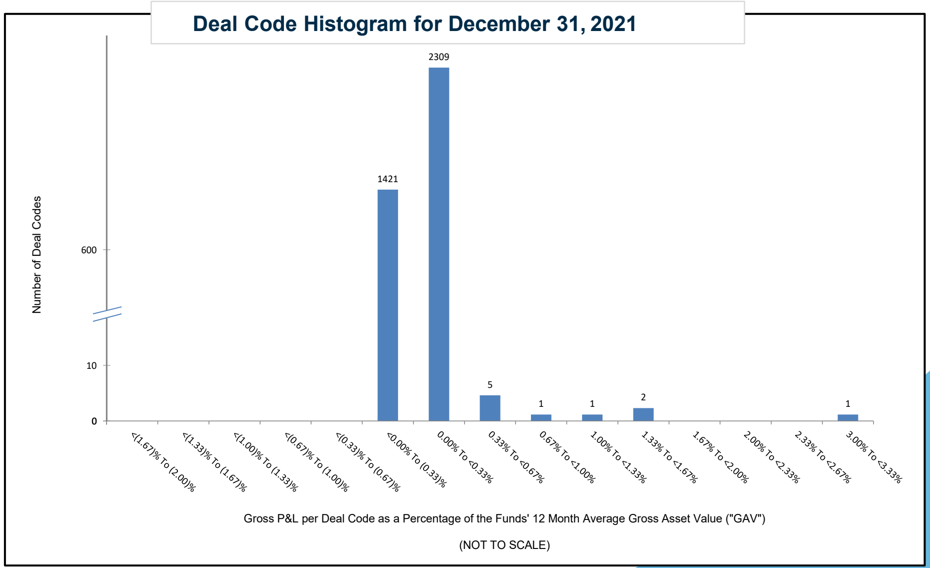
HUDSON BAY CAPITAL

Historic Deal Code Histograms









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- **Cross Fertilization of Ideas** across Strategies

- **Why Now?**

Dynamic Capital Allocation - Efficient Decision Making Eliminates Bureaucracy

Top Down

Risk Committee Allocates Risk Budgets to Portfolio Managers based on:

- Opportunity Set/Macro environment
- Win/Loss Ratio
- Quality of Returns
- Longevity

We do **not** mandate deployment

Bottom Up

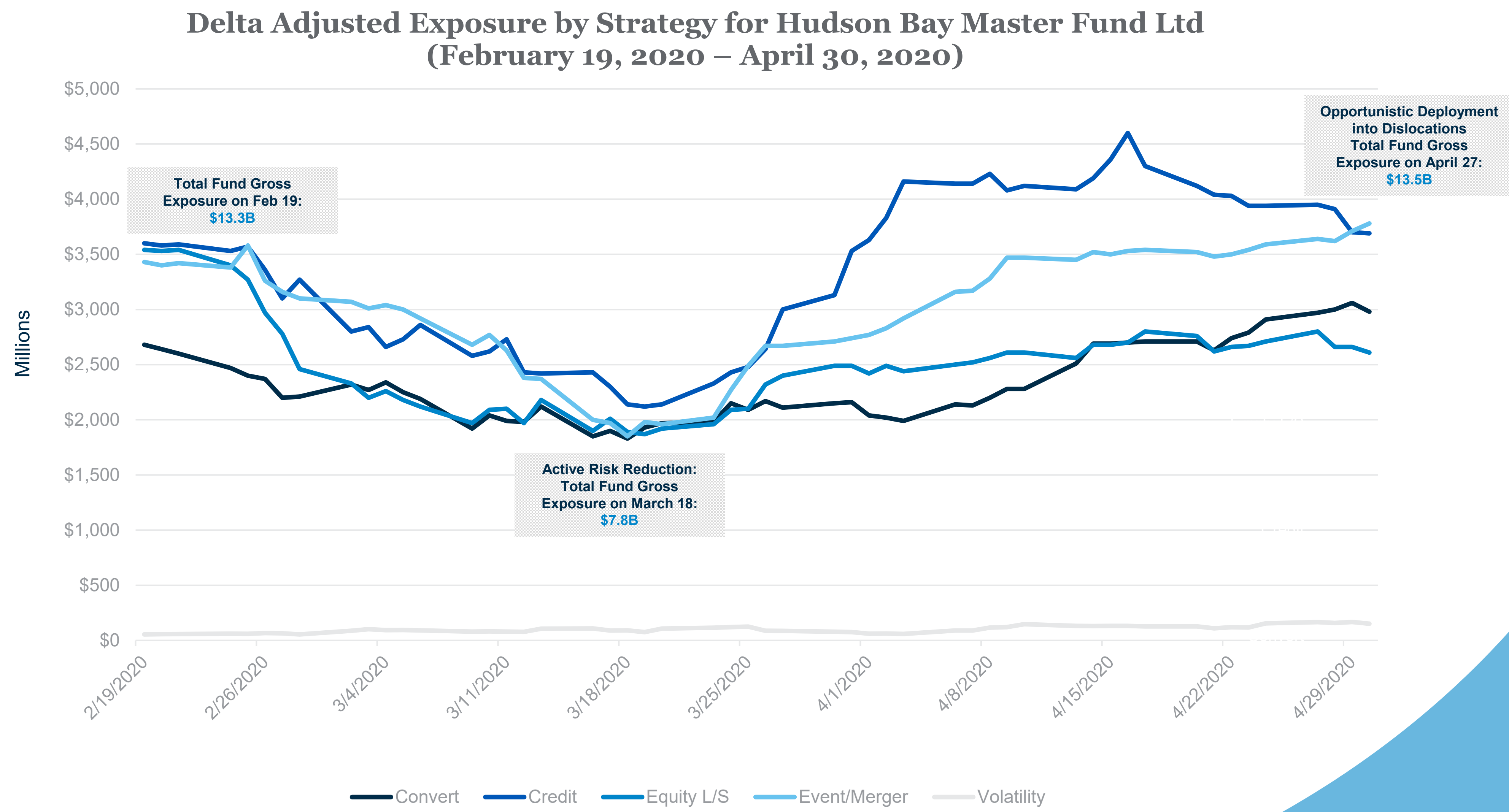
Portfolio Managers Deploy Capital Dynamically to Seize Alpha:

- PMs have the freedom to trade within their risk boundaries
- PMs are encouraged to be patient and deploy into dislocations

HUDSON BAY CAPITAL

Capital Deployment During COVID Crisis

Capital allocation across strategies should be opportunistic



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HUDSON BAY CAPITAL

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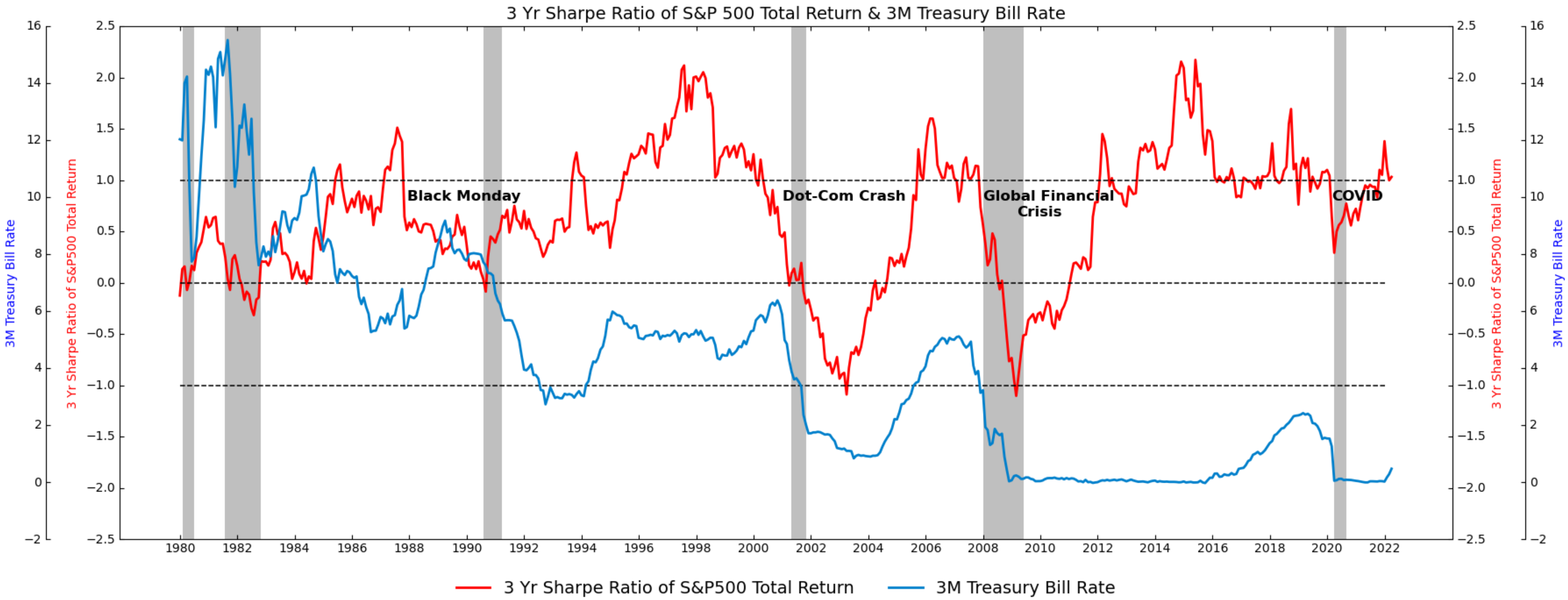
HUDSON BAY CAPITAL

Hudson Bay's Integrated Team Culture allows us to Capture Alpha at the Intersection of Strategies

HUDSON BAY CAPITAL

Beware of Sharpe Objects



As of 3/31/22

HUDSON BAY CAPITAL

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Value Proposition

- **Skill vs. Beta;** Generate Positive Returns Regardless of Market Direction
- **Portfolio Construction Edge:** Hudson Bay's Deal Code System Powers Diversification
- **Opportunistic Deployment of Capital**
- **Cross Fertilization of Ideas** across Strategies

- **Why Now?**

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Why Now?

Alpha Investing is Back

High Uncertainty & High Volatility Requires Human Judgment and Skill

Robust opportunity set

- Capital markets environment and corporate optimism has fueled and continues to **fuel deal flow**
- Elevated **equity dispersion** due to the impact of retail investors and the "Robinhood" trader
- **Post Covid dispersion** due to the divergence in the pace of global re-openings
- Increasing frequency of **dislocations** across equity and credit markets

We believe our team of PM's are positioned to utilize their outstanding human judgement combined with our time-tested risk framework to capture opportunity and capitalize on the market dynamics we are seeing.

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Why Now?

Covid Crisis Dislocation

Hudson Bay Fund LP performance since the start of the Covid crisis (February 2020) to March 2022:

- **Absolute Returns:** 30% Cumulative Net Return; 13% Annualized Net Return
- **Quality Returns:** 2.64 Sharpe
- **Consistent Returns:** 73% Up Months
- **Skill-based Returns:** 12% Annualized Alpha

See the paragraph titled, "Fund Performance Figures" at the end of this presentation for important information concerning the calculation of the Fund performance set forth above.

Past performance is not necessarily indicative of future performance.

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Why Partner with Hudson Bay?

uncorrelated

alpha

Skill-based Returns:
Looking to Generate Alpha Through All Markets

Integrated Risk Management:
Starting at the Position Level

Event

Deal Codes

hedged

Volatility

High Conviction:
Targeting Persistent Performance

skilled

A Hedged Hedge Fund:
Uncorrelated to Indices and Funds

Convert

opportunistic

transparent

Credit

Long/Short

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Time-Tested Team, Market-Tested System

Appendix

Hudson Bay Capital Management LP

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Portfolio Level Risk Mitigation

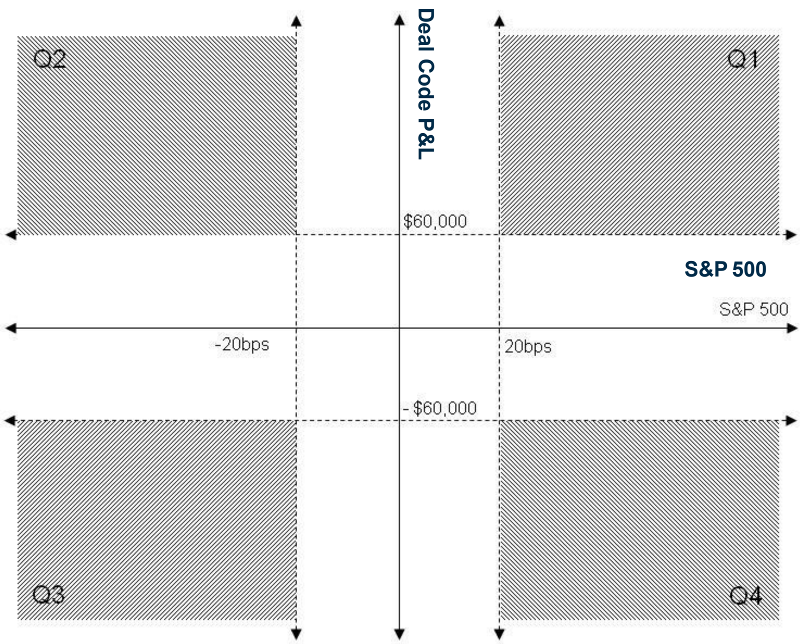
Maintaining Portfolio Diversification is a Critical Component of Risk Management

- We believe that industry standard measures of diversification like correlation and covariance have not kept pace with the increasing complexity and dynamism of today's financial instruments

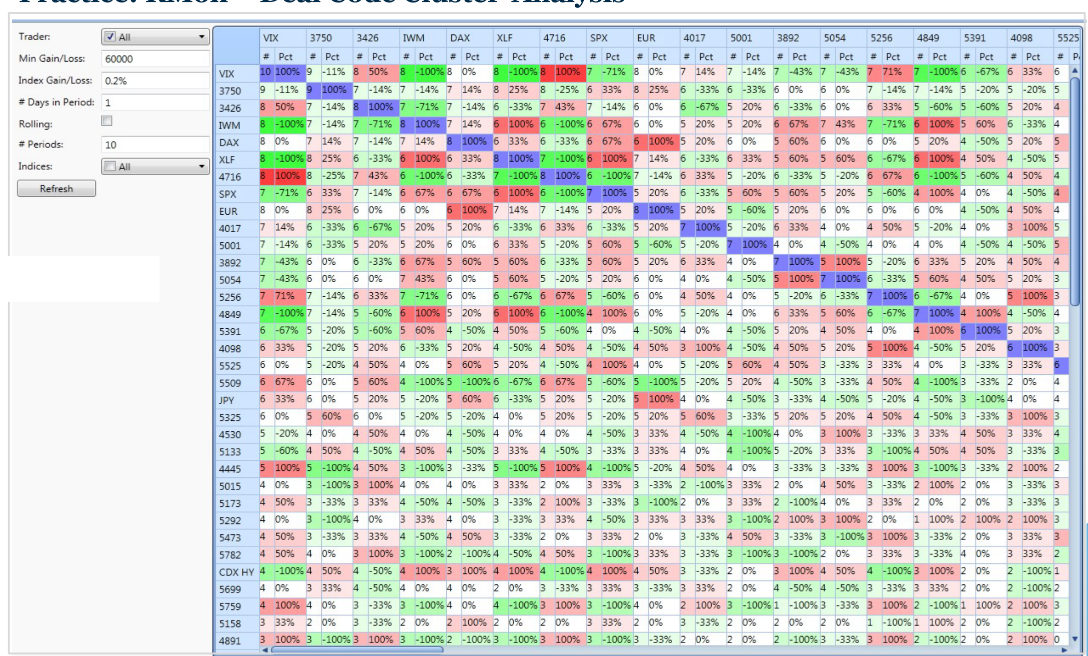
Hudson Bay Approach

- Proprietary RMon system* monitors diversification using cluster analysis
- Seek to identify concentration risk in the portfolio
- Focus on economically significant relationships; filters out noise

Philosophy: RMon – Gerber Statistic



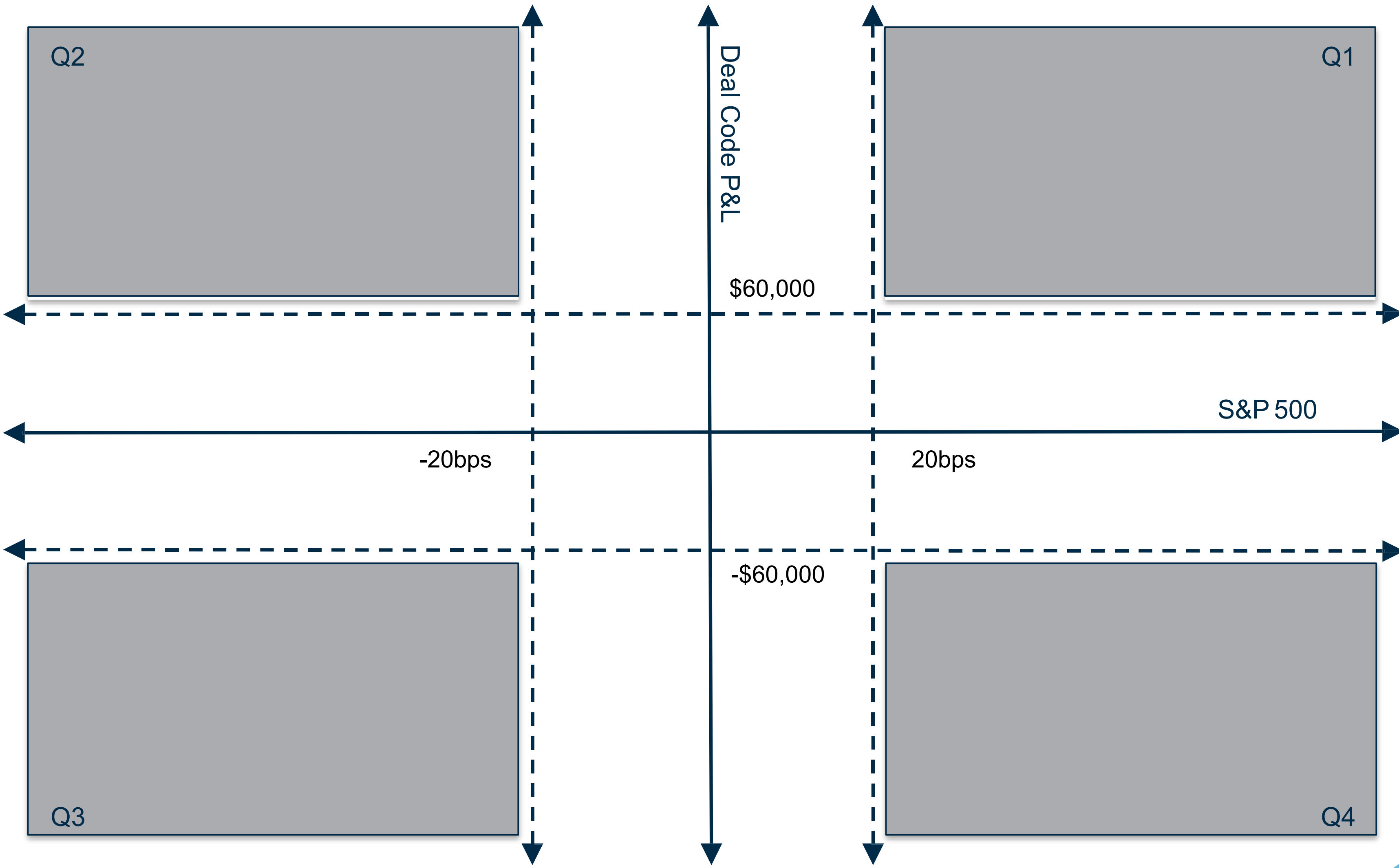
Practice: RMon – Deal Code Cluster Analysis



Please refer to the Appendix for more details information on our Risk Monitoring and Mitigation Systems

*US Patent Nos. 8,577,775; 9,940,673; and 10,140,661 and additional patents pending

Diversification Through Monitoring Co-Movement



RMON is Designed to Pick Up Meaningful Relationships that Correlation Misses

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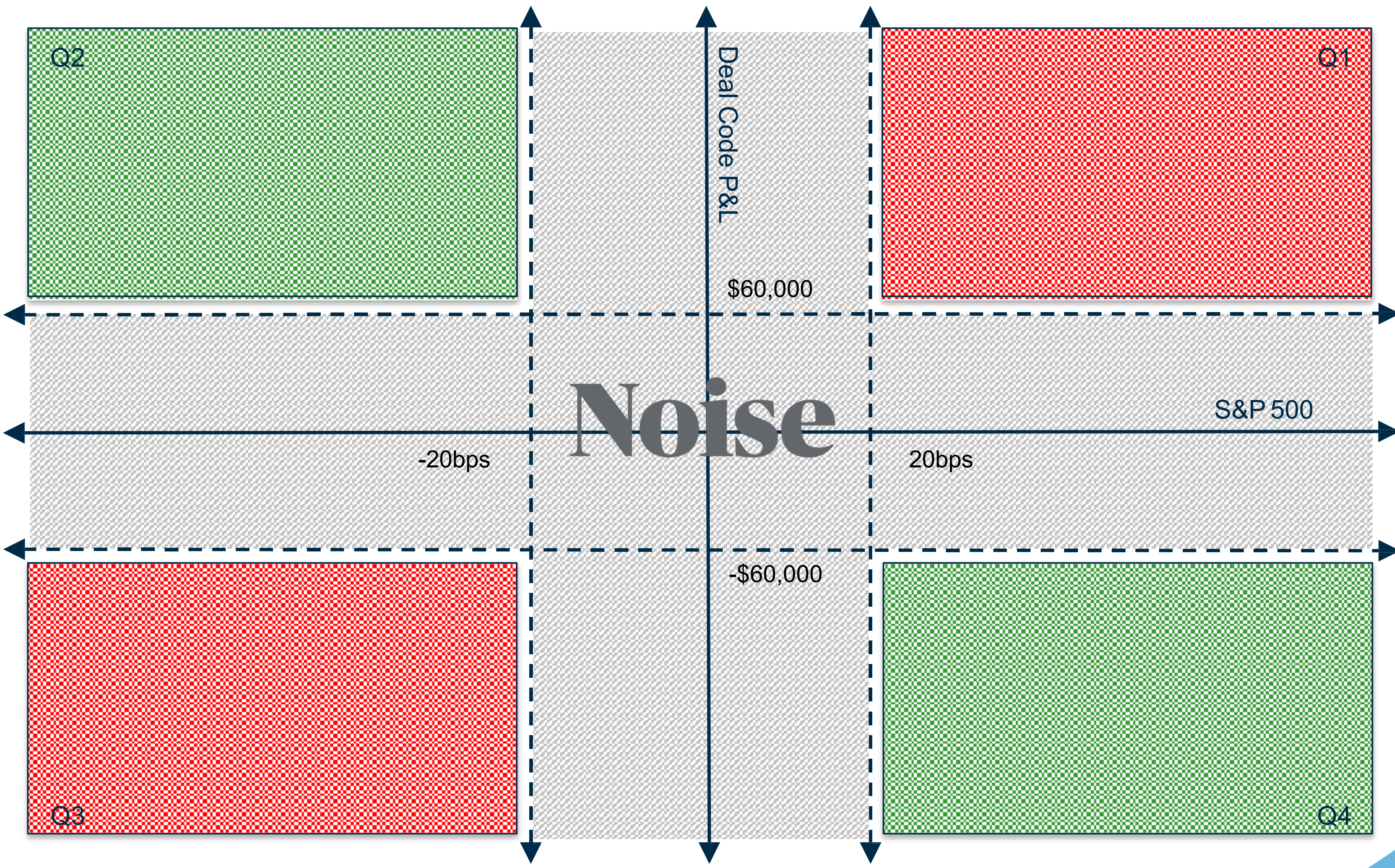
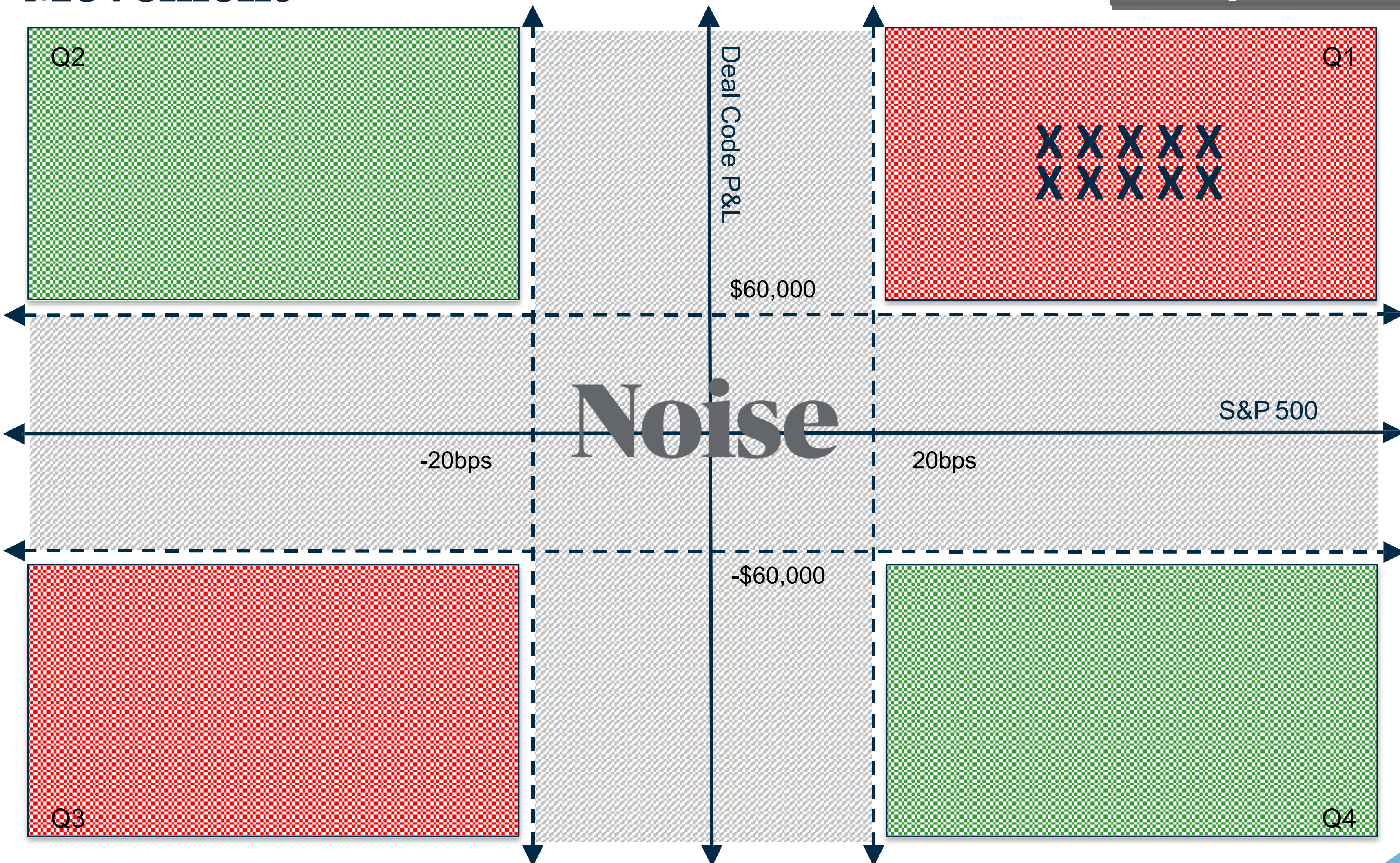
Diversification Through Monitoring Co-Movement



RMON is Designed to Pick Up Meaningful Relationships that Correlation Misses

Diversification Through Monitoring Co-Movement

* Each Time the S&P 500 Moved Up over 20 Basis Points, the Deal Code Made Money in an Economically Significant Fashion



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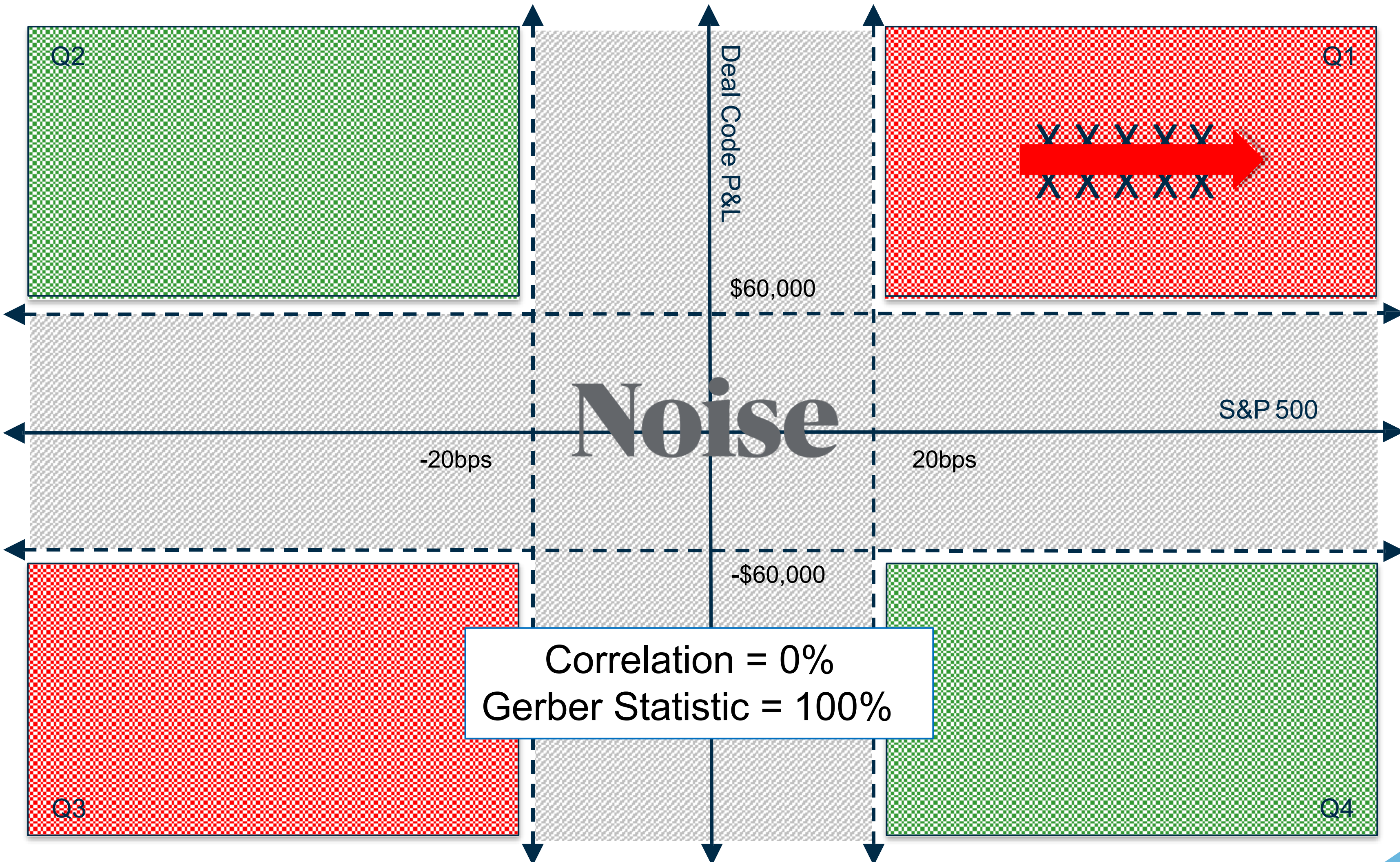
Diversification Through Monitoring Co-Movement



RMON is Designed to Pick Up Meaningful Relationships that Correlation Misses

HUDSON BAY CAPITAL

RMON Snapshot at Beginning of Covid-19 Pandemic

Peak to Trough Move of S&P500 ~12% (February 14 to February 28, 2020)

Deal Code Clusters | Deal Code History | Position Details

Summary Field: Deal Code

Traders: 11 selected

Min Gain/Loss: 60000

Index Gain/Loss: 0.2%

Periods: 10

Rolling: ☐

Days in Period: 1

Indices: 7 selected

Refresh

	10354 AXON #	Pct	10361 BGNE #	Pct	11183 ZLAB #	Pct	11663 CNK #	Pct	12237 CI #	Pct	12575 ATUS #	Pct	12592 GLPG #	Pct	12867 1801 HK #	Pct	12873 GLIBA #	Pct	13459 WAT #	Pct	13461 HCA #	Pct	13600 AM #	Pct	14289 WDAY #	Pct	14589 PEGI #	Pct
10354 - AXON	10	100%	10	-40%	10	40%	10	-20%	10	0%	10	20%	10	-40%	10	0%	10	60%	10	-20%	10	20%	10	20%	10	0%	10	-40%
10361 - BGNE	10	-40%	10	100%	10	20%	10	40%	10	-20%	10	40%	10	20%	10	-20%	10	0%	10	0%	10	-80%	10	40%	10	-20%	10	20%
11183 - ZLAB	10	40%	10	20%	10	100%	10	-40%	10	20%	10	40%	10	-20%	10	-20%	10	40%	10	-40%	10	0%	10	40%	10	-20%	10	-60%
11663 - CNK	10	-20%	10	40%	10	-40%	10	100%	10	-80%	10	20%	10	0%	10	40%	10	20%	10	60%	10	-60%	10	20%	10	0%	10	40%
12237 - CI	10	0%	10	-20%	10	20%	10	-80%	10	100%	10	0%	10	20%	10	-60%	10	-40%	10	-80%	10	40%	10	0%	10	20%	10	-20%
12575 - ATUS	10	20%	10	40%	10	40%	10	20%	10	0%	10	100%	10	-40%	10	-40%	10	20%	10	-20%	10	-60%	10	100%	10	0%	10	0%
12592 - GLPG	10	-40%	10	20%	10	-20%	10	0%	10	20%	10	-40%	10	100%	10	20%	10	0%	10	0%	10	0%	10	-40%	10	-20%	10	-20%
12867 - 1801 HK	10	0%	10	-20%	10	-20%	10	40%	10	-60%	10	-40%	10	20%	10	100%	10	40%	10	40%	10	0%	10	-40%	10	20%	10	-20%
12873 - GLIBA	10	60%	10	0%	10	40%	10	20%	10	-40%	10	20%	10	0%	10	40%	10	100%	10	20%	10	-20%	10	20%	10	-40%	10	-40%
13459 - WAT	10	-20%	10	0%	10	-40%	10	60%	10	-80%	10	-20%	10	0%	10	40%	10	20%	10	100%	10	-20%	10	-20%	10	-40%	10	40%
13461 - HCA	10	20%	10	-80%	10	0%	10	-60%	10	40%	10	-60%	10	0%	10	0%	10	-20%	10	-20%	10	100%	10	-60%	10	0%	10	-40%
13600 - AM	10	20%	10	40%	10	40%	10	20%	10	0%	10	100%	10	-40%	10	-40%	10	20%	10	-20%	10	-60%	10	100%	10	0%	10	0%
14289 - WDAY	10	0%	10	-20%	10	-20%	10	0%	10	20%	10	0%	10	-20%	10	20%	10	-40%	10	-40%	10	0%	10	0%	10	100%	10	20%
14589 - PEGI	10	-40%	10	20%	10	-60%	10	40%	10	-20%	10	0%	10	-20%	10	-20%	10	-40%	10	40%	10	-40%	10	0%	10	20%	10	100%
9783 - Buildin	10	60%	10	-40%	10	0%	10	-20%	10	0%	10	20%	10	-40%	10	-40%	10	20%	10	20%	10	20%	10	20%	10	-40%	10	0%
9876 - China H	10	20%	10	40%	10	40%	10	-20%	10	0%	10	-20%	10	0%	10	0%	10	20%	10	-20%	10	-20%	10	-20%	10	0%	10	0%
9910 - REITs	10	0%	10	20%	10	20%	10	0%	10	-20%	10	0%	10	20%	10	20%	10	0%	10	0%	10	0%	10	0%	10	-20%	10	-60%
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12459 - GDS	9	-33%	9	56%	9	-33%	9	56%	9	-33%	9	11%	9	56%	9	33%	9	11%	9	11%	9	-56%	9	11%	9	-11%	9	-11%
12587 - China H	9	11%	9	11%	9	-33%	9	11%	9	11%	9	-33%	9	56%	9	33%	9	11%	9	-33%	9	-11%	9	-33%	9	33%	9	-11%
14170 - IQV	9	56%	9	11%	9	56%	9	-33%	9	56%	9	56%	9	-33%	9	-56%	9	11%	9	-78%	9	-11%	9	56%	9	33%	9	-11%
8657 - TOWR IJ	9	11%	9	11%	9	-33%	9	11%	9	11%	9	-33%	9	56%	9	33%	9	11%	9	-33%	9	-11%	9	-33%	9	33%	9	-11%
EEM	9	56%	9	-33%	9	56%	9	11%	9	-33%	9	11%	9	-33%	9	33%	9	56%	9	11%	9	33%	9	11%	9	-11%	9	-56%
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14285 - HIIQ	9	-56%	9	33%	9	-33%	9	11%	9	-11%	9	11%	9	33%	9	11%	9	-11%	9	33%	9	-56%	9	11%	9	-11%	9	33%
14396 - A	9	33%	9	33%	9	56%	9	-33%	9	33%	9	11%	9	-11%	9	-33%	9	33%	9	-56%	9	-11%	9	11%	9	-11%	9	-11%
9021 - Airline	9	11%	9	-33%	9	-11%	9	-11%	9	11%	9	-56%	9	11%	9	33%	9	11%	9	-33%	9	56%	9	-56%	9	11%	9	-33%
9257 - LBRDA	9	11%	9	11%	9	-11%	9	33%	9	-33%	9	-11%	9	-33%	9	33%	9	11%	9	11%	9	-33%	9	-11%	9	56%	9	56%
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	9783 Buildin #	Pct	9876 China H #	Pct	9910 REITs #	Pct	IWM #	Pct	12459 GDS #	Pct	12587 China H #	Pct	14170 IQV #	Pct	8657 TOWR IJ #	Pct	EEM #	Pct	SPX #	Pct	11339 ESPR #	Pct	13885 Theater #	Pct	14285 HIIQ #	Pct
10354 - AXON	10	60%	10	20%	10	0%	10	80%	9	-33%	9	11%	9	56%	9	11%	9	56%	9	78%	9	-33%	9	11%	9	-56%
10361 - BGNE	10	-40%	10	40%	10	20%	10	-20%	9	56%	9	11%	9	11%	9	11%	9	-33%	9	-56%	9	11%	9	11%	9	33%
11183 - ZLAB	10	0%	10	40%	10	20%	10	60%	9	-33%	9	-33%	9	56%	9	-33%	9	56%	9	33%	9	-11%	9	-11%	9	-33%
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12237 - CI	10	0%	10	0%	10	-20%	10	20%	9	-33%	9	11%	9	56%	9	11%	9	-33%	9	-11%	9	11%	9	-78%	9	-11%
12575 - ATUS	10	20%	10	-20%	10	0%	10	0%	9	11%	9	-33%	9	56%	9	-33%	9	11%	9	-11%	9	33%	9	33%	9	11%
12592 - GLPG	10	-40%	10	0%	10	20%	10	-20%	9	56%	9	56%	9	-33%	9	56%	9	-33%	9	-56%	9	11%	9	-33%	9	33%
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13459 - WAT	10	20%	10	-20%	10	0%	10	-40%	9	11%	9	-33%	9	-78%	9	-33%	9	11%	9	-11%	9	11%	9	56%	9	33%
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9910 - REITs	10	0%	10	0%	10	100%	10	20%	9	56%	9	11%	9	-33%	9	11%	9	11%	9	-11%	9	33%	9	33%	9	11%
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EEM	9	11%	9	-11%	9	11%	9	56%	9	-33%	9	-33%	9	11%	9	-33%	9	100%	9	78%	8	-50%	8	50%	8	-75%
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14396 - A	9	-11%	9	78%	9	-33%	9	56%	8	-25%	8	25%	8	75%	8	25%	8	0%	8	25%	9	-56%	9	-56%	9	-33%
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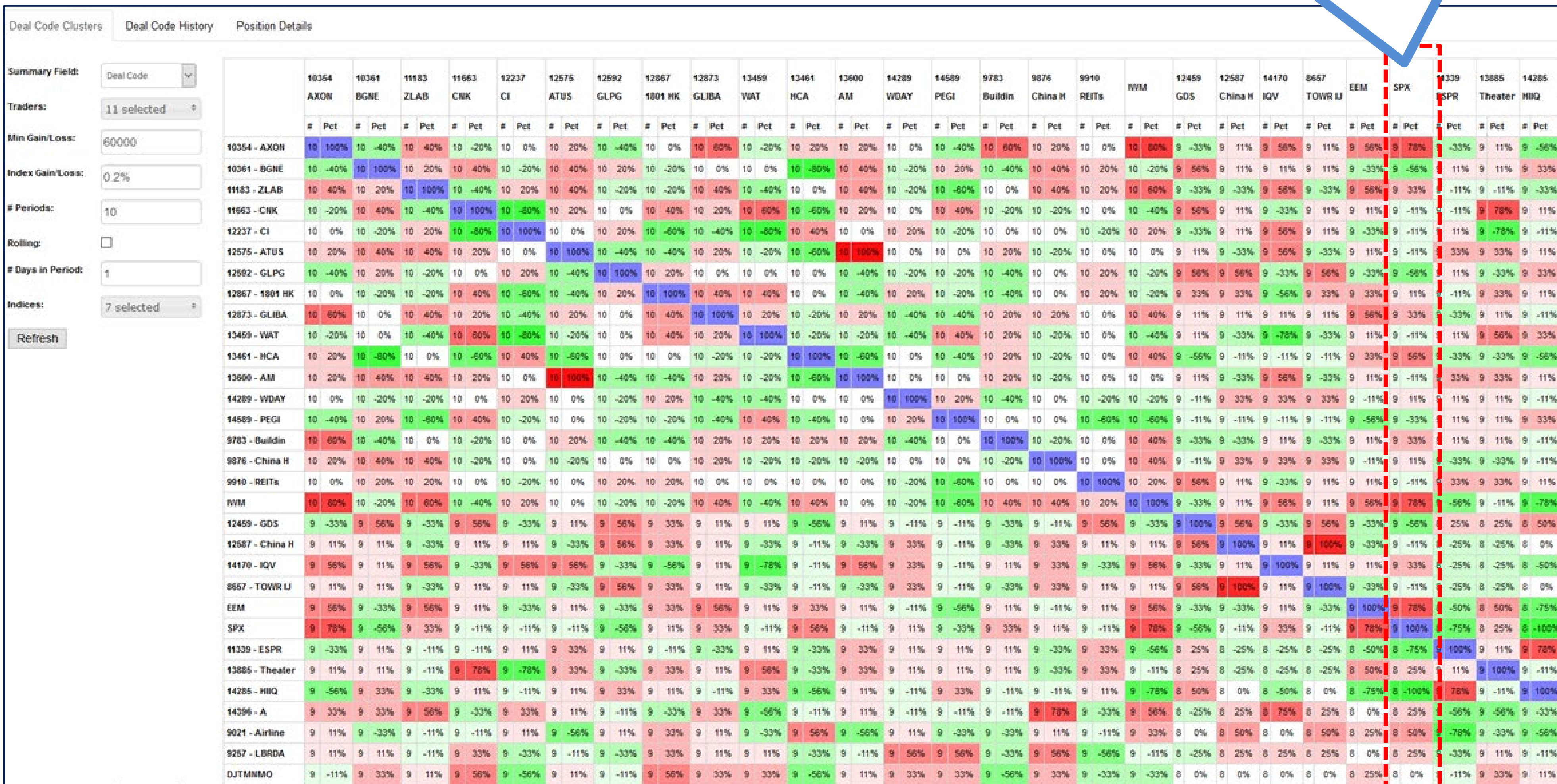
9257 - LBRDA	9	-33%	9	56%	9	-56%	9	-11%	8	-25%	8	25%	8	25%	8	25%	8	0%	8	25%	9	-33%	9	11%	9	-11%
DJTMNMO	9	-56%	9	33%	9	-33%	9	-33%	8	0%	8	0%	8	0%	8	0%	8	25%	8	0%	9	-11%	9	33%	9	11%

HUDSON BAY CAPITAL

RMON Snapshot at Beginning of Covid-19 Pandemic

Peak to Trough Move of S&P500 ~12% (February 14 to February 28, 2020)

SPX: Co-Movement shown mainly between index to index Minimal Co-Movement between Deal Codes and SPX



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HUDSON BAY CAPITAL

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Rolling:
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Indices: 7 selected
Refresh

	10354 AXON	10361 BGNE	11183 ZLAB	11663 CNK	12237 CI	12575 ATUS	12592 GLPG	12867 1801 HK	12873 GLIBA	13459 WAT	13461 HCA	13600 AM	14289 WDAY	14589 PEGI	9783 Buildin	9876 China H	9910 REITs	IWM	12459 GDS	12587 China H	14170 IQV	8657 TOWR IJ	EEM	SPX	11339 ESPR	13885 Theater	14285 HIIQ
	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct	# Pct
10354 - AXON	10 100%	10 -40%	10 40%	10 -20%	10 0%	10 20%	10 -40%	10 0%	10 60%	10 -20%	10 20%	10 20%	10 0%	10 -40%	10 60%	10 20%	10 0%	10 80%	9 -33%	9 11%	9 56%	9 11%	9 56%	9 78%	9 -33%	9 11%	9 -56%
10361 - BGNE	10 -40%	10 100%	10 20%	10 40%	10 -20%	10 40%	10 20%	10 -20%	10 0%	10 0%	10 -80%	10 40%	10 -20%	10 20%	10 -40%	10 40%	10 20%	10 -20%	9 56%	9 11%	9 11%	9 11%	9 -33%	9 -56%	9 11%	9 11%	9 33%
11183 - ZLAB	10 40%	10 20%	10 100%	10 -40%	10 20%	10 40%	10 -20%	10 -20%	10 40%	10 -40%	10 0%	10 40%	10 -20%	10 -60%	10 0%	10 40%	10 20%	10 60%	9 -33%	9 -33%	9 56%	9 -33%	9 56%	9 33%	9 -11%	9 -11%	9 -33%
11663 - CNK	10 -20%	10 40%	10 -40%	10 100%	10 -80%	10 20%	10 0%	10 40%	10 20%	10 60%	10 -60%	10 20%	10 0%	10 40%	10 -20%	10 -20%	10 0%	10 -40%	9 56%	9 11%	9 -33%	9 11%	9 11%	9 -11%	9 -11%	9 78%	9 11%
12237 - CI	10 0%	10 -20%	10 20%	10 -80%	10 100%	10 0%	10 20%	10 -60%	10 -40%	10 -80%	10 40%	10 0%	10 20%	10 -20%	10 0%	10 0%	10 -20%	10 20%	9 -33%	9 11%	9 56%	9 11%	9 -33%	9 -11%	9 11%	9 -78%	9 -11%
12575 - ATUS	10 20%	10 40%	10 40%	10 20%	10 0%	10 100%	10 -40%	10 -40%	10 20%	10 -20%	10 -60%	10 100%	10 0%	10 0%	10 20%	10 -20%	10 0%	10 0%	9 11%	9 -33%	9 56%	9 -33%	9 11%	9 -11%	9 33%	9 33%	9 11%
12592 - GLPG	10 -40%	10 20%	10 -20%	10 0%	10 20%	10 -40%	10 100%	10 20%	10 0%	10 0%	10 0%	10 -40%	10 -20%	10 -20%	10 -40%	10 0%	10 20%	10 -20%	9 56%	9 56%	9 -33%	9 56%	9 -33%	9 -56%	9 11%	9 -33%	9 33%
12867 - 1801 HK	10 0%	10 -20%	10 -20%	10 40%	10 -60%	10 -40%	10 20%	10 100%	10 40%	10 40%	10 0%	10 -40%	10 20%	10 -20%	10 -40%	10 0%	10 20%	10 -20%	9 33%	9 33%	9 -56%	9 33%	9 33%	9 11%	9 -11%	9 33%	9 11%
12873 - GLIBA	10 60%	10 0%	10 40%	10 20%	10 -40%	10 20%	10 0%	10 40%	10 100%	10 20%	10 -20%	10 20%	10 -40%	10 -40%	10 20%	10 20%	10 0%	10 40%	9 11%	9 11%	9 11%	9 11%	9 56%	9 33%	9 -33%	9 11%	9 -11%
13459 - WAT	10 -20%	10 0%	10 -40%	10 60%	10 -80%	10 -20%	10 0%	10 40%	10 20%	10 100%	10 -20%	10 -20%	10 -40%	10 40%	10 20%	10 -20%	10 0%	10 -40%	9 11%	9 -33%	9 -78%	9 -33%	9 11%	9 -11%	9 11%	9 56%	9 33%
13461 - HCA	10 20%	10 -80%	10 0%	10 -60%	10 40%	10 -60%	10 0%	10 0%	10 -20%	10 -20%	10 100%	10 -60%	10 0%	10 -40%	10 20%	10 -20%	10 0%	10 40%	9 -56%	9 -11%	9 -11%	9 -11%	9 33%	9 56%	9 -33%	9 -33%	9 -56%
13600 - AM	10 20%	10 40%	10 40%	10 20%	10 0%	10 100%	10 -40%	10 -40%	10 20%	10 -20%	10 -60%	10 100%	10 0%	10 0%	10 20%	10 -20%	10 0%	10 0%	9 11%	9 -33%	9 56%	9 -33%	9 11%	9 -11%	9 33%	9 33%	9 11%
14289 - WDAY	10 0%	10 -20%	10 -20%	10 0%	10 20%	10 0%	10 -20%	10 20%	10 -40%	10 -40%	10 0%	10 0%	10 100%	10 20%	10 -40%	10 0%	10 -20%	10 -20%	9 -11%	9 33%	9 33%	9 33%	9 -11%	9 11%	9 11%	9 11%	9 -11%
14589 - PEGI	10 -40%	10 20%	10 -60%	10 40%	10 -20%	10 0%	10 -20%	10 -20%	10 -40%	10 40%	10 -40%	10 0%	10 20%	10 100%	10 0%	10 0%	10 -60%	10 -60%	9 -11%	9 -11%	9 -11%	9 -11%	9 -56%	9 -33%	9 11%	9 11%	9 33%
9783 - Buildin	10 60%	10 -40%	10 0%	10 -20%	10 0%	10 20%	10 -40%	10 -40%	10 20%	10 20%	10 20%	10 20%	10 -40%	10 0%	10 100%	10 -20%	10 0%	10 40%	9 -33%	9 -33%	9 11%	9 -33%	9 11%	9 33%	9 11%	9 11%	9 -11%
9876 - China H	10 20%	10 40%	10 40%	10 -20%	10 0%	10 -20%	10 0%	10 0%	10 20%	10 -20%	10 -20%	10 -20%	10 0%	10 0%	10 -20%	10 100%	10 0%	10 40%	9 -11%	9 33%	9 33%	9 33%	9 -11%	9 11%	9 -33%	9 -33%	9 -11%
9910 - REITs	10 0%	10 20%	10 20%	10 0%	10 -20%	10 0%	10 20%	10 20%	10 0%	10 0%	10 0%	10 0%	10 -20%	10 -60%	10 0%	10 0%	10 100%	10 20%	9 56%	9 11%	9 -33%	9 11%	9 11%	9 -11%	9 33%	9 33%	9 11%
IWM	10 80%	10 -20%	10 60%	10 -40%	10 20%	10 0%	10 -20%	10 -20%	10 40%	10 -40%	10 40%	10 0%	10 -20%	10 -60%	10 40%	10 40%	10 20%	10 100%	9 -33%	9 11%	9 56%	9 11%	9 56%	9 78%	9 -56%	9 -11%	9 -78%
12459 - GDS	9 -33%	9 56%	9 -33%	9 56%	9 -33%	9 11%	9 56%	9 33%	9 11%	9 11%	9 -56%	9 11%	9 -11%	9 -11%	9 -33%	9 -11%	9 56%	9 -33%	9 100%	9 56%	9 -33%	9 56%	9 -33%	9 -56%	8 25%	8 25%	8 50%
12587 - China H	9 11%	9 11%	9 -33%	9 11%	9 11%	9 -33%	9 56%	9 33%	9 11%	9 -33%	9 -11%	9 -33%	9 33%	9 -11%	9 -33%	9 33%	9 11%	9 11%	9 56%	9 100%	9 11%	9 100%	9 -33%	9 -11%	8 -25%	8 -25%	8 0%
14170 - IQV	9 56%	9 11%	9 56%	9 -33%	9 56%	9 56%	9 -33%	9 -56%	9 11%	9 -78%	9 -11%	9 56%	9 33%	9 -11%	9 11%	9 33%	9 -33%	9 56%	9 -33%	9 11%	9 100%	9 11%	9 11%	9 33%	8 -25%	8 -25%	8 -50%
8657 - TOWR IJ	9 11%	9 11%	9 -33%	9 11%	9 11%	9 -33%	9 56%	9 33%	9 11%	9 -33%	9 -11%	9 -33%	9 33%	9 -11%	9 -33%	9 33%	9 11%	9 11%	9 56%	9 100%	9 11%	9 100%	9 -33%	9 -11%	8 -25%	8 -25%	8 0%
EEM	9 56%	9 -33%	9 56%	9 11%	9 -33%	9 11%	9 -33%	9 33%	9 56%	9 11%	9 33%	9 11%	9 -11%	9 -56%	9 11%	9 -11%	9 11%	9 56%	9 -33%	9 -33%	9 11%	9 -33%	9 100%	9 78%	8 -50%	8 50%	8 -75%
SPX	9 78%	9 -56%	9 33%	9 -11%	9 -11%	9 -11%	9 -56%	9 11%	9 33%	9 -11%	9 56%	9 -11%	9 11%	9 -33%	9 33%	9 11%	9 -11%	9 78%	9 -56%	9 -11%	9 33%	9 -11%	9 78%	9 100%	8 -75%	8 25%	8 -100%
11339 - ESPR	9 -33%	9 11%	9 -11%	9 -11%	9 11%	9 33%	9 11%	9 -11%	9 -33%	9 11%	9 -33%	9 33%	9 11%	9 11%	9 11%	9 -33%	9 33%	9 -56%	8 25%	8 -25%	8 -25%	8 -25%	8 -50%	8 -75%	9 100%	9 11%	9 78%
13885 - Theater	9 11%	9 11%	9 -11%	9 78%	9 -78%	9 33%	9 -33%	9 33%	9 11%	9 56%	9 -33%	9 33%	9 11%	9 11%	9 11%	9 -33%	9 33%	9 -11%	8 25%	8 -25%	8 -25%	8 -25%	8 50%	[illegible]	9 11%	9 100%	9 -11%
14285 - HIIQ	9 -56%	9 33%	9 -33%	9 11%	9 -11%	9 11%	9 33%	9 11%	9 -11%	9 33%	9 -56%	9 11%	9 -11%	9 33%	9 -11%	9 -11%	9 11%	9 -78%	8 50%	8 0%	8 -50%	8 0%	8 [illegible]	8 -100%	9 78%	9 -11%	9 100%
14396 - A	9 33%	9 33%	9 56%	9 -33%	9 33%	9 11%	9 -11%	9 -33%	9 33%	9 -56%	9 -11%	9 11%	9 -11%	9 -11%	9 -11%	9 78%	9 -33%	9 56%	8 -25%	8 25%	8 75%	8 25%	[illegible]	[illegible]	[illegible] -56%	9 -56%	9 -33%
9021 - Airline	9 11%	9 -33%	9 -11%	9 -11%	9 11%	9 -56%	9 11%	9 33%	9 11%	9 -33%	9 56%	9 -56%	9 11%	9 -33%	9 -33%	9 11%	9 -11%	9 33%	8 0%	8 50%	8 0%	8 [illegible]	[illegible] 25%	8 50%	9 -78%	9 -33%	9 -56%
9257 - LBRDA	9 11%	9 11%	9 -11%	9 33%	9 -33%	9 -11%	9 -33%	9 33%	9 11%	9 11%	9 -33%	9 -11%	9 56%	9 56%	9 -33%	9 56%	9 -56%	9 -11%	8 -25%	8 25%	8 [illegible]	[illegible]	8 0%	8 25%	9 -33%	9 11%	9 -11%
DJTMNMO	9 -11%	9 33%	9 11%	9 56%	9 -56%	9 11%	9 -11%	9 56%	9 33%	9 33%	9 -56%	9 11%	9 33%	9 33%	9 -56%	9 33%	9 -33%	9 -33%	8 0%	8 [illegible]	[illegible]	[illegible] 0%	8 25%	8 0%	9 -11%	9 33%	9 11%

Investigative Case

HUDSON BAY CAPITAL

RMON Snapshot Historical Lookback

Peak to Trough Move of S&P500 ~12% (February 14 to February 28, 2020)

Deal Code Clusters | Deal Code History | Position Details

Summary Field: Deal Code

Traders: 2 selected

Deal Codes: 1 selected

Start Date: 02/14/2020

End Date: 02/28/2020

Rolling: ☐

Days in Period: 1

Indices: 1 selected

Refresh

Period	Start Date	End Date	What If: Index: Position ($MV): $500,000 Go 14285 HIIQ PnL	SPX PnL
10	02/14/2020	02/14/2020	$253,959.48	0.18%
9	02/18/2020	02/18/2020	$125,335.72	-0.29%
8	02/19/2020	02/19/2020	$1,309.30	0.47%
7	02/20/2020	02/20/2020	$63,468.20	-0.38%
6	02/21/2020	02/21/2020	$294,461.78	-1.05%
5	02/24/2020	02/24/2020	$150,283.63	-3.35%
4	02/25/2020	02/25/2020	$477,237.34	-3.03%
3	02/26/2020	02/26/2020	$512,910.75	-0.38%
2	02/27/2020	02/27/2020	$164,574.55	-4.42%
1	02/28/2020	02/28/2020	$137,464.58	-0.82%

HUDSON BAY CAPITAL

RMON Snapshot at Position Level Detail

Peak to Trough Move of S&P500 ~12% (February 14 to February 28, 2020)

Date: 02/28/2020

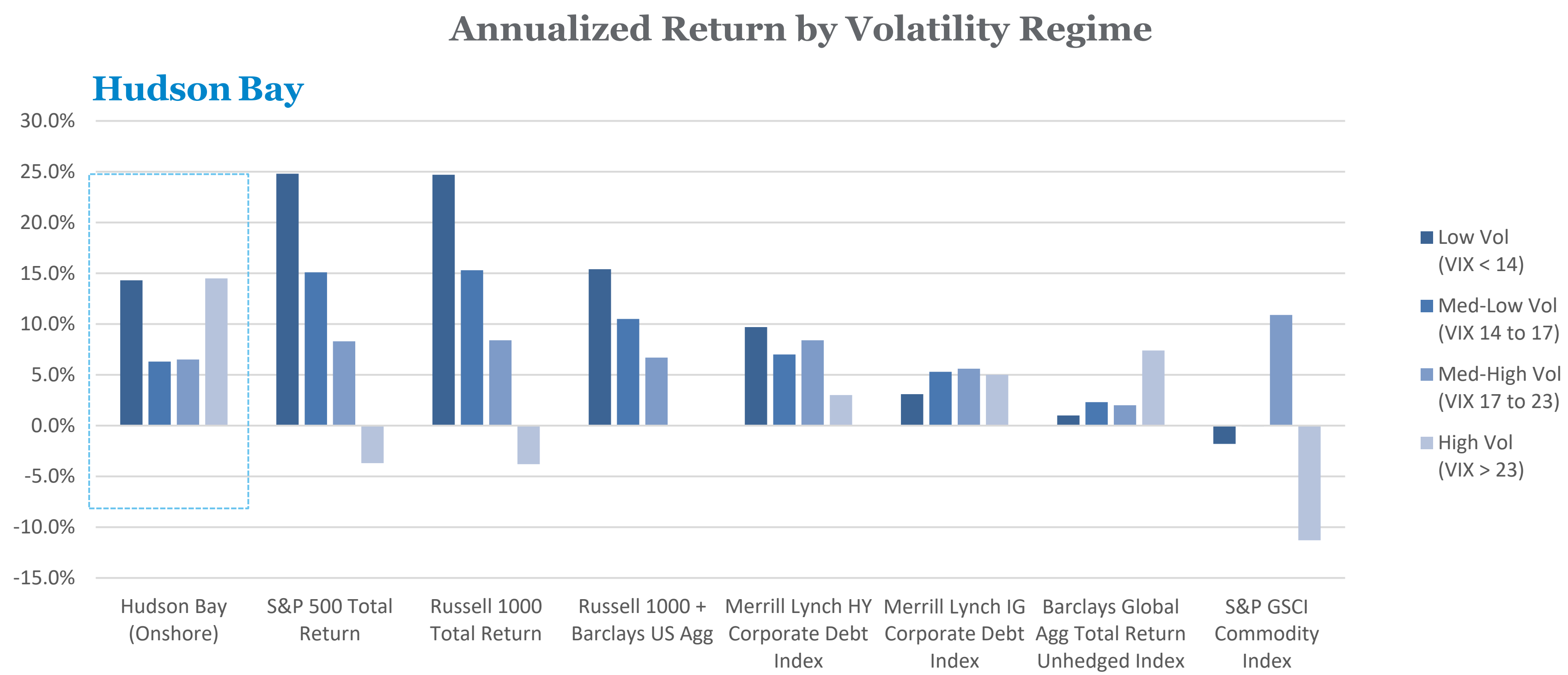
Traders: 2 selected

Deal Codes: 1 selected

Refresh

Description	Ticker	Quantity	Price	Net Exposure (ex-Sov)	DailyPL	MtdPL	YtdPL	Long Exposure (ex-Sov)	Short Exposure (ex-Sov)	Net Sov Exposure	Total Exposure	CCY
14285 - HIIQ				($363,752.10)	$137,464.58	$3,996,739.72	$6,129,140.22	$9,705,300.01	($10,069,052.11)	$0.00	($363,752.10)	
Kossove				$783,717.33	$66,292.52	$1,464,623.33	$2,102,973.28	$3,823,300.00	($3,039,582.67)	$0.00	$783,717.33	
Benefytt Technologies Inc				$3,823,300.00	($31,724.92)	$925,658.91	$1,501,408.54	$3,823,300.00	$0.00	$0.00	$3,823,300.00	
Equities				$3,823,300.00	($31,724.92)	$925,658.91	$1,501,408.54	$3,823,300.00	$0.00	$0.00	$3,823,300.00	
BENEFYTT TECHNOLOGIES INC	BFYT	130,000	29.4100	$3,823,300.00	($31,724.92)	$925,658.91	$1,501,408.54	$3,823,300.00	$0.00	$0.00	$3,823,300.00	USD
Financial Select Sector SPDR Fund				($3,039,582.67)	$98,017.44	$538,964.42	$601,564.74	$0.00	($3,039,582.67)	$0.00	($3,039,582.67)	
Equities				($3,039,582.67)	$98,017.44	$538,964.42	$601,564.74	$0.00	($3,039,582.67)	$0.00	($3,039,582.67)	
FINANCIAL SELECT SECTOR SPDR	XLF	-114,313	26.5900	($3,039,582.67)	$98,017.44	$538,964.42	$601,564.74	$0.00	($3,039,582.67)	$0.00	($3,039,582.67)	USD
Sterling				($1,147,469.43)	$71,384.81	$2,537,190.11	$4,033,327.11	$5,882,000.01	($7,029,469.44)	$0.00	($1,147,469.43)	
Benefytt Technologies Inc				$5,882,000.01	($32,436.82)	$2,030,320.56	$3,125,487.33	$5,882,000.01	$0.00	$0.00	$5,882,000.01	
Equities				$5,882,000.01	($32,436.82)	$2,030,320.56	$3,125,487.33	$5,882,000.01	$0.00	$0.00	$5,882,000.01	
BENEFYTT TECHNOLOGIES INC	BFYT	200,000	29.4100	$5,882,000.01	($32,436.82)	$2,030,320.56	$3,125,487.33	$5,882,000.01	$0.00	$0.00	$5,882,000.01	USD
Health Care Select Sector SPDR Fund				($7,029,469.44)	$103,821.63	$506,869.55	$907,839.78	$0.00	($7,029,469.44)	$0.00	($7,029,469.44)	
Equities				($7,029,469.44)	$103,821.63	$506,869.55	$907,839.78	$0.00	($7,029,469.44)	$0.00	($7,029,469.44)	
HEALTH CARE SELECT SECTOR	XLV	-75,904	92.6100	($7,029,469.44)	$103,821.63	$506,869.55	$907,839.78	$0.00	($7,029,469.44)	$0.00	($7,029,469.44)	USD

Absolute Return During Varying Vol Regimes Since Inception



Returns are for Hudson Bay Fund LP. This slide is updated through the date of this presentation.

See the paragraphs titled, "Fund Performance Figures" and "Information Concerning Comparative Indices" in the Assumptions and Additional Disclosures at the end of this presentation for important information concerning calculation of the Fund performance and the selection of the above referenced indices for inclusion in this slide. See also Disclosure 4.

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Stability of Return and Sharpe Across Various Volatility Regimes

HBC vs HF Universe vs VIX / VVIX / Chg in VIX		Hudson Bay Capital Onshore		Hedge Fund Research Global Index ("HFRXGL")		Hedge Fund Research Aggregate Index ("HFRXAGGR")		Hedge Fund Research Equity Hedge Index ("HFRXEH")		Hedge Fund Research Macro/CTA Index ("HFRXM")		Hedge Fund Research Event Driven Index ("HFRXED")		Hedge Fund Research Relative Value Multi-Strategy ("HFRXRVMS")		Hedge Fund Research Fixed Income Credit Index ("HFRXFIC")	
Market Environment	**Avg Abs Vol Chg**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**
Q1: Low Vol	<= 0.6	14.5%	1.8	10.9%	3.6	12.4%	4.3	15.0%	3.4	6.7%	1.1	13.6%	3.3	8.2%	3.0	10.1%	3.5
Q2: Medium/Low Vol	0.6 to 0.9	10.8%	2.9	6.6%	1.9	7.8%	2.2	8.2%	1.5	-0.9%	-0.3	8.4%	1.8	8.1%	1.6	10.4%	2.6
Q3: Medium/ High Vol	0.9 to 1.4	7.4%	1.6	1.3%	0.0	4.2%	0.7	0.6%	-0.1	2.6%	0.2	0.2%	-0.2	5.2%	1.0	5.1%	1.0
Q4: High Vol	> 1.4	**8.9%**	**1.3**	**-13.5%**	**-1.8**	**-8.3%**	**-1.1**	**-17.1%**	**-1.7**	**-6.7%**	**-1.1**	**-14.0%**	**-1.7**	**-6.0%**	**-0.8**	**-7.3%**	**-1.0**
Market Environment	**Max Chg in VIX**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**
Q1: Low Vol	<= 1.6	14.3%	1.8	11.7%	4.7	12.9%	5.4	16.8%	4.5	5.0%	0.9	14.7%	3.7	8.4%	2.7	10.4%	3.8
Q2: Medium/Low Vol	1.6 to 2.8	8.4%	1.8	5.0%	1.1	8.4%	1.8	7.1%	1.1	0.8%	0.0	6.1%	1.2	6.7%	1.2	8.0%	1.7
Q3: Medium/ High Vol	2.8 to 4.5	9.2%	1.8	-1.0%	-0.4	1.2%	0.0	-2.2%	-0.5	3.3%	0.3	-3.6%	-0.8	3.2%	0.4	1.9%	0.2
Q4: High Vol	> 4.5	9.7%	1.7	-10.5%	-1.4	-6.4%	-1.0	-15.1%	-1.6	-7.4%	-1.2	-9.0%	-1.2	-2.9%	-0.5	-2.0%	-0.3
Market Environment	**Level of VIX**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**
Q1: Low Vol	< 14	14.3%	1.8	9.0%	2.8	10.1%	3.1	11.4%	2.6	7.2%	1.1	11.1%	2.3	6.3%	2.5	8.1%	2.7
Q2: Medium/Low Vol	14 to 17	6.3%	1.9	2.1%	0.4	4.5%	1.3	2.8%	0.4	-4.0%	-1.2	4.9%	0.9	2.2%	0.4	4.8%	1.4
Q3: Medium/ High Vol	17 to 23	6.5%	1.3	0.9%	0.0	4.3%	0.8	1.6%	0.1	1.1%	0.1	-2.7%	-0.5	4.8%	1.0	3.3%	0.6
Q4: High Vol	> 23	14.5%	2.3	-6.7%	-0.8	-2.8%	-0.4	-9.2%	-0.8	-2.6%	-0.4	-5.2%	-0.7	2.1%	0.2	2.1%	0.2

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HUDSON BAY CAPITAL

Stability of Return and Sharpe Across Various Volatility Regimes

HBC vs HF Universe vs VIX / VVIX / Chg in VIX		Hudson Bay Capital Onshore		S&P 500 Total Return		Russell 1000 Total Return		60/40 Russell 1000 + Barclays US Agg		Merrill Lynch HY Corporate Debt Index		Merrill Lynch IG Corporate Debt Index		Barclays Global Agg Total Return Unhedged Index		S&P GSCI Commodity Index	
Market Environment	**Avg Abs Vol Chg**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**
Q1: Low Vol	<= 0.6	14.5%	1.8	31.7%	4.6	32.1%	4.6	19.7%	4.3	13.1%	4.0	4.1%	0.7	2.8%	0.3	6.5%	0.3
Q2: Medium/Low Vol	0.6 to 0.9	10.8%	2.9	27.9%	2.7	28.5%	2.8	18.9%	3.1	16.3%	2.8	8.5%	2.0	2.4%	0.4	17.1%	1.0
Q3: Medium/ High Vol	0.9 to 1.4	7.4%	1.6	5.8%	0.4	6.1%	0.4	5.5%	0.5	5.0%	0.6	6.2%	1.1	5.7%	0.9	6.5%	0.2
Q4: High Vol	> 1.4	**8.9%**	**1.3**	**-21.1%**	**-1.0**	**-22.1%**	**-1.0**	**-11.4%**	**-0.9**	**-6.5%**	**-0.4**	**0.4%**	**0.0**	**1.8%**	**0.2**	**-32.4%**	**-1.0**
Market Environment	**Max Chg in VIX**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**
Q1: Low Vol	<= 1.6	14.3%	1.8	36.3%	5.0	37.0%	5.1	22.9%	4.9	15.9%	3.9	5.1%	1.2	3.3%	0.5	14.0%	0.7
Q2: Medium/Low Vol	1.6 to 2.8	8.4%	1.8	27.3%	2.5	27.2%	2.5	16.9%	2.4	13.0%	1.9	5.8%	1.0	0.8%	0.0	14.8%	0.7
Q3: Medium/ High Vol	2.8 to 4.5	9.2%	1.8	4.4%	0.3	4.2%	0.2	4.4%	0.4	2.4%	0.2	4.7%	0.7	3.6%	0.6	1.4%	0.0
Q4: High Vol	> 4.5	9.7%	1.7	-23.6%	-1.2	-23.7%	-1.2	-11.6%	-0.9	-3.5%	-0.3	3.6%	0.3	5.0%	0.7	-32.7%	-1.1
Market Environment	**Level of VIX**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**	**Ret**	**Sharpe**
Q1: Low Vol	< 14	14.3%	1.8	24.8%	4.0	24.7%	4.0	15.4%	3.8	9.7%	2.7	3.1%	0.4	1.0%	-0.2	-1.8%	-0.2
Q2: Medium/Low Vol	14 to 17	6.3%	1.9	15.1%	1.4	15.3%	1.4	10.5%	1.5	7.0%	1.1	5.3%	1.1	2.3%	0.3	-0.1%	-0.1
Q3: Medium/ High Vol	17 to 23	6.5%	1.3	8.3%	0.5	8.4%	0.6	6.7%	0.7	8.4%	1.4	5.6%	1.2	2.0%	0.3	10.9%	0.5
Q4: High Vol	> 23	14.5%	2.3	-3.7%	-0.2	-3.8%	-0.2	0.0%	0.0	3.0%	0.2	5.0%	0.5	7.4%	1.0	-11.3%	-0.3

Returns are for Hudson Bay Fund LP. This slide is updated through the date of this presentation.

See the paragraphs titled, “Fund Performance Figures” and “Information Concerning Comparative Indices” in the Assumptions and Additional Disclosures at the end of this presentation for important information concerning calculation of the Fund performance and the selection of the above referenced indices for inclusion in this slide. See also Disclosure 4.

The referenced indices are shown for illustrative purposes only, and may have material inherent limitations when used in comparison to the returns of actively managed investment products such as Hudson Bay Fund LP because they may have volatility, credit and other material characteristics that are fundamentally different than those of the managed product; may not reflect any management fees; assume reinvestment of income and may not utilize investment techniques such as short sales or hedging. It is not possible to invest directly in these indices.

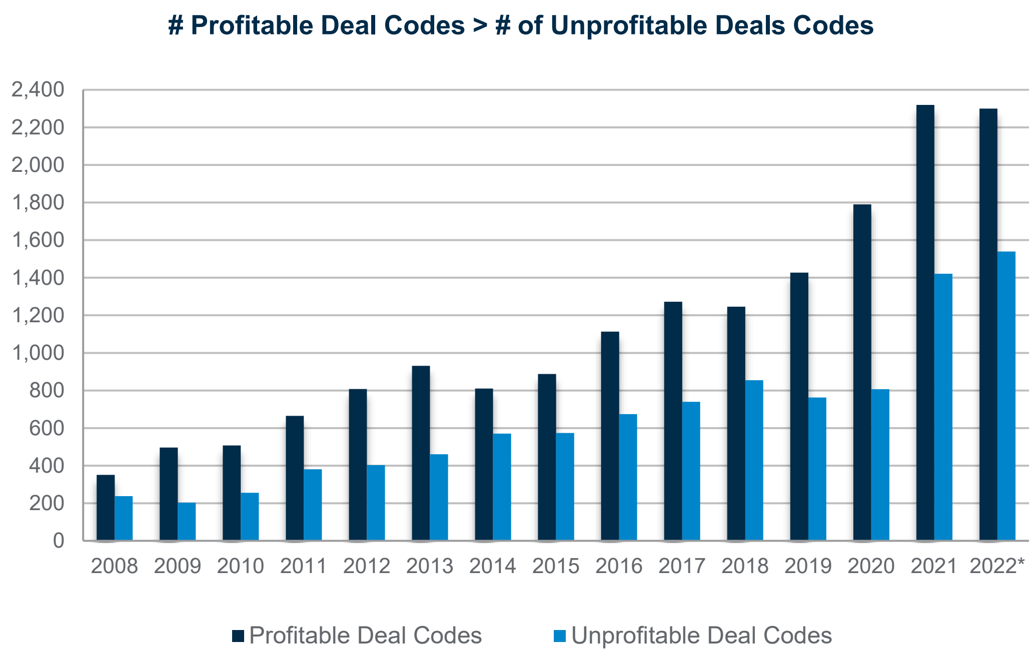
THE ACCOMPANYING “ASSUMPTIONS AND ADDITIONAL DISCLOSURES” ARE AN INTEGRAL COMPONENT OF THIS SLIDE AND SHOULD BE READ IN CONJUNCTION HEREWITH.

HUDSON BAY CAPITAL

Deal Code Win/Loss Ratio

The Deal Codes provide a framework by which we seek to evaluate the performance of each position, strategy and Portfolio Manager

Bi-Vector Evaluation Analysis



*Rolling 12 months through March 31, 2022. Prior to 2022, data is shown for Hudson Bay Master Fund Ltd. and Hudson Bay Fund LP; Beginning in 2022, data is shown for Hudson Bay Master Fund Ltd. and direct investments held by Hudson Bay Fund LP and/or Hudson Bay International Fund Ltd. are not included. See "General Disclosures" in the attached Appendix.

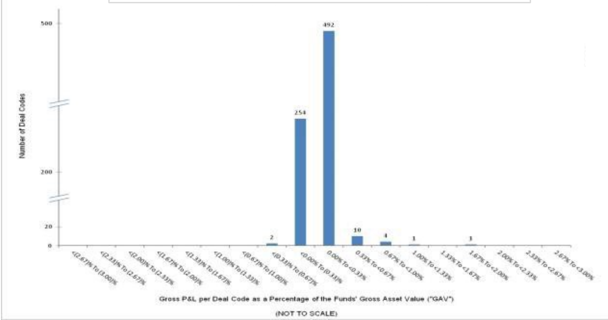
THE ACCOMPANYING "ASSUMPTIONS AND ADDITIONAL DISCLOSURES" (INCLUDING DISCLOSURE 5) ARE AN INTEGRAL COMPONENT OF THIS SLIDE AND SHOULD BE READ IN CONJUNCTION HEREWITH.

Past performance is not necessarily indicative of future performance.

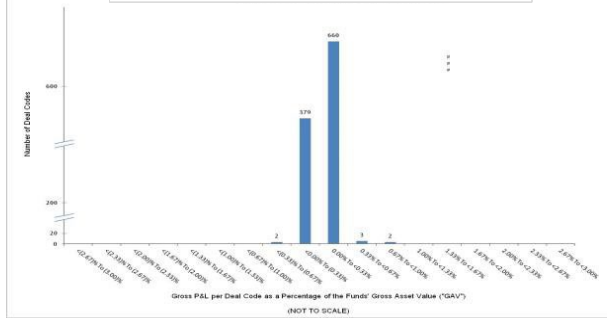
HUDSON BAY CAPITAL

Historic Deal Code Histograms

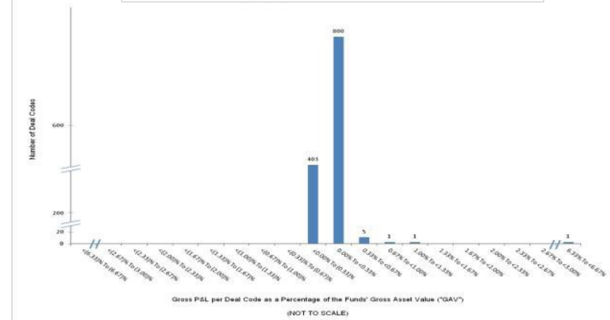
Deal Code Histogram for December 31, 2010



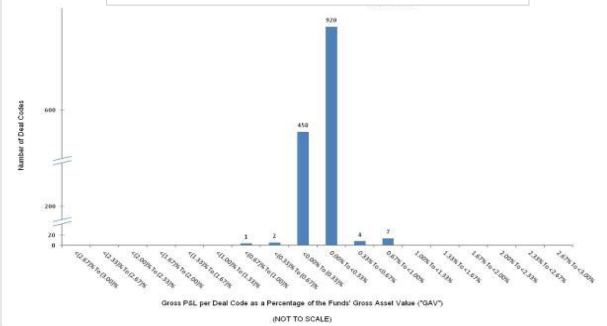
Deal Code Histogram for December 31, 2011



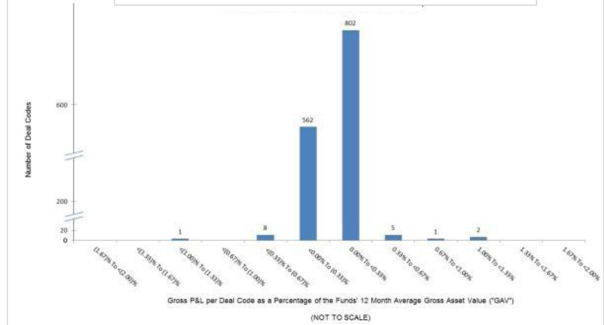
Deal Code Histogram for December 31, 2012



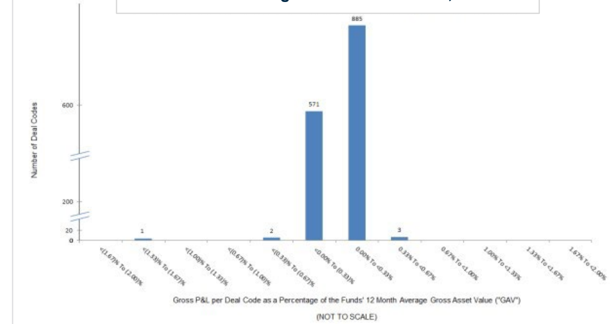
Deal Code Histogram for December 31, 2013



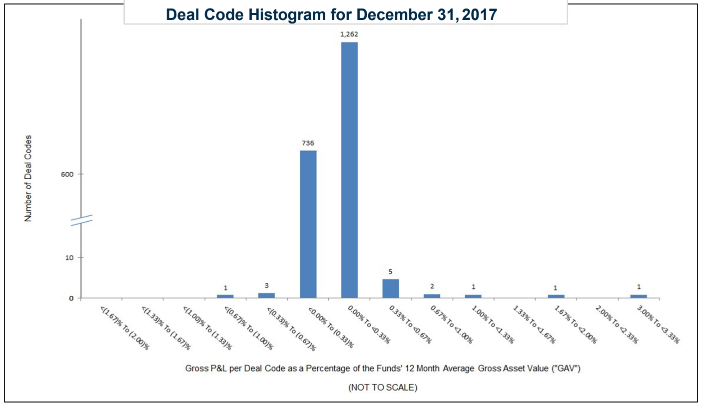
Deal Code Histogram for December 31, 2014



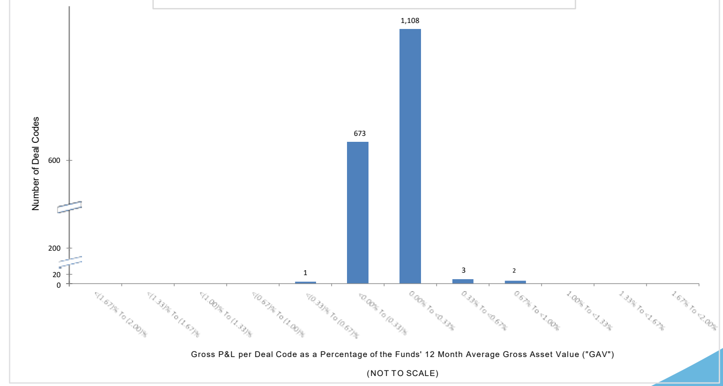
Deal Code Histogram for December 31, 2015



Deal Code Histogram for December 31, 2017



Deal Code Histogram for December 31, 2016



The Distribution of Deal Code P&L reflected above is based on trades of both the Master and onshore funds; trades by the onshore funds are not directly applicable to investors in the offshore fund.

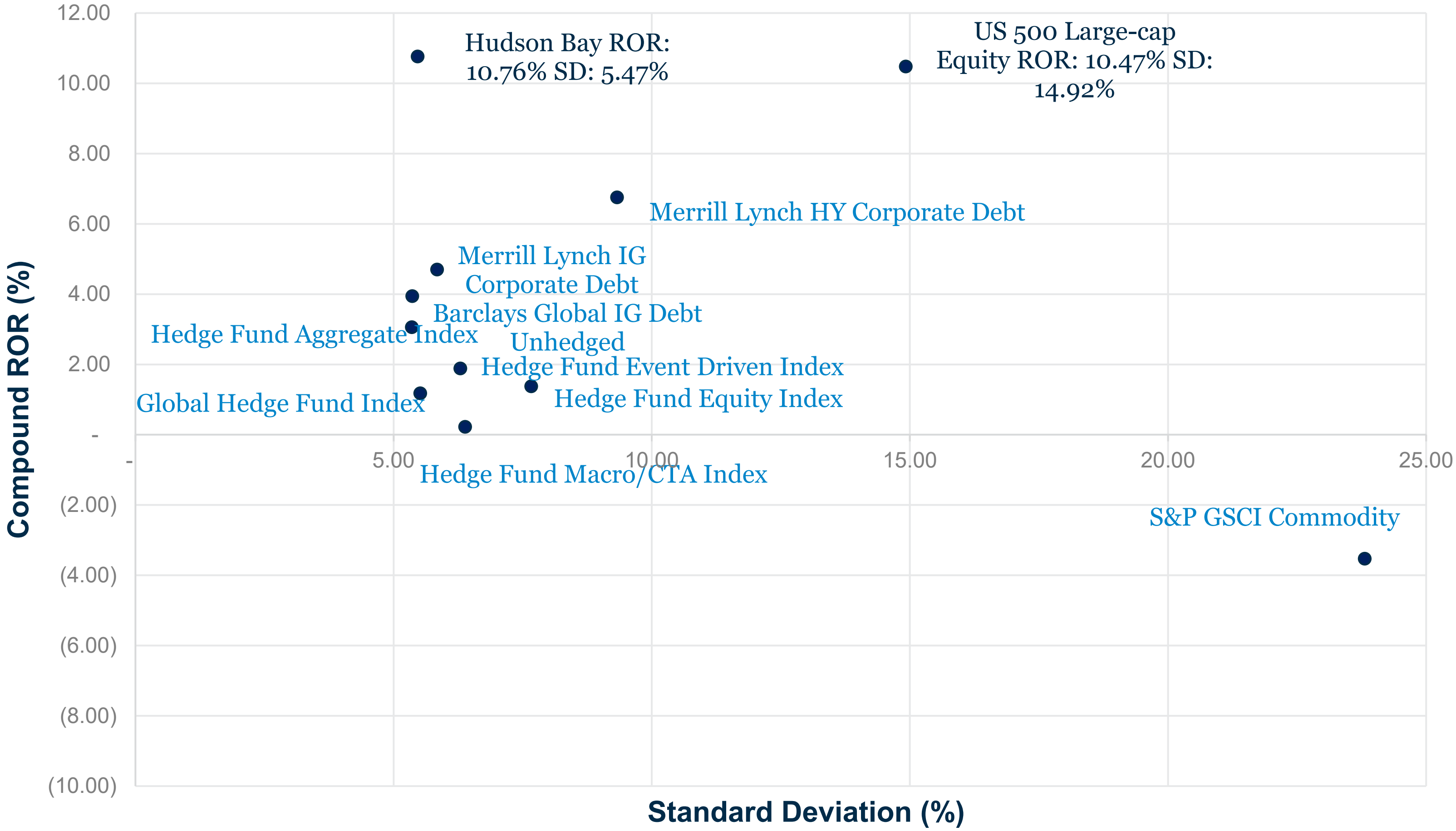
THE ACCOMPANYING "ASSUMPTIONS AND ADDITIONAL DISCLOSURES" (INCLUDING DISCLOSURE 2) ARE AN INTEGRAL COMPONENT OF THIS SLIDE AND SHOULD BE READ IN CONJUNCTION HEREWITH.

Past performance is not necessarily indicative of future performance.

HUDSON BAY CAPITAL

Risk Mitigation

Hudson Bay Outperforms with less volatility



The above chart plots the net annualized compound rate of return for Hudson Bay Fund LP and the referenced indices (vertical axis) against these entities' volatility (horizontal axis) for the period January 2006 (Hudson Bay Fund LP's date of inception) through the date of this presentation. Volatility was calculated by annualizing monthly return volatility, based on data reported by Bloomberg (for all entities except Hudson Bay Fund LP).

See the paragraphs titled, "Fund Performance Figures" and "Information Concerning Comparative Indices" in the Assumptions and Additional Disclosures at the end of this presentation for important information concerning calculation of the Fund performance and the selection of the above referenced indices for inclusion in this slide.

The referenced indices are shown for illustrative purposes only, and may have material inherent limitations when used in comparison to the returns of actively managed investment products such as Hudson Bay Fund LP, because they may have volatility, credit and other material characteristics that are fundamentally different than those of the managed product; may not reflect any management fees; assume reinvestment of income and may not utilize investment techniques such as short sales or hedging. It is not possible to invest directly in these indices.

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HUDSON BAY CAPITAL

Proven Diversifier

Generating Uncorrelated Returns

Hudson Bay	Correlation to the S&P500: **0.04**
	Beta to the S&P500: **0.01**

Correlations		Hudson Bay	Hedge Fund Aggregate	Hedge Fund Event Driven	Hedge Fund Equity	Hedge Fund Fixed Income Credit	Global Hedge Fund	Hedge Fund Macro/CTA	US Large-cap Equity	CBOE SPX Volatility Index	Merrill Lynch HY Corporate Debt	Merrill Lynch IG Corporate Debt	Barclay Global IG Debt
			Hedge Fund						Equity & Equity Vol		Credit		Fixed Income
	Hudson Bay	1.00	0.23	0.25	0.19	0.33	0.24	0.06	0.04	(0.07)	0.16	0.08	0.03
Hedge Fund	Hedge Fund Aggregate	0.23	1.00	0.84	0.92	0.82	0.94	0.38	0.77	(0.54)	0.75	0.47	0.29
	Hedge Fund Event Driven	0.25	0.84	1.00	0.80	0.79	0.90	0.21	0.70	(0.50)	0.70	0.41	0.22
	Hedge Fund Equity	0.19	0.92	0.80	1.00	0.74	0.94	0.31	0.82	(0.60)	0.70	0.41	0.22
	Hedge Fund Fixed Income Credit	0.33	0.82	0.79	0.74	1.00	0.84	0.15	0.65	(0.39)	0.83	0.53	0.28
	Global Hedge Fund	0.24	0.94	0.90	0.94	0.84	1.00	0.41	0.77	(0.54)	0.76	0.48	0.26
	Hedge Fund Macro/CTA	0.06	0.38	0.21	0.31	0.15	0.41	1.00	0.14	(0.20)	0.08	0.14	0.17
Equity & Equity Vol	US Large-cap Equity	0.04	0.77	0.70	0.82	0.65	0.77	0.14	1.00	(0.70)	0.73	0.40	0.28
	CBOE SPX Volatility Index	(0.07)	(0.54)	(0.50)	(0.60)	(0.39)	(0.54)	(0.20)	(0.70)	1.00	(0.49)	(0.30)	(0.18)
Credit	Merrill Lynch HY Corporate Debt	0.16	0.75	0.70	0.70	0.83	0.76	0.08	0.73	(0.49)	1.00	0.67	0.40
	Merrill Lynch IG Corporate Debt	0.08	0.47	0.41	0.41	0.53	0.48	0.14	0.40	(0.30)	0.67	1.00	0.70
Fixed Income	Barclay Global IG Debt	0.03	0.29	0.22	0.22	0.28	0.26	0.17	0.28	(0.18)	0.40	0.70	1.00

The above chart plots the correlation of the net returns of Hudson Bay Fund LP and the returns of the various referenced indices against one another for the period January 2006 (Hudson Bay Fund LP's date of inception) through the date of this presentation. Performance data for the indices is based on data reported by Bloomberg. The performance data has been normalized to a beginning figure of 100 as reflected on the Y axis.

See the paragraphs titled, "Fund Performance Figures" and "Information Concerning Comparative Indices" in the Assumptions and Additional Disclosures at the end of this presentation for important information concerning calculation of the Fund performance and the selection of the above referenced indices for inclusion in this slide.

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HUDSON BAY CAPITAL

Time-Tested Team, Market-Tested System

General Disclosures

The information provided in this presentation (the "Information") is current as of March 31, 2022, unless otherwise noted.

This presentation is provided for informational purposes only. It does not purport to be complete and may not contain certain material information (including, without limitation, important disclosures and risk factors associated with an investment in a fund managed by Hudson Bay Capital Management LP ("Hudson Bay") (each a "Fund" and collectively the "Funds")). The Information is not intended to be, nor should it be construed or used as, financial, legal, tax, investment or other advice. The Information set forth herein is superseded in its entirety by the applicable Confidential Private Placement Memorandum. Investors must form their own opinion as to the inherent risks of an investment in the Funds, independently of information provided by Hudson Bay.

An investment in the Funds is speculative and involves a high degree of risk, including the risk of loss of such investment. For important information regarding the risks of an investment in the Funds, please see the Confidential Offering Memorandum or Private Placement Memorandum (each an "Offering Memorandum," and collectively, the "Offering Memoranda") for the applicable Fund, which are available to suitable investors upon request to Hudson Bay. As noted in each Offering Memorandum, the risks of an investment in a Fund include the following: (i) investors could lose all or substantially all of their investment in the Fund; (ii) the Fund may trade with a high degree of leverage; (iii) the Fund's performance may be volatile; (iv) there is no secondary market for interests in the Fund and none is expected to develop; (v) interests in the Fund are not freely transferable and are subject to limited redemption rights; (vi) the Fund is subject to substantial (and potentially layered) fees and expenses; (vii) Hudson Bay will be subject to conflicts of interest in managing the Fund; (viii) the Fund is dependent on the services of Hudson Bay, the Fund's sole investment manager; and, (ix) the Fund is not subject to the same regulatory requirements as a US registered mutual fund. No Information provided herein is intended to be, or should be construed as, and should not be relied upon for, tax, accounting, legal or other advice or investment recommendations. The Fund is not intended as a complete investment program.

Certain Information is based upon observations and assumptions and involves significant elements of subjective judgment and analysis. No representations are made to the accuracy of such observations and assumptions and there can be no assurances that actual events will not differ materially from those assumed. In the event any of the assumptions contained within the Information do not prove to be true, results and answers are likely to vary or vary significantly from those contained in the Information.

Certain Information provided is based upon third party sources, which Information, although believed by Hudson Bay to be accurate, has not been independently verified by Hudson Bay.

The Information does not constitute an offer to sell or a solicitation of an offer to buy an interest in any of the Funds. The Information is qualified in its entirely by reference to the information set forth in the Offering Memorandum for the applicable Fund, as well as in Hudson Bay's Form ADV. The Information contained herein is not complete, does not contain material Information about the Funds and no representation or warranty is made concerning the accuracy or completion of the Information. No person has been authorized to give any information or make any representations, warranty, statement or assurance not contained in the Offering Memorandum, and if given or made, such other information or representation, warranty, statement or assurance may not be relied upon. In the event that the description or terms described herein are inconsistent with or contrary to the descriptions in or terms of the relevant Offering Memorandum or the Form ADV, the Offering Memorandum or the Form ADV, as applicable, shall control.

Each of Hudson Bay Fund LP and Hudson Bay International Fund Ltd (the "Feeder Funds") offers a SPAC Series (the "SPAC Series Interests") which invests indirectly into Hudson Bay SPAC Master Fund LP, a Delaware limited partnership that generally trades pari passu with Hudson Bay Master Fund Ltd. (the "Master Fund") in certain investments in special purpose acquisition companies. Performance data of the SPAC Series Interests is not included in the attached information.

Prior to August 1, 2010, Hudson Bay Fund LP and Hudson Bay Overseas Fund Ltd. operated under a side-by-side structure. As of August 1, 2010, (a) Hudson Bay Fund LP and Hudson Bay International Fund Ltd. became "feeder funds" in the Master Fund in a master feeder structure, at which time the investors in Hudson Bay Overseas Fund Ltd. became investors in the Hudson Bay International Fund Ltd.; and (b) Hudson Bay Overseas Fund Ltd. restructured as the Master Fund. As a consequence, Hudson Bay International Fund Ltd. is the successor-in-interest to Hudson Bay Overseas Fund Ltd. so that all performance figures of the Hudson Bay Overseas Fund Ltd. prior to August 1, 2010 have been attributed to Hudson Bay International Fund Ltd.

Prior to July 1, 2016, Hudson Bay Fund LP invested most of its assets in the Master Fund, and a portion of its assets in direct investments that, in the Manager's determination, were inappropriate for offshore and/or U.S. tax-exempt investors. Effective July 1, 2016, Hudson Bay Fund LP changed its name to "HB Fund LLC" and became a wholly-owned subsidiary of a newly-formed partnership, which assumed its name, "Hudson Bay Fund LP," at which time each of the limited partners of the restructured entity became limited partners of the newly-formed partnership. Accordingly, references herein to "Hudson Bay Fund LP" for the period prior to July 1, 2016 refer to the entity now designated, "HB Fund LLC." Since July 1, 2016, Hudson Bay Fund LP has invested the majority of its investable assets in the Master Fund and the remainder in HB Fund LLC so that all post-July 1, 2016 performance data for Hudson Bay Fund LP correlates to all pre-July 1, 2016 Hudson Bay LP performance data.

General Disclosures

HUDSON BAY CAPITAL MANAGEMENT LP IS A MEMBER OF NFA AND IS SUBJECT TO NFA'S REGULATORY OVERSIGHT AND EXAMINATIONS. HUDSON BAY CAPITAL MANAGEMENT LP HAS ENGAGED OR MAY ENGAGE IN UNDERLYING OR SPOT VIRTUAL CURRENCY TRANSACTIONS IN A COMMODITY POOL. ALTHOUGH NFA HAS JURISDICTION OVER HUDSON BAY CAPITAL MANAGEMENT LP AND ITS COMMODITY POOLS, YOU SHOULD BE AWARE THAT NFA DOES NOT HAVE REGULATORY OVERSIGHT AUTHORITY FOR UNDERLYING OR SPOT MARKET VIRTUAL CURRENCY PRODUCTS OR TRANSACTIONS OR VIRTUAL CURRENCY EXCHANGES, CUSTODIANS OR MARKETS. YOU SHOULD ALSO BE AWARE THAT GIVEN CERTAIN MATERIAL CHARACTERISTICS OF THESE PRODUCTS, INCLUDING LACK OF A CENTRALIZED PRICING SOURCE AND THE OPAQUE NATURE OF THE VIRTUAL CURRENCY MARKET, THERE CURRENTLY IS NO SOUND OR ACCEPTABLE PRACTICE FOR NFA TO ADEQUATELY VERIFY THE OWNERSHIP AND CONTROL OF A VIRTUAL CURRENCY OR THE VALUATION ATTRIBUTED TO A VIRTUAL CURRENCY BY HUDSON BAY CAPITAL MANAGEMENT LP.

The Funds may invest and trade in commodity futures contracts and other derivatives. Trading in such instruments involves substantial risk of loss. The high degree of leverage that is often obtainable in commodity futures and derivatives trading, because of the small margin requirements associated with such instruments, can lead to large losses and volatility, which may result in losses to investors in the Funds.

Any reference to Gerber Asset Management includes Gerber Asset Management LLC and other entities affiliated with Sander Gerber.

Fund Performance Figures

Various slides in this presentation contain performance information for one or more of the Funds. Unless noted otherwise, returns are net of all actual and accrued fees and expenses and allocations (including incentive allocations) for an investor that has been an investor since fund inception paying “full fees” (2% management and 20% incentive, subject to the adjusted “high water mark” discussed below), who has not made any additional investments or withdrawals since inception, who is not restricted in the amount of income they can receive from 'new issues' under FINRA regulations, and who is not otherwise limited in being allocated gains and losses from any of the Fund’s investments and who is not subject to particularized expenses that only relate to particular tranches/limited partners. In addition, returns for Hudson Bay Fund LP are for an investor who did not receive profits and losses through the MLP corporate “blocker,” HBC MLP Investment Corp. Particular investors’ returns will vary from the composite returns of the Funds due to the timing of subscriptions, withdrawals and redemptions, application (including to an investor since inception) of any modified incentive compensation on account of adjusted “high water marks” and due to the investor’s eligibility to receive income from “new issues” and/or the investor’s ineligibility to be allocated profits and losses from certain of the Fund’s investments and additional expenses charged to the Funds on account of revised offering terms as implemented over time. Performance estimates are unaudited and subject to adjustment without notice to you.

The categories of expenses borne by the Funds has changed over time (as the Fund offering terms have changed). Generally, certain categories of expenses previously borne by Hudson Bay Capital Management LP (the “Manager”) have migrated to expenses borne by the Funds. As a result, Fund performance results from earlier periods when the Funds incurred fewer expenses than they do currently are higher than they would have been under the current Fund expense allocation policy. In addition, for the fiscal years 2021-2023 (the “ExCap Period”), certain expenses borne by the Funds are subject to an “expense cap” whereby expenses in excess of the cap are borne by the Manager, rather than the Funds. The expense cap is scheduled to increase (as a percentage of the Funds’ net asset value) in each of the years in the ExCap Period and is scheduled to be eliminated in its entirety in the year 2024. Accordingly, assuming all other factors being equal, the performance results in each of the first two the years of ExCap Period may be higher than they would have been later in a later year of the ExCap Period when a higher expense cap would have applied. Similarly, assuming all other factors being equal, the performance results in each of the years of the ExCap Period may be higher than they would have been had the expense cap not been in place (which it will not be beginning in 2024).

Returns for an investor since inception for the period February 2015 through mid-July 2017 reflect the adjusted high watermark incentive rate of 10%, rather than the unmodified 20% rate. Securities and futures trading is speculative and may result in losses. Past performance is not necessarily indicative of future performance. It should not be assumed that an investment in a Fund will be profitable or that the performance of Hudson Bay Fund LP or Hudson Bay International Fund Ltd. will be comparable to their past performance.

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Information Concerning Comparative Indices

Various slides in this presentation compare the performance of one or more Hudson Bay Funds with various indices. The selection of each of these indices as comparative benchmarks was subjective and made by Hudson Bay Capital Management LP (“Hudson Bay”) in its sole discretion as being representative of certain asset classes throughout the market. In the views of others, more appropriate benchmarks may have been selected. To the extent different benchmarks were used, the results may have been different or materially different and may have had a material impact on the content of the information provided. Hudson Bay assumes no responsibility for the appropriateness of the use of the benchmarks referenced above for the inclusion in the information provided.

All of the results and data shown for each of the indices are based on publicly reported numbers and Hudson Bay and its affiliates assume no responsibility for their accuracy. In addition, it is likely that persons other than Hudson Bay calculate formulas in a manner differently than Hudson Bay. For example, CBOE may calculate its Sharpe ratio differently than Hudson Bay calculates its Sharpe ratio and as a result, the comparison may not be exact.

HUDSON BAY CAPITAL

Assumptions and Additional Disclosures

Information concerning the various referenced indices is as follows:

Global Hedge Fund: Hedge Fund Research HFRX Global Hedge Fund Index (“HFRXGL”). HFRXGL is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage. The strategies are asset weighted based on the distribution of assets in the hedge fund industry.

Hedge Fund Aggregate: Hedge Fund Research HFRX Aggregate Index (“HFRXAGGR”). HFRXAGGR is the equally weighted index across all sub-strategy and regional indices.

Hedge Fund Event Driven: Hedge Fund Research HFRX Event Driven Index (“HFRXED”). Event driven managers maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional derivative securities. Event driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

Hedge Fund Equity: Hedge Fund Research HFRX Equity Hedge Index (“HFRXEH”). Equity hedge strategies maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. Equity hedge managers would typically maintain at least 50% and may in some cases be substantially entirely invested in equities, both long and short.

Hedge Fund Fixed Income Credit: Hedge Fund Research HFRX Fixed Income Credit Index (“HFRXFIC”). HFRXFIC includes strategies with exposure to credit across a broad continuum of credit sub-strategies, including corporate, sovereign, distressed, convertible, asset backed, capital structure arbitrage, multi-strategy and other relative value and event driven sub-strategies. Investment thesis across all strategies is predicated on realization of a valuation discrepancy between the related credit instruments. Strategies may also include and utilize equity securities, credit derivative, government fixed income, commodities, currencies or other hybrid securities.

Hedge Fund Macro/CTA: Hedge Fund Research HFRS Macro/CTA Index (“HFRXM”). Macro strategy managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom-up theses, quantitative and fundamental approaches and long and short-term holding periods. Although some strategies employ RV techniques, macro strategies are distinct from RV strategies I that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant and integral to investment thesis.

Hedge Fund Research Relative Value Multi-Strategy (“HFRXRVMS”): Multi-Strategies employ an investment thesis is predicated on realization of a spread between related yield instruments in which one or multiple components of the spread contains a fixed income, derivative, equity, real estate, MLP or combination of these or other instruments. Strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. In many cases these strategies may exist as distinct strategies across which a vehicle which allocates directly or may exist as related strategies over which a single individual or decision-making process manages. Multi-strategy is not intended to provide broadest-based mass market investors appeal but are most frequently distinguished from others arbitrage strategies in that they expect to maintain >30% of portfolio exposure in 2 or more strategies meaningfully distinct from each other that are expected to respond to diverse market influences.

Information about the foregoing Indices can be found at www.hedgefundresearch.com

US Large-cap Equity: S&P 500 Total Return (“SPTR”). SPTR is widely regarded as the best single gauge of large-cap US equities. There is over $7 trillion benchmarked to the index, with index assets comprising approximately $1.9 trillion of this total. SPTR includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

CBOE SPX Volatility Index: Chicago Board Options Exchange SPX Volatility Index (“VIX”). VIX reflects a market estimate of future volatility, based on the weighted average of the implied volatilities for a wide range of strikes. First and second month expirations are used until 8 days from expiration, then the second and third are used.

Merrill Lynch IG Corporate Debt: BofA Merrill Lynch US Corporate Index (“C0A0”). C0A0 tracks the performance of US dollar denominated grade corporate debt publicly issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody’s, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one-year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $250 million. Certain other criteria apply.

Assumptions and Additional Disclosures

Merrill Lynch HY Corporate Debt: BofA Merrill Lynch US Cash Pay High Yield Index (“J0A0”). J0A0 tracks the performance of US dollar denominated below investment grade corporate debt, currently in a coupon paying period, that is publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody’s, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one-year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $250 million. Certain other criteria apply.

Barclay Global IG Debt: Bloomberg Barclays Global-Aggregate Total Return Index Value Unhedged USD (“LEGATRUU”). LEGATRUU is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

S&P GSCI Commodity: S&P GSCI Total Return CME (“SPGSCITR”). SPGXCITR in USD is widely recognized as the leading measure of general commodity price movements and inflation in the world economy. SPGSCITR is calculated primarily on a world production weighted basis, comprised of the physical commodities futures contracts.

60/40 Index: 60% Russell 1000 Total Return/40% Barclays IG US Total Return Unhedged

The Russell 1000 Index measures the performance of the large-cap segment of the US equity universe. It is a subset of the Russell 3000® Index and includes approximately 1,000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000® represents approximately 92% of the US market. The Russell 1000® Index is constructed to provide a comprehensive and unbiased barometer for the large-cap segment and is completely reconstituted annually to ensure new and growing equities are included.

Barclays US Treasury Inflation Notes TR Index Value Unhedged: The Bloomberg Barclays US Treasury Inflation-Linked Bond Index measures the performance of the US Treasury Inflation Protected Securities (TIPS) market. Federal Reserve holdings of US TIPS are not index eligible and are excluded from the face amount outstanding of each bond in the index.

The Bloomberg Barclays US Agg Total Return Value Unhedged USD (“LBUSTRUU”) is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS and CMBS (agency and non-agency). The results shown for the LBUSTRUU are based on the numbers reported by Bloomberg, and Hudson Bay Affiliates assume no responsibility for their accuracy. It is not possible to invest directly in the LBUSTRUU.

The Funds’ financial statements for years 2020 and earlier have been audited and prepared in accordance with GAAP. Certain information in this brochure may not have been prepared in accordance with GAAP or the procedures that would typically be used at the end of the fiscal year. While certain data and analysis contained in this brochure may be substantially based on estimated information which may be inaccurate, incomplete, or not yet fully reconciled, Hudson Bay believes such information to be materially accurate.

Before making any investment decision, prospective investors should thoroughly and carefully review the applicable Fund’s Confidential Private Placement Memorandum with their financial, legal and tax advisors to determine whether an investment is suitable for them. An investment in a Fund is not suitable for all investors.
No representation is made that any Fund will or is likely to achieve its objectives or avoid incurring substantial losses.

Financial indicators and benchmarks such as the S&P 500 Index is a capitalization-weighted index designed to measure the performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The S&P 500 Index is not included for comparative purposes, but rather to illustrate market factors that existed during the time period covered in the performance tables and graphs. The S&P 500 is unmanaged and does not utilize investment techniques such as short sales or hedging. The investment performance of Hudson Bay Fund LP or Hudson Bay International Fund Ltd. may differ substantially from the S&P 500 Index. The results shown for the S&P 500 Index are based on the numbers reported by Bloomberg, and Hudson Bay (along with its affiliates, “Hudson Bay Affiliates”) assumes no responsibility for their accuracy. It is not possible to invest directly in the S&P 500 Index.

An investment in a Fund will be illiquid, and there will be significant restrictions on transferring interests in a Fund. There is no secondary market for investments in a Fund, and none is expected to develop. The Funds may not be able to deliver important tax information to U.S. taxable investors on a timely basis.

The Funds are not required to provide transparency regarding their underlying investments to investors.

Each Fund will be subject to substantial expenses irrespective of its performance. If these expenses are not offset by investment and trading gains, the value of an investment in such Fund will decline.

Assumptions and Additional Disclosures, cont.

SLIDE SPECIFIC DISCLOSURES

Disclosure 1

The **Sample Portfolio Manager Snapshot Slide** reflects data relating to a single portfolio manager's (the "Sample PM") portfolio, reflecting all Deal Codes in such portfolio held in either Hudson Bay Master Fund Ltd. or HB Fund LLC (other than a Deal Code classified as "Deal Code 0,"which contains expenses relating to the overall operation of the portfolio that have not been allocated to another specific Deal Code). The Sample PM's portfolio is not necessarily indicative of the portfolios of other portfolio managers, and, accordingly, the information contained on the Sample Portfolio Manager Snapshot slide, may represent greater or smaller returns or losses than those relating to other portfolio managers' portfolios. Similar information relating to other portfolio managers is available upon request.

The "Portfolio Manager Deal Code Histogram Rolling 12 Months" table on the right side of the slide indicates the gross P&L for each of the Sample PM's portfolio's Deal Codes (other than Deal Code 0) for the rolling 12 months ending on December 31, 2019 (the "Period") where the Y axis represents the number of Deal Codes and the X axis represents the gross P&L of each Deal Code divided by the average weighted capital allocated to the Sample PM over the Period (where average weighted allocated capital is calculated using the number of days that a capital level existed during the Period as a total percentage of the days in that Period and where the Y axis figure is expressed in basis points). The number of Deal Codes indicated for each bar reflects the number of Deal Codes falling into the range represented by the basis points on the X axis underneath the bar and the preceding basis points on the X axis; for example, the number of Deal Codes shown on the X axis as having generated 150 basis points of losses includes all Deal Codes that lost between 200 basis points and 150 basis points during the relevant period. The Histograms exclude Deal Codes that contributed less than 1bp in absolute terms over the period. The adjusted win/loss information contained in the table on the left side of the slide excludes certain hedges used solely to offset specific portfolio or strategy level risks or which are used as macro-overlay hedges for the aggregate portfolio, as well as public offerings (e.g., an equity secondary). Deal Code P&L on the slides referencing this Disclosure 1 excludes stock loan fees.

Disclosure 2

The **Deal Code Histogram Slides** set forth the distribution of profitable and unprofitable Deal Codes as a percentage of the average monthly GAV for the 12-month period ending as of the date of the relevant report. As used herein, a Deal Code is a block of positions, typically comprised of an investment and any related hedges.

The Gross P&L for each of the Deal Codes for the 12-month period ending as of the date of the relevant report is divided by the average monthly GAV for the 12-month period ending as of the date of the relevant report. One or more of the Deal Codes may have been more or less profitable at other times during such 12-month period. In addition, only Deal Codes with an absolute value of the Gross Rate of Return more than 0.26% (the "Threshold Amount") over the period are included in the Information. Due to the nature of the Threshold Amount, certain Deal Codes that may have had Gross Rate of Returns exceeding in absolute terms the Threshold Amount in a month (or months) may be excluded from the Information. Gross Rate of Return per Deal Code is calculated in the following fashion. For each month, the Gross Monthly P&L of the Deal Code is calculated. The Gross Monthly P&L of the Deal Code is then divided by the Beginning of Month NAV for the Master Fund to get the Deal Code's Gross Monthly Contribution to the Master Fund Return. The Beginning of Month NAV includes beginning of month capital contributions. Finally, that Deal Code's Gross Monthly Contributions to Master Fund Return for all months in the last 12 months are summed to arrive at the Gross Rate of Return of the Deal Code.

To the extent that different classifications are used, the histogram distribution of profitable and unprofitable Deal Codes as a percentage of the average monthly GAV for the 12-month period ending as of the date of the relevant report may vary. The classification of any single Deal Code may vary over time, i.e., a Deal Code may be considered a Portfolio Hedge in one month, but not in another. A single (or two similar) investment idea(s) employed by two or more separate portfolio managers may be represented separately in two or more Deal Codes. Any Deal Code that either had P&L or instrument exposure at any of the 12 month-ends is included in the histograms (other than Portfolio Hedges which are excluded). Deal Codes that had zero instrument exposure and had zero P&L at each of the 12 month-ends would be excluded regardless of whether they had P&L at any other time during any of the 12 months. Prior to January 2019, Deal Code P&L included stock loan fees associated with the Deal Code. Currently, Deal Code Gross P&L excludes stock loan fees and debit charges (collectively, "Financing Fees"). Hudson Bay excludes the Financing Fees from the Deal Code P&L calculation, because, unlike stock loan fees, debit charges are charged at a Fund level and not at a security or Deal Code level and in Hudson Bay's view, allocating stock loan fees to a Deal Code without also including debit charges across a complex, multi-strategy portfolio is not appropriate. In general, the exclusion of Financing Fees from the Deal Codes should not affect the Information. That being said, in certain cases, the inclusion of such fees has and can materially change the category of a Deal Code in the Information. The decision whether to include the Financing Fees is subjective, and there is no assurance that others may not take a different view; a different methodology could have a material impact on the Information. In addition, from time to time, disclosure regarding certain Deal Codes contained herein is not applicable to the Fund's portfolio because the Fund may not have certain types of Deal Codes in its portfolio at any such time (or ever). Investors in Hudson Bay International Fund Ltd. should be aware that the Deal Code P&L data reflected on this slide is based on trades of both the Master and onshore funds; trades by the onshore fund are not directly applicable to them.

Assumptions and Additional Disclosures, cont.

Disclosure 3

The delta adjusted information provided on the slide titled "**Capital Deployment During COVID Crisis**" (the "Covid Information") reflects the daily gross market value exposures by strategy of Hudson Bay Master Fund Ltd. (for the period February 19, 2020 through April 30, 2020). The attribution of particular securities or other financial instruments to a particular strategy in the Information involves observations and/or assumptions and involves elements of subjective judgment and analysis. Assignments to a particular strategy are generally made at the time an investment is initiated and generally will not be changed, regardless of whether the components of the investment change over time. Assignments to a particular sub-strategy are generally made at the time of investment and may change over time. There can be no assurance that other persons would not reach different conclusions regarding the attribution of particular securities or other financial instruments to a particular strategy or sub-strategy and characterize them differently. Further, to the extent that different assumptions or judgments were used, the attributions set forth herein could vary. The Covid Information, which consists of daily information, is not the type of information normally reported to investors on a monthly basis. Because the Information is daily, it is not subject to the month end finalization processes normally associated with the reporting of monthly data, and the Information may therefore be less accurate than that reported on a monthly basis.

Disclosure 4

The volatility analysis in the **Vol Regime Slides** (the "Vol Information") has been prepared by Hudson Bay as one means of analysis of the performance of one or more Funds managed by Hudson Bay during periods of market volatility. The Vol Information was compiled by examining the consistency of returns and Sharpe ratios across one volatility regime (the "Vol Regime") for the period beginning with the inception of the referenced Fund (2006) through the date of this presentation using the methodology set forth below. The Vol. Regime was identified by classifying each month into a volatility regime quartile using the average level of the VIX over the course of the month. For each of the referenced Fund and the HFRX Hedge Fund Indices (the "Indices") listed on the slide as well as the Asset Classes listed above, Hudson Bay calculated annualized: (i) returns net of fees, but without taking the risk-free rate into account; and (ii) Sharpe Ratios across the Vol. Regime. The annualized performance data was calculated using monthly returns.

Disclosure 5

In the **Deal Code Win/Loss Ratio Slide**, P&L per Deal Code was calculated on a gross basis using the aggregate trading profits for each Deal Code before deduction for fees and certain expenses. Prior to September 2020, certain hedges which were used to offset specific portfolio or Strategy level risks or which were used as macro overlay hedges for the aggregate portfolio (each, a "Portfolio Hedge") were classified as separate Deal Codes and were not included in the Information. Beginning with September 2020, Portfolio Hedges have been included as separate Deal Codes (subject to the exceptions below). Portfolio Hedges are generally designed to hedge other Deal Codes. If the Portfolio Hedges classified as separate Deal Codes were distributed to the constituent Deal Codes they are designed to hedge, the profits and losses associated with each such constituent Deal Code could be greater or less than shown. The classification of a particular Deal Code as a Portfolio Hedge involves elements of subjective judgment and analysis. There can be no assurance that other persons would not reach different conclusions regarding the classification of such Deal Codes, which, in each case, could result in different or materially different results.

GENERAL DISCLOSURES

Prior to August 1, 2010, Hudson Bay Fund LP and Hudson Bay Overseas Fund Ltd. operated under a side-by-side structure. As of August 1, 2010, (a) Hudson Bay Fund LP and Hudson Bay International Fund Ltd. became "feeder funds" in the Master Fund in a master feeder structure, at which time the investors in Hudson Bay Overseas Fund Ltd. became investors in the Hudson Bay International Fund Ltd.; and (b) Hudson Bay Overseas Fund Ltd. restructured as the Master Fund. As a consequence, Hudson Bay International Fund Ltd. is the successor-in-interest to Hudson Bay Overseas Fund Ltd. so that all performance figures of the Hudson Bay Overseas Fund Ltd. prior to August 1, 2010 have been attributed to Hudson Bay International Fund Ltd.

Any reference to Gerber Asset Management includes Gerber Asset Management LLC and other entities affiliated with Sander Gerber.

As referenced herein and/or on the above slides, various slides refer to one or more of Hudson Bay Master Fund Ltd., Hudson Bay Fund LP, Hudson Bay International Fund Ltd. and or an aggregate combination of Hudson Bay Fund LP and Hudson Bay International Fund Ltd. Because Hudson Bay Fund LP currently, and, historically, has invested in its own independent portfolio in addition to its investment in Hudson Bay Master Fund Ltd., its returns have differed over time from that of Hudson Bay International Fund Ltd., which invests all of its investable assets in Hudson Bay Master Fund. Investors reviewing this document should pay attention to which Fund(s) are being referenced in each slide, as the information reflected may differ from the information relating to the Fund in which they are invested.

The Funds will be speculative investments and will involve a high degree of risk. An investor could lose all or a substantial portion of the investment. Investors must have the financial ability, sophistication, experience and willingness to bear the risks of an investment in the Funds. The performance of the Funds can be expected to be volatile.

Assumptions and Additional Disclosures, cont.

An investment in a Fund will be illiquid, and there will be significant restrictions on transferring interests in a Fund. There is no secondary market for investments in a Fund, and none is expected to develop. The Funds may not be able to deliver important tax information to U.S. taxable investors on a timely basis.

The Funds are not required to provide transparency regarding their underlying investments to investors.

Each Fund will be subject to substantial expenses irrespective of its performance. If these expenses are not offset by investment and trading gains, the value of an investment in such Fund will decline.

U.S. persons must, among other requirements, be “accredited investors” and “qualified purchasers,” as defined in the applicable securities laws, before they can invest in the Funds.

All Fund terms described herein are subject to change without notice subject to applicable law. The terms are not intended to be complete or final and are qualified in their entirety by reference to the applicable Confidential Private Placement Memorandum (copies of which will be furnished to any qualified prospective investors upon request and must be received and reviewed by all investors prior to investing). In the event that the description or terms described herein are inconsistent with or contrary to the descriptions in or terms of the Confidential Private Placement Memorandum, the Confidential Private Placement Memorandum shall control.

No regulatory authority has passed upon or endorsed this presentation or the merits of an investment in the Funds. Certain information contained in this presentation constitutes “forward-looking statements,” which can be identified by the use of forward-looking terminology such as “may”, “will”, “should”, “expect”, “anticipate”, “project”, “estimate”, “intend”, “continue”, “target”, “believe”, the negative thereof, other variations thereon or comparable terminology. Due to various risks and uncertainties, actual events or results or actual performance of the Funds may differ materially from those reflected or contemplated in such forward-looking statements.

Performance data of the Indices is based on data reported by Bloomberg. Hudson Bay makes no representations or guarantees with regard to the accuracy of such data.

None of Hudson Bay Fund LP, Hudson Bay International Fund Ltd., Hudson Bay or Hudson Bay Capital Associates LLC, nor any of their respective affiliates, nor any officers, directors, employees, or agents thereof, shall be liable for any errors or omissions in the production or contents of, or otherwise relating to, this information. The information contained on the slides is confidential and may not be copies, sold, licensed, marketed, reproduced or redistributed, directly or indirectly, without the express prior written consent of Hudson Bay. By accepting this document, you acknowledge and agree that you will keep all of the information contained herein strictly confidential.

This brochure is provided for informational purposes only. It does not purport to be complete, may not contain certain material information (including, without limitation, important disclosures and risk factors associated with an investment in a Fund). This information is not intended to be, nor should it be construed or used as, financial, legal, tax, or investment advice. The information set forth herein is superseded in its entirety by the applicable Confidential Private Placement Memorandum. Investors must form their own opinion as to the inherent risks of an investment in the Funds, independently of information provided by Hudson Bay.

Before making any investment decision, prospective investors should thoroughly and carefully review the applicable Fund’s Confidential Private Placement Memorandum with their financial, legal and tax advisors to determine whether an investment is suitable for them. An investment in a Fund is not suitable for all investors.

No representation is made that any Fund will or is likely to achieve its objectives or avoid incurring substantial losses.

For Swiss investors:
Swiss Representative: Mont-Fort Funds ag, 63 chemin Plan-Pra, 1936 Verbier, Switzerland
Swiss paying agent: Banque Cantonale de Genève, 17, Quai de l’ile, 1204 Geneva, Switzerland.
Place of performance and jurisdiction: The place of performance for units of the foreign collective investment schemes offered in Switzerland is the registered office of the representative. The place of jurisdiction is the registered office of the representative or the registered office or place of residence of the investor.

HUDSON BAY CAPITAL

Time-Tested Team, Market-Tested System

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Employees' Retirement Fund of the City of Dallas

Actuarial Valuation Report as of December 31, 2021

P: 469.524.0000 | www.grsconsulting.com

June 7, 2022

Board of Trustees
Employees' Retirement Fund of the City of Dallas
1920 McKinney Avenue
10th Floor
Dallas, Texas 75201

Dear Members of the Board:

We are pleased to present our report of the actuarial valuation of the Employees' Retirement Fund of the City of Dallas ("ERF" or the "Fund") as of December 31, 2021.

This valuation provides information on the financial health of ERF. It includes a determination of the actuarially calculated contribution rates for the 2022 calendar year. In addition, it also contains the information necessary to determine the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2022 per City Ordinance. The current adjusted total obligation rate is a function of the previous year's adjusted total obligation rate, this year's actuarially calculated contribution rate, and the rate necessary to make the debt service payment on the previously issued pension obligation bonds for fiscal year 2023.

In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of December 31st, the last day of the ERF plan year. This report was prepared at the request of the Board and is intended for use by the ERF staff and those designated or approved by the Board. This report may be provided to parties other than ERF staff only in its entirety and only with the permission of the Board.

As authorized in Chapter 40A-4(a)(16) of the Dallas City Code, the actuarial methods and assumptions are set by the Board of Trustees, based upon recommendations made by the plan's actuary. An experience study was performed for the five-year period ending December 31, 2019. As a result of that study, revised assumptions were adopted by the Board effective with the valuation as of December 31, 2019. There were no changes in the actuarial assumptions or methods since the prior valuation.

We believe the assumptions are internally consistent, reasonable, and, where appropriate, based on the actual experience of the ERF. All of the methods and assumptions used in this valuation were selected in compliance with the Actuarial Standards of Practice. All actuarial methods and assumptions are described under Section P of this report. The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions.

5605 North MacArthur Boulevard | Suite 870 | Irving, Texas 75038-2631

Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. Due to the limited scope of this assignment, GRS did not perform an analysis of the potential range of such possible future differences. The actuarial calculations are intended to provide information for rational decision making. Other than the sensitivity analysis shown in Section L, this report does not include a more robust assessment of the future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This valuation is based on the provisions of ERF in effect as of the valuation date, data on the ERF membership and information on the asset values of the Fund as of December 31, 2021. The member, annuitant and asset data used in the valuation were all prepared and furnished by ERF staff. While certain checks for reasonableness were performed, the data used was not audited.

To the best of our knowledge, this report is complete and accurate and was conducted in accordance with the Actuarial Standards of Practice as set forth by the Actuarial Standards Board and in compliance with the provisions of the Dallas City Code. The undersigned are independent actuaries and consultants. Mr. Falls is a Fellow of the Society of Actuaries, an Enrolled Actuary, and a Member of the American Academy of Actuaries and he meets the Qualification Standards of the American Academy of Actuaries. Both Mr. Falls and Mr. Ward have significant experience in performing valuations for large public retirement systems.

We would like to thank the ERF staff for their assistance in providing all necessary information to complete this valuation. Their courteous help is very much appreciated. We look forward to discussing this actuarial valuation report with you at your convenience. Please do not hesitate to let us know if you have any questions or need additional information.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Lewis Ward

Lewis Ward
Consultant

R. Ryan Falls

R. Ryan Falls, FSA, EA, MAAA
Senior Consultant

Table of Contents

EXECUTIVE SUMMARY

($ in 000s)

The key results from the actuarial valuation of the Employees' Retirement Fund of the City of Dallas as of December 31, 2021 may be summarized as follows:

	December 31, 2020	December 31, 2021
· Members		
- Actives	7,244	7,175
- Benefit recipients	7,552	7,655
- Deferred vested*	911	974
- Other terminated*	799	1,007
- Total	16,506	16,811
· Covered payroll (including overtime)	$ 428,824	$ 442,863
· Normal cost	$ 84,929	$ 85,892
as % of expected payroll	20.11%	19.71%
· Actuarial accrued liability	$ 4,932,886	$ 5,094,362
· Actuarial value of assets	$ 3,747,078	$ 3,872,601
· Market value of assets	$ 3,706,753	$ 4,093,215
· Unfunded actuarial accrued liability (UAAL)	$ 1,185,808	$ 1,221,761
· Estimated yield on assets (market value basis)	6.42%	16.01%
· Estimated yield on assets (actuarial value basis)	6.81%	8.68%
· Contribution Rates		
- Prior Adjusted Total Obligation Rate	36.00%	36.00%
- Current Total Obligation Rate	43.77%	43.17%
- Current Adjusted Total Obligation Rate	36.00%	36.00%
· Actuarial gains/(losses)		
- Assets	$ (16,030)	$ 52,230
- Actuarial liability experience	$ 69,812	$ (29,375)
- Assumption and method changes	$ 0	$ 0
· 30-year level % of pay funding cost	$ 153,181	$ 157,107
as % of payroll (Employee + City)	34.85%	34.61%
· Funded ratio		
- Based on actuarial value of assets	76.0%	76.0%
- Based on market value of assets	75.1%	80.3%

** Deferred vested are members who have applied for a deferred pension. Other terminations are other members who have terminated and still have contribution balances in the Fund.*

PURPOSES OF THE ACTUARIAL VALUATION

At your request, we have performed the actuarial valuation of the Employees' Retirement Fund of the City of Dallas ("ERF" or the "Fund") as of December 31, 2021.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of ERF as of the valuation date;
- To develop the actuarially determined level of contributions for ERF for the 2022 calendar year; and
- To develop the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2022.

REPORT HIGHLIGHTS

($ in 000s)

The following is a set of key actuarial results from the prior year's valuation as compared to the current year:

	Valuation Date	
	December 31, 2020	December 31, 2021
Contribution Rates (% of Payroll)		
Normal Cost (including administrative expense)	21.44%	21.19%
Total Actuarial Contribution Rate	34.85%	34.61%
Total Projected Actuarial Contribution	$153,181	$157,107
Funded Status (on AVA basis)		
Actuarial Accrued Liability	$4,932,886	$5,094,362
Actuarial Value of Assets	3,747,078	3,872,601
Unfunded Actuarial Accrued Liability	$1,185,808	$1,221,761
Funded Ratio	75.96%	76.02%

FUNDING PROCESS

Based on the previous work of the Employees' Retirement Fund Study Committee, which was ratified by the ERF Board, the Dallas City Council and the voters of Dallas, a new funding process commenced October 1, 2005. From this date forward, a new "current adjusted total obligation rate" will be contributed jointly by the City (63%) and the Membership (37%). This current adjusted total obligation rate will cover both the debt service tied to the pension obligation bonds issued in 2005 and the contributions to the ERF. In subsequent years, the contribution rate changes only if the actuarial valuation develops a "current total obligation rate" which differs from the "prior adjusted total obligation rate" by more than 3.00% (plus or minus).

As shown in Section N – Table 3 and discussed later in this report, the "current total obligation rate" (Item 4 in Table 3) exceeds the "prior adjusted total obligation rate" (Item 1 in Table 3) as of December 31, 2021. This means that the "current adjusted total obligation rate" will remain at 36.00% of active member payroll for the fiscal year beginning October 1, 2022. It should be noted that under the contribution corridor methodology, the "current adjusted total obligation rate" would have been higher if not for the maximum rate of 36.00% allowed under Chapter 40A of the Dallas City Code.

ACTUARIAL CONTRIBUTIONS

As shown in Section N – Table 2, the Actuarially Required Contribution Rate developed in this actuarial valuation is 34.61% of active member payroll. This rate excludes the amount needed to make the City's debt service payment on the pension obligation bonds in fiscal year 2023. This rate is the total level rate of pay (member + City) that would need to be contributed each of the next 30 years to pay off the unfunded liability of the Fund over that 30-year period. Note that because the total rate is assumed to remain level and the average normal cost as a percentage of pay is expected to decline over that time period (due to Tier B), the payment towards the unfunded liability as a percentage of pay is expected to increase over the 30-year period.

As shown in Section N – Table 3 of this report, the debt service payment is determined to be 8.56% of projected payroll. The sum of these rates is 43.17% (the Current Total Obligation Rate), which is 7.17% more than the Prior Adjusted Total Obligation Rate of 36.00%. Because the total contribution rate cannot exceed 36.00%, the total contribution rate in fiscal year 2023 (the Current Adjusted Total Obligation Rate) to fund the ERF and make the debt service payment on the pension obligation bonds will be 36.00%, which is the maximum rate allowed under Chapter 40A of the Dallas City Code.

The members contribute 37% of the Current Adjusted Total Obligation Rate and the City contributes 63%. Hence, the members' portion of the 36.00% total contribution rate will be 13.32% and the City portion will be 22.68%. All of the member contribution rate will be contributed to the ERF. As noted above, 8.56% of the City's contribution rate will go towards the debt service on the pension obligation bonds and the remaining 14.12% will be contributed towards the ERF. This means a total contribution rate of 27.44% will be contributed to the ERF for the 2023 fiscal year, which compares to the actuarially calculated rate of 34.61%.

ACTUARIAL ASSUMPTIONS

Section P of this report includes a summary of the actuarial methods and assumptions used in this valuation. In short, costs are determined using the Entry Age Normal actuarial cost method. The assumed annual investment return rate is 7.25% and includes an annual assumed rate of inflation of 2.50%.

There were no changes in the actuarial assumptions since the prior valuation report. Please see Section P of this report for a summary description of these methods and assumptions.

ERF BENEFITS

The City of Dallas voters approved a new tier of benefits for City of Dallas municipal employees hired after December 31, 2016.

There were no changes in the benefit provisions of ERF since the prior valuation. Please see Section Q for a summary description of the ERF benefits.

EXPERIENCE DURING PREVIOUS YEARS

An Actuarial (Gain)/Loss Analysis [(G)/L] reviews the effects of the actual experience on the expected Unfunded Actuarial Accrued Liability (UAAL). If any unexpected difference increases assets or reduces liabilities (i.e., reductions in the UAAL), we have an actuarial gain. Unexpected increases in the UAAL results in an actuarial loss.

On a market value return basis, the Fund returned approximately 16.01% (calculated on a dollar-weighted basis, net of investment expenses). Given this return, the actual investment income was greater than the expected investment income on the market value of assets; therefore, an investment gain occurred. Please see Section N – Table 6 for the determination of the actuarial value of assets (AVA) and page 48 for a description of the AVA methodology. As developed on Section N – Table 9a, there was a $52.2 million gain on the actuarial value of assets as of December 31, 2021. The rate of return on the actuarial value of assets for 2021 was 8.68% (calculated on a dollar-weighted basis, net of investment expenses). This result was greater than the investment return assumption of 7.25%.

As developed on Section N – Table 8, ERF experienced an overall actuarial experience gain in calendar year 2021 in the amount of $22.9 million. Since there was a $52.2 million gain on the actuarial value of assets, this implies there was a liability actuarial loss of about $29.4 million derived from demographic assumptions and non-investment economic assumptions (cost-of-living-adjustment). Please see Section N – Table 9b for an analysis of the experience loss by source.

The total (G)/L for the prior 5 years is broken down as follows ($ in millions):

		2017	**2018**	**2019**	**2020**	**2021**
1)	Actuarial (Gain)/Loss on Assets	($19.85)	$88.73	$35.80	$16.03	($52.23)
2)	Actuarial (Gain)/Loss on Liabilities	(61.02)	11.35	(6.16)	(69.81)	29.37
3)	Total Actuarial (Gain) or Loss (1+2)	($80.87)	$100.08	$29.64	($53.78)	($22.86)

The unfunded actuarial accrued liability (UAAL) also increased $33.9 million due to the shortfall between the calculated contribution rate and the actual contributions during 2021.

ASSET INFORMATION

The assets of the Fund (on a market value basis) increased from $3,707 million as of December 31, 2020 to $4,093 million as of December 31, 2021.

An asset smoothing method (adopted by the Board) is used to recognize asset gains and losses. The purpose of such a smoothing method is to allow the use of market values, but to dampen the effect of the typical year-to-year market fluctuations. Please see page 48 of this report for a description of the smoothing method (actuarial value of asset method). See Table 6 in Section N of this report for the determination of the actuarial value of assets as of December 31, 2021.

The actuarial value of assets has increased from $3,747 million to $3,873 million during 2021. The actuarial assets are greater than the expected actuarial assets, $3,821 million, due to favorable investment experience in calendar year 2021. This resulted in an actuarial gain on the actuarial assets of $52.2 million.

The rate of return on investments for 2021 on the actuarial value of assets was 8.68%, compared to 6.81% in 2020. The detailed determinations of asset values utilized in this valuation and the change in assets in the last year are exhibited in Tables 4 and 5 of Section N of this report.

FUNDED STATUS

The funded status of ERF is measured by the Funded Ratio and the Unfunded Actuarial Accrued Liability (UAAL). The Funded Ratio is the ratio of the actuarial value of assets available for benefits to the actuarial accrued liability (AAL) of the Fund on the valuation date. Therefore, it reflects the portion of the AAL that is covered by ERF assets. The UAAL is the difference between these two amounts.

A Funded Ratio of 100% means that the funding of ERF is precisely on schedule as of the particular valuation date. In addition, an increasing funded ratio from year-to-year may also mean that the funding of ERF is on schedule. By monitoring changes in the Funded Ratio each year, we can determine whether or not funding progress is being made.

Based on the market value of assets, the Funded Ratio of ERF increased from 75.1% as of December 31, 2020 to 80.3% as of December 31, 2021. Based on the actuarial value of assets, the Funded Ratio of ERF remained relatively unchanged at approximately 76.0% as of December 31, 2020 and 76.0% as of December 31, 2021.

The UAAL increased from $1,185.8 million as of December 31, 2020 to $1,221.8 million as of December 31, 2021. Since the UAAL is positive, this implies the actuarial accrued liabilities exceed the actuarial assets of the Fund as of December 31, 2021.

The actual $36.0 million increase in the UAAL was less than the expected increase of $58.8 million ($24.9 million due to negative amortization and $33.9 million as a result of the actual contributions being less than the actuarially determined contribution rate), resulting in a net actuarial experience gain in total. The primary reasons the increase in the UAAL was less than expected were favorable investment experience and mortality experience.

The funded status is one of many metrics used to show trends and develop future expectations about the health of a retirement system. The funded status measure itself is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future contributions since it does not reflect normal cost contributions, the timing of amortization payments, or future experience other than expected.

GASB DISCLOSURE

Governmental Accounting Standards Board (GASB) Statement Numbers 67 and 68 detail the current accounting standards for ERF and the Fund's sponsor, the City of Dallas, Texas. These new standards were effective with the plan year ending December 31, 2014 for the Fund and the fiscal year ending September 30, 2015 for the City. The new standards created a clear distinction between the funding requirements of a pension plan and the accounting requirements. Because of these changes, the GASB disclosure information will no longer be included in the actuarial valuation report, but will instead be provided under separate cover.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The Current Adjusted Total Obligation Rate shown in the Executive Summary may be considered as a minimum contribution rate that complies with Chapter 40A of the Dallas City Code. However, due to the contribution rate cap, this is less than the actuarially calculated rate. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Several generally accepted plan maturity measures are described below and are followed by a table showing a 10-year history of the measurements for Dallas ERF.

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees, resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives, resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF PRESENT VALUE OF BENEFITS

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability. While a robust measurement of additional risk assessment is outside the scope of the annual actuarial valuation, we have included a scenario test of a 1% increase or 1% decrease in the investment return assumption. The results of this test are shown at the end of this section.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Ratio of the market value of assets to total payroll	9.24	8.64	8.43	7.71	8.55	8.13	8.12	9.34	9.72	9.01
Ratio of actuarial accrued liability to payroll	11.50	11.50	11.21	10.68	10.39	10.48	10.50	11.03	10.55	10.64
Ratio of actives to retirees and beneficiaries	0.94	0.96	1.00	1.05	1.11	1.10	1.11	1.09	1.08	1.09
Ratio of net cash flow to market value of assets	-4.7%	-4.9%	-4.8%	-5.1%	-4.3%	-4.4%	-4.5%	-4.2%	-4.4%	-5.1%
Duration of the actuarial present value of benefits*	12.54	12.69	12.37	NA	NA	NA	NA	NA	NA	NA

*Duration measure not available prior to 2019

Impact on Funding Metrics of Investment Return Assumption +/- 1%

	Investment Return Assumption		
Cost Item	6.25%	7.25%	8.25%
Normal Cost % (excluding admin expenses)	24.39%	19.71%	16.23%
UAAL ($ in millions)	$1,820.0	$1,221.8	$721.2
30-year funding rate (employee + City)	43.76%	34.61%	26.18%
Funded Ratio	68.0%	76.0%	84.3%
Funding Period	Infinite	50 years	28 years

CLOSING COMMENTS

The unfunded actuarial accrued liability of the Fund has increased by less than expected due to favorable experience from investments and mortality. Offsetting these gains, there were losses from the 5.00% cost of living adjustment and from salary increases being greater than expected.

The calculated contribution rate necessary to pay the Fund's normal cost and amortize the UAAL over 30 years is 34.61% of pay. When the debt service payment on the Pension Obligation Bonds is considered, the total contribution rate is 43.17% of payroll. However, Chapter 40A of the Dallas City Code limits the contribution rate to 36.00% of payroll, therefore, the total rate to be contributed by the employees and the City for fiscal year 2023 will be 36.00% of pay.

Following adoption of the proposed changes by the ERF Board, the Dallas City Council, and approval by the City of Dallas voters, the new tier of benefits became effective for employees hired after December 31, 2016 and the outlook for the ERF improved. Based on our projections, reflecting the new tier of benefits and assuming the actuarial assumptions are exactly met (including a 7.25% return on the actuarial value of assets), ERF is expected to be fully funded in approximately 50 years.

ACTUARIAL TABLES

Summary of Actuarial Values
As of December 31, 2021

($ in 000s)

	APV* of Projected Benefits	Entry Age Actuarial Values: Actuarial Accrued Liability (AAL)	Normal Cost $	Normal Cost % of Pay**
1 Active Members				
a. Retirement	$ 1,899,956	$ 1,456,787	$ 62,161	14.26%
b. Death	19,016	11,438	1,035	0.24%
c. Disability	12,339	4,747	1,044	0.24%
d. Termination	141,178	(5,505)	19,634	4.50%
e. Health Subsidy	42,759	31,622	2,018	0.47%
Total	$ 2,115,248	$ 1,499,089	$ 85,892	19.71%
2 Benefit Recipients	3,456,659	3,456,659		
3 Other Inactive	138,614	138,614		
4 Total Actuarial Values of Benefits	$ 5,710,521	$ 5,094,362	$ 85,892	19.71%
5 Actuarial Value of Assets		$ 3,872,601		
6 Unfunded Actuarial Accrued Liability (4 - 5)		$ 1,221,761		
7 Funding Ratio		76.02%		
8 Market Value Measurements				
UAAL on market value		$ 1,001,147		
Funded Ratio on market value		80.35%		

* *APV – Actuarial Present Value*

*** Percentage of expected payroll for continuing active members.*

Demonstration of Actuarially Required Contribution Rate for FY 2023

Valuation as of December 31,	Actuarially Determined Total Contribution Rate	Projected Compensation for Plan Year (in $M)	Total Contributions to Fund for Plan Year (in $M)	Actuarial Accrued Liability (AAL $M)	Actuarial Value of Assets (AVA $M)	Unfunded Actuarial Accrued Liability (UAAL $M)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2021	34.61%	$ 442.9	$ 153.3	$ 5,094.4	$ 3,872.6	$ 1,221.8
2022	34.61%	454.4	157.3	5,213.8	3,962.8	1,251.0
2023	34.61%	467.6	161.8	5,335.8	4,056.9	1,279.0
2024	34.61%	481.2	166.5	5,451.5	4,146.4	1,305.1
2025	34.61%	495.4	171.5	5,560.5	4,231.3	1,329.2
2026	34.61%	510.0	176.5	5,662.9	4,311.9	1,351.0
2027	34.61%	525.1	181.7	5,758.8	4,388.4	1,370.4
2028	34.61%	540.8	187.2	5,848.9	4,461.7	1,387.2
2029	34.61%	557.2	192.8	5,934.1	4,533.8	1,400.3
2030	34.61%	574.0	198.7	6,014.6	4,604.4	1,410.2
2031	34.61%	591.8	204.8	6,091.1	4,674.5	1,416.6
2032	34.61%	610.0	211.1	6,164.7	4,745.7	1,419.0
2033	34.61%	628.2	217.4	6,235.4	4,818.4	1,417.0
2034	34.61%	646.8	223.9	6,303.0	4,892.7	1,410.2
2035	34.61%	666.1	230.5	6,367.5	4,969.1	1,398.4
2036	34.61%	686.1	237.4	6,429.2	5,048.3	1,380.9
2037	34.61%	706.6	244.6	6,488.8	5,131.4	1,357.3
2038	34.61%	727.8	251.9	6,546.9	5,219.7	1,327.2
2039	34.61%	749.8	259.5	6,604.4	5,314.6	1,289.8
2040	34.61%	772.7	267.4	6,662.4	5,417.7	1,244.7
2041	34.61%	796.4	275.6	6,721.8	5,530.7	1,191.1
2042	34.61%	820.8	284.1	6,783.2	5,655.1	1,128.1
2043	34.61%	846.0	292.8	6,847.6	5,792.4	1,055.2
2044	34.61%	872.0	301.8	6,916.5	5,945.0	971.4
2045	34.61%	898.8	311.1	6,991.5	6,115.5	876.0
2046	34.61%	926.2	320.6	7,073.9	6,306.1	767.8
2047	34.61%	954.4	330.3	7,164.8	6,518.9	645.9
2048	34.61%	983.2	340.3	7,265.2	6,756.0	509.2
2049	34.61%	1,012.7	350.5	7,375.8	7,019.3	356.5
2050	34.61%	1,043.0	361.0	7,497.2	7,310.7	186.5
2051	34.61%	1,074.1	371.7	7,630.0	7,632.1	(2.2)

Information for City Ordinance 25695
For the Fiscal Year Commencing October 1, 2022

1 Prior Adjusted Total Obligation Rate	36.00%	
2 Actuarially Required Contribution Rate*	34.61%	
3 Debt Service		
a Scheduled Debt Service Payment for FY 2023	$ 38,843,241	
b Projected Payroll	$ 453,934,344	
c Pension Obligation Bond Credit Rate (a/b)	8.56%	
4 Current Total Obligation Rate (2 + 3c)	43.17%	
5 Current Adjusted Total Obligation Rate	36.00%	**
6 Allocation of Contribution Rates Commencing October 1, 2022		
a Employee (5 x .37)	13.32%	
b City (5 x .63)	22.68%	

* Actuarially determined level contribution rate as demonstrated on Table 2.

** If the absolute value of the difference between the Prior Adjusted Total Obligation Rate (PATOR) and the Current Total Obligation Rate (CTOR) is less than or equal to 3.0% then:

Current Adjusted Total Obligation Rate (CATOR) = PATOR

otherwise:

1) If PATOR - CTOR > 3.00% then the CATOR is set equal to the greater of:
   a) the average of the Prior Adjusted Total Obligation Rate and the Current Total Obligation Rate; or
   b) 90% of the Prior Adjusted Total Obligation Rate

or

2) If PATOR - CTOR < -3.00% then the CATOR is set equal to the lesser of:
   a) the average of the Prior Adjusted Total Obligation Rate and the Current Total Obligation Rate; or
   b) 110% of the Prior Adjusted Total Obligation Rate

Additionally, the CATOR cannot exceed 36.00%.

Excerpts from City Ordinance 25695

ACTUARIALLY REQUIRED CONTRIBUTION RATE – means, for any fiscal year, a rate of contribution to the fund, expressed as a percentage of members' projected wages for such fiscal year, which is the sum of the following as determined in the actuarial valuation report for the preceding plan year:

(A) the actuarial present value of the pension plan benefits and expenses that are allocated to a valuation period by the actuarial cost method; and

(B) the contribution that will amortize the difference between the actuarial accrued liability of the fund and the actuarial value of the assets of the fund over the period of years required by generally accepted accounting principles.

CITY CONTRIBUTIONS – means, for each pay period ending during a transition year, the city shall contribute to the retirement fund an amount equal to:

(A) 63% times the current total obligation rate for that fiscal year times the members' wages for the pay period, minus

(B) The pension obligation bond credit rate for that fiscal year times the members' wages for the pay period;

and, for each pay period ending during each fiscal year, except for a transition year, the city shall contribute to the retirement fund an amount equal to:

(C) 63% times the current adjusted total obligation rate for that fiscal year times the members' wages for the pay period, minus

(D) The pension obligation bond credit rate for that fiscal year times the members' wages for the pay period.

EMPLOYEE CONTRIBUTIONS – means, for each pay period ending during a transition year, each member shall contribute to the retirement fund an amount equal to:

(A) 37% times the current total obligation rate for that fiscal year times the member's wages for the pay period;

and, for each pay period ending during each fiscal year, except for a transition year, the member shall contribute to the retirement fund an amount equal to:

(B) 37% times the current adjusted total obligation rate for that fiscal year times the member's wages for the pay period.

CURRENT ADJUSTED TOTAL OBLIGATION RATE – means, for any fiscal year, the rate determined by the board as follows, using whichever formula is applicable:

(A) If the current total obligation rate minus the prior adjusted total obligation rate is greater than three, then the current adjusted total obligation rate for such fiscal year is equal to the lesser of:

(i) the prior adjusted total obligation rate plus one-half times the difference of the current total obligation rate minus the prior adjusted total obligation rate; or

(ii) 110 percent times the prior adjusted total obligation rate; or

(iii) 36 percent.

(B) If the difference between the current total obligation rate and the prior adjusted total obligation rate is less than three, then the current adjusted total obligation rate for such fiscal year is equal to the prior adjusted total obligation rate.

(C) If the prior adjusted total obligation rate minus the current total obligation rate is greater than three, then the current adjusted total obligation rate for such fiscal year is equal to the greater of:

(i) the prior adjusted total obligation rate minus one-half times the difference of the prior adjusted total obligation rate minus the current total obligation rate; or

(ii) 90 percent times the prior adjusted total obligation rate.

CURRENT TOTAL OBLIGATION RATE – means, for any fiscal year, the rate adopted by the board that is equal to the sum of the pension obligation bond credit rate for such fiscal year plus the actuarially required contribution rate for such fiscal year.

PENSION OBLIGATION BOND CREDIT RATE – means, for any fiscal year, the rate adopted by the board that is a percentage calculated by dividing:

(A) the debt service due during such fiscal year on any pension obligation bonds, the proceeds of which have been deposited in the fund, by:

(B) the total members' projected wages for such fiscal year, as reported in the relevant actuarial valuation report.

PRIOR ADJUSTED TOTAL OBLIGATION RATE – means:

(A) for the fiscal year commencing October 1, 2006, the current total obligation rate that was effective for the prior fiscal year; and

(B) for each fiscal year commencing on or after October 1, 2007, the current adjusted total obligation rate that was effective for the prior fiscal year.

PROJECTED PAYROLL – means the covered payroll for the valuation proceeding the fiscal year multiplied by the payroll growth assumption.

TRANSITION YEAR – means each of the following:

(A) the first fiscal year in which debt service payments related to pension obligation bonds are due from the city;

(B) the first fiscal year in which no debt service payments related to pension obligation bonds are due from the city; and

(C) the fiscal year beginning October 1, 2005.

Net Assets Available for Benefits

($ in 000s)

		December 31, 2020		December 31, 2021
1 Assets				
a. Cash & Short-Term	$	336,137	$	473,616
2 Receivables				
a. Accrued Investment Income	$	14,925	$	13,295
b. Securities Sold		6,188		1,848
c. Employer Contribution		467		2,445
d. Employee Contribution		439		702
e. Pending Contracts		406,359		287,389
	$	428,378	$	305,679
3 Investments				
a. Index Funds	$	208,318	$	239,274
b. Fixed Income		976,820		991,047
c. Equities		1,888,059		2,059,147
d. Real Estate		222,726		291,794
e. Private Equity		316,237		384,761
	$	3,612,160	$	3,966,023
4 Total Assets	$	4,376,675	$	4,745,318
5 Liabilities				
a. Accounts Payable	$	8,482	$	9,005
b. Investment Transactions		661,440		643,098
	$	669,922	$	652,103
6 Net Assets Available For Benefits	$	3,706,753	$	4,093,215

Change in Assets Available for Benefits
Fiscal Year Ending December 31, 2021

($ in 000s)

	2020	2021
1 Assets Available at Beginning of Year	$ 3,658,088	$ 3,706,753
Adjustment *	0	0
	$ 3,658,088	$ 3,706,753
2 Revenues		
a. Employer Contributions	$ 61,615	$ 63,583
b. Employee Contributions	58,358	59,256
c. Investment Income	91,867	88,100
d. Investment Expense	(17,915)	(21,074)
e. Realized and Unrealized Gains (Losses)	153,972	510,013
f. Other (Security Lending)	1,181	971
Total Revenues	$ 349,078	$ 700,849
3 Expenses		
a. Benefits	$ 287,465	$ 296,586
b. Refunds	6,857	10,452
c. Administrative Expenses	5,699	6,547
d. Depreciation Expense	392	802
Total Expense	$ 300,413	$ 314,387
4 Assets Available at End of Year (1 + 2 - 3)	$ 3,706,753	$ 4,093,215

** Change due to difference between unaudited asset value used for prior valuation and audited asset value*

Development of Actuarial Value of Assets

($ in 000s)

		December 31, 2021
1.	Market value of assets at beginning of year	$ 3,706,753
2.	External cashflow	
	a. Contributions	$ 122,839
	b. Benefits and refunds paid	(307,038)
	c. Administrative and miscellaneous expenses	(7,349)
	d. Subtotal	(191,548)
3.	Assumed investment return rate for fiscal year	7.25%
4.	Assumed investment income for fiscal year	$ 261,917
5.	Expected Market Value at end of year (1+ 2 + 4)	$ 3,777,122
6.	Market value of assets at end of year	$ 4,093,215
7.	Difference (6 - 5)	$ 316,093

8. Development of amounts to be recognized as of December 31, 2021:

Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income	Offsetting of Gains/(Losses)	Net Deferrals Remaining	Years Remaining	Recognized for this valuation	Remaining after this valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2017	$ 0	$ 0	$ 0	1	$ 0	$ 0
2018	(16,581)	16,581	0	2	0	0
2019	0	0	0	3	0	0
2020	(23,744)	23,744	0	4	0	0
2021	316,093	(40,325)	275,768	5	55,154	220,614
Total	$ 275,768	$ 0	$ 275,768		$ 55,154	$ 220,614

9.	Final actuarial value of plan net assets, end of year (Item 6 - Item 8, Column 6)	$ 3,872,601
10.	Ratio of actuarial value to market value	94.6%

Notes: Remaining deferrals in Column (1) for prior years are from last year's report Table 6, column 6. The number in the current year is Item 7, above. Column 2 is a direct offset of the current year's excess/(shortfall) return against prior years' excess/(shortfall) of the opposite type.

Historical Investment Performance

Dollar Weighted Basis Net of Investment Expenses

Calendar Year	On Market Value	On Actuarial Value
2002	-9.81%	-5.37%
2003	27.05%	2.03%
2004	15.22%	9.38%
2005	7.93%	13.71%
2006	16.90%	13.03%
2007	3.56%	9.58%
2008	-31.31%	-3.76%
2009	30.35%	6.79%
2010	15.77%	4.30%
2011	0.86%	1.15%
2012	14.29%	2.82%
2013	16.75%	10.65%
2014	6.14%	10.29%
2015	-1.83%	7.02%
2016	8.65%	8.51%
2017*	12.34%	8.99%
2018	-5.15%	5.23%
2019	17.30%	6.74%
2020	6.42%	6.81%
2021	16.01%	8.68%
5-year average ending in 2021	9.06%	7.28%
10-year average ending in 2021	8.83%	7.55%

*The yield on the actuarial value of assets for 2017 includes the impact of the method change for the Actuarial Value of Assets.

Analysis of Change in Unfunded Actuarial Accrued Liability
For the Year Ending December 31, 2021

($ in 000s)

1. UAAL as of December 31, 2020		$ 1,185,808
2. Expected Change in UAAL during 2021		
a. Expected Amortization Payment for CY 2021 based on the Actuarially Determined Contribution Rate	(58,949)	
b. Interest adjustments on 1 & 2a to Year End @ 7.25%	83,872	
c. Expected change in UAAL		24,923
3. Increase/(Decrease) in UAAL Due to Difference Between the Actuarially Determined Contribution Rate and Actual Contribution Rate		33,885
4. Net Actuarial Experience (Gains) & Losses		(22,855)
5. Assumption and Method Changes		0
6. UAAL as of December 31, 2021		$ 1,221,761

Investment Experience (Gain) or Loss

($ in 000s)

Item	Valuation as of December 31, 2021
1. Actuarial assets, beginning of year	$ 3,747,078
2. Contributions	122,839
3. Benefits and refunds paid with administrative expenses	(314,387)
4. Assumed net investment income at 7.25% on	
a. Beginning of year assets	271,663
b. Contributions	4,375
c. Benefits and refunds paid with administrative expenses	(11,197)
d. Total	$ 264,841
5. Expected actuarial assets, end of year (Sum of Items 1 through 4)	3,820,371
6. Actual actuarial assets, end of year	3,872,601
7. Asset experience (gain)/loss for year	(52,230)

Analysis of Actuarial (Gains) and/or Losses for 2021

($ in 000s)

	2021
Investment Return	$ (52,230)
Salary Increase	19,231
Age and Service Retirement	(2,809)
General Employment Termination	(3,695)
Disability Incidence	(259)
Active Mortality	550
Benefit Recipient Mortality	(25,294)
Actual vs. Expected Cost of Living Adjustment (COLA)*	55,708
Other	(14,057)
Total Actuarial (Gain)/ Loss	$ (22,855)

* Actual COLA of 5.00% for Tier A and 3.00% for Tier B versus expected COLAs of 2.50% for Tier A and 2.20% for Tier B.

Schedule of Funding Status

($ in 000s)

End of Year	Actuarial Value of Assets (a)	AAL (b)	UAAL (b-a)	Funding Ratio (a/b)	Payroll* (c)	UAAL as % of Payroll ((b-a)/c)
1998	$1,617,468	$1,750,430	$132,962	92.40%	$275,547	48.30%
1999	1,862,644	1,873,998	11,353	99.39%	282,127	4.00%
2000	1,997,828	2,038,078	40,250	98.03%	298,355	13.50%
2001	2,017,041	2,276,488	259,447	88.60%	332,842	77.90%
2002	1,863,701	2,399,569	535,868	77.67%	324,615	165.08%
2003	1,843,099	2,489,071	645,972	74.05%	318,492	202.82%
2004	2,482,082	2,488,270	6,188	99.75%	331,201	1.87%
2005	2,739,269	2,606,173	(133,096)	105.11%	332,446	-40.04%
2006	2,998,099	2,761,404	(236,695)	108.57%	344,997	-68.61%
2007	3,183,260	2,915,164	(268,096)	109.20%	370,150	-72.43%
2008	2,957,506	3,075,385	117,879	96.17%	389,362	30.27%
2009	3,031,652	3,192,120	160,468	94.97%	375,164	42.77%
2010	3,027,439	3,282,126	254,687	92.24%	332,045	76.70%
2011	2,916,746	3,391,652	474,906	86.00%	318,972	148.89%
2012	2,846,124	3,518,356	672,232	80.89%	340,452	197.45%
2013	3,074,284	3,610,845	362,477	85.14%	352,486	102.83%
2014	3,241,053	4,004,055	763,002	80.94%	374,002	204.01%
2015	3,320,387	4,129,133	808,746	80.41%	404,981	199.70%
2016	3,451,463	4,291,802	840,339	80.42%	420,693	199.75%
2017	3,601,612	4,377,844	776,232	82.27%	432,854	179.33%
2018	3,620,319	4,526,996	906,677	79.97%	435,375	208.25%
2019	3,682,959	4,863,325	1,180,366	75.73%	444,737	265.41%
2020	3,747,078	4,932,886	1,185,808	75.96%	439,544	269.78%
2021	3,872,601	5,094,362	1,221,761	76.02%	453,934	269.15%

* *Projected to following year.*

Summary of Data Characteristics

As of December 31,	2019	2020	2021
Active Members			
Number	7,427	7,244	7,175
Total Annualized Earnings of Members as of 12/31 (000s)	$ 433,890	$ 428,824	$ 442,863
Average Earnings	58,421	59,197	61,723
Benefit Recipients			
Number	7,405	7,552	7,655
Total Annual Retirement Income (000s)	$ 269,263	$ 277,429	$ 294,130
Total Annual Health Supplement (000s)	10,984	10,929	11,077
Average Total Annual Benefit	37,871	38,228	39,870
Inactive Members*			
Deferred Vested	877	911	974
Deferred Nonvested	789	799	1,007
Total	1,666	1,710	1,981

* *The number of inactives on 12/31/2021 includes 974 members who have applied for a deferred pension and 1,007 other members who have terminated and still have contribution balances in the Fund.*

Distribution of Active Members and Payroll by Age and Years of Service

Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30 & Over	Totals
	Years of Service								
Under 20	4								4
	$139,901								$139,901
20-24	94	73							167
	$3,712,985	$3,198,406							$6,911,391
25-29	157	284	76						517
	$7,078,931	$13,543,283	$3,947,658						$24,569,872
30-34	158	335	239	36					768
	$7,289,985	$18,123,730	$13,255,721	$2,272,625					$40,942,061
35-39	138	241	236	127	48				790
	$7,055,806	$13,941,127	$14,617,183	$8,615,764	$3,285,603				$47,515,483
40-44	118	230	254	130	105	38	2		877
	$6,449,088	$13,725,063	$16,051,559	$8,769,853	$7,289,613	$2,631,995	$204,280		$55,121,451
45-49	95	227	202	139	128	134	49		974
	$4,759,687	$13,820,588	$13,524,587	$9,567,088	$9,299,243	$9,165,367	$3,366,898		$63,503,458
50-54	78	199	238	118	136	180	100	16	1,065
	$4,084,437	$12,832,619	$14,384,731	$7,904,679	$9,894,757	$12,964,257	$7,568,958	$1,209,975	$70,844,413
55-59	60	172	189	174	172	139	62	28	996
	$3,217,809	$11,088,368	$11,385,504	$11,087,222	$11,935,226	$9,361,155	$4,960,914	$2,295,013	$65,331,211
60-64	44	106	133	113	100	84	39	34	653
	$2,396,590	$6,258,428	$8,009,182	$7,513,462	$7,049,388	$5,657,925	$3,439,728	$3,076,687	$43,401,390
65&Over	8	42	68	66	55	56	35	34	364
	$430,764	$2,427,936	$4,206,940	$4,593,530	$3,691,035	$3,775,847	$2,474,018	$2,982,074	$24,582,144
Totals	954	1,909	1,635	903	744	631	287	112	7,175
	$46,615,983	$108,959,548	$99,383,065	$60,324,223	$52,444,865	$43,556,546	$22,014,796	$9,563,749	$442,862,775

Distribution of Benefit Recipients as of December 31, 2021

Age	Number	Annual Benefit*	Annual Average Benefit*
Under 50	41	$ 747,093	$ 18,222
50-54	165	7,428,114	45,019
55-59	594	28,515,392	48,006
60-64	1,332	54,462,678	40,888
65-69	1,652	64,658,632	39,140
70-74	1,710	69,652,124	40,732
75-79	1,024	36,012,040	35,168
80-84	612	18,683,666	30,529
85-89	317	8,942,051	28,208
90 & Over	208	5,028,479	24,175
Total	7,655	$ 294,130,270	$ 38,423

* *Does not include Health Benefit Supplement.*

Schedule of Active Member Valuation Data

Year Ending December 31,	Active Participants	Percent Change	Covered Payroll	Percent Change	Average Salary	Percent Change
2007	8,117	-	$ 359,369,000	-	$ 44,274	-
2008	8,371	3.1%	378,021,000	5.2%	45,158	2.0%
2009	7,654	-8.6%	364,237,000	-3.6%	47,588	5.4%
2010	7,034	-8.1%	322,374,000	-11.5%	45,831	-3.7%
2011	6,745	-4.1%	309,682,000	-3.9%	45,913	0.2%
2012	6,864	1.8%	330,536,000	6.7%	48,155	4.9%
2013	6,993	1.9%	342,219,000	3.5%	48,937	1.6%
2014	7,180	2.7%	363,109,000	6.1%	50,572	3.3%
2015	7,477	4.1%	393,186,000	8.3%	52,586	4.0%
2016	7,619	1.9%	409,433,000	4.1%	53,738	2.2%
2017	7,838	2.9%	421,269,000	2.9%	53,747	0.0%
2018	7,584	-3.2%	423,723,000	0.6%	55,871	4.0%
2019	7,427	-2.1%	433,890,000	2.4%	58,421	4.6%
2020	7,244	-2.5%	428,824,000	-1.2%	59,197	1.3%
2021	7,175	-1.0%	442,863,000	3.3%	61,723	4.3%

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

Year Ending December 31,	Added to Rolls		Removed from Rolls		Rolls-End of Year			
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	% Increase in Annual Allowances	Average Annual Allowances
2007	239	$ 7,250,468	205	$ 4,551,742	5,304	$142,267,609	-	$ 26,823
2008	383	8,905,680	211	4,684,964	5,476	154,692,846	8.7%	28,249
2009	446	9,268,740	216	4,795,982	5,706	165,826,328	7.2%	29,062
2010	508	12,798,268	221	4,907,000	5,993	179,730,384	8.4%	29,990
2011	404	10,012,165	198	4,396,317	6,199	193,851,170	7.9%	31,271
2012	325	9,795,464	204	4,529,539	6,320	202,120,582	4.3%	31,981
2013	324	11,246,955	197	4,327,990	6,447	210,027,512	3.9%	32,578
2014	370	12,415,771	219	4,821,713	6,598	219,150,070	4.3%	33,215
2015	476	13,777,204	318	6,847,464	6,756	226,019,290	3.1%	33,455
2016	384	12,746,549	237	5,562,549	6,903	237,992,528	5.3%	34,477
2017	383	9,893,931	244	6,375,641	7,042	244,768,143	2.8%	34,758
2018	402	14,905,595	220	5,976,286	7,224	258,085,328	5.4%	35,726
2019	478	17,715,050	297	8,368,302	7,405	269,263,106	4.3%	36,362
2020	455	28,634,730	308	11,614,128	7,552	277,428,698	3.0%	36,736
2021	424	16,109,924	321	8,655,976	7,655	294,130,270	6.0%	38,423

Solvency Test

($ in 000s)

	Aggregated Accrued Liabilities for				Portions of Accrued Liabilities Covered by Reported Assets		
Valuation Date	Active and Inactive Members Contributions	Retirees and Beneficiaries	Active and Inactive Members (Employer Financed Portion)	Reported Assets	(5)/(2)	[(5)-(2)]/3	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
December 31, 2007	$ 206,090	$ 1,591,731	$ 1,117,343	$ 3,183,260	100.0%	100.0%	100.0%
December 31, 2008	221,667	1,707,599	1,146,119	2,957,506	100.0%	100.0%	89.7%
December 31, 2009	228,666	1,834,491	1,128,963	3,031,652	100.0%	100.0%	85.8%
December 31, 2010	232,727	2,041,322	1,008,077	3,027,439	100.0%	100.0%	74.7%
December 31, 2011	240,821	2,181,731	969,100	2,916,746	100.0%	100.0%	51.0%
December 31, 2012	257,716	2,250,533	1,010,107	2,846,124	100.0%	100.0%	33.4%
December 31, 2013	278,892	2,319,424	1,012,529	3,074,284	100.0%	100.0%	47.0%
December 31, 2014	301,567	2,578,071	1,124,417	3,241,053	100.0%	100.0%	32.1%
December 31, 2015	325,607	2,650,638	1,152,888	3,320,387	100.0%	100.0%	29.9%
December 31, 2016	350,646	2,770,533	1,170,623	3,451,463	100.0%	100.0%	28.2%
December 31, 2017	373,193	2,854,818	1,149,833	3,601,612	100.0%	100.0%	32.5%
December 31, 2018	392,004	2,989,597	1,145,395	3,620,319	100.0%	100.0%	20.8%
December 31, 2019	408,984	3,228,576	1,225,766	3,682,959	100.0%	100.0%	3.7%
December 31, 2020	430,411	3,312,228	1,190,247	3,747,078	100.0%	100.0%	0.4%
December 31, 2021	448,149	3,456,659	1,189,554	3,872,601	100.0%	99.1%	0.0%

EXPERIENCE TABLES

Pay Experience for Employees who are Active at Beginning and End of Year
Valuation Pay Analysis
Analyzed by Years of Service

Service Beginning of Year	Experience for 2021			
	Number	Expected Pay	Actual Pay	Ratio A/E
Under 5	1,692	$ 92,635,691	$ 95,295,899	103%
5-9	1,741	104,248,481	105,549,050	101%
10-14	860	57,025,663	57,538,476	101%
15-19	861	59,239,616	59,806,475	101%
20-24	605	41,191,540	41,875,331	102%
25-29	324	24,465,541	24,752,364	101%
30 & Over	126	10,458,937	10,571,211	101%
Total	6,209	$ 389,265,469	$ 395,388,806	102%
Over 10 Years	2,776	$ 192,381,297	$ 194,543,857	101%

Service Beginning of Year	Experience for 2020-2021			
	Number	Expected Pay	Actual Pay	Ratio A/E
Under 5	3,703	$ 200,233,852	$ 201,356,794	101%
5-9	3,429	203,066,757	202,653,206	100%
10-14	1,847	121,426,823	120,584,751	99%
15-19	1,578	108,641,220	108,249,387	100%
20-24	1,323	90,606,951	89,714,232	99%
25-29	623	46,821,916	46,429,775	99%
30 & Over	267	22,067,074	21,935,261	99%
Total	12,770	$ 792,864,593	$ 790,923,406	100%
Over 10 Years	5,638	$ 389,563,984	$ 386,913,406	99%

Analysis of Retirement Experience

Each Age

Age	2021 Retirement Actual	2021 Retirement Expected	2021 Retirement Ratio A/E	2020-2021 Retirement Actual	2020-2021 Retirement Expected	2020-2021 Retirement Ratio A/E
46	-	-	N/A	-	-	N/A
47	-	-	N/A	-	-	N/A
48	-	-	N/A	-	-	N/A
49	1	0.20	500%	1	0.60	167%
50	7	6.65	105%	9	10.55	85%
51	5	7.80	64%	9	17.30	52%
52	7	8.60	81%	16	18.20	88%
53	12	13.70	88%	21	25.50	82%
54	9	9.75	92%	17	20.30	84%
55	9	9.35	96%	24	21.10	114%
56	12	14.35	84%	25	25.65	97%
57	14	12.65	111%	31	26.75	116%
58	12	11.65	103%	27	26.80	101%
59	13	15.25	85%	24	28.30	85%
60	26	18.59	140%	55	40.07	137%
61	24	17.17	140%	40	34.82	115%
62	20	16.14	124%	35	34.34	102%
63	14	15.49	90%	28	30.89	91%
64	6	14.27	42%	17	30.76	55%
65	14	17.65	79%	32	35.18	91%
66	14	16.06	87%	28	29.28	96%
67	9	10.45	86%	19	20.48	93%
68	5	6.98	72%	14	15.33	91%
69	7	6.24	112%	12	10.91	110%
70 & Over	11	79.00	14%	39	171.00	23%
Total	251	327.99	77%	523	674.11	78%
Total Under 70	240	248.99	96%	484	503.11	96%

Analysis of Retirement Experience

Age Groups

Age Group	2021 Retirements Actual	2021 Retirements Expected	2021 Retirements Ratio A/E	2020-2021 Retirements Actual	2020-2021 Retirements Expected	2020-2021 Retirements Ratio A/E
Under 55	41	46.70	88%	73	92.45	79%
55-59	60	63.25	95%	131	128.60	102%
60-64	90	81.66	110%	175	170.88	102%
65-69	49	57.38	85%	105	111.18	94%
70 & Over	11	79.00	14%	39	171.00	23%
Total	251	327.99	77%	523	674.11	78%
Total Under 70	240	248.99	96%	484	503.11	96%

Analysis of Turnover Experience

Years of Service	2021 Quits			2020-2021 Quits		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
0-4	501	348.83	144%	890	736.60	121%
5-9	190	131.45	145%	316	255.13	124%
10-14	47	26.14	180%	76	54.59	139%
15-19	17	13.42	127%	34	24.58	138%
20-24	6	4.81	125%	16	11.19	143%
25-29	1	0.46	216%	1	0.94	106%
Total	762	525.10	145%	1,333	1,083.04	123%

Analysis of Active Mortality Experience

Age	2021 Deaths			2020-2021 Deaths		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	0	0.02	0%	0	0.05	0%
25-29	1	0.10	962%	2	0.21	935%
30-34	1	0.21	486%	1	0.41	241%
35-39	3	0.30	984%	5	0.61	814%
40-44	1	0.49	203%	2	1.01	197%
45-49	2	0.84	237%	3	1.73	174%
50-54	3	1.45	207%	7	2.93	239%
55-59	2	2.03	98%	5	4.12	121%
60 and Over	7	3.29	213%	15	6.54	229%
Total	20	8.74	229%	40	17.62	227%

Analysis of Disability Experience

Age	2021 Disabilities			2020-2021 Disabilities		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	0	0.00	0%	0	0.00	0%
25-29	0	0.02	0%	0	0.05	0%
30-34	0	0.12	0%	0	0.24	0%
35-39	0	0.28	0%	0	0.56	0%
40-44	0	0.53	0%	0	1.09	0%
45-49	0	0.93	0%	0	1.89	0%
50-54	0	1.33	0%	0	2.66	0%
55-59	0	1.46	0%	0	2.93	0%
60 and Over	0	0.91	0%	0	1.71	0%
Total	0	5.58	0%	0	11.15	0%

Analysis of Retiree Mortality Experience*

Age	2021 Experience			2020-2021 Experience		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
Under 60	3	2.44	123%	9	4.93	183%
60-64	19	8.07	235%	27	16.09	168%
65-69	26	17.49	149%	53	35.49	149%
70-74	51	29.98	170%	83	57.43	145%
75-79	31	26.89	115%	71	52.61	135%
80-84	29	25.46	114%	57	49.92	114%
85-89	25	20.35	123%	53	40.69	130%
90 & over	31	25.36	122%	53	49.40	107%
Total	215	156.04	138%	406	306.56	132%

**This analysis does not include beneficiary, QDRO, or disabled deaths.*

ACTUARIAL METHODS AND ASSUMPTIONS

The most recent experience study was completed in conjunction with the December 31, 2019 actuarial valuation. Please see our experience study, dated June 2020, to see more detail of the rationale for the current assumptions. As authorized under Sec. 40A-9 of Chapter 40A, the actuarial methods and assumptions are established set by the Board of Trustees based upon recommendations from the Fund's actuary.

Entry Age Normal Method

The Entry Age Normal actuarial cost method is the actuarial valuation method used for all purposes under ERF. The concept of this method is that funding of benefits for each member should be affected as a, theoretically, level contribution (as a level percentage of pay) from entry into ERF to termination of active status.

The Normal Cost (NC) for a fiscal year under this method is determined as described in the prior paragraph for each individual member. The ERF NC for the year is the total of individual normal costs determined for each active member. The Actuarial Accrued Liability (AAL) under this method is the theoretical asset balance of the normal costs that would have accumulated to date based upon current actuarial assumptions. To the extent that the current assets of the fund are insufficient to cover the AAL, an Unfunded Actuarial Accrued Liability (UAAL) develops.

Actuarially Determined Contribution

The actuarially determined contribution rate is developed using an open group projection. The total contribution rate (member plus City) is the level percentage of pay needed to fund the Normal Cost for each year and pay off the UAAL over 30 years.

In the open group projection, the demographic assumptions are applied to the current active employees and any employees that are assumed to leave employment are replaced one for one with a new employee. Over time this results in the change of the employee group from mostly Tier A members to Tier B members. The projection is built to assume no gains or losses on the actuarial accrued liability or the actuarial value of assets.

In the projection, new members' pay is assumed to increase at 3.00% year over year (i.e. a new employee in 2022 is assumed to be hired at a salary that is 3.00% greater than a new employee hired in 2021). The 3.00% growth rate is equal to our wage inflation assumption of 3.00% (ultimate salary increase assumption). Note that this is not an assumption that payroll will grow at 3.00% per year. Payroll could grow more slowly in the near-term due to membership demographics.

New Entrant Profile

For the purposes of determining the funding period, an open group projection is used which replaces on a one-to-one basis each active member who leaves employment with an average new hire. The average new hire is determined based on a new entrant profile, which is created from the valuation data by determining the entry age and entry pay for anyone with between one and six years of service as of the valuation date, with salaries normalized to the valuation date. A summary of the new entrant profile is shown in the table below, with 60% of the population being male. The salaries below would be applicable for the year preceding the valuation date. Future cohorts of new hires have starting salaries that are assumed to grow at the General Wage Inflation of 3.00% over the salaries of the previous year.

New Entrant Profile		
Entry Age	**# of Employees**	**Average Salary**
15-19	2	$50,325
20-24	168	42,076
25-29	321	46,684
30-34	314	50,677
35-39	228	52,539
40-44	230	56,535
45-49	205	56,856
50-54	185	59,947
55-59	146	54,524
60-64	65	61,295
65-69	8	51,568
Total	**1,872**	**$52,432**

Actuarial Value of Asset Method

The method for determining the actuarial value of assets in future years is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual market value and the expected market value of assets each year, and recognizes the cumulative excess return (or shortfall) at a minimum rate of 20% per year. Each year, a base is set up to reflect this difference. If the current year's base is of opposite sign to the deferred bases, then it is offset dollar for dollar against the deferred bases. Any remaining bases are then recognized over the remaining period for the base.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Annual Rate of Investment Return: For all purposes under the Fund, the rate of investment return is assumed to be 7.25% per annum, net of investment expenses. This rate includes an annual assumed rate of inflation of 2.50%. In addition, annual cost-of-living adjustments are assumed to occur on average at the rate of 2.50% per annum for Tier A members and 2.20% for Tier B members (due to the lower maximum on cost-of-living-adjustments).

Annual Compensation Increases: Each member's compensation is assumed to increase in accordance with a table based on actual ERF experience. Sample rates follow:

Years of Service	Merit, Promotion, Longevity	General	Total
0	5.25 %	3.00 %	8.25 %
1	4.25	3.00	7.25
2	3.25	3.00	6.25
3	2.50	3.00	5.50
4	2.00	3.00	5.00
5	1.75	3.00	4.75
6	1.75	3.00	4.75
7	1.25	3.00	4.25
8	1.25	3.00	4.25
9	1.00	3.00	4.00
10	1.00	3.00	4.00
11	1.00	3.00	4.00
12	0.75	3.00	3.75
13	0.75	3.00	3.75
14	0.75	3.00	3.75
15	0.75	3.00	3.75
16	0.75	3.00	3.75
17	0.75	3.00	3.75
18	0.50	3.00	3.50
19 & Over	0.00	3.00	3.00

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Mortality:

Disabled Lives: The gender-distinct 2019 Texas Municipal Retirees Mortality Table for males and females respectively, set forward 4 years for males and 3 years for females. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries ("Ultimate MP") and projected from the year 2019.

Sample rates as of 2021 follow (rate per 1,000), with projected mortality applied:

	Disability Mortality Rate	
Age	**Male**	**Female**
20	35	30
30	35	30
40	35	30
50	35	30
60	35	30
70	35	30
80	82	50
90	236	161

Other Benefit Recipients: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries ("Ultimate MP") and projected from the year 2019.

Sample rates as of 2021 follow (rate per 1,000), with projected mortality applied:

	Mortality Rate	
Age	**Male**	**Female**
30	0.4	0.1
40	0.8	0.3
50	2.7	1.1
60	7.4	3.5
70	19.8	11.0
80	54.8	35.1
90	154.3	112.1

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Mortality, Continued:

Active Members: The PubG-2010 Employee Mortality Table for General Employees tables are used for males and females respectively. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries ("Ultimate MP") and projected from the year 2010.

Sample rates as of 2021 follow (rate per 1,000), with projected mortality applied:

	Mortality Rate	
Age	**Male**	**Female**
30	0.3	0.1
40	0.6	0.3
50	1.3	0.7
60	2.9	1.7
70	6.3	4.4
80	15.5	11.9
90	132.4	103.7

10% of active deaths are assumed to be service related.

Disability: A client-specific table of disability incidence with sample rates follows (rate per 1,000):

Age	Disability Rate
30	0.1
40	0.5
50	1.2
60	2.2

20% of disabilities are assumed to be service related. There is a 0% assumption of disability for members who have over 10 years of service and are eligible for retirement.

Retirement: Upon eligibility, active members are assumed to retire as follows (rate per 1,000):

Tier A:

Age	Male		Female	
	First Year Eligible	Thereafter	First Year Eligible	Thereafter
48-49	100	100	100	100
50	550	550	450	350
51	500	450	400	350
52	500	300	400	300
53	400	300	350	300
54	350	250	350	200
55	300	250	350	250
56	300	250	350	250
57	300	250	350	250
58-59	300	250	250	200
	Service < 18 yrs.	Service 18 yrs.+	Service < 18 yrs.	Service 18 yrs. +
60	80	230	90	200
61	90	230	90	180
62	100	230	90	200
63	100	230	150	150
64	150	230	120	130
65	150	230	120	300
66	200	230	150	300
67	200	230	250	300
68	200	230	150	300
69	200	230	150	300
70	1,000	1,000	1,000	300

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Retirement, Continued:
Upon eligibility, active members are assumed to retire as follows (rate per 1,000):

Tier B:

Age	**Male**		**Female**	
	Service < 40 yrs.	Service 40 yrs. +	Service < 40 yrs.	Service 40 yrs. +
<55	10	350	10	350
55-56	20	350	20	350
57-58	30	350	30	350
59-60	40	350	40	350
61-62	50	350	50	350
63-64	60	350	60	350
65	180	600	200	450
66	200	250	250	250
67	200	250	250	250
68	200	250	150	250
69	200	250	150	250
70	1,000	1,000	1,000	1,000

*For service < 40 yrs, rates shown are for those who met the rule of 80.

Retirement of Deferred Vested Members:
All deferred vested members are assumed to commence payment at their normal retirement age, which is age 60 for Tier A members and age 65 for Tier B members.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

General Turnover: A table of termination rates based on ERF experience as shown below.

	Terminations (per 1,000)	
Years of Service	**Male**	**Female**
0	228	200
1	180	165
2	144	150
3	110	120
4	90	95
5	75	90
6	67	80
7	60	65
8	51	48
9	43	48
10	33	45
11	33	32
12	30	30
13	30	30
14	22	20
15	22	14
16	19	14
17	19	14
18	19	14
19	19	14
20	12	14
21	12	14
22	12	6
23	12	6
24	12	6
25	12	6
26 & Over	5	6

There is 0% assumption of termination for members eligible for retirement.

Refunds of Contributions: Members are assumed to choose the most valuable termination benefit.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Operational Expenses: The amount of estimated administrative expenses expected in the next year is assumed to be equal to the prior year's expenses and is incorporated in the Normal Cost.

Marital Status: 75% of active male members and 50% of active female employees are assumed to be married.

Vacation Leave Conversions: Members with 20 or more years of service are assumed to convert unused vacation leave to 1.5 months of service. Other members are assumed to convert unused vacation leave to 1 month of service. No vacation leave conversion is assumed for disability retirement.

Spouse Age: The female spouse is assumed to be 3 years younger than the male spouse.

Payroll Growth Rate: Used to estimate projected payroll for the following fiscal year only. Assumed to be equal to the inflation rate of 2.50%. This assumption is not used as part of the open group projection used to calculate the Actuarially Determined Contribution Rate.

Member's Pay: In determining the member's valuation salary, the greater of the prior calendar year's gross pay and the member's rate of compensation is used.

Form of Payment: For Tier A it is assumed that 60% of married active male members and 84% of married active female employees will elect a Joint & 50% Survivor form of payment. Taking into consideration the marriage assumption and the inherent subsidy in the ERF's Joint & 100% Survivor factors, the male employees are valued with Joint and 28.0% Survivor annuities and the female employees are valued with Joint and 19.5% Survivor annuities. It is also assumed that 100% of Tier B employees will elect the normal form of payment under Tier B.

Data Adjustments: Certain records are missing spousal information. For these records we use the marital status assumption and spousal age difference assumption to value these records. No other adjustments are made to the data.

Actuarial Equivalence Assumptions: for form of payment conversion and Tier B early retirement factors are based on the following assumptions:

a. Interest Rate of 8.00%.

b. Mortality: Unisex blend (60% male and 40% female) of the following assumptions for males and females. 109% of the RP-2000 Combined Healthy Table for males with Blue Collar adjustment projected to 2026 using improvement scale BB for males. 103% of the RP-2000 Combined Healthy Table for females with Blue Collar adjustment projected to 2026 using improvement scale BB for females.

c. Cost-of-living-adjustments (COLA): a 3.00% COLA assumption for Tier A members and a 2.50% COLA assumption for Tier B members.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Actuarial Model: This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Changes in Methods and Assumptions Since Prior Valuation: None.

SUMMARY OF BENEFIT PROVISIONS

Employees' Retirement Fund of the City of Dallas
As of December 31, 2021

Membership

An employee becomes a member upon permanent employment and contributes to the Fund.

Tier A

A person who was employed by the City prior to January 1, 2017, or who was re-employed by the City on or after January 1, 2017 and whose pre January 1, 2017 credited service was not cancelled by withdrawal or forfeiture or was reinstated.

Tier B

A person who was employed by the City on or after January 1, 2017, or who was re-employed by the City on or after January 1, 2017 and whose pre January 1, 2017 credited service has been cancelled by withdrawal or forfeiture.

Contributions

Member: 37% of the current adjusted total obligation rate. New rates effective October 1 after the valuation date.

City: 63% of the current adjusted total obligation rate. New rates effective October 1 after the valuation date.

Definitions

Final Average Salary:

Tier A

Average monthly salary over the member's highest three years (or 36 months) of service.

Tier B

Average monthly salary over the member's highest five years (or 60 months) of service.

Credited Service: Length of time as an employee of the City of Dallas and while making contributions to the Fund.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Retirement Pension

Eligibility:

Tier A

a. Attainment of age 60; or

b. Attainment of age 55 (if credited service began before May 9, 1972); or

c. At any age after completion of 30 years of credited service with a reduced benefit before age 50; or

d. Attainment of age 50, if the sum of an active member's age and credited service is at least equal to 78.

Tier B

a. Attainment of age 65 and 5 years of service; or

b. At any age after completion of 40 years of credited service; or

c. At any age if the sum of an active member's age and credited service is at least equal to 80 (under this eligibility the member's pension will be actuarially reduced for each year prior to the age of 65 that the member retires).

d. Restricted Prior Service Credit included for eligibility (if approved).

Retirement Benefits:

Tier A

The retirement benefit equals 2-3/4% multiplied by average monthly earnings multiplied by credited service limited to a maximum of 36.3636 years plus a monthly $125 health supplement (prorated for service less than 5 years).

Tier B

The retirement benefit equals 2-1/2% multiplied by average monthly earnings multiplied by credited service limited to a maximum of 40 years (no monthly health supplement).

Form of Payment:

Tier A

An unreduced pension benefit under a joint and one-half survivor option with 10 years guaranteed or a ten-year certain and life option. An actuarially equivalent joint and full survivor option is also available.

Tier B

An unreduced pension payable for life with 10 years guaranteed. Actuarially equivalent joint and survivor options (50% and 100%) are also available.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Early Retirement Factors:

Tier A

For members retiring prior to age 50 with 30 or more years of service the pension shall be multiplied by the following percentage:

Age	Percentage
49	93.3
48	87.2
47	81.5
46	76.3
45	71.5
44	67.0

Tier B

For members retiring prior to age 65 with less than 40 years of service, the pension shall be multiplied by the following percentage:

Age	Percentage	Age	Percentage
64	89.72	56	40.03
63	80.66	55	36.41
62	72.64	54	33.15
61	65.53	53	30.22
60	59.21	52	27.57
59	53.58	51	25.18
58	48.56	50	23.01
57	44.06	49	21.05

Deferred Retirement

Eligibility: Deferred retirement pension benefit commencing at age 60 for Tier A members or at age 65 for Tier B members, with at least five (5) years of credited service, and accumulated contributions are left on deposit with the Fund.

Monthly Benefit: The deferred retirement benefit is equal to the retirement pension based on earnings and credited service at the time of termination.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Disability Retirement Pension

Non-Service Disability:

1. Eligibility: Five (5) years of service and totally and permanently incapacitated for duty.
2. Monthly Benefit: Computed based on average monthly earnings and credited service at time of disability but not less than 10 times the percentage multiplier multiplied by the average monthly earnings.

Service Disability:

1. Eligibility: Totally and permanently incapacitated from the further performance of duty as a result of injury while in the course of employment for the City.

2. Monthly Benefit: Calculated as a non-service disability pension but not less than $1,000 per month.

Death Benefits

Eligibility: active or inactive members who die prior to retirement

Benefit: For members with less than 2 years of service or inactive member with less than 5 years of service: refund of the members contributions.

Benefit: For members with more than 2 years of service but less than 15 years of service: an unreduced pension to designated beneficiary for 120 months or a one-half survivor option for life with 120 payments guaranteed.

Benefit: For members eligible for retirement or members and inactive members with more than 15 years of service: an unreduced pension to designated beneficiary for 120 months or a Full Survivor option for life with 120 payments guaranteed.

Form: Benefit paid in accordance with the option on file, or the eligible option, or if no eligible beneficiary, a lump sum equivalent of 10 years of benefit payments to the member's estate.

Minimum Benefit for Service Death: For job-related death a minimum of 10 years of service used in calculation of benefit. Benefit will not be less than $1,000 per month.

SUMMARY OF BENEFIT PROVISIONS (cont.)

Return of Accumulated Contributions

A member at the time of termination is entitled to be paid accumulated contributions without interest.

Cost-of-Living Adjustments

An annual cost-of-living adjustment to the base pension benefit shall be made based on the greater of:

Tier A

a. The percentage of change in the price index for October of the current year over October of the previous year, up to 5%, or

b. The percentage of annual average change in the price index for the 12-month period ending with the effective date of the adjustment, up to 5%.

Tier B

c. The percentage of change in the price index for October of the current year over October of the previous year, up to 3%, or

d. The percentage of annual average change in the price index for the 12-month period ending with the effective date of the adjustment, up to 3%.

DISCUSSION SHEET

Employees' Retirement Fund
Board of Trustees Meeting

June 14, 2022

Issue: Fiscal Year 2022-23 Budget

Attachment: Proposed ERF FY 2022-23 Budget

Discussion: The fiscal year budget is from 10/1/22 to 9/30/23. The proposed FY 2022-23 budget is $23,430,000, which includes recurring expenditures and special projects. This represents an increase of $528,400 compared to the FY 2021-22 budget. The recurring expenditures are the operating costs and investment fees of the Fund. The recurring costs for FY 2022-23 are $22,780,000, which is an increase of $378,400 over the prior year. This increase is primarily due to merit raises and additional staff to provide support for ongoing software upgrades and related regression testing. This increase is partially offset by lower investment management fees resulting from a decrease in assets under management.

The special projects category includes technology upgrades which are one-time costs. The proposed budget for Special Projects for FY 2022-23 is $650,000.

Highlights include:

- Investment management fees decreased due to lower assets under management.
- Personnel costs are budgeted to increase in accordance with the City of Dallas estimated merit increase. Although the amount of the merit increase, if any, authorized by the City of Dallas has not been decided, an increase of 1-5% has been included in this proposed budget. Additional positions are added to support regression testing of software upgrades. The positions are necessary to continue to ensure compliance with plan provisions.
- Non-recurring Special Projects costs are budgeted at $650,000 to provide for additional reports and improvements to regression testing of regular software upgrades.
- Certain costs determined by the City of Dallas have not yet been decided. This includes the amount of merit increase, healthcare charges per employee, workers compensation, pension costs related to each department's share of pension obligation bond debt service payments and software support for

Workday. A future budget adjustment may be necessary upon passage of the City of Dallas' final budget.

In summary, the net increase to the FY 2022-23 budget is $528,400, or 2.3% higher than the FY 2021-22 budget.

Recommendation: Approve the proposed budget for FY 2022-23. Suggested motion for the approval is as follows: Move approval of the proposed FY 2022-23 budget totaling $23,430,000 which is attached to this discussion sheet and authorize the Executive Director to administer the budget as noted below.

The Executive Director is authorized to expend, as required, up to 110% of each line item or $50,000 whichever is less of the funds appropriated herein, but in no instance, is the authorization given to exceed the total budgeted for each category (Administrative, Benefits Management, Investments Management, Capital, or Special Projects) without Board approval.

The Executive Director is authorized to negotiate and sign contracts which are required in the conduct of Fund business and funds have been approved in this budget. This authorization is limited to $50,000 per contract.

The Executive Director is authorized to pay budgeted expenses, and to further pay pensions and member refunds which are authorized by law but are not specifically included in this budget.

EMPLOYEES' RETIREMENT FUND
EXPENDITURE BUDGET
Proposed Fiscal Year 2022-23 Budget

	YTD Expenditures Thru 4/30/22	FY 2021-22 Budget	Proposed FY 2022-23 Budget	Budget Variance	Percent Increase (Decrease)
ADMINISTRATIVE					
Salaries	$ 2,336,347	$ 4,121,100	$ 4,764,500	$ 643,400	15.6%
Merits	-	54,000	54,000	-	0.0%
Service Incentive Pay	-	3,200	2,000	(1,200)	-37.5%
Lump Sum Pay	-	208,300	234,300	26,000	12.5%
Pensions	333,308	891,500	974,500	83,000	9.3%
Flexible Benefits	113,987	276,100	298,500	22,400	8.1%
FICWA/Medicare	32,547	59,800	68,000	8,200	13.7%
Workers' Compensation	-	30,000	35,000	5,000	16.7%
Temporary Help Services	62,936	150,000	180,000	30,000	20.0%
Supplies	1,652	12,000	10,000	(2,000)	-16.7%
Food Supplies	1,394	10,000	10,000	-	0.0%
Meter Postage	15,582	26,000	27,300	1,300	5.0%
Printing/Communication	17,934	25,000	26,300	1,300	5.2%
Property Insurance	9,430	9,300	10,000	700	7.5%
Liability Insurance	291,928	238,000	307,000	69,000	29.0%
Membership Dues	14,752	26,000	27,300	1,300	5.0%
Subscriptions	1,197	3,000	3,200	200	6.7%
Professional Development/Travel	37,868	80,000	99,000	19,000	23.8%
Reimbursement for Vehicle Use	-	300	400	100	33.3%
Data and Telecommunications Services	202,754	630,000	630,000	-	0.0%
Rent	309,525	545,000	599,500	54,500	10.0%
Parking and Public Transportation	7,200	8,000	8,000	-	0.0%
Legal	261,735	230,000	241,500	11,500	5.0%
Accounting	32,667	56,000	50,000	(6,000)	-10.7%
Audit	14,250	60,000	49,700	(10,300)	-17.2%
Actuary	57,165	80,000	84,000	4,000	5.0%
Election	-	50,000	50,000	-	0.0%
Other	25,485	45,000	45,000	-	0.0%
Total Administrative	**4,181,642**	**7,927,600**	**8,889,000**	**961,400**	**12.1%**
BENEFITS MANAGEMENT					
Disabilities/Continuations/Etc	-	28,000	28,000	-	0.0%
Pension Benefit Information	-	10,000	10,000	-	0.0%
Total Benefits Management	**-**	**38,000**	**38,000**	**-**	**0.0%**
INVESTMENTS MANAGEMENT					
Manager Fees	9,648,295	13,600,000	13,000,000	(600,000)	-4.4%
Investment Consultant & Services	319,629	376,000	375,000	(1,000)	-0.3%
Custodial Fees	232,283	320,000	316,000	(4,000)	-1.3%
Total Investments Management	**10,200,207**	**14,296,000**	**13,691,000**	**(605,000)**	**-4.2%**
CAPITAL					
Furniture, Fixtures, Equipment	3,970	50,000	50,000	-	0.0%
Computer Equipment	10,767	90,000	112,000	22,000	24.4%
Total Capital	**14,737**	**140,000**	**162,000**	**22,000**	**15.7%**
TOTAL RECURRING	**$ 14,396,586**	**$ 22,401,600**	**$ 22,780,000**	**$ 378,400**	**1.7%**
NON-RECURRING					
Special Projects	196,074	500,000	650,000	150,000	30.0%
				-	
TOTAL BUDGET	**$ 14,592,660**	**$ 22,901,600**	**$ 23,430,000**	**$ 528,400**	**2.3%**

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Pension Bridge Private Equity Exclusive 2022

Loews Chicago Hotel, Chicago, Illinois

July 25-26

Find out more

Attracting the elite within the private equity industry

We are excited to be back together in-person this July hosting the longest running, dedicated private equity conference in the investment industry - the Pension Bridge Private Equity Exclusive.

Now in its 16th year, the conference is returning this summer to Chicago at The Loews Chicago Hotel. You'll experience the same high quality networking and educational opportunities in a brand new venue, with a refreshed look and feel. Gather with innovative thought leaders from North America's largest LPs and GPs, all coming together for two days of in-depth knowledge sharing and peer-to-peer collaboration.

Hot topics, sparking vibrant conversations

There has never been a better time for the industry to come together to discuss its opportunities and challenges. Private equity is the darling of the investment community, with assets under management growing more strongly than ever. But this very success is creating its own issues with the huge weight of dry power driving deal prices and making the competition for the best deals tighter. At the same time, new deal structures are extending the life of investments and providing investors new ways to access and derive value from this market.

Where business gets done

Over nearly two decades, Pension Bridge has built an enviable reputation for hosting some of the most important and valuable conferences for the institutional asset management community.

We regularly attract super-star LPs, with more than $6trn of asset in the room.

LPs come to meet new and existing managers and ultimately to make new private equity allocations; Consultants aim to improve their understanding of the sector and to develop their networks; and GPs come to build relationships with investors and consultants, and of course to win business.

Speaker Roster

A conference like no other

Attendance at Pension Bridge is sought after. This is the event where GPs can make game-changing deals by connecting with prospective and current clients.

To allow for this, we have, and always will, maintain a strict attendance structure. Unique to the industry, we aim to deliver a 1:1 ratio of investors and consultants to manager attendees. This ensures there is an optimal environment to foster connections – investors don't feel overwhelmed, and you have the greatest visibility to forge relationships.

This year we expect more than 200 fee-earning and non fee-earning LPs to attend, with a limit of only 90 GP firms.

Become a Sponsor

Notice Anything Different?

With the return to physical conference, comes a new look for Pension Bridge. In November 2021, Pension Bridge united with the rest of its sister brands (Falk Marques Group, HFM, Fund Intelligence and many others) to form one new global brand - With Intelligence. But be rest assured, they are still the same high-quality, content-rich events you have known and loved for the past 17 years. **If anything, we are harnessing a new power.**

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Joshua - Save the date for our **13th Annual Global Real Assets Investment Forum**. Join us and our chairperson, Cynthia Steer, *Independent Director*, **Xponance, Inc.** at the Four Seasons Hotel in Austin on Tuesday, August 9th.

When we last convened in early February for Part 1 of this forum, we focused on the big question: Do you really need real assets in your portfolio? Well, now that we know the answer is YES, our conversations will be centered on **reevaluating your real asset investment objectives**. Stay tuned for our panel discussion announcement!

RSVP TODAY

Kind regards,

Institutional Investor

TEXPERS

Texas Association of Public Employee Retirement Systems

2022 SUMMER EDUCATIONAL FORUM:

SHARING SOLUTIONS IN SUN CITY

Hotel Paso Del Norte

10 Henry Trost Ct.
El Paso, TX 79901

August 21 - 23, 2022
El Paso, TX

Hi,

Online registration is open for our Summer Educational Forum, set for Aug. 21-23, 2022, in El Paso, Texas. This year's forum theme is Sharing Solutions in Sun City and will bring Texas' key public pension stakeholders together for education and networking.

During the event, attendees will gain insights on public fund management and investment issues while enjoying the relaxed and historic atmosphere of El Paso and the Hotel Paso Del Norte.

The Texas Association of Public Employee Retirement Systems hosts educational programs for trustees and administrators that manage the retirement funds of police officers, firefighters, and municipal and district employees throughout Texas. The association has 68 member pension systems that manage $32.7 billion in retirement assets for 57,728 active members and 60,737 retirees and beneficiary annuitants.

The forum starts on Sunday, Aug. 21, with a golf tournament, conference registration, and a welcome reception and continues on Monday, Aug. 22, with a day of general sessions and members' networking event. The forum ends on Tuesday, Aug. 23, with a half-day of more sessions offering insights into fund management and investment industry trends.

Register Now

We've contracted with a hotel with a history of excellence dating back to 1912, allowing us to offer attendees ample room to discover, network, and succeed. The hotel provides everything you'll need for a multi-day stay, including internet access, business services, on-site dining, a fitness center, and a day spa. The hotel is also within walking distance to popular retail and dining destinations.

The deadline to reserve a room and receive a special $98 + tax per night group block rate is July 29, 2022, or when room nights run out. Register for the event to obtain the special TEXPERS Educational Forum group block rate. After registering for the forum, a confirmation email will include a link to allow you to make your room reservation.

We can't wait to see you there,
The TEXPERS staff

Follow TEXPERS on Facebook, Twitter, and LinkedIn for the latest news about Texas' public pension industry.

#TEXPERS2022

Get in touch

713-622-8018

texpers@texpers.org

TEXPERS

Texas Association of Public Employee Retirement Systems

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HOME WELCOME AGENDA SPEAKERS ACTIVITIES LOCATION CONTACT US REGISTER NOW

Welcome

There has rarely seemed a more important time to get together.

Given the magnitude of current events, amplified by the 24-hour news cycle, deciding what really matters is both hard and vital.

The aim of our forum is to help you with this task.

Combining investors, peers and globally recognized thinkers, we look forward to welcoming you and providing you with ideas to help you successfully navigate the coming decade.

Agenda

Please note that the agenda is subject to change. Any changes will be updated on this page as soon as possible.

Download a PDF version of the agenda

13 September
Day 1

14 September
Day 2

13 September

8:15am	**Welcome**
8:30am	**Reflections on Growth and Time**

Dave Bujnowski, Geoffrey West, Alexander Rose

In this panel, we will explore two topics that are core to Baillie Gifford's investment philosophy: growth and long-term thinking. Joining us are Geoffrey West, distinguished professor of the Santa Fe Institute whose work includes ground-breaking perspectives on scaling laws of organisms, ecosystems, and corporations. And Alexander Rose, Executive Director at the Long Now Foundation and designer of The 10,000 Year Clock, an icon to long-term thinking that ticks every year and chimes every millennium. Among other things, we'll consider what questions we should be asking when seeking exceptional companies that will not just scale but do so in an enduring fashion.

9:40am	**Client Strategy Sessions**
	An opportunity to hear from the investors managing your Baillie Gifford portfolio.
10:45am	**Coffee Break**
11:15am	**Investment Insights**
	Using a combination of external experts, academics and investors, please choose from a number of different, topical investment sessions.
12:15pm	**Lunch**
1:45pm	**Strategy/Insight Sessions**
	We invite you to choose either an additional topical session or to hear from one of our other investment strategy teams.
2:50pm	**Coffee Break**
3:30pm	**A Clash of Two Gilded Ages**
	Tom Coutts, Branko Milanović and Yuen Yuen Ang We join renowned experts, Yuen Yuen Ang and Branko Milanović, to discuss two different capitalist models in two different political systems, exploring historic parallels and future tensions between China and the United States.
4:30pm	**End of Day 1**
6:00pm	**Cocktails and Dinner followed by After Dinner Speaker**

REGISTER NOW

Speakers

Kathrin Hamilton
Client Service Director

Alexander Rose
Executive Director of The Long Now Foundation

Dave Bujnowski
Investment Manager

Geoffrey West
Theoretical Physicist

Tom Coutts
Investment Manager

Branko Milanović
Senior Scholar

Yuen Yuen Ang
Professor of Politics

Scott Nisbet
Client Service Director

Alex Honnold
Rock Climber

Paulina McPadden
Investment Manager

Mike Berners-Lee
Professor, Author & Sustainability Expert

Tom Slater
Investment Manager

Hendrik Bessembinder
Professor of Finance

Activities

Golf

Morning walk or jog

Registration

To register for the Baillie Gifford Client Forum 2022, please complete the online form by clicking the link below.

REGISTER NOW

Location

SALAMANDER RESORT HOTEL
500 N PENDLETON ST, MIDDLEBURG, VA 20117

Contact us

If you have any questions about the conference, please contact Val Fairnie at val.fairnie@bailliegifford.com

COHEN & STEERS | Real Assets Institute

Save the date

Investor Conference

September 29, 2022

DETAILS

Thursday, September 29, 2022

New York City | New York Stock Exchange

This year the Cohen & Steers annual Investor Conference returns to a fully in-person program on Thursday, September 29, 2022 at the New York Stock Exchange.

This one-day program is our most anticipated client event of the year, where we discuss key questions on the minds of investors and will offer you an opportunity to network with your peers. We look forward to seeing you.

SAVE THE DATE

View this email as a web page.

16th Annual

Small and Emerging Managers Conference

Fairmont Chicago Millennium Park

Save the Date: October 12-13, 2022

Mark your calendar to join GCM Grosvenor and industry colleagues in person at the 2022 SEM Conference, as we continue the tradition of bringing together institutional investors and consultants with small, emerging, and diverse investment managers.

Registration opens in late July; we will share more details with you then.

Previous SEM Conference attendees should keep an eye out for a new opportunity to get involved in the creation of this year's conference program!

READ MORE

Read more about the SEM Conference, including highlights and the agenda from last year's event.

Questions? Contact the GCM Grosvenor Events Team at events@gcmlp.com.

GCM GROSVENOR'S COMMITMENT TO SMALL, EMERGING, AND DIVERSE MANAGERS
GCM Grosvenor promotes equal access to capital in alternatives by driving increased investment with small, emerging, and diverse managers. We have over $22 billion invested and committed to these managers across private equity, infrastructure, real estate, and absolute return strategies. To further accelerate growth, we host multiple industry-leading annual conferences, including the SEM Conference and Consortium, to train, educate, and promote small, emerging, and diverse managers while connecting them with institutional investors.
Learn more >>

GCM GROSVENOR

This message was sent by GCM Grosvenor
900 North Michigan Avenue Suite 1100 | Chicago, IL 60611
gcmgrosvenor.com | events@gcmlp.com | (646) 442-1115

19th Annual Global ARC Boston

October 24th - 26th, 2022

The InterContinental Boston, MA, USA

REGISTER(HTTPS://WWW.GARCBOSTON.COM/PAGE/1976245/REGISTER)

Add to calendar: Google (https://www.google.com/calendar/render?action=TEMPLATE&text=19th%20Annual%20Global%20ARC%20Boston&dates=20221024T0

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2022 Keynote Speakers

(/agenda/speakers/1343363)

Mark Blyth
Author: 'Austerity: The History of A Dangerous Idea' and 'Great Transformations: Economic Ideas and Institutional Change in the Twentieth Century' ...
Brown University

(https://twitter.com/MkBlyth)

(/agenda/speakers/1351558)

Sir David Spiegelhalter OBE FRS
Winton Professor of the Public Understanding of Risk
University of Cambridge

(https://twitter.com/d_spiegel)

(/agenda/speakers/1344471)

Vijay Keshav Gokhale
Former Foreign Secretary of India; Senior Non-Resident Fellow
The Carnegie Institute, India

(https://twitter.com/VGokhale59)

(/agenda/speakers/1343364)

Mihir Desai
The Muzuho Financial Group Professor of Finance and Author of 'The Wisdom of Finance'
Harvard Business School

(https://www.linkedin.com/in/mihir-desai-8246a0119) (https://twitter.com/desaimihira)

(/agenda/speakers/1347331)

Naomi Oreskes
Henry Charles Lea Professor of the History of Science and Affiliated Professor of Earth and Planetary Sciences
Harvard University

(https://twitter.com/NaomiOreskes)

(/agenda/speakers/1347330)

Hal Brands
Henry A. Kissinger Distinguished Professor of Global Affairs
Johns Hopkins University School of Advanced International Studies

(https://twitter.com/HalBrands)

(/agenda/speakers/1344439)

Teresa Ghilarducci
The Bernard L. and Irene Schwartz Professor of Economics
The New School for Social Research

(https://twitter.com/tghilarducci)

(/agenda/speakers/1344440)

David Wengrow
Professor of Comparative Archaeology
University College London (UCL)

(https://twitter.com/davidwengrow)

(/agenda/speakers/1343366)

Rana Mitter
Author: 'A Bitter Revolution: China's Struggle with the Modern World', Director of the University of Oxford China Centre, Professor of the History ...
University of Oxford

in(https://www.linkedin.com/in/rana-mitter-2b388612/) (https://twitter.com/ox_chinacentre)

About Global ARC

An independent global organization founded in 2002, **Global ARC** convenes a network of the world's foremost sovereign wealth funds, pension funds, central banks, endowments, foundations, insurance companies, and investment managers. Our gatherings focus on the intersection of public policy, macro-economic developments, capital markets, and alpha-driven investments. Global ARC is closed to all press and media.

* Please note, Global ARC uses a much stricter definition of 'end investors' than most of our competitor events. We limit our definition of institutional investors to full-time staff – not trustees – of public and corporate pension funds, foundations, endowments, sovereign wealth funds and social security funds.

View in browser

Invesco

Save the Date!

Please join us at the **2022 Invesco Real Estate Global Client Conference**.

Location:
The Lodge at Torrey Pines
San Diego, California

Date:
Begins Tuesday November 15*
Cocktails/Dinner 6 p.m.

Ends Thursday, November 17
Cocktails/Dinner 6 p.m.

*Fund meetings for Existing Fund Investors and Advisory Board Members will take place on Tuesday afternoon and Thursday morning.

ADD TO CALENDAR

For questions, please contact:

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Laler DeCosta
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Cinnamon Russell
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Client Portfolio Manager
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For event questions, please contact:

Jennifer Pettine
Corporate Events Manager
(713) 214-4700
jennifer.pettine@invesco.com

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ASSET ALLOCATION COMPARISON

May 31, 2022

	Market Value	% of Total Fund	Allocation Policy	% Difference from Allocation	Prior Period Market Value	Prior Period % of Total Fund
EQUITY						
CHANNING CAPITAL	36,152,348.36	**0.96**			34,976,093.36	**0.93**
REDWOOD- SL	30,138,546.97	**0.80**			30,880,151.45	**0.82**
SYSTEMATIC	73,699,362.22	**1.95**			72,530,445.16	**1.94**
Total Small Cap	**139,990,257.55**	***3.71***			**138,386,689.97**	***3.69***
SMITH GRAHAM	80,203,238.10	**2.13**			78,473,962.01	**2.09**
T. ROWE PRICE	155,455,337.93	**4.12**			155,516,874.61	**4.15**
Total Domestic/Enhanced equity	**235,658,576.03**	***6.25***			**233,990,836.62**	***6.25***
NTGI S&P 500 EQUITY INDEX	164,915,347.52	**4.37**			164,610,758.48	**4.39**
Total Index	**164,915,347.52**	***4.37***			**164,610,758.48**	***4.39***
Total Domestic	**540,564,181.10**	***14.33***	***12.50***	***1.83***	**536,988,285.07**	***14.33***
ADELANTE CAPITAL	53,627,357.73	**1.42**			57,790,133.11	**1.54**
CENTERSQUARE-SL	53,482,710.51	**1.42**			56,854,839.33	**1.52**
Total REITS	**107,110,068.24**	***2.84***	***2.50***	***0.34***	**114,644,972.44**	***3.06***
AEW PARTNERS	26,455,537.01	**0.70**			24,698,887.00	**0.66**
HEITMAN	107,423,966.03	**2.85**			107,423,966.03	**2.87**
INVESCO	81,269,354.00	**2.28**			81,391,852.00	**2.29**
INVESCO - SL	85,963,665.31	**2.15**			85,963,665.31	**2.17**
VIRTUS REAL ESTATE CAP	22,332,916.00	**0.59**			19,262,193.00	**0.51**
Total Real Estate	**323,445,438.35**	***8.58***	***7.50***	***1.08***	**318,740,563.34**	***8.51***
FAIRVIEW CAPITAL	85,995,896.00	**2.28**			81,375,893.00	**2.17**
GROSVENOR GCM - CFIG	170,237,227.00	**4.51**			150,582,410.00	**4.02**
HAMILTON LANE	119,031,467.00	**3.16**			112,034,009.00	**2.99**
Total Private Equity	**375,264,590.00**	***9.95***	***7.50***	***2.45***	**343,992,312.00**	***9.18***
ACADIAN	132,098,100.04	**3.50**			131,107,747.99	**3.50**
AQR CAPITAL	121,724,765.20	**3.23**			119,543,517.79	**3.19**
ATIVO	39,071,555.68	**1.04**			38,949,720.55	**1.04**
BAILLIE GIFFORD	67,493,225.77	**1.79**			68,620,423.49	**1.83**
EARNEST PARTNERS	93,990,625.95	**2.49**			91,856,304.51	**2.45**
Total International	**454,378,272.64**	***12.05***	***12.50***	***-0.45***	**450,077,714.33**	***12.01***
ARIEL	*120,101,785.77*	**3.18**			*117,137,030.01*	**3.13**
NORTHERN TRUST INTL EQ ACWI INDEX	*25,538,298.94*	**0.68**			*25,398,672.38*	**0.68**
WELLINGTON MGMT	*121,214,872.82*	**3.21**			*121,632,461.47*	**3.25**
Total Global Equity	**266,854,957.53**	***7.08***	***7.50***	***-0.42***	**264,168,163.86**	***7.05***
ACADIAN-LVG	240,398,283.51	**6.37**			240,155,380.68	**6.41**
BLACKROCK	*234,978,560.38*	**6.23**			*237,198,139.14*	**6.33**
Total Global Low Volatility Equity	**475,376,843.89**	***12.60***	***12.50***	***0.10***	**477,353,519.82**	***12.74***
ATLANTIC TRUST	72,286,141.84	**1.92**			69,030,834.32	**1.84**
HARVEST FUND	72,705,587.12	**1.93**			69,142,360.56	**1.85**
COHEN & STEERS	71,558,528.37	**1.90**			69,757,979.21	**1.86**
Total Global Listed Infratructure	**216,550,257.33**	***5.74***	***5.00***	***0.74***	**207,931,174.09**	***5.55***
Total Marketable Alternatives	**-**	***0.00***	***2.50***	***-2.50***	**-**	***0.00***
TOTAL EQUITY	**2,759,544,609.08**	**73.17**	**70.00**	**3.17**	**2,713,896,704.95**	**72.44**
FIXED INCOME						
GARCIA HAMILTON	152,330,053.30	**4.04**			61,454,429.24	**1.64**
NT COLLECTIVE AGGREGATE BOND INDEX FUND	110,453,516.60	**2.93**			200,393,525.14	**5.35**
SECURIAN ASSET MANAGEMENT	203,546,545.18	**5.40**			203,572,077.93	**5.43**
Total Investment Grade	**466,330,115.08**	***12.36***	***15.00***	***-2.64***	**465,420,032.31**	***12.42***
NEUBERGER BERMAN	169,475,328.97	**4.49**			172,581,354.21	**4.61**
Total Opportunistic Credit	**169,475,328.97**	***4.49***	**5.00**	***-0.51***	**172,581,354.21**	***4.61***
BLACKROCK-HY	174,390,388.63	**4.62**			174,475,727.92	**4.66**
OAKTREE	178,140,072.54	**4.72**			177,610,377.48	**4.74**
Total High Yield	**352,530,461.17**	***9.35***	***10.00***	***-0.65***	**352,086,105.40**	***9.40***
CASH ACCOUNT	23,699,725.68	**0.63**			42,529,281.17	**1.14**
Total Short Term	**23,699,725.68**	***0.63***	***0.00***	***0.63***	**42,529,281.17**	***1.14***
TOTAL FIXED INCOME	**1,012,035,630.90**	**26.83**	**30.00**	**-3.17**	**1,032,616,773.09**	**27.56**

TOTAL FUND **$ 3,771,580,239.98** **$ 3,746,513,478.04**

Market Value YE 2021 **$ 4,082,277,584.28**

Market Value Variance

Change from YE 2021: $ (310,697,344.30)

Change from prior month: $ 25,066,761.94

Asset Allocation: Actual vs. Target

May 31, 2022

	Market Value	Gross Actual Allocation	Target Allocation	% Difference from Allocation
EQUITY				
CHANNING CAPITAL	36,152,348.36	0.96		
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ACADIAN-LVG	240,398,283.51	6.37		
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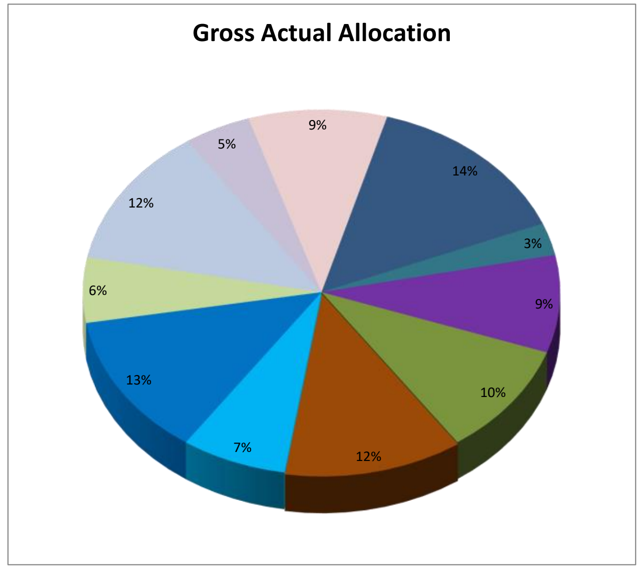
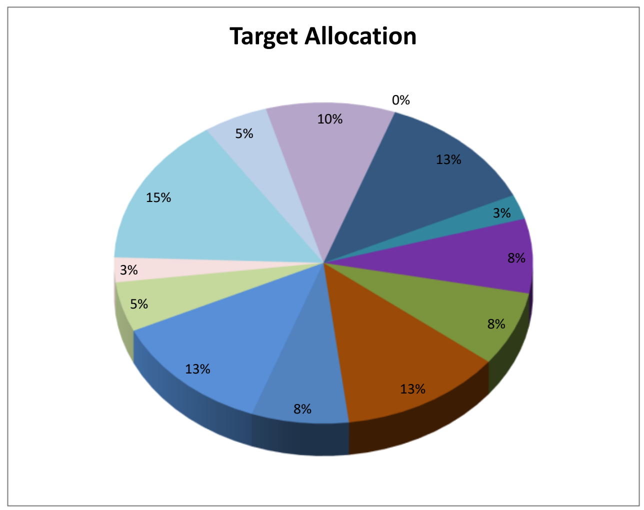
Total Global Low Volatility Equity	475,376,843.89	12.60	*12.50*	*0.10*
ATLANTIC TRUST	72,286,141.84	1.92		
HARVEST FUND	72,705,587.12	1.93		
COHEN & STEERS	71,558,528.37	1.90		
Total Global Listed Infratructure	216,550,257.33	5.74	*5.00*	*0.74*
Total Marketable Alternatives	-	0.00	*2.50*	*-2.50*
TOTAL EQUITY	**2,759,544,609.08**	73.17	70.00	3.17
FIXED INCOME				
GARCIA HAMILTON	152,330,053.30	4.04		
NT COLLECTIVE AGGREGATE BOND INDEX FUND	110,453,516.60	2.93		
SECURIAN ASSET MANAGEMENT	203,546,545.18	5.40		
Total Investment Grade	466,330,115.08	12.36	*15.00*	-2.64
NEUBERGER BERMAN	169,475,328.97	4.49		
Total Opportunistic Credit	169,475,328.97	4.49	*5.00*	-0.51
BLACKROCK-HY	174,390,388.63	4.62		
OAKTREE	178,140,072.54	4.72		
Total High Yield	352,530,461.17	9.35	*10.00*	-0.65
CASH ACCOUNT	23,699,725.68	0.63		
Total Short Term	23,699,725.68	0.63	*0.00*	*0.63*
TOTAL FIXED INCOME	**1,012,035,630.90**	26.83	30.00	-3.17
TOTAL FUND	**$ 3,771,580,239.98**			





Wilshire

Dallas Employees' Retirement Fund

Monthly Investment Summary

May-2022

Monthly Index Performance

Periods Ended May 31, 2022

	Performance (%)				
	1 Month	QTD	1 Year	3 Years	5 Years
U.S. Equity					
FT Wilshire 5000 Total Market TR Index	-0.15	-9.18	-2.89	15.99	12.98
S&P 500	0.18	-8.55	-0.30	16.44	13.38
FT Wilshire 4500 Completion Index	-1.55	-11.41	-15.91	12.77	10.32
MSCI USA Minimum Volatility Index	-0.01	-5.27	2.77	9.62	10.47
U.S. Equity by Size/Style					
FT Wilshire U.S. Large-Cap Index	-0.17	-9.23	-1.81	16.49	13.62
FT Wilshire U.S. Large-Cap Growth Index	-2.07	-14.26	-6.08	18.29	14.85
FT Wilshire U.S. Large-Cap Value Index	1.92	-3.23	3.07	14.52	11.55
FT Wilshire U.S. Small-Cap Index	0.20	-8.34	-12.81	11.26	8.74
FT Wilshire U.S. Small-Cap Growth Index	-0.23	-10.55	-19.94	9.89	8.59
FT Wilshire U.S. Small-Cap Value Index	0.57	-6.34	-5.08	12.52	8.34
FT Wilshire U.S. Micro-Cap Index	-1.84	-13.55	-30.84	4.10	3.63
Non-U.S. Equity (USD)					
MSCI AC World ex USA (Net)	0.72	-5.61	-12.41	6.49	4.42
MSCI ACWI ex USA Minimum Volatility Index (Net)	-1.86	-6.11	-4.65	3.45	3.90
MSCI EAFE Index (Net)	0.75	-5.77	-10.38	6.43	4.17
MSCI Emerging Markets (Net)	0.44	-5.15	-19.83	5.00	3.80
MSCI AC World ex USA Small Cap (Net)	-0.92	-7.32	-13.37	8.58	5.07
U.S. Fixed Income					
Blmbg. U.S. Aggregate	0.64	-3.17	-8.22	0.00	1.17
Blmbg. U.S. Treasury: Long	-1.89	-10.62	-14.27	-2.02	0.89
Blmbg. U.S. Long Corporate Index	1.00	-8.86	-15.15	0.45	2.17
Blmbg. U.S. TIPS	-0.99	-3.02	-1.45	4.45	3.68
Blmbg. U.S. Credit Index	0.89	-4.40	-9.99	0.62	1.83
Blmbg. U.S. Corp: High Yield	0.25	-3.32	-5.27	3.33	3.57
S&P LSTA Leverage Loan Index	-2.56	-2.35	-0.28	2.89	3.34

Asset Allocation & Performance

Dallas Total Fund

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Global Equity Composite	1.02	-3.64	-9.76	-5.35	10.69	8.21	8.89	9/1/2012	266,854,958	7.08
Global Low Volatility Composite	-0.41	-1.59	-7.12	-0.22	6.26	6.40	7.41	7/1/2015	475,376,844	12.60
Domestic Equity Composite	0.67	-6.15	-12.32	-3.71	16.04	11.92	10.35	1/1/1990	540,564,181	14.33
International Equity Composite	1.07	-4.33	-10.56	-12.74	8.95	5.47	5.59	1/1/1990	454,378,273	12.05
Global Fixed Income Composite	0.19	-5.85	-8.79	-8.12	0.56	1.61	4.52	10/1/1995	466,330,115	12.36
High Yield Composite	0.11	-3.84	-6.88	-4.04	3.55	3.32	6.08	1/1/1997	352,530,461	9.35
Credit Opportunities Composite	-1.05	-4.46	-8.15	-7.33	1.43	2.48	4.46	2/1/2016	169,475,329	4.49
Total Real Estate Composite	-1.50	3.41	0.59	20.36	10.64	9.17	7.01	1/1/1990	430,555,507	11.42
Global Listed Infrastructure Composite	4.15	7.69	18.43	24.47	3.98	2.24	5.00	1/1/2012	216,550,257	5.74
Private Equity Composite	0.88	8.63	13.43	45.81	20.75	18.30	15.10	6/1/2009	375,264,590	9.95
Managed Short Term Composite	0.07	0.11	0.12	0.14	0.70	1.12	2.74	1/1/1990	23,699,726	0.63
Dallas Total Fund	0.37	-1.64	-4.81	1.85	8.22	6.85	8.92	1/1/1985	3,771,580,240	100.00
Policy Index	-0.24	-3.73	-7.84	-1.83	7.51	6.37	9.41			

Asset Allocation & Performance

Domestic Equity

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Systematic Financial	1.61	-6.31	-9.46	-6.41	12.86	8.75	10.66	8/1/2003	73,699,362	13.63
Russell 2000 Index	0.15	-8.65	-16.57	-16.92	9.70	7.72	8.94			
Redwood Investments *	-2.40	-16.53	-29.61	-22.09	9.11	7.17	7.54	10/1/2016	30,138,547	5.58
Russell 2000 Growth Index	-1.89	-13.53	-24.79	-25.71	6.18	6.87	7.86			
Channing Capital *	3.36	-6.88	-6.58	-7.45	13.99	7.87	7.51	12/1/2013	36,152,348	6.69
Russell 2000 Value Index	1.92	-4.15	-8.25	-7.67	12.21	7.83	7.39			
Domestic Equity Small Cap Composite	1.16	-8.86	-14.07	-10.60	12.54	8.37	9.51	6/1/2003	139,990,258	25.90
Smith Graham *	2.20	-3.14	-5.67	-1.34	19.62		9.63	1/1/2018	80,203,238	14.84
Russell Midcap Index	0.08	-5.26	-12.87	-6.77	12.87		9.36			
T. Rowe Price	-0.04	-6.33	-13.51	-1.39	16.45	13.61	10.12	4/1/2006	155,455,338	28.76
S&P 500	0.18	-5.16	-12.76	-0.30	16.44	13.38	9.64			
Northern Trust S&P 500 (Lending)	0.19	-5.08	-12.69	-0.22	16.41	13.38	10.46	1/1/1995	164,915,348	30.51
S&P 500	0.18	-5.16	-12.76	-0.30	16.44	13.38	10.42			
Domestic Equity Composite	0.67	-6.15	-12.32	-3.71	16.04	11.92	10.35	1/1/1990	540,564,181	100.00
Custom Benchmark	-0.15	-6.14	-13.67	-2.89	15.99	12.98	10.43			

Asset Allocation & Performance

Real Estate

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Adelante Capital Management	-7.20	-5.21	-14.59	5.56	9.01	8.81	9.88	10/1/2001	53,627,358	50.07
Wilshire U.S. Real Estate Securities Index	-7.27	-5.43	-14.89	4.44	7.40	7.46	9.95			
CenterSquare	-5.93	-3.91	-12.59	5.00	8.95		10.40	6/1/2018	53,482,711	49.93
Wilshire U.S. Real Estate Securities Index	-7.27	-5.43	-14.89	4.44	7.40		8.95			
REIT Composite	-6.57	-4.56	-13.60	5.27	8.98	8.72	9.97	10/1/2001	107,110,068	100.00
Wilshire U.S. Real Estate Securities Index	-7.27	-5.43	-14.89	4.44	7.40	7.46	9.95			

Private Real Estate Summary

Periods Ended as of May 31, 2022

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Invesco II	81,269,354	65,188,333	65,188,333	12,015,013	Jan-14	6.4%	1.4
Total Direct Private Real Estate	**81,269,354**	**65,188,333**	**65,188,333**	**12,015,013**	**Jan-14**	**6.4%**	**1.4**

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Heitman America Real Estate Trust	107,423,966	75,000,000	88,210,161	90,247,268	Dec-10	8.0%	2.2
Invesco Core Real Estate USA	85,963,665	75,000,000	75,000,000	91,218,086	Oct-10	11.7%	2.4
Total Core Private Real Estate	**193,387,631**	**150,000,000**	**163,210,161**	**181,465,354**	**Oct-10**	**10.4%**	**2.3**

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
AEW Partners Real Estate Fund IX	18,666,790	45,000,000	18,703,704	16,806	Mar-21	-0.4%	1.0
AEW PIX MM Co-Invest	2,663,177	10,000,000	2,471,698	75,472	Nov-21	12.3%	1.1
AEW PIX Oakland Park Co-Invest	5,125,570	5,000,000	5,000,000	-	Feb-22	2.5%	1.0
Virtus Real Estate Capital III	22,332,916	43,281,585	20,159,406	1,959,068	Jan-21	12.5%	1.2
Total Value-Add Private Real Estate	**48,788,453**	**103,281,585**	**46,334,808**	**2,051,346**	**Jan-21**	**9.7%**	**1.1**

[1] Total Value to Paid-in Capital ("TVPI") multiple calculation = *(market value + distributions) / capital called*

Private Equity Summary

Periods Ended as of May 31, 2022

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple [3]
Hamilton Lane Secondary Fund II	319,905	25,000,000	22,058,532	31,103,855	Jul-09	13.5%	1.4
Hamilton Lane Secondary Fund III	4,434,613	30,000,000	23,372,292	27,402,929	Nov-12	10.5%	1.4
Hamilton Lane Secondary Fund IV	22,569,075	30,000,000	25,907,343	21,413,313	Mar-17	23.0%	1.7
Hamilton Lane Secondary Fund V	50,743,490	65,000,000	36,826,419	4,110,097	Mar-20	44.1%	1.5
Hamilton Lane Fund VII Composite	20,309,536	50,000,000	45,600,834	52,221,159	Jan-10	7.0%	1.6
Hamilton Lane Fund VIII (Global)	20,654,848	30,000,000	22,270,594	13,656,569	Nov-12	8.2%	1.5
GCM Grosvenor - Partnership, L.P.	35,350,773	75,000,000	86,833,339	118,043,237	Jun-11	14.9%	1.8
GCM Grosvenor - Partnership II, L.P. (2014)	54,350,484	60,000,000	70,633,751	62,989,796	Jul-14	18.8%	1.7
GCM Grosvenor - Partnership II, L.P. (2015)	51,551,493	30,000,000	38,938,522	10,684,124	Dec-15	16.6%	1.6
GCM Grosvenor - Partnership II, L.P. (2017)	26,461,716	30,000,000	24,943,710	5,920,137	Jan-18	18.5%	1.3
GCM Grosvenor - Advance Fund, L.P.	2,522,761	10,000,000	2,538,275	53,279	Jun-21	-	1.0
Fairview Capital - Lone Star Fund I	55,688,507	40,000,000	35,663,040	12,887,383	Aug-15	19.2%	1.9
Fairview Capital - Lone Star Fund II	22,861,817	30,000,000	16,893,189	138,948	Dec-18	14.8%	1.4
Fairview Capital - Lone Star Fund III	5,984,225	25,000,000	6,067,866	-	Apr-21	-7.6%	1.0
Fairview Capital - Private Markets Fund VI	1,461,347	10,000,000	1,469,595	-	Apr-22	-0.6%	1.0
Total Private Equity Composite	**375,264,590**	**540,000,000**	**460,017,300**	**360,624,828**	**Jul-09**	**15.2%**	**1.6**
Public Market Equivalent (PME) [2]	**441,916,264**					**17.0%**	

Asset Allocation & Performance

International Equity

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Acadian International	**0.62**	**-1.64**	**-6.99**	**-7.51**	**11.68**	**7.39**	**8.49**	**4/1/1989**	**132,098,100**	**29.07**
Custom Benchmark	-0.92	-6.37	-13.36	-13.37	8.58	5.07	5.90			
Ativo International *	**0.31**	**-5.15**	**-13.02**	**-10.26**	**5.03**		**2.21**	**1/1/2018**	**39,071,556**	**8.60**
MSCI EAFE Index (Net)	0.75	-5.16	-11.34	-10.38	6.43		2.57			
AQR Capital Management	**1.83**	**-2.64**	**-7.73**	**-12.73**	**6.27**	**3.12**	**3.32**	**4/1/2006**	**121,724,765**	**26.79**
Custom Benchmark	0.72	-5.46	-10.74	-12.41	6.49	4.42	3.13			
Baillie Gifford	**-1.64**	**-11.15**	**-23.54**	**-27.83**	**4.55**		**3.99**	**4/1/2019**	**67,493,226**	**14.85**
MSCI AC World ex USA (Net)	0.72	-5.46	-10.74	-12.41	6.49		5.17			
Earnest Partners	**3.08**	**-4.54**	**-6.81**	**-7.24**	**10.66**		**8.90**	**4/1/2019**	**93,990,626**	**20.69**
MSCI AC World ex USA (Net)	0.72	-5.46	-10.74	-12.41	6.49		5.17			
International Equity Composite	**1.07**	**-4.33**	**-10.56**	**-12.74**	**8.95**	**5.47**	**5.59**	**1/1/1990**	**454,378,273**	**100.00**
Custom Benchmark	0.48	-5.59	-11.12	-12.54	6.77	4.51	4.55			

Asset Allocation & Performance

Global Equity

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Ariel Global *	2.53	1.40	-0.32	3.89	10.91		7.06	1/1/2018	120,101,786	45.01
MSCI AC World Index (Net)	0.12	-5.90	-12.83	-6.78	11.71		7.52			
Wellington	-0.34	-7.74	-16.96	-12.68	9.96	7.50	10.48	9/1/2012	121,214,873	45.42
MSCI AC World Index (Net)	0.12	-5.90	-12.83	-6.78	11.71	9.00	9.59			
Northern Trust Global Equity	0.55	-5.82	-12.69	-7.16	12.03	9.25	10.72	10/1/2015	25,538,299	9.57
MSCI AC World IMI (Net)	0.06	-6.01	-12.93	-7.54	11.51	8.78	10.24			
Global Equity Composite	1.02	-3.64	-9.76	-5.35	10.69	8.21	8.89	9/1/2012	266,854,958	100.00
MSCI AC World Index (Net)	0.12	-5.90	-12.83	-6.78	11.71	9.00	9.59			

Asset Allocation & Performance

Global Low Volatility

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Acadian Global Low Vol.	0.10	-1.43	-6.18	1.04	6.74	6.11	7.21	7/1/2015	240,398,284	50.57
MSCI AC World Index (Net)	0.12	-5.90	-12.83	-6.78	11.71	9.00	8.44			
MSCI ACWI Minimum Volatility Index (Net)	-1.10	-1.93	-8.21	-1.73	5.82	6.52	7.32			
BlackRock Global Low Vol.	-0.94	-1.75	-8.07	-1.48	5.78	6.68	7.60	7/1/2015	234,978,560	49.43
MSCI ACWI Minimum Volatility Index (Net)	-1.10	-1.93	-8.21	-1.73	5.82	6.52	7.32			
Global Low Volatility Composite	-0.41	-1.59	-7.12	-0.22	6.26	6.40	7.41	7/1/2015	475,376,844	100.00
MSCI ACWI Minimum Volatility Index (Net)	-1.10	-1.93	-8.21	-1.73	5.82	6.52	7.32			

Asset Allocation & Performance

Global Listed Infrastructure

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Atlantic Trust CIBC	4.72	9.11	25.25	29.81	9.24	5.04	6.65	1/1/2012	72,286,142	33.38
Alerian MLP Index	7.73	9.84	27.88	27.52	6.13	2.62	2.14			
Harvest Fund Advisors MLP	5.15	9.04	28.28	34.56	11.67	6.94	6.75	1/1/2012	72,705,587	33.57
Alerian MLP Index	7.73	9.84	27.88	27.52	6.13	2.62	2.14			
C&S Global Listed Infrastructure	2.58	5.47	1.28	8.40			16.73	11/1/2020	71,558,528	33.04
FTSE Global Core Infrastructure 50/50 (Net)	2.30	5.88	2.22	8.48			17.03			
Global Listed Infrastructure Composite	4.15	7.69	18.43	24.47	3.98	2.24	5.00	1/1/2012	216,550,257	100.00
Global Listed Infrastructure Benchmark	5.06	8.69	19.35	20.56	-1.66	-1.97	-0.08			

Asset Allocation & Performance

Global Fixed Income

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Securian Asset Management	-0.01	-5.83	-8.84	-7.94	0.27	1.56	3.77	7/1/2007	203,546,545	43.65
Blmbg. U.S. Aggregate	0.64	-5.86	-8.92	-8.22	0.00	1.17	3.39			
Garcia Hamilton *	0.73	-4.65	-6.96	-6.87	0.29	1.37	2.31	11/1/2013	152,330,053	32.67
Blmbg. U.S. Aggregate	0.64	-5.86	-8.92	-8.22	0.00	1.17	1.91			
NT Collective Aggregate Bond Index	0.02	-6.43	-9.48				-9.43	7/1/2021	110,453,517	23.69
Blmbg. U.S. Aggregate	0.64	-5.86	-8.92				-8.86			
Global Fixed Income Composite	0.19	-5.85	-8.79	-8.12	0.56	1.61	4.52	10/1/1995	466,330,115	100.00
Blmbg. U.S. Aggregate	0.64	-5.86	-8.92	-8.22	0.00	1.17	4.56			

Asset Allocation & Performance

Opportunistic Credit

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Neuberger Berman	-1.05	-4.46	-8.15	-7.33	1.43	2.48	4.46	2/1/2016	169,475,329	
Custom Benchmark	-0.76	-4.32	-8.47	-7.01	1.35	2.31	4.58			

Asset Allocation & Performance

High Yield

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Oaktree Capital Management	0.28	-3.71	-6.60	-3.73	3.54	3.04	6.26	2/1/1997	178,140,073	50.53
FTSE High Yield Cash Pay	0.11	-4.12	-7.57	-4.74	3.20	3.41	6.37			
BlackRock	-0.05	-3.98	-7.16	-4.36	3.55	3.59	5.75	10/1/2006	174,390,389	49.47
FTSE High Yield Cash Pay	0.11	-4.12	-7.57	-4.74	3.20	3.41	6.15			
High Yield Composite	0.11	-3.84	-6.88	-4.04	3.55	3.32	6.08	1/1/1997	352,530,461	100.00
FTSE High Yield Cash Pay	0.11	-4.12	-7.57	-4.74	3.20	3.41	6.38			

Asset Allocation & Performance

Cash

Periods Ended May 31, 2022

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value $	%
Cash Account	0.07	0.11	0.12	0.14	0.70	1.12	3.08	1/1/1988	23,699,726	100.00
Managed Short Term Composite	0.07	0.11	0.12	0.14	0.70	1.12	2.74	1/1/1990	23,699,726	100.00

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At A Glance

For period ended May 31,2022

	2021		2022	
Retirements	**This Month**	**YTD**	**This Month**	**YTD**
Age	17	90	18	90
Service	2	13	1	6
Rule of 78	9	47	4	41
QDRO	0	0	0	1
Total	28	150	23	138
Disability Retirements				
Service	0	0	0	0
Non-service	0	3	0	0
Total	0	3	0	0
Benefits Paid	$ 24,630,215.03	$ 122,657,666.29	$ 26,267,335.18	$ 131,825,773.82
Refunds	$ 765,034.80	$ 3,663,213.94	$ 1,180,358.02	$ 4,750,543.11
Number of refunds	48	221	91	299
***Contributions**	$ 9,088,793.84	$ 45,588,407.25	$ 14,682,328.15	$ 53,052,790.40

Members on record at month end					
	Retirees & beneficiaries	Disabilities	Actives	Tier A actives	Tier B Actives
Jan	*7,658*	*139*	*7,313*	*4,279*	*3,034*
Feb	*7,671*	*138*	*7,328*	*4,232*	*3,096*
Mar	*7,680*	*138*	*7,361*	*4,192*	*3,169*
April	*7,690*	*135*	*7,346*	*4,148*	*3,198*
May	*7,706*	*135*	*7,385*	*4,118*	*3,267*
June					
July					
Aug					
Sep					
Oct					
Nov					
Dec					

Employees' Retirement Fund of the City of DALLAS ®