APOPKA PENSION BOARD OF TRUSTEES'
POLICE OFFICERS • FIREFIGHTERS • GENERAL EMPLOYEES
JOINT MEETING AGENDA
THURSDAY, FEBRUARY 20, 2020 at 1:30 p.m.
APOPKA CITY HALL COUNCIL CHAMBERS

***** REVISED 02/18/2020 *****

CALL TO ORDER
INVOCATION
PLEDGE OF ALLEGIANCE
ESTABLISH A QUORUM
1. Police Officers' Pension Board of Trustees
2. Firefighters' Pension Board of Trustees
3. General Employees' Pension Board of Trustees

CERTIFY ELECTION RESULTS
1. Police Officers' Pension Board
2. Firefighters' Pension Board
3. General Employees' Pension Board

5th MEMBER TRUSTEE APPOINTMENTS
1. Police Officers' Pension Board
2. Firefighters' Pension Board
3. General Employees' Pension Board

APPROVAL OF MINUTES
1. Police Officers' Pension Board – Regular Meeting – November 21, 2019
2. Firefighters' Pension Board – Regular Meeting – November 21, 2019
3. General Employees' Pension Board – Regular Meeting – November 21, 2019

PUBLIC COMMENT PERIOD
The Public Comment Period is for Board-related issues that may or may not be on today's Agenda. If you are here for a matter on the agenda, please wait for that item to come up on the agenda. If you wish to address one of the Boards, please fill out an Intent to Speak form and provide it to the Chair prior to the start of the meeting. Each speaker will have four minutes to give remarks. Please refer to Resolution No. 2016-16 for further information regarding our Public Participation Policy & Procedures.

PRUDENTIAL REPORT
Asset Allocation Review as of December 31, 2019
Actuarial Valuation Report as of October 1, 2019

INSURANCE OFFICE OF AMERICA REPORT
Fiduciary Investment Review as of December 31, 2019

REVIEW & APPROVAL OF DRAFTED ORDINANCE
1. Police Officers' Pension Board
2. Firefighters' Pension Board
3. General Employees' Pension Board

ATTORNEY'S REPORT
OLD BUSINESS
NEW BUSINESS
NEXT MEETING DATE: Thursday, May 21, 2020 at 1:30 p.m.
ADJOURNMENT

APOPKA PENSION BOARDS OF TRUSTEES' JOINT MEETING MINUTES
Police Officers' • Firefighters' • General Employees'
Thursday, November 21, 2019 – 1:30 P.M.

CALL TO ORDER
The meeting was called to order at 1:30 p.m.

INVOCATION
Steve Brick gave the invocation.

PLEDGE OF ALLEGIANCE
The Chairmen led the attendees in the Pledge of Allegiance.

ESTABLISH A QUORUM
Police Officers: Chairman Steve Brick, Daniel Garcia, Robert Goff, and Jim Greene. We are waiting on the City to appoint a replacement for Jackson Young who decided not to seek another term.
Firefighters: Chairman Mark Fry, Todd Bengtson, Steve Hooks, and Will Sanchez. Ray Thompson was excused.
General Employees: Chairman Bryan Nelson, Jeanne Green, Linda Goff, Naret Teran, and Byron Tobias.

The following service providers were present: Robert Craddock, Todd Morin, and Shannon Witherell from Prudential, Lee Shane from Insurance Office of America, Glenn Thomas, Plan Attorney, and Susy Pita, Plan Administrator. Also present were a few City staff members.

PUBLIC COMMENTS:
There were none.

APPROVAL OF MINUTES
Police Officers: A motion was made by Robert Goff to approve the minutes from the regular meeting held August 15, 2019. Seconded by Jim Greene, the motion carried unanimously.
Firefighters: A motion was made by Todd Bengtson to approve the minutes from the regular meeting held August 15, 2019. Seconded by Will Sanchez, the motion carried unanimously.
General Employees: A motion was made by Jeanne Green to approve the minutes from the regular meeting held August 15, 2019. Seconded by Byron Tobias, the motion carried unanimously.

PRUDENTIAL REPORT
Robert Craddock presented the economic overview and the investment review. Total assets as of September 30, 2019 were as follows: Police Officer's Plan - $57,023,098, Firefighters' Plan - $43,968,435, and General Employees' Plan - $54,413,653.

INSURANCE OFFICE OF AMERICA
Lee Shane began his report to the Boards by reviewing the spreadsheets for the budget accounts as of September 30, 2019. A recommendation was made to add one more column to see what the expenses were under the old ERISA budget vs. the new expenses. Lee will amend the spreadsheet to include the new column for the Trustee's review at the next meeting. Lee concluded his report with the Fiduciary Investment Review for the quarter ending September 30, 2019.

ATTORNEY'S REPORT
Attorney Glenn Thomas provided his report to the Boards under the Agenda items requiring his input throughout the meeting.

OLD BUSINESS
Glenn Thomas reviewed the final drafts of the Ordinances for each of the Plans. Following the review, the Plan Administrator was directed to request the required Actuarial Impact Statements from the Actuary and to forward them to the City upon receipt.

Once the City Commission approves the final Ordinances, the Summary Plan Descriptions will be updated by the Prudential team to include the new (and revised) Plan provisions. As soon as it has been completed a copy will be distributed to the Trustees for formal approval by the Boards and then distributed to the membership.

NEW BUSINESS
The 2020 Meeting Schedule was reviewed and approved.

ADJOURNMENT
The meeting ended at 2:30 p.m.

The next regular meeting date will be Thursday, February 20, 2020 at 1:30 p.m.

For the Police Officers' Pension Board:____

____

For the Firefighters' Pension Board:____

____

For the General Employees' Pension Board:____________________________________

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Global Portfolio Strategies, Inc., a Prudential Financial Company

Prudential

Asset Allocation Review

CITY OF APOPKA

Performance results as of December 31, 2019

For Plan Sponsor and Financial Professional use only: Not for use by Participants

Dean M. Molinaro
Vice President, Full Service Investments
Phone: (860) 534 - 3461

This section represents services provided by Global Portfolio Strategies, Inc. (GPSI). These services are discussed in greater detail in the Form ADV within the section titled Fiduciary Consulting Services for Defined Benefit Retirement Plans.

If you would like a copy of our FORM ADV Part 2A or if you have any questions please contact your Investment Strategist or you can call (860) 534-7790.

DECEMBER 31, 2019 NET PERFORMANCE RESULTS

Prudential

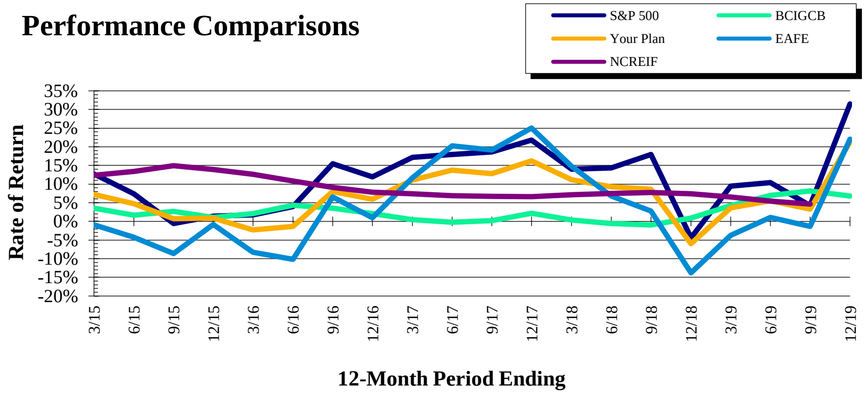
Dean M. Molinaro, Vice President, (860) 534-3461

NET DOLLAR WEIGHTED RATES OF RETURN

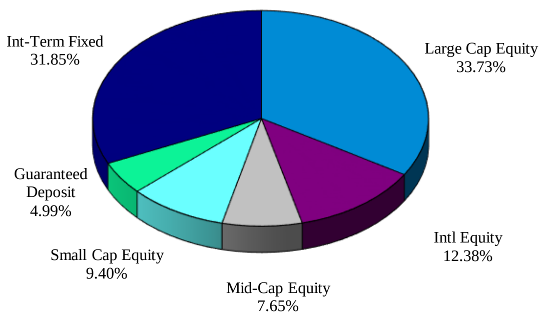
Three Months	5.46%
Plan Year-to-Date	5.46%
One Year	21.28%
Three Years	9.85%
Five Years	7.21%
Ten Years	8.32%

October 1 Plan Year

Performance Comparisons

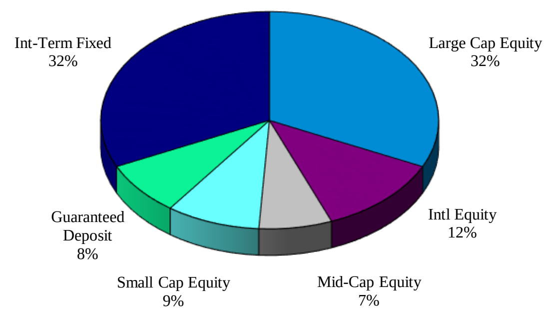


December 31, 2019 Status of Assets



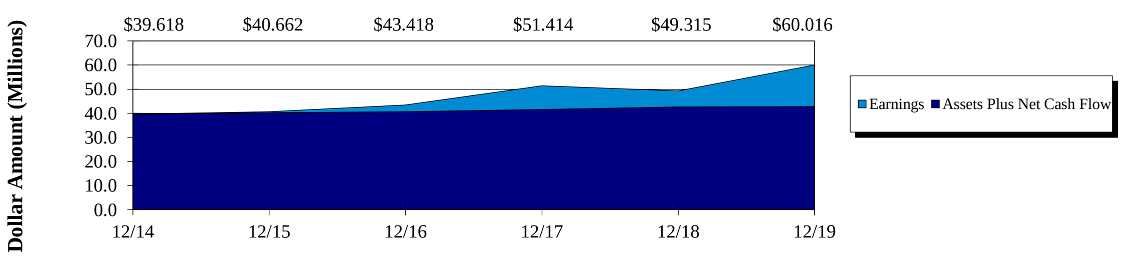
Total Assets $60,016,266
Equity 63.16%, Fixed Income 36.84%

Long-Term Strategy



Equity 60%, Fixed Income 40%

Portfolio Growth Versus Net Contributions



QUARTERLY UPDATE

The US economy ended the year on a very sluggish note. After adjustment for inflation, fourth quarter GDP increased at an estimated annual rate of only 1.8%. For all of 2019, US GDP rose by 2.3%. he world economy also weakened during the past year: Real GDP growth of 2.5% was the slowest since the Great Recession. Comparable to that in the US, decent growth in consumer spending and employment in the major economies was offset by a recession in manufacturing and trade.

World equity markets performed well in the final quarter of last year, outperforming global bonds by a wide margin. Value stocks outperformed growth stocks for the first time in several years, while small-cap stocks outperformed large-cap stocks. For the full year, world financial markets performed exceptionally well, with double-digit returns in virtually all major asset classes, including domestic and international equities, domestic fixed income, and precious metals. The S&P 500 led all major asset classes in 2019 with a total return of 31.5%, propelled by a 50% return in the technology sector. International equities and US small-cap stocks lagged but each generated sizeable returns of 23.3% and 25.5%, respectively.

NEXT STEPS

In order to rebalance your plan`s asset mix to its long term investment strategy, we will implement the following transfers over a two month period starting February 3, 2020:

From:
$580,000 Large Cap Growth / JPMorgan Investment Management Fund
$455,000 Large Cap Value / LSV
$260,000 Mid Cap Growth / Westfield Capital
$230,000 International Blend / Pictet
$125,000 Mid Cap Value / Integrity
$125,000 Small Cap Growth I Fund (managed by Brown Advisory)
$115,000 Small Cap Value / Kennedy Capital

To:
$1,890,000 Guaranteed Deposit

DECEMBER 31, 2019 NET PERFORMANCE RESULTS

Dean M. Molinaro, Vice President, (860) 534-3461

Prudential

FUND NAME	Account Description	Plan Assets as of 12/31/19	Performance as of Date	Inception Date	CUMULATIVE RETURNS 3 Mos.	CUMULATIVE RETURNS YTD	AVERAGE ANNUAL TOTAL RETURNS 1 YR	AVERAGE ANNUAL TOTAL RETURNS 3 YRS	AVERAGE ANNUAL TOTAL RETURNS 5 YRS	AVERAGE ANNUAL TOTAL RETURNS 10 YRS	Since Inception Return
DOMESTIC EQUITY - LARGE CAPITALIZATION											
Large Cap Growth / JPMorgan Investment Management Fund	Growth	$10,182,735	12/31/2019	05/31/1998	9.46	38.68	38.68	24.11	15.19	13.99	N/A
Large Cap Value / LSV	Value	$10,058,105	12/31/2019	07/28/2002	9.21	25.82	25.82	8.77	7.74	12.06	N/A
S&P 500 Index			12/31/2019		9.07	31.49	31.49	15.27	11.70	13.56	N/A
Russell 1000 Index			12/31/2019		9.04	31.43	31.43	15.05	11.48	13.54	N/A
Russell 1000 Growth Index			12/31/2019		10.62	36.39	36.39	20.49	14.63	15.22	N/A
Russell 1000 Value Index			12/31/2019		7.41	26.54	26.54	9.68	8.29	11.80	N/A
DOMESTIC EQUITY - MID-CAPITALIZATION											
Mid Cap Growth / Westfield Capital	Growth	$2,362,334	12/31/2019	06/28/2007	11.87	44.28	44.28	20.34	13.00	13.92	N/A
Mid Cap Value / Integrity	Value	$2,226,310	12/31/2019	05/23/2005	5.99	27.68	27.68	8.17	7.57	12.40	N/A
Russell Midcap Index			12/31/2019		7.06	30.54	30.54	12.06	9.33	13.19	N/A
Russell Midcap Growth Index			12/31/2019		8.17	35.47	35.47	17.36	11.60	14.24	N/A
Russell Midcap Value Index			12/31/2019		6.36	27.06	27.06	8.10	7.62	12.41	N/A
DOMESTIC EQUITY - SMALL CAPITALIZATION											
Small Cap Growth I Fund (managed by Brown Advisory)	Growth	$2,826,480	12/31/2019	11/21/2008	7.84	34.79	34.79	15.00	7.40	11.92	N/A
Small Cap Value / Kennedy Capital	Value	$2,817,831	12/31/2019	01/29/2001	9.14	25.20	25.20	4.18	5.76	11.30	N/A
Russell 2000 Index			12/31/2019		9.94	25.52	25.52	8.59	8.23	11.83	N/A
Russell 2000 Growth Index			12/31/2019		11.39	28.48	28.48	12.49	9.34	13.01	N/A
Russell 2000 Value Index			12/31/2019		8.49	22.39	22.39	4.77	6.99	10.56	N/A
INTERNATIONAL EQUITY											
International Blend / Pictet	Blend	$7,432,170	12/31/2019	01/19/2007	7.17	24.30	24.30	7.98	6.36	5.47	N/A
MSCI EAFE Index (net)			12/31/2019		8.17	22.01	22.01	9.56	5.67	5.50	N/A
FIXED INCOME											
Guaranteed Deposit	Guaranteed	$2,992,758	12/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Core Bond Enhanced Index / PGIM Fund	Fixed Income Index	$6,505,035	12/31/2019	03/15/1999	0.13	8.61	8.61	3.75	2.84	3.57	N/A
High Grade Bond / GSAM	Fixed Income	$3,066,690	12/31/2019	09/30/1999	0.27	9.53	9.53	3.99	3.08	4.17	N/A
Core Plus Bond / PGIM Fund	Fixed Income	$6,508,850	12/31/2019	07/19/2002	0.41	11.02	11.02	5.55	4.37	4.49	N/A
Government Securities Enhanced Index / PGIM Fund	Government	$3,036,969	12/31/2019	12/15/1998	-0.80	6.64	6.64	3.14	2.09	2.74	N/A
iMoneyNet Taxable Money Funds Index			12/31/2019		4.25	5.31	5.31	2.55	1.55	0.78	N/A
Bloomberg Barclays U.S. Aggregate Bond Index			12/31/2019		0.18	8.72	8.72	4.03	3.05	3.75	N/A
Bloomberg Barclays U.S. Corporate High Yield Index			12/31/2019		2.61	14.32	14.32	6.37	6.13	7.57	N/A
TOTAL PLAN ASSETS		$60,016,266									

(1) - Denotes funds on the Due Diligence Advisor Program Watch List for reasons that may include performance related concerns and/or fund manager organizational changes.
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DECEMBER 31, 2019 NET PERFORMANCE RESULTS

Prudential

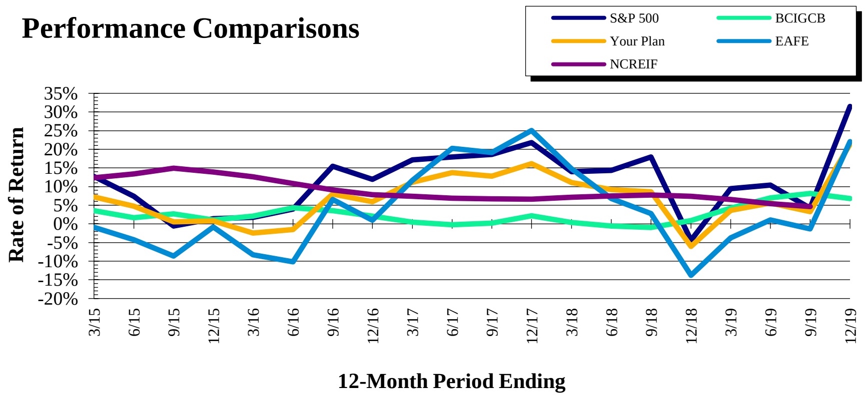
Dean M. Molinaro, Vice President, (860) 534-3461

NET DOLLAR WEIGHTED RATES OF RETURN

Three Months	5.43%
Plan Year-to-Date	5.43%
One Year	21.34%
Three Years	9.82%
Five Years	7.17%
Ten Years	8.30%

October 1 Plan Year

Performance Comparisons

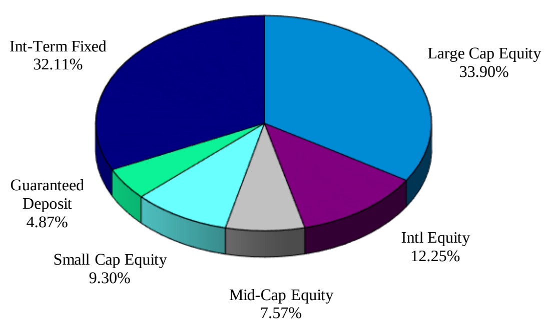


QUARTERLY UPDATE

The US economy ended the year on a very sluggish note. After adjustment for inflation, fourth quarter GDP increased at an estimated annual rate of only 1.8%. For all of 2019, US GDP rose by 2.3%. he world economy also weakened during the past year: Real GDP growth of 2.5% was the slowest since the Great Recession. Comparable to that in the US, decent growth in consumer spending and employment in the major economies was offset by a recession in manufacturing and trade.

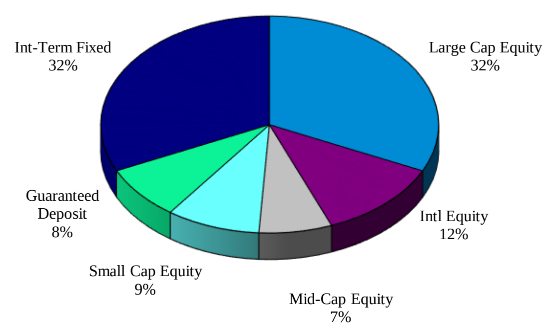
World equity markets performed well in the final quarter of last year, outperforming global bonds by a wide margin. Value stocks outperformed growth stocks for the first time in several years, while small-cap stocks outperformed large-cap stocks. For the full year, world financial markets performed exceptionally well, with double-digit returns in virtually all major asset classes, including domestic and international equities, domestic fixed income, and precious metals. The S&P 500 led all major asset classes in 2019 with a total return of 31.5%, propelled by a 50% return in the technology sector. International equities and US small-cap stocks lagged but each generated sizeable returns of 23.3% and 25.5%, respectively.

December 31, 2019 Status of Assets



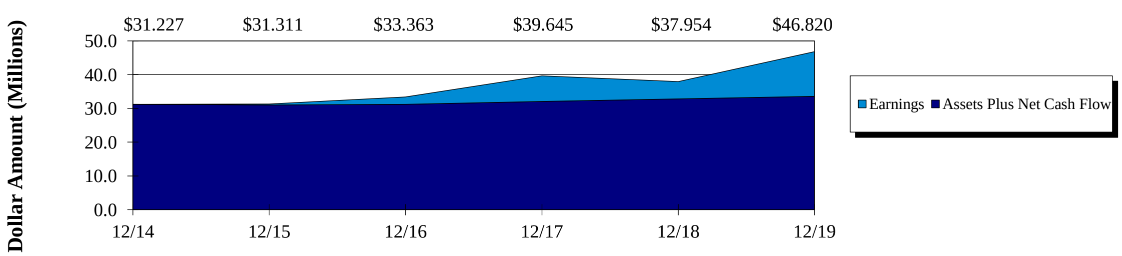
Total Assets $46,820,213
Equity 63.02%, Fixed Income 36.98%

Long-Term Strategy



Equity 60%, Fixed Income 40%

Portfolio Growth Versus Net Contributions



NEXT STEPS

In order to rebalance your plan`s asset mix to its long term investment strategy, we will implement the following transfers over a two month period starting February 3, 2020:

From:
$515,000 Large Cap Growth / JPMorgan Investment Management Fund
$375,000 Large Cap Value / LSV
$185,000 Mid Cap Growth / Westfield Capital
$115,000 International Blend / Pictet
$80,000 Mid Cap Value / Integrity
$75,000 Small Cap Growth I Fund (managed by Brown Advisory)
$65,000 Small Cap Value / Kennedy Capital

To:
$1,410,000 Guaranteed Deposit

Global Portfolio Strategies, Inc. CITY OF APOPKA MUNICIPAL FIREFIGHTERS RETIREMENT TRUST FUND

DECEMBER 31, 2019 NET PERFORMANCE RESULTS

Dean M. Molinaro, Vice President, (860) 534-3461

Prudential

FUND NAME	Account Description	Plan Assets as of 12/31/19	Performance as of Date	Inception Date	CUMULATIVE RETURNS 3 Mos.	YTD	AVERAGE ANNUAL TOTAL RETURNS 1 YR	3 YRS	5 YRS	10 YRS	Since Inception Return
DOMESTIC EQUITY - LARGE CAPITALIZATION											
Large Cap Growth / JPMorgan Investment Management Fund	Growth	$8,007,262	12/31/2019	05/31/1998	9.46	38.68	38.68	24.11	15.19	13.99	N/A
Large Cap Value / LSV	Value	$7,864,905	12/31/2019	07/28/2002	9.21	25.82	25.82	8.77	7.74	12.06	N/A
S&P 500 Index			12/31/2019		9.07	31.49	31.49	15.27	11.70	13.56	N/A
Russell 1000 Index			12/31/2019		9.04	31.43	31.43	15.05	11.48	13.54	N/A
Russell 1000 Growth Index			12/31/2019		10.62	36.39	36.39	20.49	14.63	15.22	N/A
Russell 1000 Value Index			12/31/2019		7.41	26.54	26.54	9.68	8.29	11.80	N/A
DOMESTIC EQUITY - MID-CAPITALIZATION											
Mid Cap Growth / Westfield Capital	Growth	$1,825,064	12/31/2019	06/28/2007	11.87	44.28	44.28	20.34	13.00	13.92	N/A
Mid Cap Value / Integrity	Value	$1,717,525	12/31/2019	05/23/2005	5.99	27.68	27.68	8.17	7.57	12.40	N/A
Russell Midcap Index			12/31/2019		7.06	30.54	30.54	12.06	9.33	13.19	N/A
Russell Midcap Growth Index			12/31/2019		8.17	35.47	35.47	17.36	11.60	14.24	N/A
Russell Midcap Value Index			12/31/2019		6.36	27.06	27.06	8.10	7.62	12.41	N/A
DOMESTIC EQUITY - SMALL CAPITALIZATION											
Small Cap Growth I Fund (managed by Brown Advisory)	Growth	$2,184,119	12/31/2019	11/21/2008	7.84	34.79	34.79	15.00	7.40	11.92	N/A
Small Cap Value / Kennedy Capital	Value	$2,171,663	12/31/2019	01/29/2001	9.14	25.20	25.20	4.18	5.76	11.30	N/A
Russell 2000 Index			12/31/2019		9.94	25.52	25.52	8.59	8.23	11.83	N/A
Russell 2000 Growth Index			12/31/2019		11.39	28.48	28.48	12.49	9.34	13.01	N/A
Russell 2000 Value Index			12/31/2019		8.49	22.39	22.39	4.77	6.99	10.56	N/A
INTERNATIONAL EQUITY											
International Blend / Pictet	Blend	$5,734,915	12/31/2019	01/19/2007	7.17	24.30	24.30	7.98	6.36	5.47	N/A
MSCI EAFE Index (net)			12/31/2019		8.17	22.01	22.01	9.56	5.67	5.50	N/A
FIXED INCOME											
Guaranteed Deposit	Guaranteed	$2,281,844	12/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Core Bond Enhanced Index / PGIM Fund	Fixed Income Index	$4,995,486	12/31/2019	03/15/1999	0.13	8.61	8.61	3.75	2.84	3.57	N/A
High Grade Bond / GSAM	Fixed Income	$2,511,070	12/31/2019	09/30/1999	0.27	9.53	9.53	3.99	3.08	4.17	N/A
Core Plus Bond / PGIM Fund	Fixed Income	$5,052,255	12/31/2019	07/19/2002	0.41	11.02	11.02	5.55	4.37	4.49	N/A
Government Securities Enhanced Index / PGIM Fund	Government	$2,474,104	12/31/2019	12/15/1998	-0.80	6.64	6.64	3.14	2.09	2.74	N/A
iMoneyNet Taxable Money Funds Index			12/31/2019		4.25	5.31	5.31	2.55	1.55	0.78	N/A
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TOTAL PLAN ASSETS		$46,820,213									

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17302 **1/28/2020**

DECEMBER 31, 2019 NET PERFORMANCE RESULTS

Prudential

Dean M. Molinaro, Vice President, (860) 534-3461

NET DOLLAR WEIGHTED RATES OF RETURN

Three Months	5.41%
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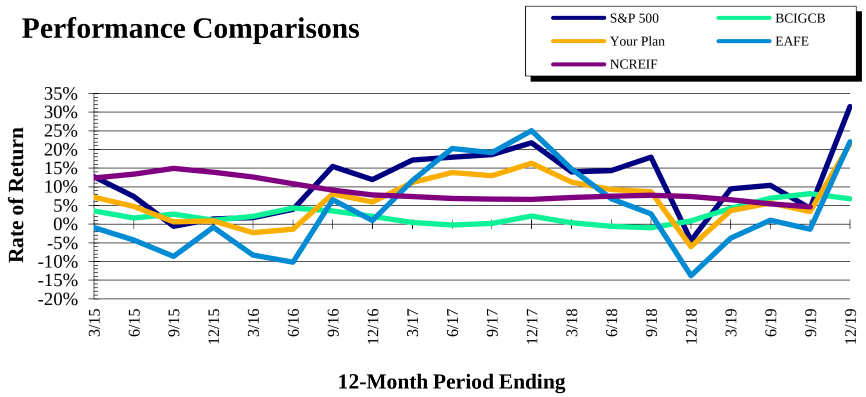
October 1 Plan Year

Performance Comparisons



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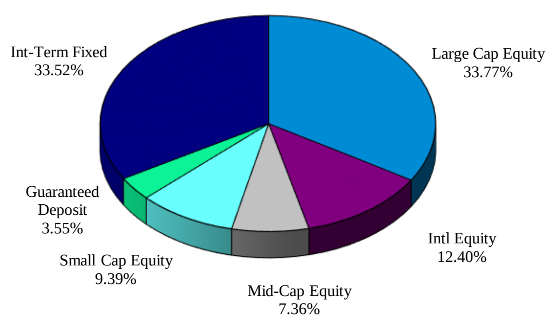
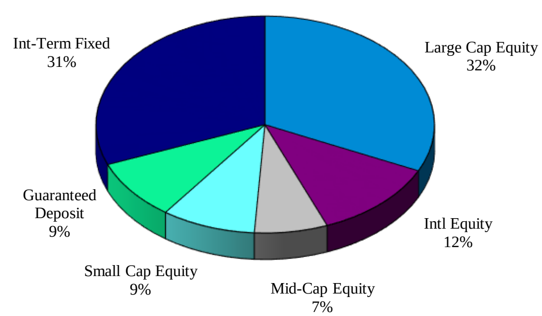
December 31, 2019 Status of Assets



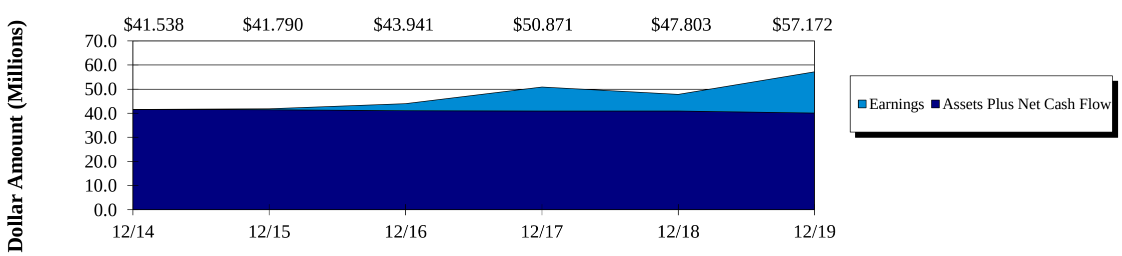
Total Assets $57,172,134
Equity 62.93%, Fixed Income 37.07%

Long-Term Strategy



Equity 60%, Fixed Income 40%

Portfolio Growth Versus Net Contributions



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$45,000 Mid Cap Value / Integrity

To:
$1,665,000 Guaranteed Deposit

Global Portfolio Strategies, Inc. CITY OF APOPKA MUNICIPAL GENERAL EMPLOYEES RETIREMENT TRUST FUND

DECEMBER 31, 2019 NET PERFORMANCE RESULTS

Dean M. Molinaro, Vice President, (860) 534-3461

Prudential

FUND NAME	Account Description	Plan Assets as of 12/31/19	Performance as of Date	Inception Date	CUMULATIVE RETURNS		AVERAGE ANNUAL TOTAL RETURNS				Since Inception Return
					3 Mos.	YTD	1 YR	3 YRS	5 YRS	10 YRS	
DOMESTIC EQUITY - LARGE CAPITALIZATION											
Large Cap Growth / JPMorgan Investment Management Fund	Growth	$9,664,269	12/31/2019	05/31/1998	9.46	38.68	38.68	24.11	15.19	13.99	N/A
Large Cap Value / LSV	Value	$9,641,906	12/31/2019	07/28/2002	9.21	25.82	25.82	8.77	7.74	12.06	N/A
S&P 500 Index			12/31/2019		9.07	31.49	31.49	15.27	11.70	13.56	N/A
Russell 1000 Index			12/31/2019		9.04	31.43	31.43	15.05	11.48	13.54	N/A
Russell 1000 Growth Index			12/31/2019		10.62	36.39	36.39	20.49	14.63	15.22	N/A
Russell 1000 Value Index			12/31/2019		7.41	26.54	26.54	9.68	8.29	11.80	N/A
DOMESTIC EQUITY - MID-CAPITALIZATION											
Mid Cap Growth / Westfield Capital	Growth	$2,162,614	12/31/2019	06/28/2007	11.87	44.28	44.28	20.34	13.00	13.92	N/A
Mid Cap Value / Integrity	Value	$2,047,814	12/31/2019	05/23/2005	5.99	27.68	27.68	8.17	7.57	12.40	N/A
Russell Midcap Index			12/31/2019		7.06	30.54	30.54	12.06	9.33	13.19	N/A
Russell Midcap Growth Index			12/31/2019		8.17	35.47	35.47	17.36	11.60	14.24	N/A
Russell Midcap Value Index			12/31/2019		6.36	27.06	27.06	8.10	7.62	12.41	N/A
DOMESTIC EQUITY - SMALL CAPITALIZATION											
Small Cap Growth I Fund (managed by Brown Advisory)	Growth	$2,675,088	12/31/2019	11/21/2008	7.84	34.79	34.79	15.00	7.40	11.92	N/A
Small Cap Value / Kennedy Capital	Value	$2,695,040	12/31/2019	01/29/2001	9.14	25.20	25.20	4.18	5.76	11.30	N/A
Russell 2000 Index			12/31/2019		9.94	25.52	25.52	8.59	8.23	11.83	N/A
Russell 2000 Growth Index			12/31/2019		11.39	28.48	28.48	12.49	9.34	13.01	N/A
Russell 2000 Value Index			12/31/2019		8.49	22.39	22.39	4.77	6.99	10.56	N/A
INTERNATIONAL EQUITY											
International Blend / Pictet	Blend	$7,089,672	12/31/2019	01/19/2007	7.17	24.30	24.30	7.98	6.36	5.47	N/A
MSCI EAFE Index (net)			12/31/2019		8.17	22.01	22.01	9.56	5.67	5.50	N/A
FIXED INCOME											
Guaranteed Deposit	Guaranteed	$2,030,713	12/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Core Bond Enhanced Index / PGIM Fund	Fixed Income Index	$6,333,874	12/31/2019	03/15/1999	0.13	8.61	8.61	3.75	2.84	3.57	N/A
High Grade Bond / GSAM	Fixed Income	$3,191,211	12/31/2019	09/30/1999	0.27	9.53	9.53	3.99	3.08	4.17	N/A
Core Plus Bond / PGIM Fund	Fixed Income	$6,546,200	12/31/2019	07/19/2002	0.41	11.02	11.02	5.55	4.37	4.49	N/A
Government Securities Enhanced Index / PGIM Fund	Government	$3,093,734	12/31/2019	12/15/1998	-0.80	6.64	6.64	3.14	2.09	2.74	N/A
iMoneyNet Taxable Money Funds Index			12/31/2019		4.25	5.31	5.31	2.55	1.55	0.78	N/A
Bloomberg Barclays U.S. Aggregate Bond Index			12/31/2019		0.18	8.72	8.72	4.03	3.05	3.75	N/A
Bloomberg Barclays U.S. Corporate High Yield Index			12/31/2019		2.61	14.32	14.32	6.37	6.13	7.57	N/A
TOTAL PLAN ASSETS		$57,172,134									

(1) - Denotes funds on the Due Diligence Advisor Program Watch List for reasons that may include performance related concerns and/or fund manager organizational changes.
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See important information on the following pages.

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17303 1/28/2020

The performance quoted represents past performance. The investment return and principal value will fluctuate so that an investor's shares, when redeemed, may be worth more or less than original cost. Past performance does not guarantee future results. Current performance may be lower or higher than the performance data quoted. For performance information current to the most recent month end, please call 1-877-778-2100 or visit our website at www.prudential.com. While past performance is never an indication of future results, short periods of performance may be particularly unrepresentative of long-term performance.

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Footnotes

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Outside fund information offered through other firms was provided by the fund's custodian or from publicly available sources. Global Portfolio Strategies, Inc.
urges its clients to compare information provided in this statement to statements from their qualified custodian or benefit plan service provider.

Footnotes (Continued)

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Bloomberg Barclays U.S. Corporate High-Yield Index: The index measures the performance of USD-denominated, non-investment grade, fixed-rate, taxable corporate bonds, including corporate bonds, fixed-rate bullet, putable, and callable bonds, SEC Rule 144A securities, Original issue zeros, Pay-in-kind (PIK) bonds, Fixed-rate and fixed-to-floating capital securities.

Bloomberg Barclays U.S. Gov/Credit Long Term Index: The index measures the performance of non-securitized component of the U.S. Aggregate Index with maturities of 10 years and greater, including Treasuries, government-related issues and corporate. It is a subset of the U.S. Aggregate Index.

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FTSE NAREIT All Equity REITs Index: The index measures the performance of REIT performance indexes that spans the commercial real estate space across the US economy. It contains all Equity REITs not designated as Timber REITs or Infrastructure REITs. The index is market-capitalization weighted.

iMoneyNet Taxable Money Funds Index: Net: Measures the equally weighted returns of over 1,600 of the largest taxable money market funds.

MSCI EAFE Index (net): Measures the performance of the large and mid cap segments of developed markets, excluding the US & Canada equity securities. It is free float-adjusted market-capitalization weighted.

MSCI EMF Index (net): Measures the performance of the large and mid cap segments of emerging market equity securities. It is free float-adjusted market-capitalization weighted.

National Council of Real Estate Investment Fiduciaries (NCREIF) Open-End Diversified Core Equity Fund Index (NFI-ODCE): Is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only. All Properties in the NPI have been acquired, at least in part, on behalf of tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment.

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Investment Review

City of Apopka Municipal Police Retire. Trust Fund

Performance Results as of Fourth Quarter, 2019

Dean M. Molinaro
Vice President, Full Service Investments
(860) 534- 3461

These sections describe services provided solely by Prudential Retirement Insurance and Annuity Company (PRIAC), and does not relate to investment advisory services provided by Global Portfolio Strategies, Inc.

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Disclosures, Footnotes and Definitions

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Disclosures

2. For Manager of Managers Institutional Sub-Advised funds and Institutional Select Funds: **Actual performance may be affected by the manager not being able to invest directly in a country prior to satisfaction of that country's legal requirements.**

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Benchmark indices are unmanaged and cannot be invested in directly.

Footnotes

7. Effective 12/15/2014, PGIM, Inc. (formerly known as Prudential Investment Management, Inc or "PIM") replaced Pacific Investment Management Company, LLC as the manager of the Separate Account. Performance prior to 12/15/2014 reflects that of Pacific Investment Management Company, LLC.

8. Effective 7/29/2016, Brown Advisory replaced Columbus Circle as manager for the Fund. Performance from 11/24/2008 through 7/29/2016 is that of Columbus Circle. As a result of the manager replacement, the Fund's name changed to Small Cap Growth I Fund (managed by Brown Advisory).

9. Effective 8/25/2011, JPMorgan Inv. Mgmt replaced Turner Inv. Partners as the manager for the Fund. Performance from 7/26/2004 to 8/25/2011 is that of Turner Inv. Partners. As a result of the manager replacement, the Fund's name changed to Large Cap Growth / JP Morgan Investment Management Fund.

10. The Separate Account was established 1/19/2007. All performance results are net of the management fee for this Fund of 0.90%. Actual Fund performance is also net of other Fund operating expenses of 0.04% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

11. The Separate Account was established 1/29/2001. All performance results are net of the highest management fee for this Fund of 1.00%. Actual Fund performance is also net of other Fund operating expenses of 0.00% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

12. The Separate Account was established 11/21/2008. All performance results are net of the management fee for this Fund of 1.05%. Actual Fund performance is also net of other Fund operating expenses of 0.01% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

13. The Separate Account was established 12/15/1998. All performance results are net of the highest management fee for this Fund of 0.35%. Actual Fund performance is also net of other Fund operating expenses of 0.03% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

14. The Separate Account was established 3/15/1999. All performance results are net of the management fee for this Fund of 0.15%. Actual Fund performance is also net of other Fund operating expenses of 0.02% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

15. The Separate Account was established 5/23/2005. All performance results are net of the management fee for this Fund of 0.85%. Actual Fund performance is also net of other Fund operating expenses of 0.01% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

16. The Separate Account was established 5/31/1998. All performance results are net of the management fee for this Fund of 0.74%. Actual Fund performance is also net of other Fund operating expenses of 0.02% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

17. The Separate Account was established 6/28/2007. All performance results are net of the management fee for this Fund of 0.90%. Actual Fund performance is also net of other Fund operating expenses of 0.00% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

18. The Separate Account was established 7/19/2002. All performance results are net of the management fee for this Fund of 0.35%. Actual Fund performance is also net of other Fund operating expenses of 0.02% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

19. The Separate Account was established 7/28/2002. All performance results are net of the management fee for this Fund of 0.69%. Actual Fund performance is also net of other Fund operating expenses of 0.02% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

20. The Separate Account was established 9/30/1999. All performance results are net of the highest management fee for this Fund of 0.35%. Actual Fund performance is also net of other Fund operating expenses of 0.05% for the prior calendar year. Such Fund operating expenses may reflect the benefit of a commission recapture program. Fee waivers of 0.00% are in place for this Fund. Actual performance shown reflects the imposition of the foregoing expenses and the benefit of any fee waivers and commission recaptures.

21. These investments represent investments into a separate account. Returns, ratings, and rankings shown reflect the net expense ratio quoted. All returns are net of the management fees charged for the separate account and net of other operational expenses, and if requested for inclusion in the report may also contain record keeping charges as described in your most recent illustrative revenue disclosure.

An enhanced index strategy is not a better index fund. Rather, it is an actively managed strategy that, like all active strategies, may actually underperform the benchmark index and be more volatile than we expect.

Definitions

5 Yr Treasury Avg Yield - Market yield on U.S. Treasury securities at 5-year constant maturity, quoted on investment basis.

Alpha - A measure of performance on a risk-adjusted basis. Alpha, often considered the active return on an investment, gauges the performance of an investment against a market index used as a benchmark, since they are often considered to represent the market's movement as a whole. The excess returns of a fund relative to the return of a benchmark index is the fund's alpha.

Bloomberg Barclays Agency Index - The index measures the performance of native currency agency debentures from issuers, callable and non-callable agency securities that are publicly issued by U.S. government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. government. It is a subcomponent of the Government-Related Index and the U.S. Government Index as well as a component of the U.S. Aggregate Index and the U.S. Universal Index.

Bloomberg Barclays Asset-Backed Securities Index - The Bloomberg Barclays U.S. Asset Backed Securities (ABS) Index measures the performance of ABS with the following collateral types: credit and charge card, auto and utility loans. All securities have an average life of at least one year.

Bloomberg Barclays Government Bond Index - Measures the performance of the U.S. Treasury and U.S. Agency Indices, including Treasuries and U.S. agency debentures. It is a component of the U.S. Government/Credit Index and the U.S. Aggregate Index.

Bloomberg Barclays Treasury Bond Index - The index measures the performance of public obligations of the U.S. Treasury, including securities roll up to the U.S. Aggregate, U.S. Universal, and Global Aggregate Indices.

Bloomberg Barclays U.S. Aggregate Bond Index - Measures the performance of investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-through's), ABS, and CMBS. It rolls up into other Bloomberg Barclays flagship indices, such as the multi-currency Global Aggregate Index and the U.S. Universal Index, which includes high yield and emerging markets debt.

Bloomberg Barclays U.S. Corporate High-Yield Index - Measures the performance of USD-denominated, non-investment grade, fixed-rate, taxable corporate bonds, including corporate bonds, fixed-rate bullet, putable, and callable bonds, SEC Rule 144A securities, Original issue zeros, Pay-in-kind (PIK) bonds, Fixed-rate and fixed-to-floating capital securities.

Bloomberg Barclays U.S. Credit Index - Measures the performance of the US Corporate and a non-corporate component that includes foreign agencies, sovereigns, supranationals and local authorities. It is a subset of the US Government/Credit Index and the US Aggregate Index.

Bloomberg Barclays U.S. Mortgage Backed Securities Index - Measures the performance of the agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARM) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

Bloomberg Barclays U.S. Treasury Inflation-Protected Securities (TIPS) Index - Measures the performance of rules-based, market value-weighted inflation-protected securities issued by the U.S. Treasury. It is a subset of the Global Inflation-Linked Index (Series-L).

Bloomberg Barclays US Treasury Inflation Notes TR Index Value - The Index measures the performance of the U.S. treasury inflation-linked bond market. Securities must be rated investment grade as defined by the Index methodology. The principal and the interest of all constituent bonds must be inflation-linked and denominated in U.S. Dollars. Nominal U.S. Treasury bonds, floating rate bonds and STRIPS are excluded.

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Category Median - Prudential Retirement constructs Asset Class Categories using MPI Stylus, a product of Markov Processes International LLC, and data provided by Morningstar™, Inc. Categories are constructed by using the appropriate Morningstar™, Inc. category. Category medians and fund percentile rankings are then calculated using MPI Stylus and therefore may differ from those provided directly by Morningstar™, Inc.

Category Returns: Trailing Period Return Charts - In order to measure a fund's performance relative to a style specific benchmark and peer group or universe, funds and benchmarks are plotted relative to where they would rank within a given fund category. For example, the top line of the bar indicates the top 5th percentile return of the category. The 25th percentile return of the category is indicated by the second line. The median or 50th percentile return of the category is indicated by the third line. The 75th percentile return of the category is indicated by the fourth line. The bottom line of the bar indicates the 95th percentile return of the category.

DDA Rank - The DDA Rank represents the quartile ranking assigned to the fund in the latest Due Diligence Advisor Program Report. Each separate account is assessed on the basis of nominal and risk adjusted returns, and downside and relative risk (versus an appropriate benchmark). These metrics are weighted based on 1-, 3- and 5-year results, with greatest emphasis placed on long term timeframes. Due Diligence Quartile Ranks shown are based on the last available Due Diligence Analysis, among the following peer group universe totals.

Downside Risk (Relative) / Semi-StandardDeviation of Excess Return - The risk of underperforming a designated benchmark as measured by the semi-standard deviation of returns. Downside risk only measures the variability of returns below the target return that is specified by the investor. Unlike standard deviation, downside risk calculations do not include returns above the target because above target returns pose no threat to investors' ability to meet their investment objectives.

FTSE NAREIT Equity REITs Index - The FTSE NAREIT US Real Estate Index Series is designed to present investors with a comprehensive family of REIT performance indexes that spans the commercial real estate space across the US economy. The index series provides investors with exposure to all investment and property sectors. In addition, the more narrowly focused property sector and sub-sector indexes provide the facility to concentrate commercial real estate exposure in more selected markets.The FTSE NAREIT Equity REITs index contains all Equity REITs not designated as Timber REITsor Infrastructure REITs.

Gross Expense Ratio - The Total Gross Expense Ratio represents the percentage of fund assets paid for operating expenses and management fees. It typically includes the following types of fees: accounting, administrator, advisor, auditor, board of directors, custodial, distribution (12b-1), legal, organizational, professional, registration, shareholder reporting, sub-advisor, and transfer agency. The expense ratio does not reflect the fund's brokerage costs, fee waivers, or investor sales charges.

Indexes - Investors cannot invest directly in an index.

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MSCI EAFE Index (net) - The MSCI EAFE Index is designed to represent the performance of large and mid-cap securities across 21 developed markets, including countries in Europe, Australasia and the Far East, excluding the U.S. and Canada. The Index is available for a number of regions, market segments/sizes and covers approximately 85% of the free float-adjusted market capitalization in each of the 21 countries.

MSCI Emerging Markets Index - Measures the performance of the large and mid cap segments of emerging market equity securities. It is free float-adjusted market-capitalization weighted.

MSCI Europe ex UK Net Dividend Index - The MSCI Europe ex UK Index captures large and mid cap representation across 14 Developed Markets (DM) countries in Europe*. With 342 constituents, the index covers approximately 85% of the free float-adjusted market capitalization across European Developed Markets excluding the UK.

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MSCI Japan Net Dividend Index - MSCI Japan Index measures the performance of the large and mid cap segments of Japan equity securities. It is free float-adjusted market-capitalization weighted.

MSCI Pacific Ex Japan Net Dividend Index - The index measures the performance of the large and mid cap segments of the developed Pacific region, excluding Japan equity securities. It is free float-adjusted market-capitalization weighted.

MSCI United Kingdom Net Dividend Index - The MSCI United Kingdom Index is designed to measure the performance of the large and mid cap segments of the UK market. With 102 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the UK.

Net Expense Ratio - The Total Net Expense Ratio represents fee charged against fund assets after adjustment for fee waivers.

Risk - Also known as Standard deviation, Risk is a statistical measure of the degree of variability, or dispersion, of a portfolio's return around its average return over a specified time period. Investors can examine historical standard deviation in conjunction with historical returns in order to decide whether a portfolio's volatility would have been acceptable given the returns it produced. A higher standard deviation indicates a wider dispersion of past returns and thus greater risk. Standard deviation does not indicate how a portfolio actually performed, but merely the volatility of its returns over time around their mean.

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 represents approximately 92% of the US market. It includes approximately 1,000 of the largest securities based on a combination of their market cap and current index membership. The 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 reflected.

Russell 1000 Value Index - Measures the performance of the large-cap value segment of the US equity securities. It includes the Russell 1000 index companies with lower price-to-book ratios and lower expected growth values. It is market-capitalization weighted.

Russell 1000® Growth Index - Measures the performance of the large-cap growth segment of the US equity securities. It includes the Russell 1000 index companies with higher price-to-book ratios and higher forecasted growth values. It is market-capitalization weighted.

Russell 2000® Growth Index - Measures the performance of small-cap growth segment of the US equity universe. It includes those Russell 2000 companies with higher price/book ratios and higher predicted and forecasted growth values. It is market-capitalization weighted.

Russell 2000® Index - Measures the performance of the small-cap segment of the US equity universe. It is a subset of the Russell 3000 Index and it represents approximately 8% of the US market. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership.

Russell 2000® Value Index - Measures the performance of small-cap value segment of the US equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower expected and historical growth values.

Russell Midcap Value Index - Measures the performance of the mid-cap value segment of the US equity universe. It includes Russell midcap index companies with lower price-to-book ratios and lower forecasted growth values. It is market-capitalization weighted.

Russell Midcap® Growth Index - Measures the performance of the midcap growth segment of the U.S. equity universe. It includes those Russell Midcap Index companies with higher price-to-book ratios and higher forecasted growth values.

Russell Midcap® Index - Measures the performance of the mid-cap segment of the US equity universe. It is a subset of Russell 1000 index and includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The index represents approximately 31% of the total market capitalization of the Russell 1000 companies. It is constructed to provide a comprehensive and unbiased barometer for the mid-cap segment. The index is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true mid-cap opportunity set.

S&P 500 Information Technology - Comprises those companies included in the S&P 500 that are classified as members of the GICS® information technology sector.

S&P 500 Index - The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities. There is over USD 7.8 trillion benchmarked to the index, with index assets comprising approximately USD 2.2 trillion of this total. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

S&P 500 Industrials - The S&P 500® Industrials Index comprises those companies included in the S&P 500 that are classified as members of the GICS® industrials sector

S&P 500 Real Estate Sector TR - All components of the S&P 500® are assigned to at least one of 11 Select Sector Indices, which track major economic segments and are highly liquid benchmarks. Stock classifications are based on the Global Industry Classification Standard (GICS®).

S&P 500 Telecomm Service - The S&P 500® Telecommunication Services Index comprises those companies included in the S&P 500 that are classified as members of the GICS® telecommunication services sector.

S&P 500-Consumer Discretionary - The S&P 500® Consumer Discretionary Index comprises those companies included in the S&P 500 that are classified as members of the GICS® consumer discretionary sector.

S&P 500-Energy - The S&P 500® Energy Index comprises those companies included in the S&P 500 that are classified as members of the GICS® energy sector.

S&P 500-Financial Services - The S&P 500® Financials Index comprises those companies included in the S&P 500 that are classified as members of the GICS® financials sector.

S&P 500-Health Care - The S&P 500® Health Care Index comprises those companies included in the S&P 500 that are classified as members of the GICS® health care sector.

S&P 500-Materials and Processing - The index measures the performance of all those companies held in the S&P 500 index that are classified as a materials(sector) company using the Global Industry Classification Standard(GICS) system.

S&P 500-Utilities - The S&P 500® Utilities Index comprises those companies included in the S&P 500 that are classified as members of the GICS® utilities sector.

S&P500-Consumer Staples - The S&P 500® Consumer Staples Index comprises those companies included in the S&P 500 that are classified as members of the GICS® consumer staples sector.

Sharpe Ratio - The Sharpe ratio was developed by Nobel laureate William F. Sharpe and is used to help investors understand the return of an investment compared to its risk. The ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk. Subtracting the risk-free rate from the mean return allows an investor to better isolate the profits associated with risk-taking activities. Generally, the greater the value of the Sharpe ratio, the more attractive the risk-adjusted return.

Market Commentary

Certain information contained herein may constitute "forward-looking statements," (including observations about markets and industry and regulatory trends as of the original date of this document). Due to various risks and uncertainties, actual events or results may differ materially from those reflected or contemplated in such forward-looking statements. As a result, you should not rely on such forward-looking statements in making any decisions. No representation or warranty is made as to future performance or such forward-looking statements. These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security or other financial instrument or any investment management services and should not be used as the basis for any investment decision. Past performance is not a guarantee or a reliable indicator of future results
Past performance does not guarantee future results.

Economic Review

Source: Robert DeLucia, Consulting Economist, Prudential Retirement

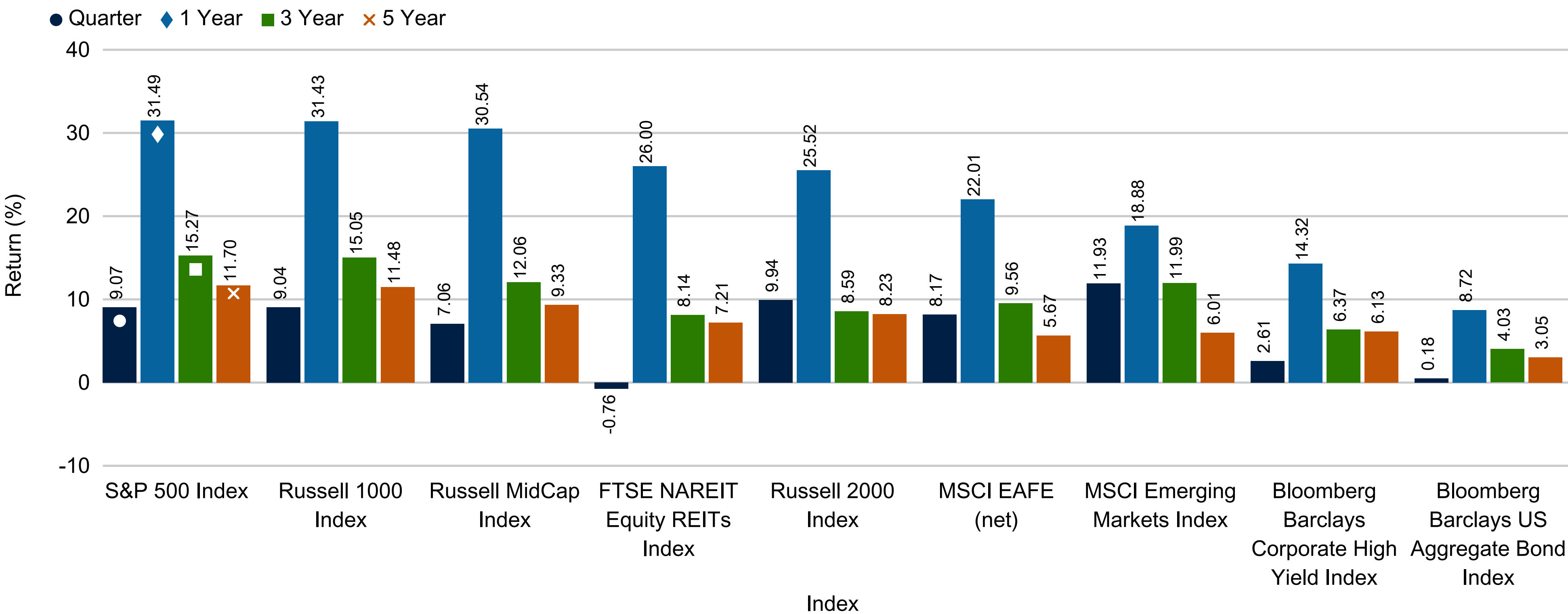
• The U.S. economy ended the year on a very sluggish note. Fourth quarter GDP increased at an estimated annual rate of only 1.8%, bringing growth to 2.3% for the full year. World economic growth also slowed precipitously during the past two years, as full-year global GDP growth of 2.5% was the slowest since the Great Recession. The overarching theme of 2019 was a relentless fear of recession, with U.S.-China trade relations dominating the investment landscape.

• Following nearly two years of intense conflict over trade relations, the U.S. and China agreed to a partial truce at year end, which both parties labeled as "phase one." In exchange for a moderate reduction in current U.S. tariffs and promise of no new tariffs, China agreed to increased purchases of agricultural and industrial goods. While limited in scope, the truce could be a catalyst for reduced business and investor anxiety and an improvement in confidence.

• 2019 was a year of profound crosscurrents among economic sectors, with robust growth in household spending and an outright recession in manufacturing and export trade. Core Consumer Inflation remains under excellent control at 1.6%, while wages for production and non-supervisory workers are increasing at a rate in excess of 3.5%. Job creation continues to grow at a solid pace, exerting downward pressure on the unemployment rate, currently at a 50-year low of 3.5%. U.S. corporate earnings were essentially flat in 2019, as profit margins were squeezed by a combination of slower sales growth, rising input costs, and incremental costs associated with disruptions to supply chains.

• Despite an environment of profound economic, geopolitical, and policy uncertainty, world equity markets performed well in the final quarter of 2019, outperforming global bonds by a wide margin. Financial market behavior during the fourth quarter was driven by a notable shift in market psychology, as investor obsession over recession gradually turned towards increased economic optimism and risk-on sentiment.

Financial Market Returns



This chart is for illustration purposes only and is not meant to represent the performance of any investment. Investors cannot invest directly in an index.

• World financial markets performed exceptionally well in 2019, with double-digit returns in virtually all major asset classes. Equity markets performed strongly in the final quarter of the year, as investor obsession over recession gradually shifted toward increased economic optimism, benefiting domestic and international stocks.

• The S&P 500 Index delivered its best annual return since 2013, ending the year near historic highs. U.S. stocks were supported by easing trade tensions, an accommodative Federal Reserve and investors' expectations for improving economic growth.

• Investment grade bonds, as measured by the Bloomberg Barclays U.S. Aggregate Bond Index, gained nearly 9% for the year, its best calendar year return since 2002. The Bloomberg Barclays Corporate High Yield Index was the best performing segment of the domestic fixed-income market, advancing 14.3% for the year.

Domestic Equity Style Returns

Quarter

	Value	Blend	Growth
Large (Russell 1000™ Index)	7.41	9.04	10.62
Mid (Russell Midcap™ Index)	6.36	7.06	8.17
Small (Russell 2000™ Index)	8.49	9.94	11.39

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- Domestic equities ended the calendar year with all styles and market caps posting double digit returns. Growth stocks outperformed Value stocks across the market cap spectrum by a wide margin, driven by strong returns from the top-performing Information Technology sector.
- In a reversal, small-cap outperformed large and mid-cap stocks for the quarter, benefiting from renewed optimism over an improving economic outlook for 2020. Small-Cap Growth was the best performing segment as higher volatility (beta) stocks led the market higher.
- Specific leadership within the large-cap indices continued to be driven by the Information Technology sector, with Microsoft, Facebook, Amazon and Apple as top contributors for the calendar year.

1 Year

	Value	Blend	Growth
Large (Russell 1000™ Index)	26.54	31.43	36.39
Mid (Russell Midcap™ Index)	27.06	30.54	35.47
Small (Russell 2000™ Index)	22.39	25.52	28.48

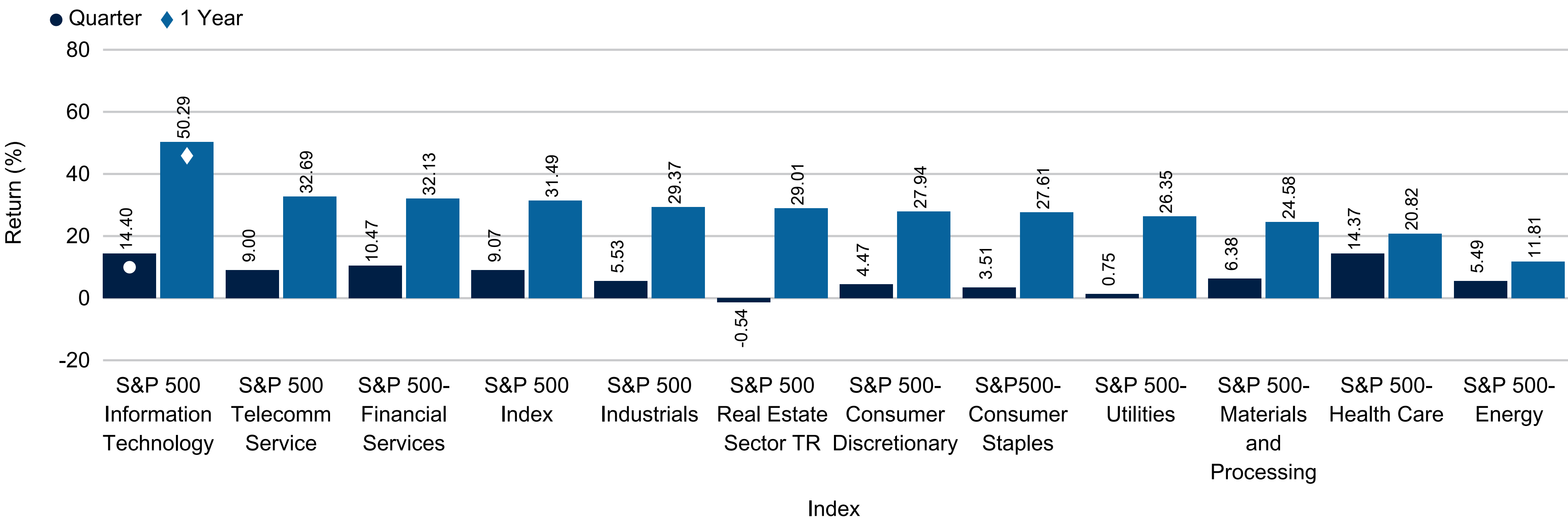
3 Years

	Value	Blend	Growth
Large (Russell 1000™ Index)	9.68	15.05	20.49
Mid (Russell Midcap™ Index)	8.10	12.06	17.36
Small (Russell 2000™ Index)	4.77	8.59	12.49

5 Years

	Value	Blend	Growth
Large (Russell 1000™ Index)	8.29	11.48	14.63
Mid (Russell Midcap™ Index)	7.62	9.33	11.60
Small (Russell 2000™ Index)	6.99	8.23	9.34

S&P 500 Sector Performance



% S&P 500® Index	23.20	10.39	12.95	n/a	9.05	2.93	9.75	7.20	3.32	2.65	14.20	4.35

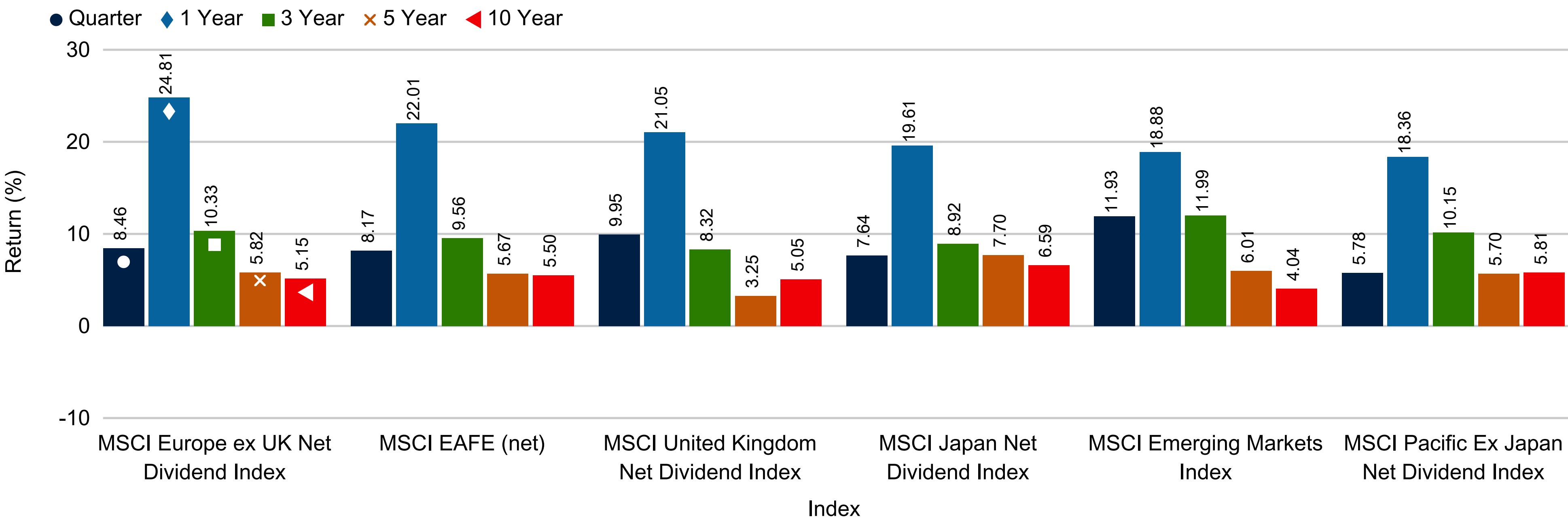
This chart is for illustration purposes only and is not meant to represent the performance of any investment. Investors cannot invest directly in an index.

• All sectors of the S&P 500 Index posted positive returns for the calendar year, with Information Technology the best performing sector, advancing 50.3%. Higher growth areas of the market performed strongly, as investor demand for sectors such as Consumer Discretionary and Information Technology contributed significantly to the S&P 500's return.

• Defensive sectors such as Utilities and Consumer Staples were among the weakest performers for the quarter, a sharp reversal from the third quarter when investors gravitated towards higher yielding stocks in the low yield environment.

• Health Care stocks, which lagged the broader S&P 500 Index materially in 2019, rallied in the fourth quarter as concerns about the "Medicare for All" plan diminished. Financial stocks also posted strong gains during the quarter, supported by a steepening of the yield curve. Although advancing strongly in the month of December, energy stocks languished for the year amid regulatory uncertainty.

International Index Returns



% MSCI EAFE™ Index(net)	45.68	100.00	16.74	22.90	n/a	11.58

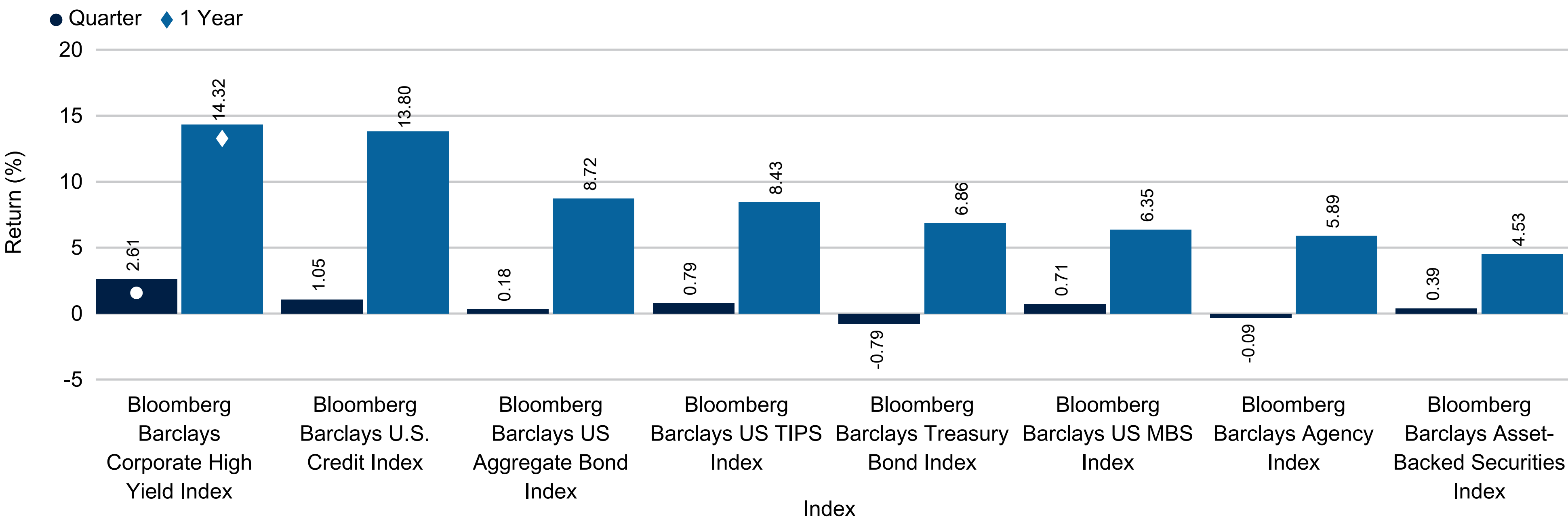
This chart is for illustration purposes only and is not meant to represent the performance of any investment. Investors cannot invest directly in an index.

• International equities lagged U.S. equities on a relative basis throughout the year, but still posted robust gains of 22% for the MSCI EAFE Index and 18.9% for the MSCI Emerging Markets Index. Europe was the strongest performing region for the year, benefiting from stronger economic data, elevated probability of a Brexit negotiation process and easing trade concerns.

• A year end "phase one" deal between the U.S and China, accommodative monetary policy and an improving economic outlook propelled Emerging Market equities to be the best performing segment for the quarter.

• United Kingdom equities performed well amid reduced near-term political uncertainty with a decisive victory for Prime Minister Boris Johnson, while Japanese equities were helped by a framework agreement between the U.S. and China.

Fixed Income Returns



% Bloomberg Barclays	n/a	25.05	100.00	n/a	41.98	27.06	3.38	2.53

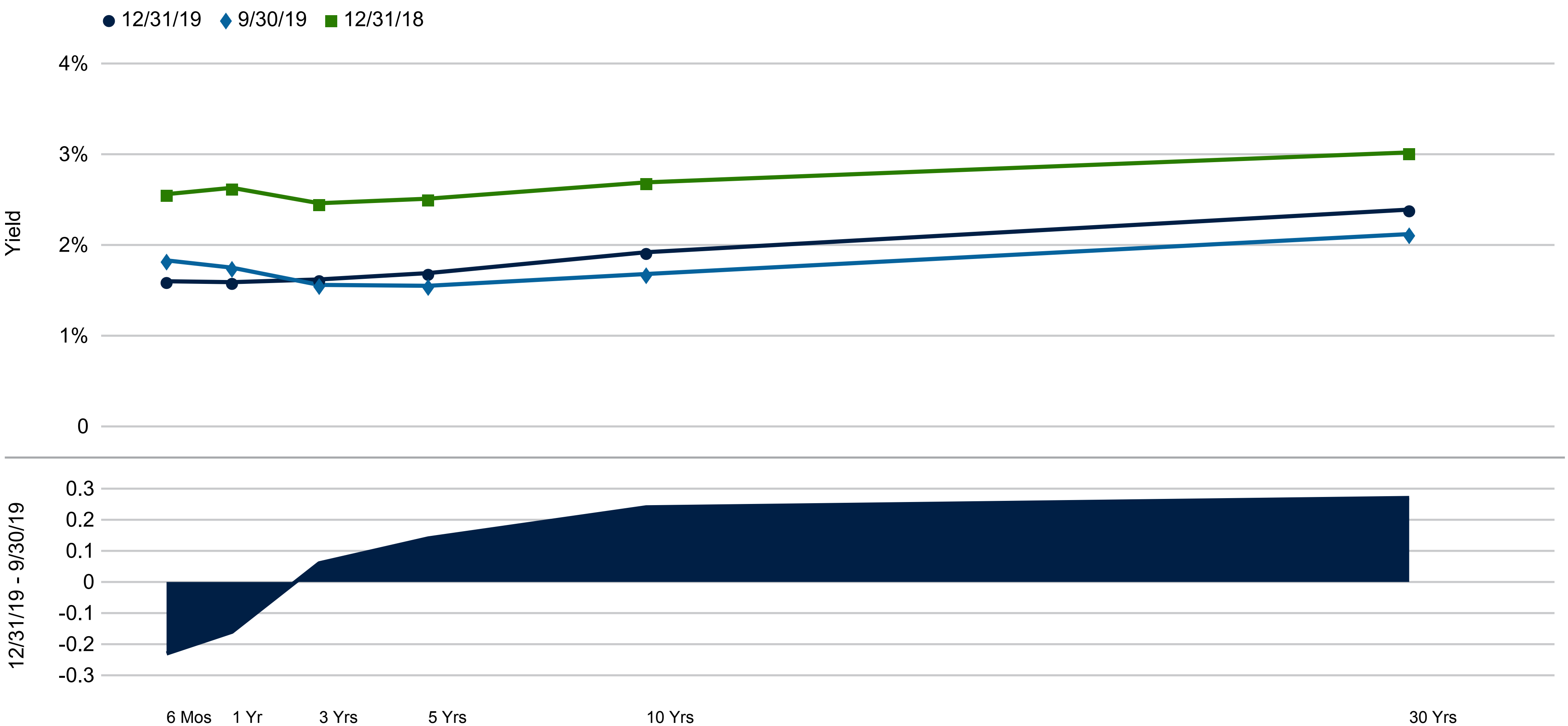
This chart is for illustration purposes only and is not meant to represent the performance of any investment. Investors cannot invest directly in an index.

• All major fixed income segments posted gains for the year with the Bloomberg Barclays U.S. Credit Index the best performing component of the Aggregate Index. Investment grade corporate issues benefited from credit spreads tightening and supportive monetary policy. Outside of the U.S., developed markets such as Germany and Japan are trading at negative interest rates.

• The Bloomberg Barclays Corporate High Yield Index was the best-performing segment within the domestic fixed-income market. High yield outpaced all other sectors due to investors' increased appetite for risk assets and yield, driving prices higher.

• The Bloomberg Barclays Treasury Bond Index registered a 0.79% loss for the quarter. Treasuries suffered as investors rotated into lower quality issues due to a relatively healthy economic backdrop supported by encouraging signs of a trade deal between the U.S and China and an accommodative central bank environment.

U.S. Treasury Yield Curve



This chart is for illustration purposes only and is not meant to represent the performance of any investment. Investors cannot invest directly in an index.

• The Federal Open Market Committee (FOMC) cut interest rates a total of three times during 2019, bringing the federal funds rate target down to a range of 1.5% to 1.75% while signaling that future monetary policy will be on hold.

• After a brief inversion of the two-year and ten-year yield curve during the third quarter, the shape of the yield curve changed rather dramatically during the fourth quarter, closing at its steepest level of 2019, driven largely by good news on trade and economic data.

Economic & Market Outlook

• Current underlying trends strongly suggest that the probability of recession in 2020 is low. Despite lingering economic fears, classic leading indicators of recession are dormant and do not signal an economic downturn any time soon. Monetary and credit conditions are extremely favorable; inflation is under excellent control; the yield curve is upward sloping; the housing and labor markets are strong; and there is no evidence of excesses in spending or capital formation. Genuine recession risks are unlikely to build until 2021 or 2022 as business cycle pressures mount.

• The recent trade truce between the U.S. and China will have some salutary effect on the U.S. and world economies. The "phase one" truce is limited in scope but appears to be sufficient to calm business and investor fears of a protracted escalation in the tariff war. Assuming some improvement in business confidence, firms will be more inclined to pursue expansion plans, which would benefit both employment and capital formation.

• The U.S. economy is likely to perform better this year, with U.S. GDP expected to increase by a minimum 2.6%, as strength in consumer spending and housing is augmented by a moderate recovery in the manufacturing and capital goods sectors. Corporate earnings per share (EPS) are expected to increase by 5% to 10%, led by technology, capital goods, materials, banks, and consumer cyclicals.

• There is a high likelihood that the world economy will surprise on the upside in 2020 with performance that exceeds that of the U.S. The world economy should experience a solid rebound, sparked by massive global monetary stimulus, an end to inventory liquidation in Germany, improving domestic demand in China, and resumed growth in world trade. World GDP could increase at a pace in excess of 3%.

• The upcoming year could also be a major inflection point in politics and government economic policy. The 2020 elections represent a major wild card in the economic and investment outlook. The thrust of economic policy in future years will be heavily dependent upon the presidential election outcome.

• The 2020 investment landscape should become increasingly favorable as the year unfolds. Economic, financial, and policy trends are expected to support another year of positive returns, although annual returns are likely to trail those of 2019, and by a wide margin. The environment is expected to be more favorable for equity versus fixed-income markets, while international equities are likely to outperform those in the U.S., led by European and Asian stocks. Non-U.S. equities should benefit from improving business conditions, more expansionary policies, and significantly more attractive valuations.

Plan Summary

Executive Summary

Asset Class	Fund	Plan Assets	% of Assets[5]	Meets Performance Criteria[4]	DDA Rank[6] 09/30/2019	Category Percentile Ranks: Category Rank 1 YR	Category Rank 3 YRS	Category Rank 5 YRS
Stable Value	Guaranteed Deposit Fund	$2,992,757.61	4.99%	N/A	--	--	--	--
Fixed Income - Government Bond	Government Securities Enhanced Index / PGIM Fund[2,3,13,21]	$3,036,968.94	5.06%	Yes	--	5	5	29
Fixed Income - Core Bond	Core Bond Enhanced Index / PGIM Fund[2,3,14,21]	$6,505,034.76	10.84%	Yes	--	28	31	24
	High Grade Bond / GSAM Fund[2,3,20,21]	$3,066,690.22	5.11%	Yes	3	11	24	20
Fixed Income - Core Plus Bond	Core Plus Bond / PGIM Fund[2,3,7,18,21]	$6,508,850.39	10.85%	Yes	1	9	2	3
Large Cap - Value	Large Cap Value / LSV Asset Management[2,3,19,21]	$10,058,105.32	16.76%	No	4	41	68	53
Large Cap - Growth	Large Cap Growth / JP Morgan Investment Management Fund[2,3,9,16,21]	$10,182,734.52	16.97%	Yes	1	7	4	8
Mid Cap - Value	Mid Cap Value / Integrity Fund[2,3,15,21]	$2,226,309.87	3.71%	Yes	1	43	38	38
Mid Cap - Growth	Mid Cap Growth / Westfield Capital Fund[2,3,17,21]	$2,362,333.98	3.94%	Yes	1	2	13	17
Small Cap - Value	Small Cap Value / Kennedy Capital Fund[2,3,11,21]	$2,817,831.23	4.70%	Yes	2	21	47	49
Small Cap - Growth	Small Cap Growth I Fund (managed by Brown Advisory)[2,3,8,12,21]	$2,826,479.88	4.71%	Yes	4	23	45	86
International - Blend	International Blend / Pictet Asset Management Fund[2,3,10,21]	$7,432,169.54	12.38%	Yes	2	28	74	13
	Total	$60,016,266.26	100.0%					

4. Meets Performance criteria: Actively managed and enhanced index funds should outperform the index over the 3 or 5 year periods or maintain a top half ranking in the applicable peer universe over the same time periods. Passively managed funds should outperform or underperform the index by no more than 50 basis points (0.50%) over the 3 or 5 year periods.

5. The % of Total Assets represents the % of Total Assets reported in the table above and are unaudited.

6. The DDA Rank represents the quartile ranking assigned to the fund in the latest Due Diligence Advisor Program Report.

Executive Summary

Asset Class	Fund	Plan Assets	% of Assets[5]	Meets Performance Criteria[4]	DDA Rank[6] 09/30/2019	Category Percentile Ranks: Category Rank 1 YR	Category Rank 3 YRS	Category Rank 5 YRS
Stable Value	Guaranteed Deposit Fund	$2,281,844.03	4.87%	N/A	--	--	--	--
Fixed Income - Government Bond	Government Securities Enhanced Index / PGIM Fund[2,3,13,21]	$2,474,104.48	5.28%	Yes	--	5	5	29
Fixed Income - Core Bond	Core Bond Enhanced Index / PGIM Fund[2,3,14,21]	$4,995,485.99	10.67%	Yes	--	28	31	24
	High Grade Bond / GSAM Fund[2,3,20,21]	$2,511,070.33	5.36%	Yes	3	11	24	20
Fixed Income - Core Plus Bond	Core Plus Bond / PGIM Fund[2,3,7,18,21]	$5,052,255.48	10.79%	Yes	1	9	2	3
Large Cap - Value	Large Cap Value / LSV Asset Management[2,3,19,21]	$7,864,904.77	16.80%	No	4	41	68	53
Large Cap - Growth	Large Cap Growth / JP Morgan Investment Management Fund[2,3,9,16,21]	$8,007,261.97	17.10%	Yes	1	7	4	8
Mid Cap - Value	Mid Cap Value / Integrity Fund[2,3,15,21]	$1,717,525.06	3.67%	Yes	1	43	38	38
Mid Cap - Growth	Mid Cap Growth / Westfield Capital Fund[2,3,17,21]	$1,825,063.63	3.90%	Yes	1	2	13	17
Small Cap - Value	Small Cap Value / Kennedy Capital Fund[2,3,11,21]	$2,171,662.66	4.64%	Yes	2	21	47	49
Small Cap - Growth	Small Cap Growth I Fund (managed by Brown Advisory)[2,3,8,12,21]	$2,184,119.40	4.66%	Yes	4	23	45	86
International - Blend	International Blend / Pictet Asset Management Fund[2,3,10,21]	$5,734,915.13	12.25%	Yes	2	28	74	13
	Total	$46,820,212.93	100.0%					

4. Meets Performance criteria: Actively managed and enhanced index funds should outperform the index over the 3 or 5 year periods or maintain a top half ranking in the applicable peer universe over the same time periods. Passively managed funds should outperform or underperform the index by no more than 50 basis points (0.50%) over the 3 or 5 year periods.

5. The % of Total Assets represents the % of Total Assets reported in the table above and are unaudited.

6. The DDA Rank represents the quartile ranking assigned to the fund in the latest Due Diligence Advisor Program Report.

Executive Summary

						Category Percentile Ranks		
Asset Class	Fund	Plan Assets	% of Assets[5]	Meets Performance Criteria[4]	DDA Rank[6] 09/30/2019	Category Rank 1 YR	Category Rank 3 YRS	Category Rank 5 YRS
Stable Value	Guaranteed Deposit Fund	$2,030,713.40	3.55%	N/A	--	--	--	--
Fixed Income - Government Bond	Government Securities Enhanced Index / PGIM Fund[2,3,13,21]	$3,093,733.78	5.41%	Yes	--	5	5	29
Fixed Income - Core Bond	Core Bond Enhanced Index / PGIM Fund[2,3,14,21]	$6,333,873.69	11.08%	Yes	--	28	31	24
	High Grade Bond / GSAM Fund[2,3,20,21]	$3,191,210.93	5.58%	Yes	3	11	24	20
Fixed Income - Core Plus Bond	Core Plus Bond / PGIM Fund[2,3,7,18,21]	$6,546,199.98	11.45%	Yes	1	9	2	3
Large Cap - Value	Large Cap Value / LSV Asset Management[2,3,19,21]	$9,641,906.50	16.86%	No	4	41	68	53
Large Cap - Growth	Large Cap Growth / JP Morgan Investment Management Fund[2,3,9,16,21]	$9,664,268.75	16.90%	Yes	1	7	4	8
Mid Cap - Value	Mid Cap Value / Integrity Fund[2,3,15,21]	$2,047,813.77	3.58%	Yes	1	43	38	38
Mid Cap - Growth	Mid Cap Growth / Westfield Capital Fund[2,3,17,21]	$2,162,614.00	3.78%	Yes	1	2	13	17
Small Cap - Value	Small Cap Value / Kennedy Capital Fund[2,3,11,21]	$2,695,039.60	4.71%	Yes	2	21	47	49
Small Cap - Growth	Small Cap Growth I Fund (managed by Brown Advisory)[2,3,8,12,21]	$2,675,088.14	4.68%	Yes	4	23	45	86
International - Blend	International Blend / Pictet Asset Management Fund[2,3,10,21]	$7,089,671.67	12.40%	Yes	2	28	74	13
	Total	$57,172,134.21	100.0%					

4. Meets Performance criteria: Actively managed and enhanced index funds should outperform the index over the 3 or 5 year periods or maintain a top half ranking in the applicable peer universe over the same time periods. Passively managed funds should outperform or underperform the index by no more than 50 basis points (0.50%) over the 3 or 5 year periods.

5. The % of Total Assets represents the % of Total Assets reported in the table above and are unaudited.

6. The DDA Rank represents the quartile ranking assigned to the fund in the latest Due Diligence Advisor Program Report.

Plan Summary

Average Annual Total Returns as of 12/31/2019

Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
Stable Value														
Guaranteed Deposit Fund	0.74%	2.99%	2.99%	3.12%	3.30%	2.58%	--	01/01/1983	--	--	--	--	0.70%	0.70%
Current Net Annualized Rate as of 01/01/2019: 3.30%														
5 Yr Treasury Avg Yield	0.41%	1.97%	1.97%	2.22%	1.89%	1.64%	--	--	0.16%	0.00%	5.11%	--	--	--
Fixed Income - Government Bond														
Fixed income investment (bond) funds are subject to interest rate risk; their value will decline as interest rates rise. Fund shares are not guaranteed by the U.S. Government.														
Government Securities Enhanced Index / PGIM Fund[2,3,13,21]	-0.78%	6.70%	6.70%	3.19%	2.15%	2.79%	--	12/15/1998	3.72%	-0.24%	0.31%	--	0.38%	0.38%
Bloomberg Barclays Government Bond Index	-0.77%	6.83%	6.83%	3.31%	2.36%	3.03%	--	--	3.62%	0.00%	0.37%	--	--	--
Intermediate Government Category Median	-0.05%	5.80%	5.80%	2.58%	1.95%	2.68%	--	--	2.58%	0.01%	0.36%	--	--	--
Fixed Income - Core Bond														
Fixed income investment (bond) funds are subject to interest rate risk; their value will decline as interest rates rise. Fund shares are not guaranteed by the U.S. Government.														
Core Bond Enhanced Index / PGIM Fund[2,3,14,21]	0.18%	8.83%	8.83%	3.96%	3.05%	3.78%	--	03/15/1999	3.12%	-0.03%	0.64%	--	0.17%	0.17%
High Grade Bond / GSAM Fund[2,3,20,21]	0.29%	9.59%	9.59%	4.05%	3.13%	4.22%	--	09/30/1999	2.98%	0.16%	0.70%	3	0.40%	0.40%
Bloomberg Barclays US Aggregate Bond Index	0.18%	8.72%	8.72%	4.03%	3.05%	3.75%	--	--	3.06%	0.00%	0.66%	--	--	--
Intermediate Core Bond Category Median	0.08%	8.31%	8.31%	3.63%	2.76%	3.61%	--	--	2.96%	-0.13%	0.59%	--	--	--
Fixed Income - Core Plus Bond														
Fixed income investment (bond) funds are subject to interest rate risk; their value will decline as interest rates rise. Fund shares are not guaranteed by the U.S. Government.														
Core Plus Bond / PGIM Fund[2,3,7,18,21]	0.42%	11.08%	11.08%	5.61%	4.42%	4.56%	--	07/19/2002	3.44%	1.21%	0.97%	1	0.37%	0.37%
Bloomberg Barclays US Aggregate Bond Index	0.18%	8.72%	8.72%	4.03%	3.05%	3.75%	--	--	3.06%	0.00%	0.66%	--	--	--
Intermediate Core Plus Bond Category Median	0.32%	9.23%	9.23%	4.10%	3.17%	4.27%	--	--	2.91%	0.41%	0.73%	--	--	--
Large Cap - Value														

Average Annual Total Returns as of 12/31/2019

Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
Large Cap Value / LSV Asset Management[2,3,19,21]	9.23%	25.90%	25.90%	8.83%	7.80%	12.13%	--	07/28/2002	14.21%	-1.40%	0.53%	4	0.71%	0.71%
Russell 1000 Value Index	7.41%	26.54%	26.54%	9.68%	8.29%	11.80%	--	--	11.98%	0.00%	0.64%	--	--	--
Large Value Category Median	7.18%	25.22%	25.22%	9.76%	7.89%	10.85%	--	--	12.24%	-0.34%	0.60%	--	--	--
Large Cap - Growth														
Large Cap Growth / JP Morgan Investment Management Fund[2,3,9,16,21]	9.46%	38.69%	38.69%	24.13%	15.20%	14.00%	--	05/31/1998	14.73%	-0.32%	0.97%	1	0.76%	0.76%
Russell 1000 Growth Index	10.62%	36.39%	36.39%	20.49%	14.63%	15.22%	--	--	12.92%	0.00%	1.05%	--	--	--
Large Growth Category Median	9.46%	32.35%	32.35%	18.40%	12.38%	13.56%	--	--	13.23%	-1.97%	0.86%	--	--	--
Mid Cap - Value														
Small and mid-sized companies may present greater opportunities for capital appreciation, but may also involve greater risks than larger companies. As a result, the value of stocks issued by these companies may fluctuate more than stocks of larger issuers.														
Mid Cap Value / Integrity Fund[2,3,15,21]	5.97%	27.61%	27.61%	8.11%	7.51%	12.34%	--	05/23/2005	13.92%	-0.54%	0.52%	1	0.86%	0.86%
Russell MidCap Value Index	6.36%	27.06%	27.06%	8.10%	7.62%	12.41%	--	--	12.62%	0.00%	0.56%	--	--	--
Mid-Cap Value Category Median	6.81%	26.68%	26.68%	7.62%	7.08%	10.88%	--	--	13.69%	-0.65%	0.50%	--	--	--
Mid Cap - Growth														
Small and mid-sized companies may present greater opportunities for capital appreciation, but may also involve greater risks than larger companies. As a result, the value of stocks issued by these companies may fluctuate more than stocks of larger issuers.														
Mid Cap Growth / Westfield Capital Fund[2,3,17,21]	11.86%	44.21%	44.21%	20.28%	12.94%	13.87%	--	06/28/2007	13.89%	1.37%	0.87%	1	0.90%	0.90%
Russell MidCap Growth Index	8.17%	35.47%	35.47%	17.36%	11.60%	14.24%	--	--	13.65%	0.00%	0.80%	--	--	--
Mid-Cap Growth Category Median	7.75%	33.74%	33.74%	16.39%	10.91%	13.05%	--	--	14.25%	-0.64%	0.72%	--	--	--
Small Cap - Value														
Small and mid-sized companies may present greater opportunities for capital appreciation, but may also involve greater risks than larger companies. As a result, the value of stocks issued by these companies may fluctuate more than stocks of larger issuers.														
Small Cap Value / Kennedy Capital Fund[2,3,11,21]	9.14%	25.20%	25.20%	4.18%	5.76%	11.30%	--	01/29/2001	16.14%	-1.11%	0.36%	2	1.00%	1.00%
Russell 2000 Value Index	8.49%	22.39%	22.39%	4.77%	6.99%	10.56%	--	--	15.88%	0.00%	0.44%	--	--	--
Small Value Category Median	7.94%	21.81%	21.81%	3.95%	5.66%	10.07%	--	--	16.08%	-1.08%	0.36%	--	--	--

Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
	Average Annual Total Returns as of 12/31/2019													
Small Cap - Growth														
Small and mid-sized companies may present greater opportunities for capital appreciation, but may also involve greater risks than larger companies. As a result, the value of stocks issued by these companies may fluctuate more than stocks of larger issuers.														
Small Cap Growth I Fund (managed by Brown Advisory)[1,2,3,8,12,21]	7.83%	34.72%	34.72%	14.94%	7.34%	11.86%	--	11/21/2008	15.48%	-0.72%	0.47%	4	1.06%	1.06%
Manager Composite	7.60%	34.24%	34.24%	14.89%	12.49%	13.94%	--	03/31/1993	14.79%	4.12%	0.80%	4	1.05%	1.05%
Blended Performance	7.83%	34.72%	34.72%	14.94%	12.46%	13.92%	--	03/31/1993	14.89%	4.06%	0.80%	4	1.06%	1.06%
Russell 2000 Growth Index	11.39%	28.48%	28.48%	12.49%	9.34%	13.01%	--	--	16.90%	0.00%	0.55%	--	--	--
Small Growth Category Median	9.44%	27.91%	27.91%	14.31%	10.12%	12.99%	--	--	16.64%	1.28%	0.61%	--	--	--
International - Blend														
Investing in foreign securities presents certain unique risks not associated with domestic investments, such as currency fluctuation and political and economic changes. This may result in greater share price volatility.														
International Blend / Pictet Asset Management Fund[2,3,10,21]	7.20%	24.43%	24.43%	8.09%	6.46%	5.57%	--	01/19/2007	13.01%	0.76%	0.47%	2	0.94%	0.94%
MSCI EAFE (net)	8.17%	22.01%	22.01%	9.56%	5.67%	5.50%	--	--	12.23%	0.00%	0.43%	--	--	--
Foreign Large Blend Category Median	8.77%	21.84%	21.84%	8.99%	5.30%	5.25%	--	--	12.06%	-0.13%	0.40%	--	--	--

1. When such funds have fewer than five years of performance history, three types of performance information are provided to assist you in choosing your plan's investment options. "Fund Performance" represents the actual performance of the fund for all periods since the inception date of the fund (which is shown in this line). "Manager's Composite" represents the composite return of multiple portfolios advised by the Manager since the inception date. These portfolios have an investment style and approach similar to the investment style of the fund. "Blended" represents a combination of the actual Fund performance and the current Manager's Composite performance. Actual Fund performance is used for periods after the fund was managed by the current Manager. For periods before the current Manager's assumption of Fund management, the Manager's Composite return is used. Therefore, when no Actual Fund performance with the current manager exists, the Blended performance line will equal the Manager Composite line. The inception date associated with this line is the inception date of the Manager's Composite. "Since Inception" returns are only provided when the inception date is less than 10 years ago. All performance is net of the expense ratio shown for that line.

Investment Options Review

Prudential Retirement constructs Asset Class Categories using MPI Stylus, a product of Markov Processes International LLC, and data provided by Morningstar™, Inc. Prudential Retirement, Morningstar and Markov Processes International are not affiliated entities.

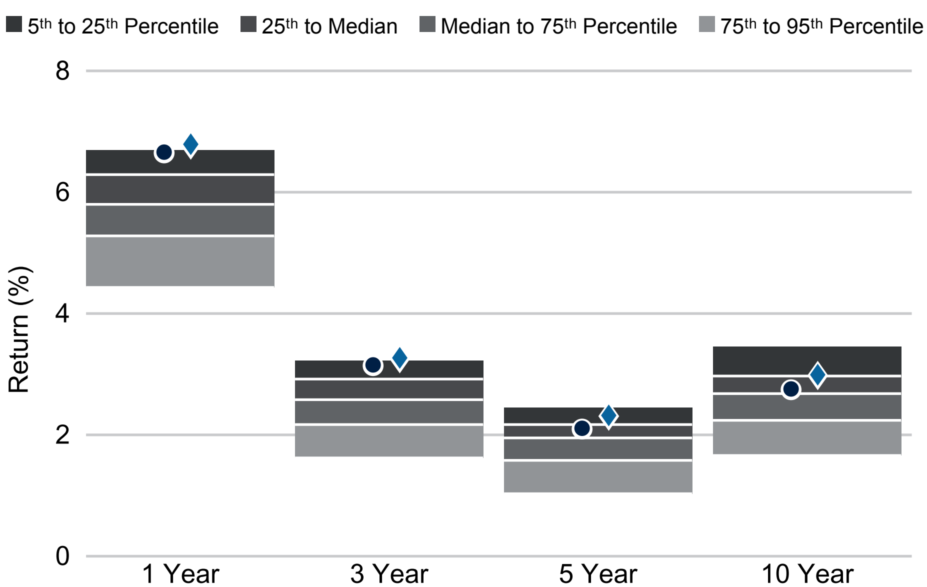
Within MPI Stylus, Asset Class Categories are constructed based on the category provided in the Morningstar open-end universe. Total Return Performance of each of the funds on our platform is then compared against the appropriate Asset Class Category to generate the percentile ranking within each time period. All total return performance is net of all management and investment expenses only. Unless specifically requested by a plan sponsor, contract charges are not included. If included, contract charges would lower the performance and therefore change the fund's percentile rankings. Fund percentile rankings may differ from those provided directly by Morningstar™, Inc. Funds are ranked by total return performance against the Asset Class Category that is identified at the bottom of each section with the words Category Median following the Asset Class Category name. For more information on how many funds are in each Asset Class Category please refer to the Number of Funds In Category section below.

Fixed Income - Government Bond

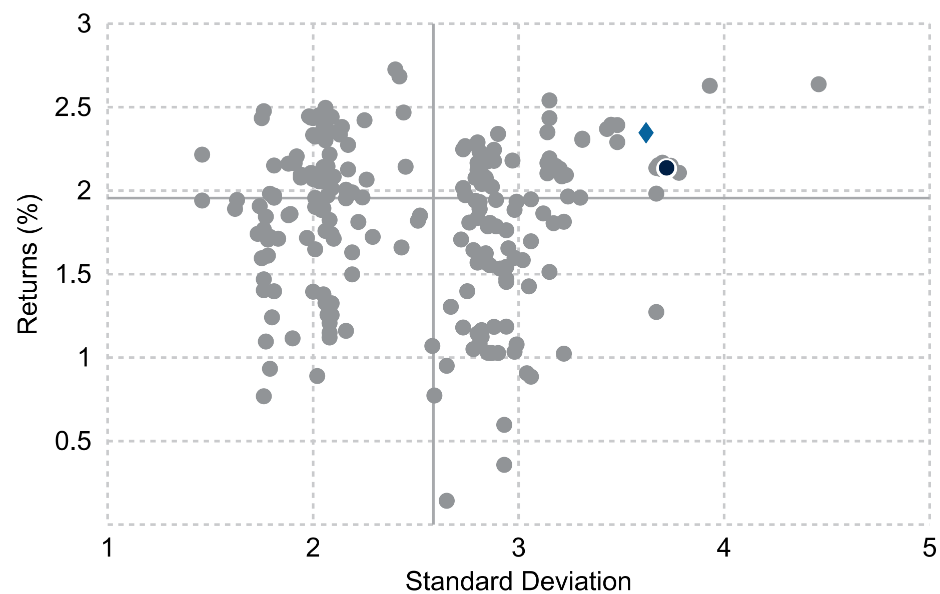
Fund	Average Annual Total Returns as of 12/31/2019 3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Government Securities Enhanced Index / PGIM Fund	-0.78%	6.70%	6.70%	3.19%	2.15%	2.79%	--	12/15/1998	3.72%	-0.24%	0.31%	--	0.38%	0.38%
Return Rank	89	5	5	5	29	39	--	--	99	68	62	--	--	--
♦ *Bloomberg Barclays Government Bond Index*	*-0.77%*	*6.83%*	*6.83%*	*3.31%*	*2.36%*	*3.03%*	--	--	*3.62%*	*0.00%*	*0.37%*	--	--	--
Intermediate Government Category Median	*-0.05%*	*5.80%*	*5.80%*	*2.58%*	*1.95%*	*2.68%*	--	--	*2.58%*	*0.01%*	*0.36%*	--	--	--
No. Of Funds In Category	224	224	224	223	221	198	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



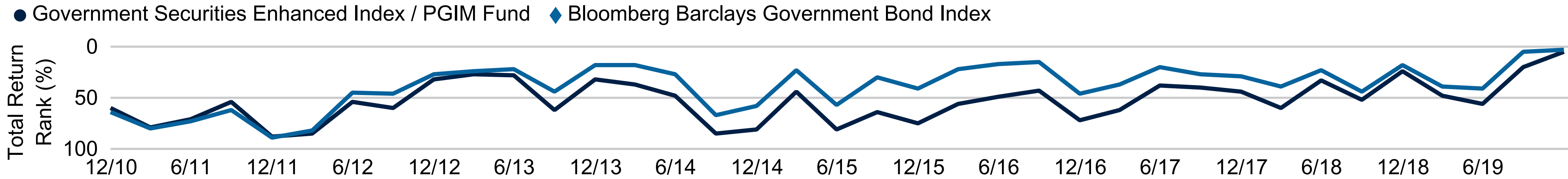
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



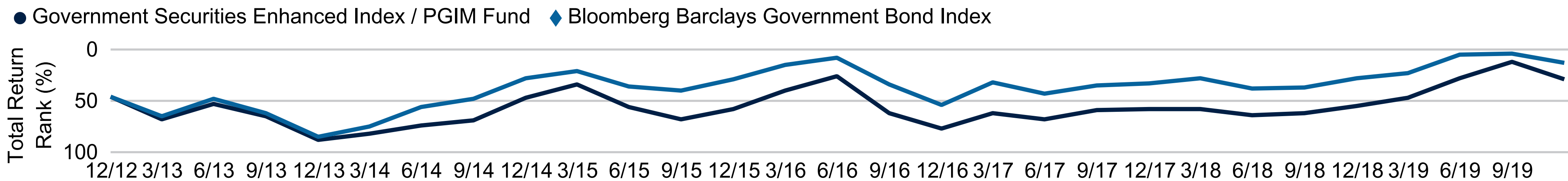
Source: Morningstar™ Intermediate Government Category for creating asset class universe.

Fixed Income - Government Bond

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019

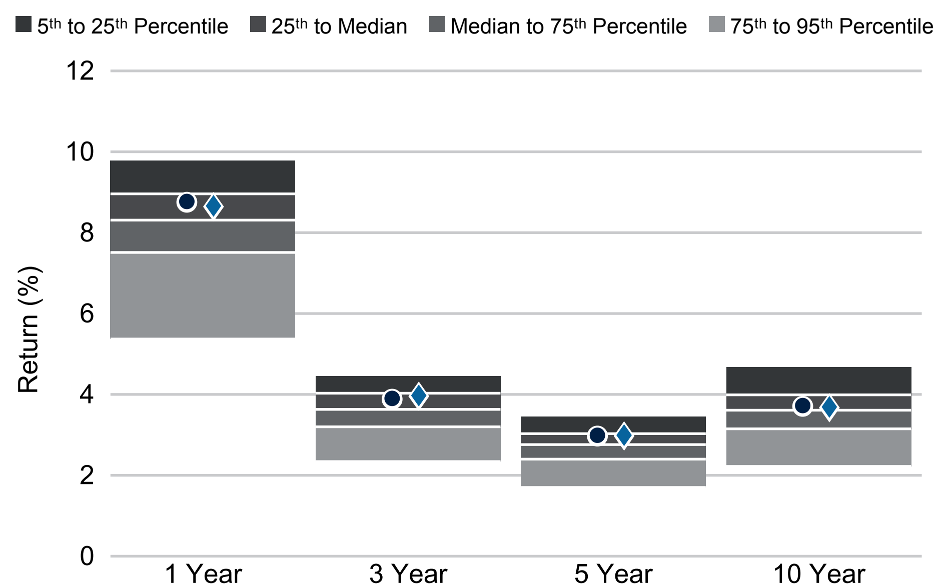


Fixed Income - Core Bond

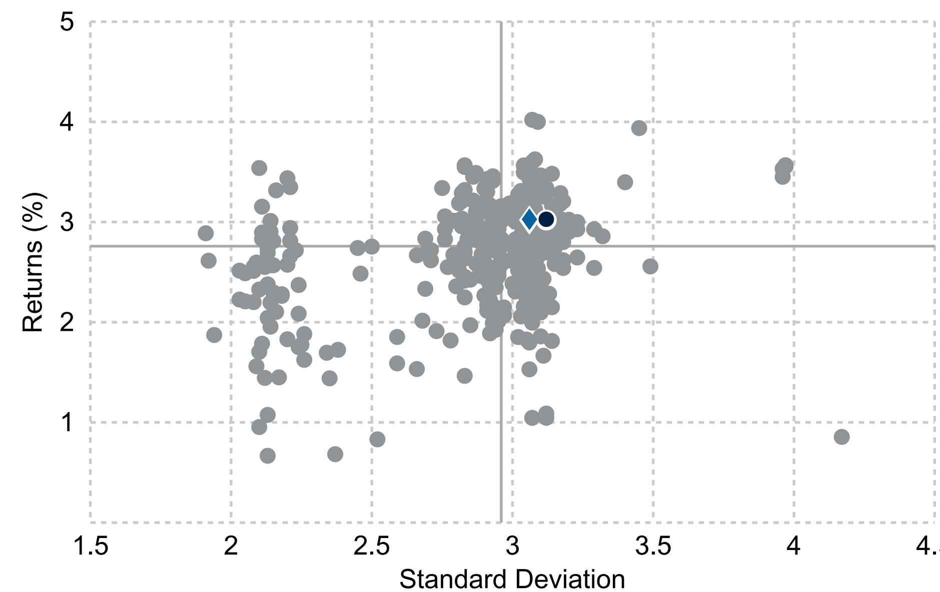
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
		Average Annual Total Returns as of 12/31/2019												
● Core Bond Enhanced Index / PGIM Fund	0.18%	8.83%	8.83%	3.96%	3.05%	3.78%	--	03/15/1999	3.12%	-0.03%	0.64%	--	0.17%	0.17%
Return Rank	37	28	28	31	24	39	--	--	87	41	37	--	--	--
♦ *Bloomberg Barclays US Aggregate Bond Index*	*0.18%*	*8.72%*	*8.72%*	*4.03%*	*3.05%*	*3.75%*	--	--	*3.06%*	*0.00%*	*0.66%*	--	--	--
Intermediate Core Bond Category Median	*0.08%*	*8.31%*	*8.31%*	*3.63%*	*2.76%*	*3.61%*	--	--	*2.96%*	*-0.13%*	*0.59%*	--	--	--
No. Of Funds In Category	423	420	420	404	383	353	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



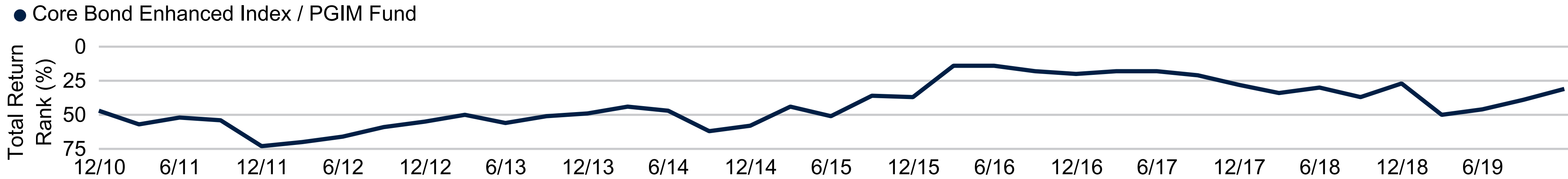
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



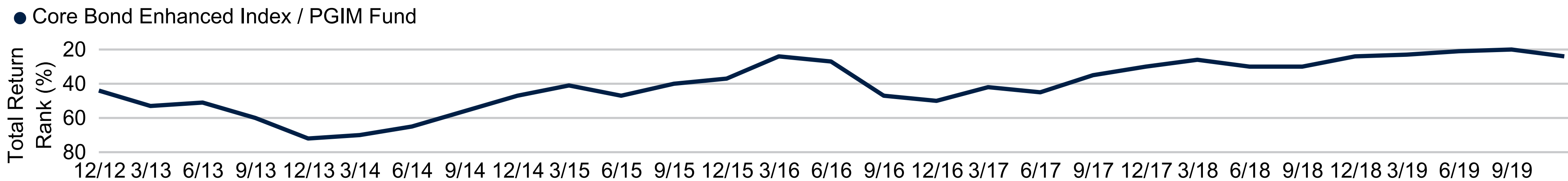
Source: Morningstar™ Intermediate Core Bond Category for creating asset class universe.

Fixed Income - Core Bond

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



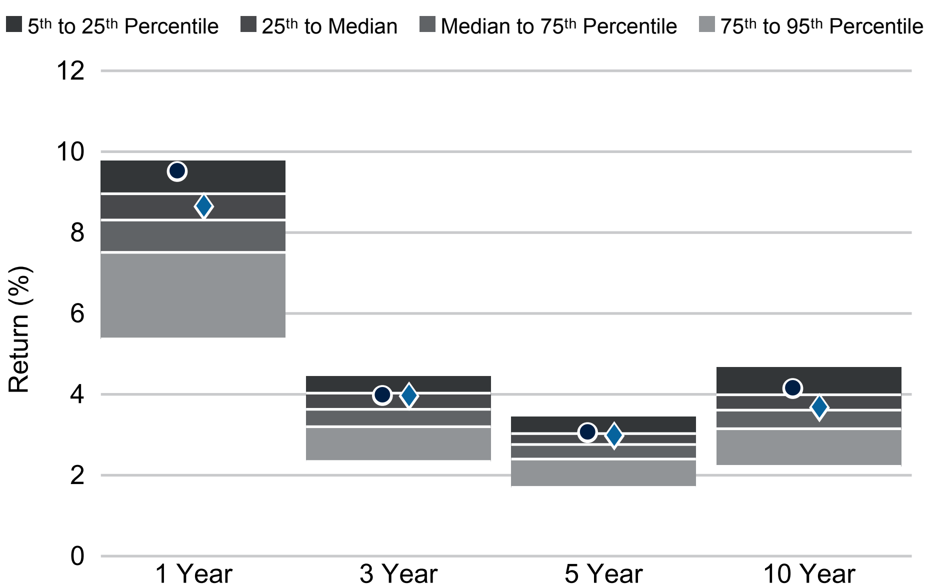
Fixed Income - Core Bond

Average Annual Total Returns as of 12/31/2019

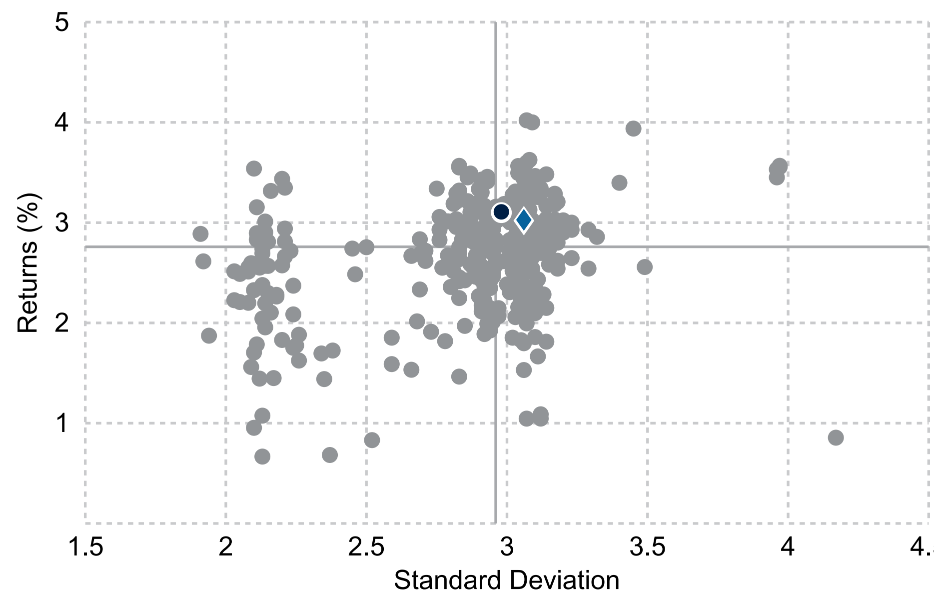
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● High Grade Bond / GSAM Fund	0.29%	9.59%	9.59%	4.05%	3.13%	4.22%	--	09/30/1999	2.98%	0.16%	0.70%	3	0.40%	0.40%
Return Rank	26	11	11	24	20	15	--	--	54	27	26	--	--	--
◆ *Bloomberg Barclays US Aggregate Bond Index*	*0.18%*	*8.72%*	*8.72%*	*4.03%*	*3.05%*	*3.75%*	--	--	*3.06%*	*0.00%*	*0.66%*	--	--	--
Intermediate Core Bond Category Median	*0.08%*	*8.31%*	*8.31%*	*3.63%*	*2.76%*	*3.61%*	--	--	*2.96%*	*-0.13%*	*0.59%*	--	--	--
No. Of Funds In Category	423	420	420	404	383	353	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



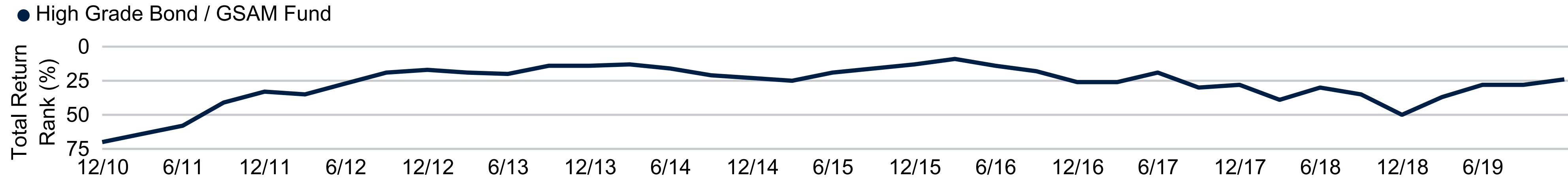
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



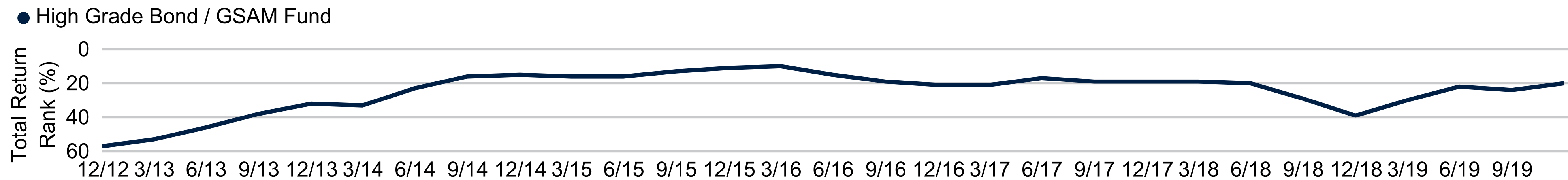
Source: Morningstar™ Intermediate Core Bond Category for creating asset class universe.

Fixed Income - Core Bond

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



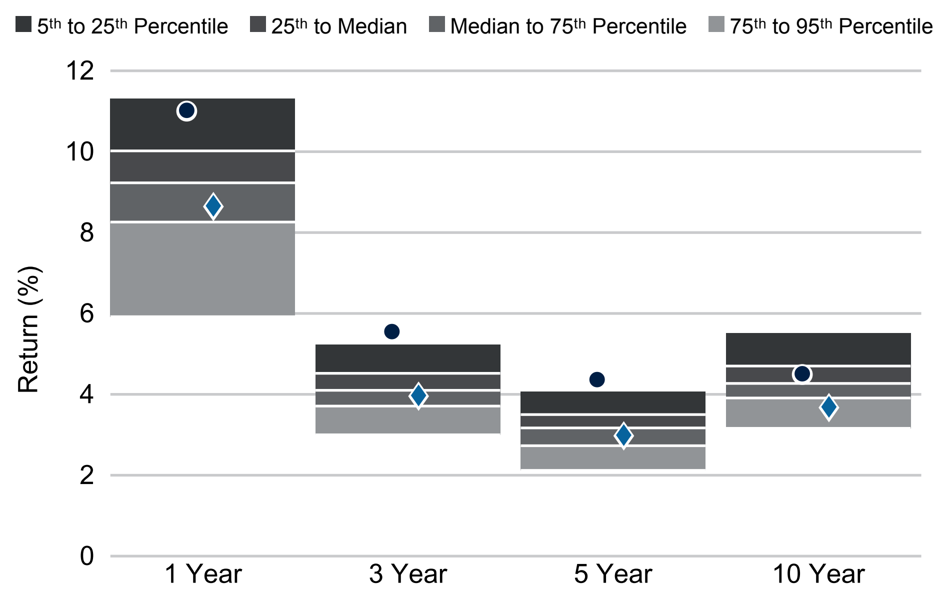
Fixed Income - Core Plus Bond

Average Annual Total Returns as of 12/31/2019

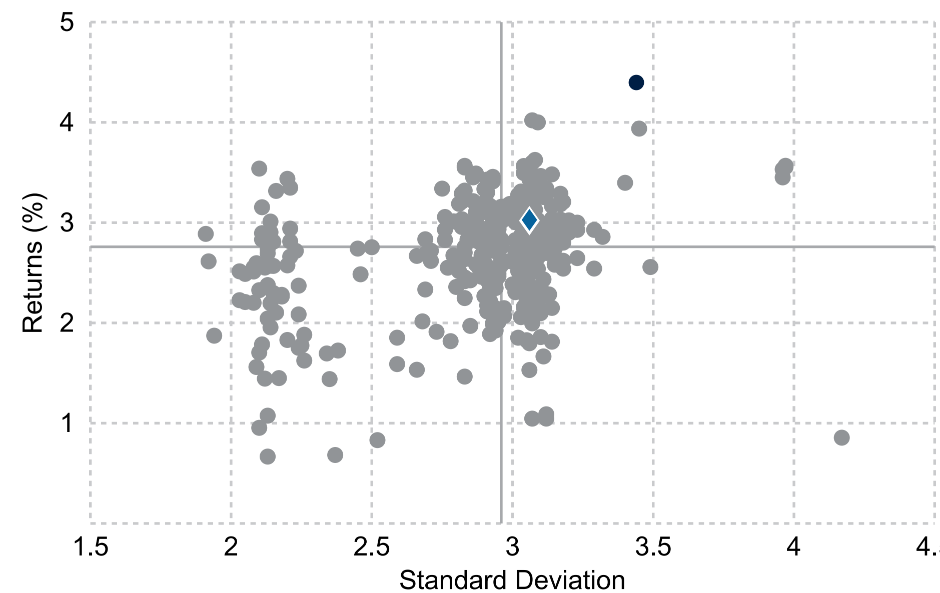
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Core Plus Bond / PGIM Fund	0.42%	11.08%	11.08%	5.61%	4.42%	4.56%	--	07/19/2002	3.44%	1.21%	0.97%	1	0.37%	0.37%
Return Rank	41	9	9	2	3	32	--	--	94	9	12	--	--	--
♦ *Bloomberg Barclays US Aggregate Bond Index*	*0.18%*	*8.72%*	*8.72%*	*4.03%*	*3.05%*	*3.75%*	--	--	*3.06%*	*0.00%*	*0.66%*	--	--	--
Intermediate Core Plus Bond Category Median	*0.32%*	*9.23%*	*9.23%*	*4.10%*	*3.17%*	*4.27%*	--	--	*2.91%*	*0.41%*	*0.73%*	--	--	--
No. Of Funds In Category	607	607	607	568	523	461	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



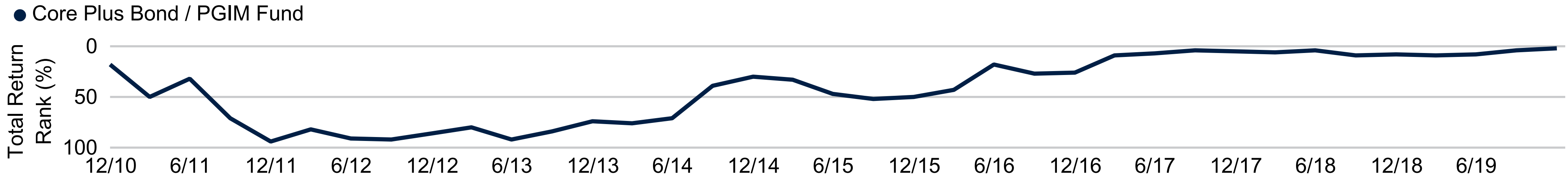
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



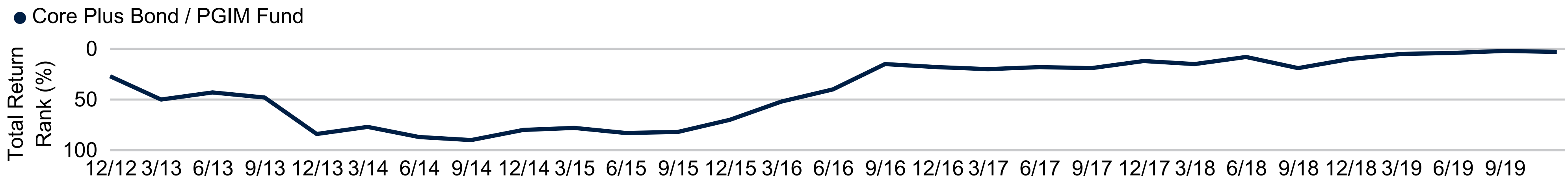
Source: Morningstar™ Intermediate Core Bond Category for creating asset class universe.

Fixed Income - Core Plus Bond

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



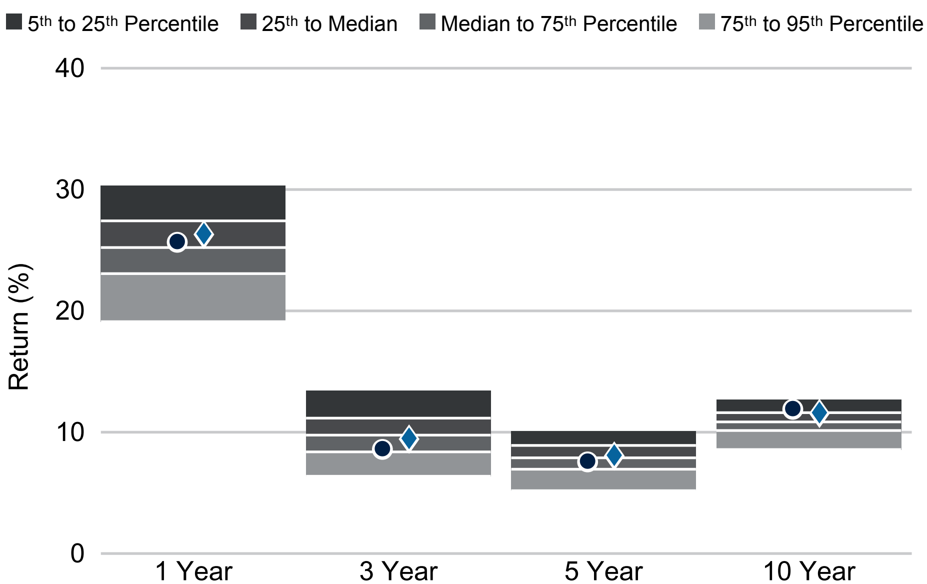
Large Cap - Value

Average Annual Total Returns as of 12/31/2019

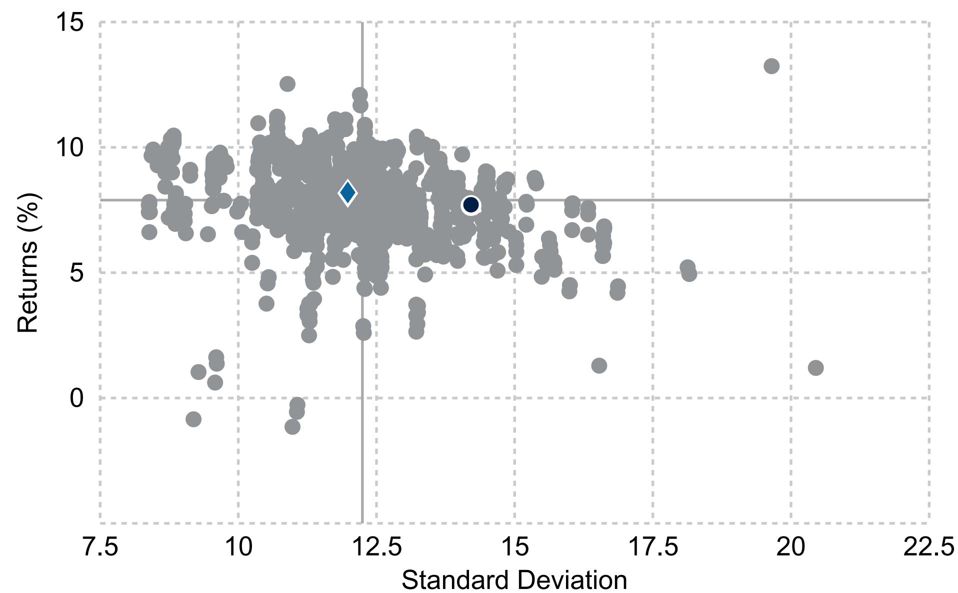
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Large Cap Value / LSV Asset Management	9.23%	25.90%	25.90%	8.83%	7.80%	12.13%	--	07/28/2002	14.21%	-1.40%	0.53%	4	0.71%	0.71%
Return Rank	14	41	41	68	53	13	--	--	91	75	72	--	--	--
♦ *Russell 1000 Value Index*	*7.41%*	*26.54%*	*26.54%*	*9.68%*	*8.29%*	*11.80%*	--	--	*11.98%*	*0.00%*	*0.64%*	--	--	--
Large Value Category Median	*7.18%*	*25.22%*	*25.22%*	*9.76%*	*7.89%*	*10.85%*	--	--	*12.24%*	*-0.34%*	*0.60%*	--	--	--
No. Of Funds In Category	1153	1134	1134	1105	1032	921	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



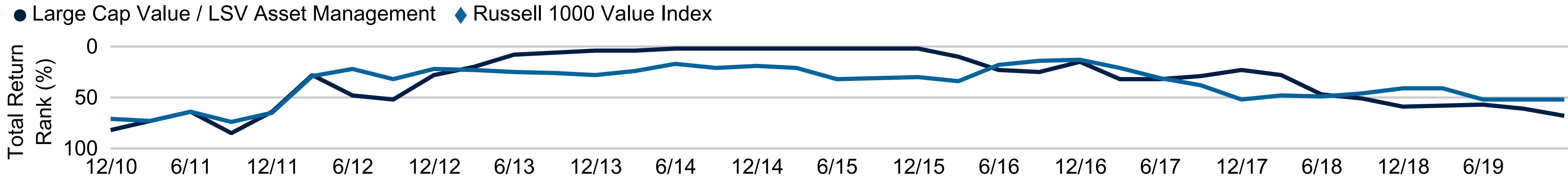
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



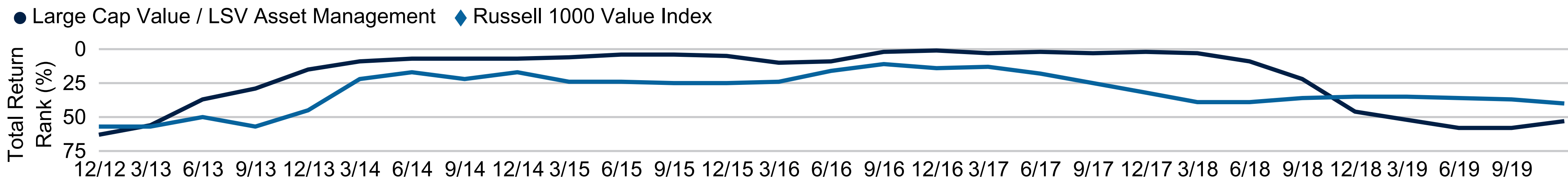
Source: Morningstar™ Large Value Category for creating asset class universe.

Large Cap - Value

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



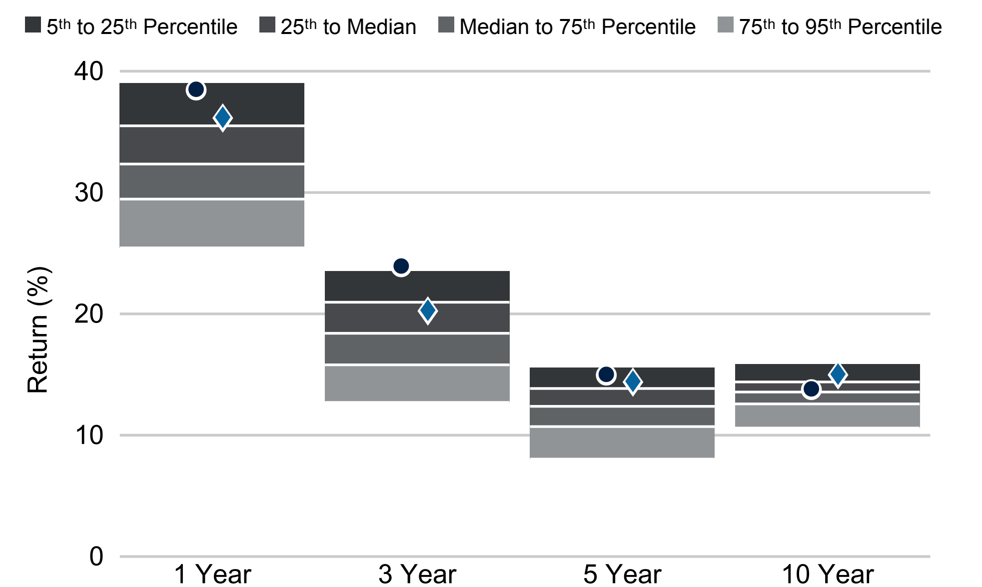
Large Cap - Growth

Average Annual Total Returns as of 12/31/2019

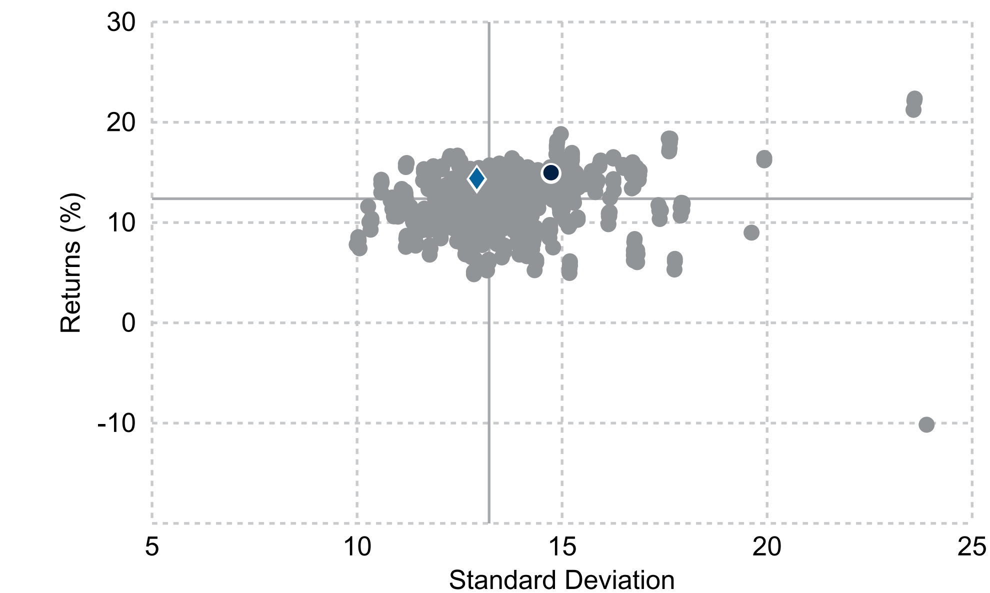
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Large Cap Growth / JP Morgan Investment Management Fund	9.46%	38.69%	38.69%	24.13%	15.20%	14.00%	--	05/31/1998	14.73%	-0.32%	0.97%	1	0.76%	0.76%
Return Rank	50	7	7	4	8	38	--	--	85	18	22	--	--	--
♦ *Russell 1000 Growth Index*	*10.62%*	*36.39%*	*36.39%*	*20.49%*	*14.63%*	*15.22%*	--	--	*12.92%*	*0.00%*	*1.05%*	--	--	--
Large Growth Category Median	*9.46%*	*32.35%*	*32.35%*	*18.40%*	*12.38%*	*13.56%*	--	--	*13.23%*	*-1.97%*	*0.86%*	--	--	--
No. Of Funds In Category	1347	1328	1328	1284	1240	1091	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



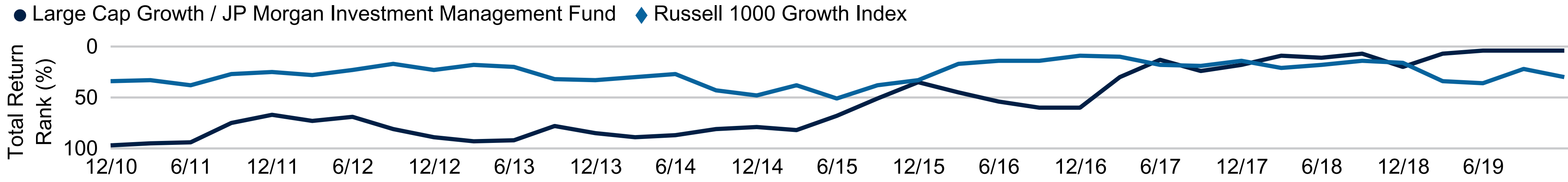
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



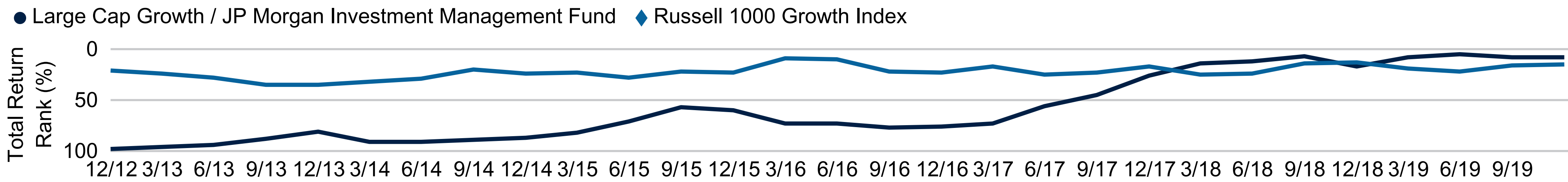
Source: Morningstar™ Large Growth Category for creating asset class universe.

Large Cap - Growth

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



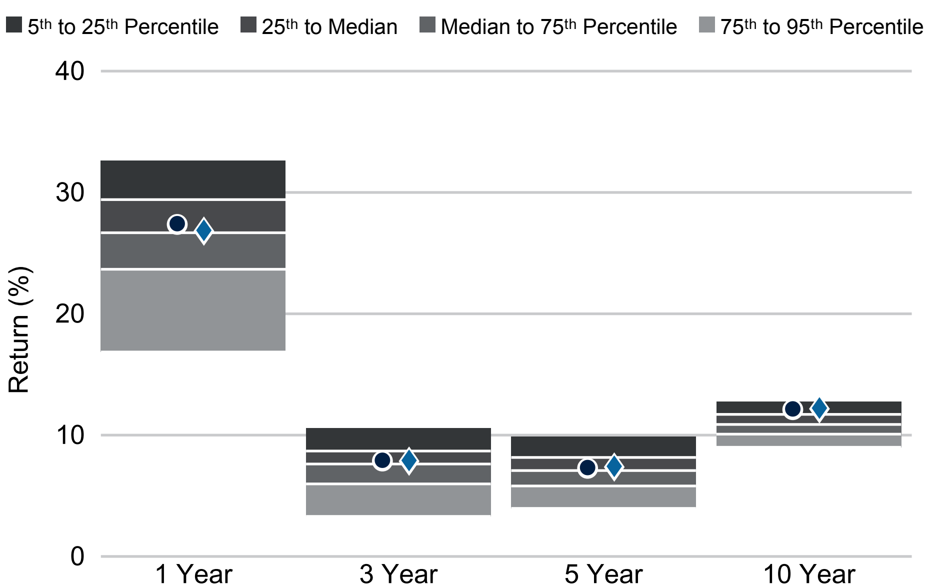
Mid Cap - Value

Average Annual Total Returns as of 12/31/2019

Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Mid Cap Value / Integrity Fund	5.97%	27.61%	27.61%	8.11%	7.51%	12.34%	--	05/23/2005	13.92%	-0.54%	0.52%	1	0.86%	0.86%
Return Rank	73	43	43	38	38	13	--	--	58	48	44	--	--	--
♦ *Russell MidCap Value Index*	*6.36%*	*27.06%*	*27.06%*	*8.10%*	*7.62%*	*12.41%*	--	--	*12.62%*	*0.00%*	*0.56%*	--	--	--
Mid-Cap Value Category Median	*6.81%*	*26.68%*	*26.68%*	*7.62%*	*7.08%*	*10.88%*	--	--	*13.69%*	*-0.65%*	*0.50%*	--	--	--
No. Of Funds In Category	403	402	402	386	378	317	--	--	--	--	--	--	--	--

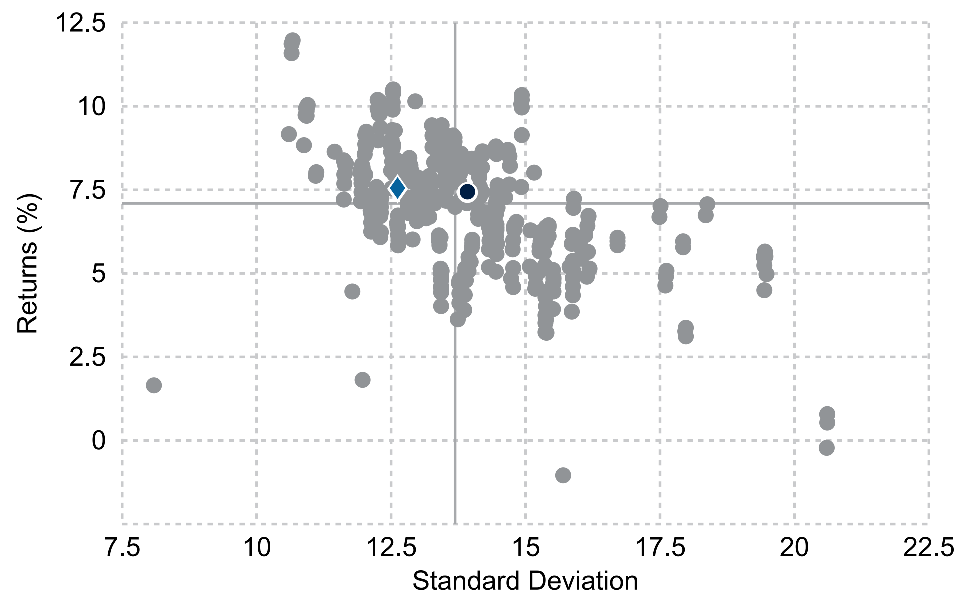
Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



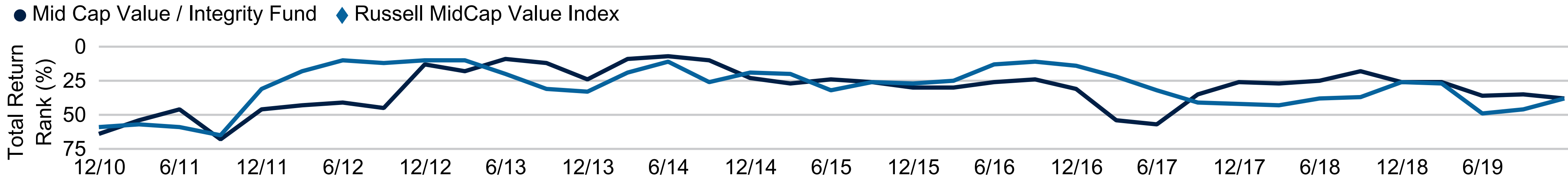
Source: Morningstar™ Mid-Cap Value Category for creating asset class universe.

Risk Return Analysis: Trailing 5 Years Ended 12/31/2019

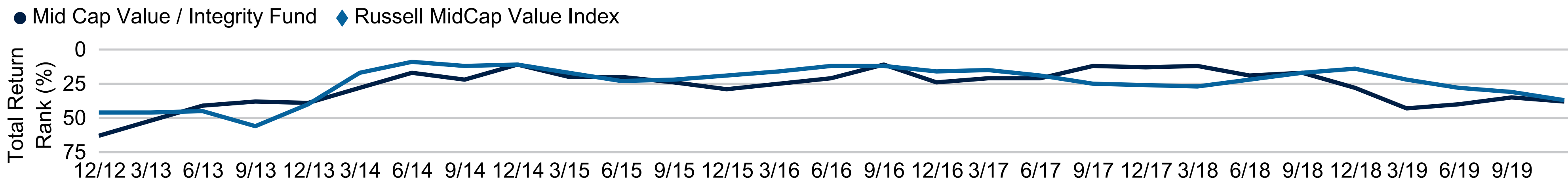


Mid Cap - Value

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



Mid Cap - Growth

Average Annual Total Returns as of 12/31/2019

Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Mid Cap Growth / Westfield Capital Fund	11.86%	44.21%	44.21%	20.28%	12.94%	13.87%	--	06/28/2007	13.89%	1.37%	0.87%	1	0.90%	0.90%
Return Rank	7	2	2	13	17	32	--	--	45	21	20	--	--	--
♦ *Russell MidCap Growth Index*	*8.17%*	*35.47%*	*35.47%*	*17.36%*	*11.60%*	*14.24%*	--	--	*13.65%*	*0.00%*	*0.80%*	--	--	--
Mid-Cap Growth Category Median	*7.75%*	*33.74%*	*33.74%*	*16.39%*	*10.91%*	*13.05%*	--	--	*14.25%*	*-0.64%*	*0.72%*	--	--	--
No. Of Funds In Category	602	595	595	578	552	505	--	--	--	--	--	--	--	--

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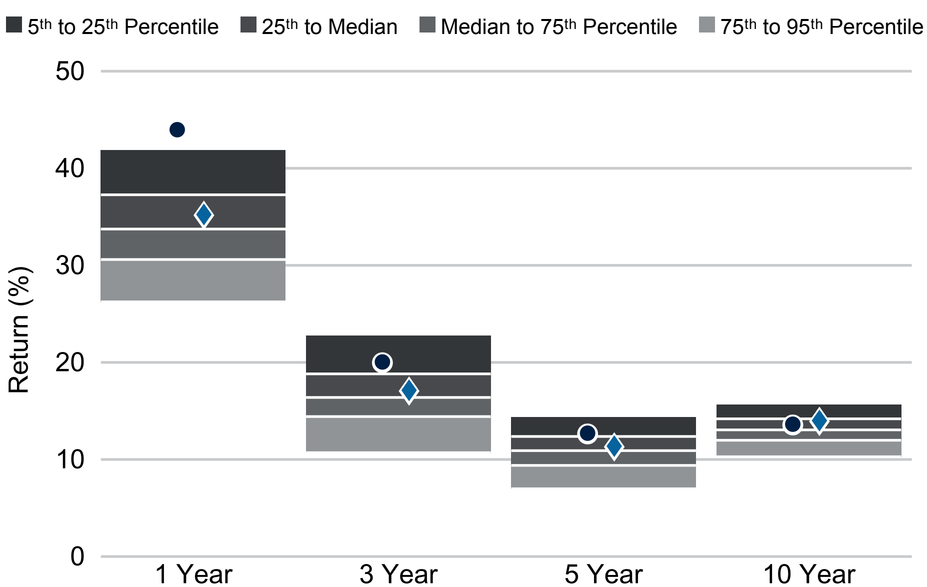
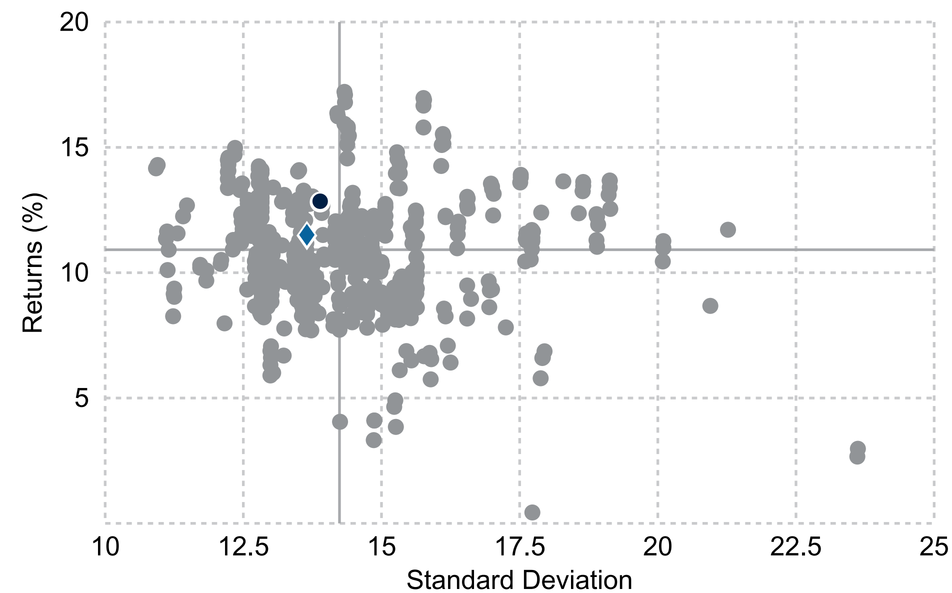
Category Returns: Trailing Period Returns as of 12/31/2019



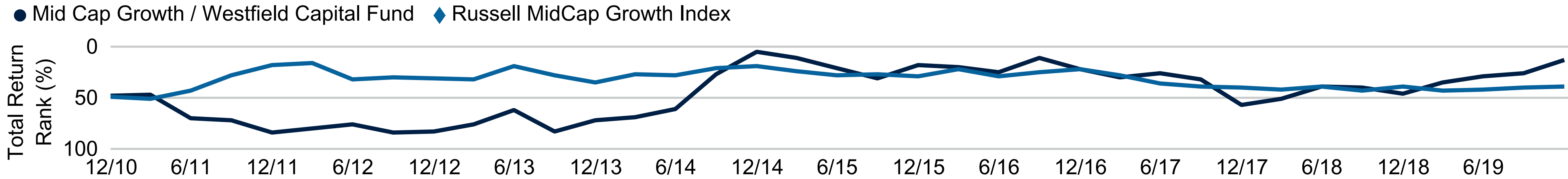
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



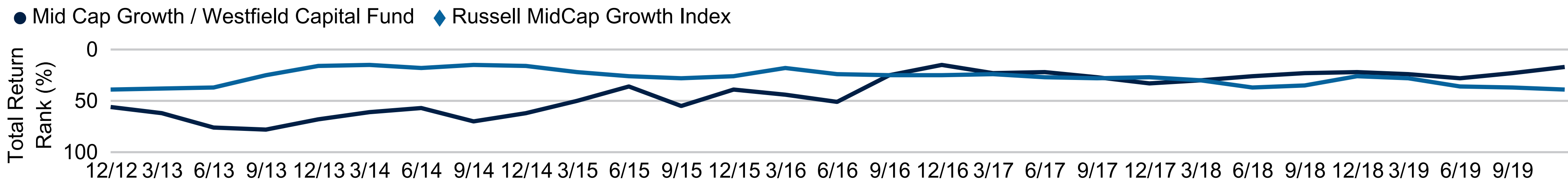
Source: Morningstar™ Mid-Cap Growth Category for creating asset class universe.

Mid Cap - Growth

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



Small Cap - Value

Average Annual Total Returns as of 12/31/2019

Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
● Small Cap Value / Kennedy Capital Fund	9.14%	25.20%	25.20%	4.18%	5.76%	11.30%	--	01/29/2001	16.14%	-1.11%	0.36%	2	1.00%	1.00%
Return Rank	23	21	21	47	49	16	--	--	51	51	49	--	--	--
♦ *Russell 2000 Value Index*	*8.49%*	*22.39%*	*22.39%*	*4.77%*	*6.99%*	*10.56%*	--	--	*15.88%*	*0.00%*	*0.44%*	--	--	--
Small Value Category Median	*7.94%*	*21.81%*	*21.81%*	*3.95%*	*5.66%*	*10.07%*	--	--	*16.08%*	*-1.08%*	*0.36%*	--	--	--
No. Of Funds In Category	410	408	408	400	384	333	--	--	--	--	--	--	--	--

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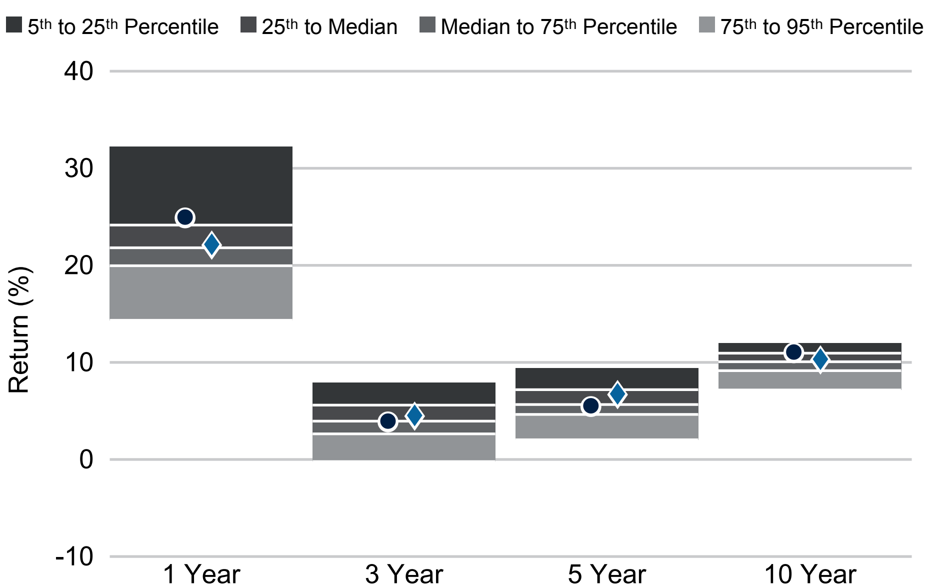
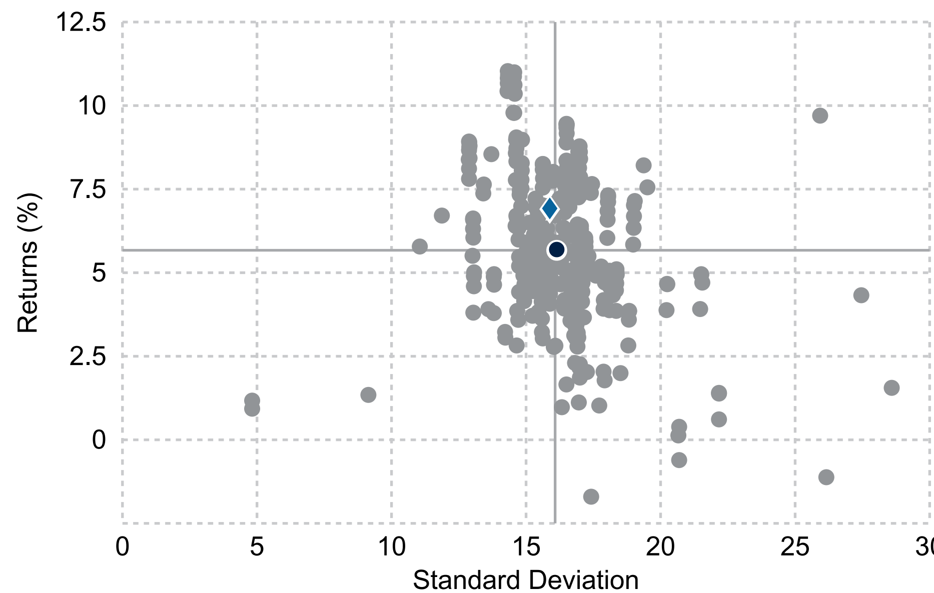
Category Returns: Trailing Period Returns as of 12/31/2019



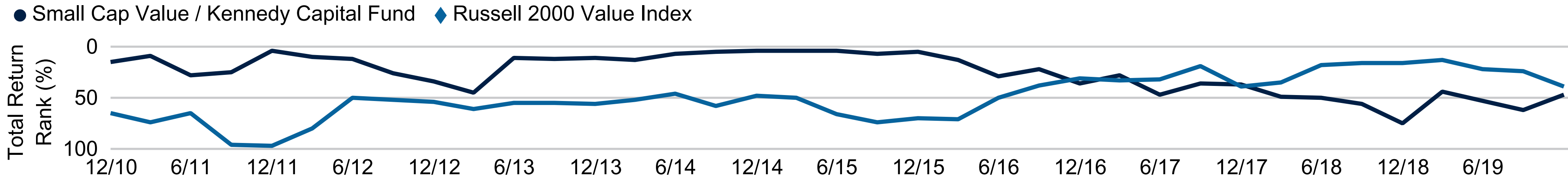
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



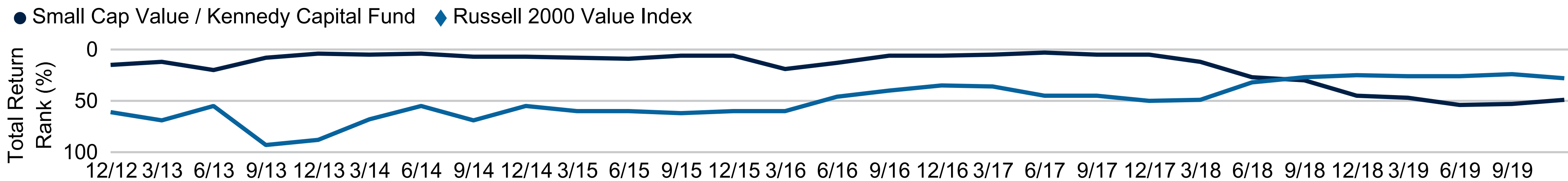
Source: Morningstar™ Small Value Category for creating asset class universe.

Small Cap - Value

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019

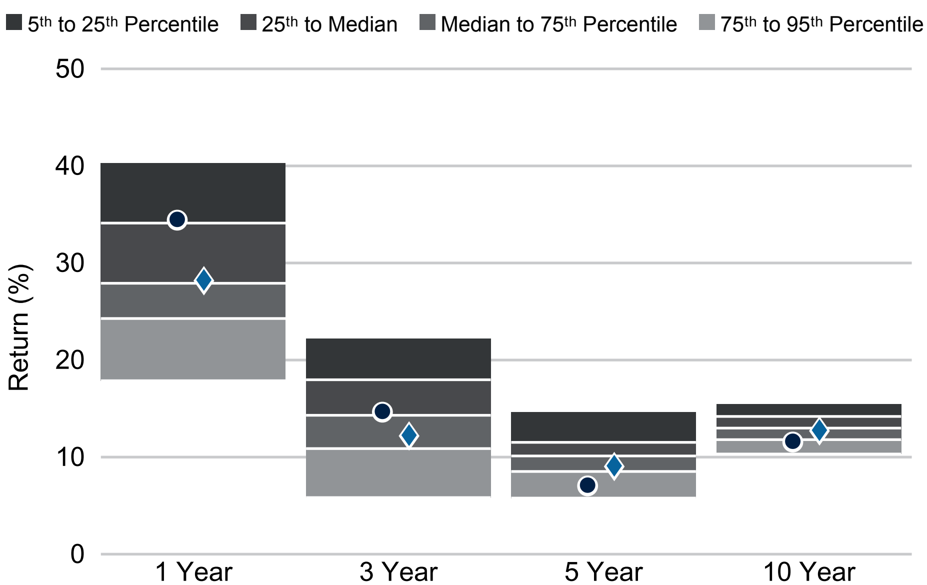


Small Cap - Growth

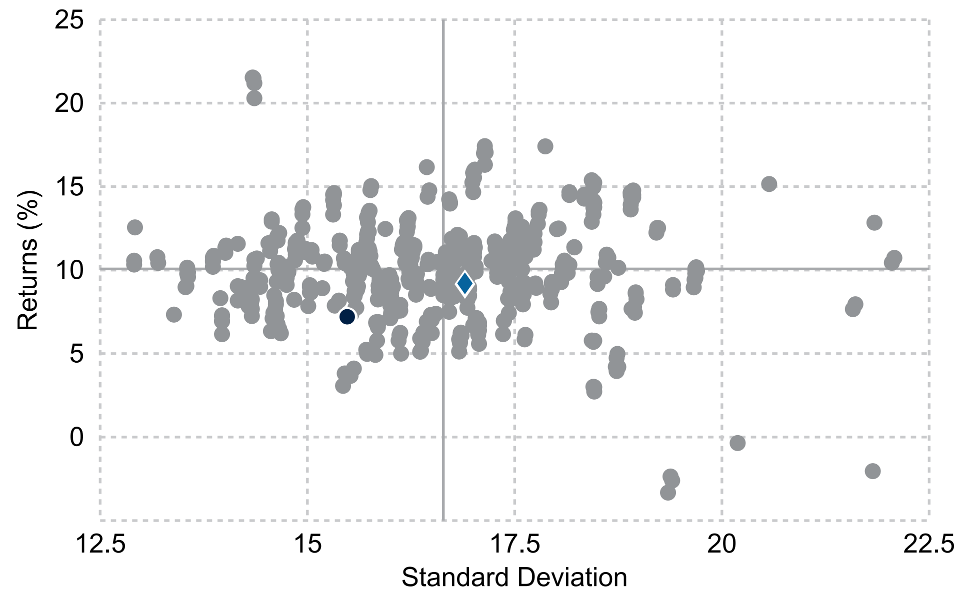
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
	Average Annual Total Returns as of 12/31/2019													
● Small Cap Growth I Fund (managed by Brown Advisory)	7.83%	34.72%	34.72%	14.94%	7.34%	11.86%	--	11/21/2008	15.48%	-0.72%	0.47%	4	1.06%	1.06%
Return Rank	74	23	23	45	86	75	--	--	22	81	84	--	--	--
Manager Composite	*7.60%*	*34.24%*	*34.24%*	*14.89%*	*12.49%*	*13.94%*	--	*03/31/1993*	*14.79%*	*4.12%*	*0.80%*	*4*	*1.05%*	*1.05%*
Return Rank	76	25	25	45	16	30	--	--	15	11	8	--	--	--
Blended Performance	*7.83%*	*34.72%*	*34.72%*	*14.94%*	*12.46%*	*13.92%*	--	*03/31/1993*	*14.89%*	*4.06%*	*0.80%*	*4*	*1.06%*	*1.06%*
Return Rank	74	23	23	45	16	31	--	--	17	12	8	--	--	--
♦ *Russell 2000 Growth Index*	*11.39%*	*28.48%*	*28.48%*	*12.49%*	*9.34%*	*13.01%*	--	--	*16.90%*	*0.00%*	*0.55%*	--	--	--
Small Growth Category Median	*9.44%*	*27.91%*	*27.91%*	*14.31%*	*10.12%*	*12.99%*	--	--	*16.64%*	*1.28%*	*0.61%*	--	--	--
No. Of Funds In Category	635	631	631	616	596	533	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



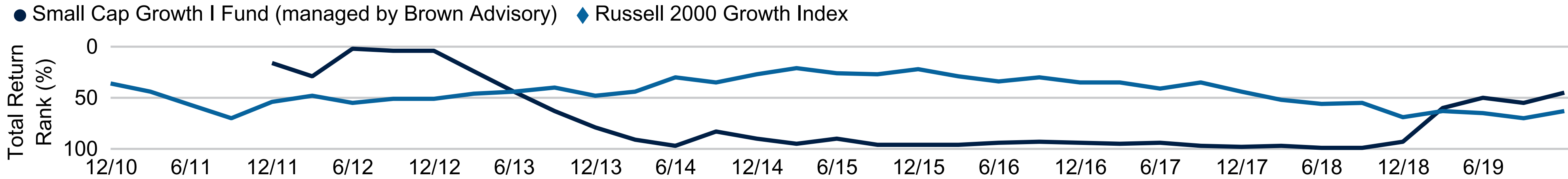
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



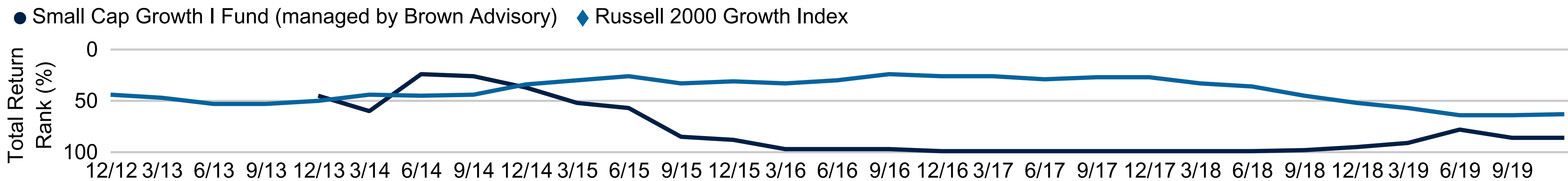
Source: Morningstar™ Small Growth Category for creating asset class universe.

Small Cap - Growth

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019

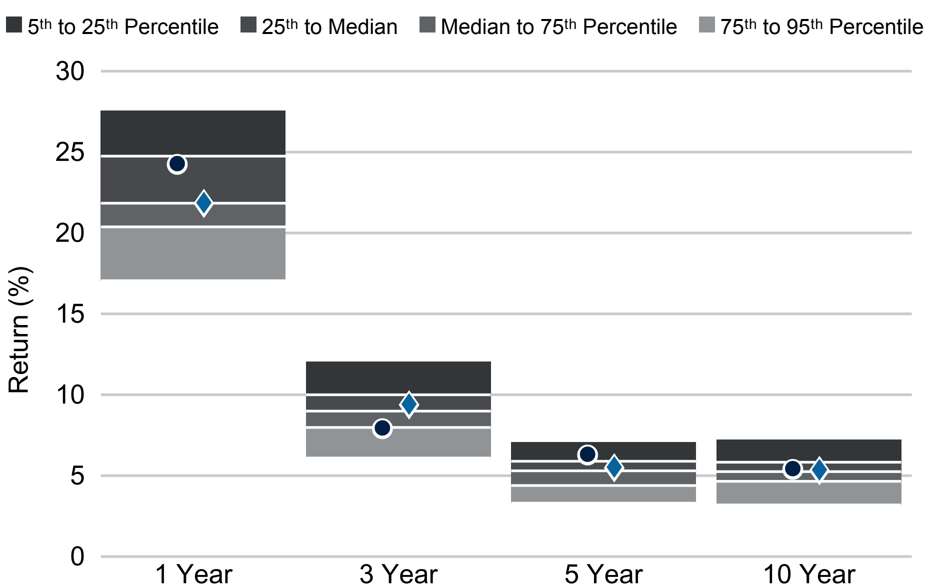


International - Blend

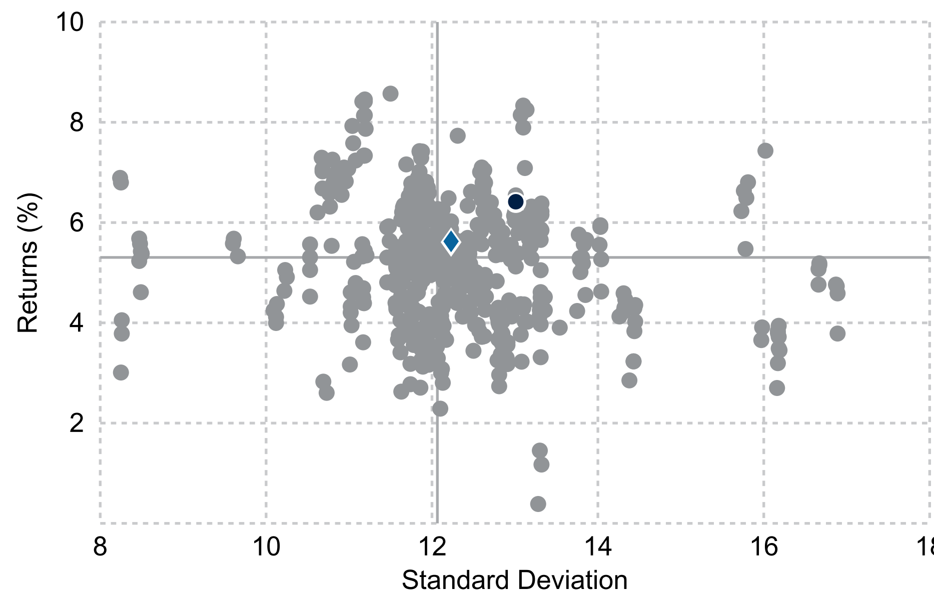
Fund	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date	Risk 5 YRS	Alpha 5 YRS	Sharpe 5 YRS	DDA Rank	Gross Expense Ratio	Net Expense Ratio
	Average Annual Total Returns as of 12/31/2019													
● International Blend / Pictet Asset Management Fund	7.20%	24.43%	24.43%	8.09%	6.46%	5.57%	--	01/19/2007	13.01%	0.76%	0.47%	2	0.94%	0.94%
Return Rank	90	28	28	74	13	36	--	--	83	20	20	--	--	--
♦ *MSCI EAFE (net)*	*8.17%*	*22.01%*	*22.01%*	*9.56%*	*5.67%*	*5.50%*	--	--	*12.23%*	*0.00%*	*0.43%*	--	--	--
Foreign Large Blend Category Median	*8.77%*	*21.84%*	*21.84%*	*8.99%*	*5.30%*	*5.25%*	--	--	*12.06%*	*-0.13%*	*0.40%*	--	--	--
No. Of Funds In Category	715	691	691	656	582	505	--	--	--	--	--	--	--	--

Return rank within category is the percentile ranking of an investment option's returns relative to the other investment options in its category. The highest ranking a fund can receive is 1.

Category Returns: Trailing Period Returns as of 12/31/2019



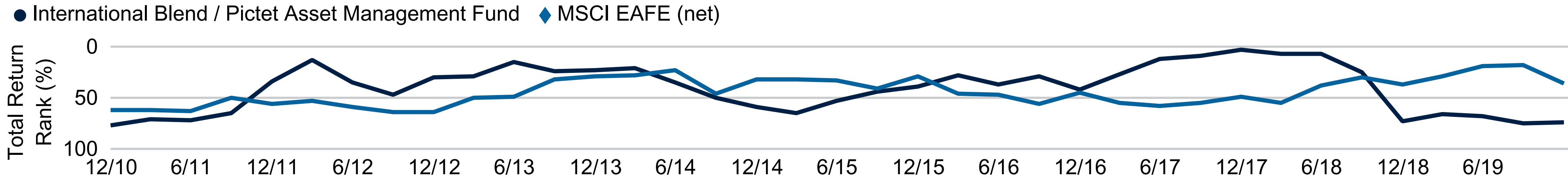
Risk Return Analysis: Trailing 5 Years Ended 12/31/2019



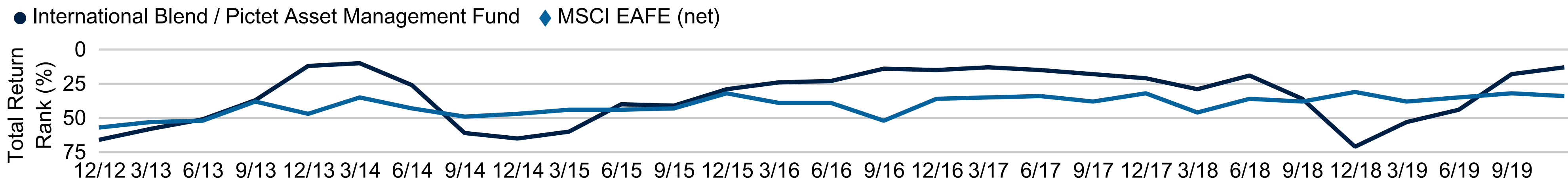
Source: Morningstar™ Foreign Large Blend Category for creating asset class universe.

International - Blend

36 Month Rolling Returns as of 12/31/2019



60 Month Rolling Returns as of 12/31/2019



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1002100-00008-00

POLICE (12/31/19)						
Investment	Police AUM	%	old XP	new XP	Old Expenses in one qtr	New Expenses in one qtr
Large Value / LSV	$ 10,058,105	17%	97	71	$ 24,391	$ 17,853
Large Growth / JPM	$ 10,182,735	17%	97	76	$ 24,693	$ 19,347
Mid Value / Integrity	$ 2,226,310	4%	112	87	$ 6,234	$ 4,842
Mid Growth / Westfield	$ 2,362,334	4%	115	90	$ 6,792	$ 5,315
Small Value / Kennedy	$ 2,817,831	5%	120	100	$ 8,453	$ 7,045
Small Growth / Brown Advisory	$ 2,826,480	5%	102	107	$ 7,208	$ 7,561
Interntional Blend / Pictet	$ 7,432,170	12%	113	93	$ 20,996	$ 17,280
CBEI / PGIM	$ 6,505,035	11%	37	17	$ 6,017	$ 2,765
Government Securities Enhanced Index / PGIM	$ 3,036,969	5%	42	37	$ 3,189	$ 2,809
High Grade Bond / GSAM	$ 3,066,690	5%	44	39	$ 3,373	$ 2,990
CPB / PGIM	$ 6,508,850	11%	37	37	$ 6,021	$ 6,021
Guaranteed Deposit Account	$ 2,992,758	5%	70	70	$ 5,237	$ 5,237
	$ 60,016,267		82	66	$ 122,604	$ 99,065

Quarter	ERISA budget tracking	Assumed 7.5% additional Return	Old Budget Account Credit
2019 Q2	$ 21,675	$ 406	$ 17,570
2019 Q3	$ 21,875	$ 410	$ 18,448
2019 Q4	$ 23,023	$ 432	$ 19,019
2020 Q1			
2020 Q2			
2020 Q3			
2020 Q4			

FIRE (12/31/19)						
Investment	Fire AUM	%	old XP	new XP	Old Expenses in one qtr	New Expenses in one qtr
Large Value / LSV	$ 7,864,905	17%	97	71	$ 19,072	$ 13,960
Large Growth / JPM	$ 8,007,262	17%	97	76	$ 19,418	$ 15,214
Mid Value / Integrity	$ 1,717,525	4%	112	87	$ 4,809	$ 3,736
Mid Growth / Westfield	$ 1,825,064	4%	115	90	$ 5,247	$ 4,106
Small Value / Kennedy	$ 2,171,663	5%	120	100	$ 6,515	$ 5,429
Small Growth / Brown Advisory	$ 2,184,119	5%	102	107	$ 5,570	$ 5,843
Interntional Blend / Pictet	$ 5,734,915	12%	113	93	$ 16,201	$ 13,334
CBEI / PGIM	$ 4,995,486	11%	37	17	$ 4,621	$ 2,123
Government Securities Enhanced Index / PGIM	$ 2,474,104	5%	42	37	$ 2,598	$ 2,289
High Grade Bond / GSAM	$ 2,511,070	5%	44	39	$ 2,762	$ 2,448
CPB / PGIM	$ 5,052,255	11%	37	37	$ 4,673	$ 4,673
Guaranteed Deposit Account	$ 2,281,844	5%	70	70	$ 3,993	$ 3,993
	$ 46,820,212		82	66	$ 95,479	$ 77,148

Quarter	ERISA budget tracking	Assumed 7.5% additional Return	Old Budget Account Credit
2019 Q2	$ 16,660	$ 312	$ 13,552
2019 Q3	$ 16,824	$ 315	$ 14,220
2019 Q4	$ 17,915	$ 336	$ 14,753
2020 Q1			
2020 Q2			
2020 Q3			
2020 Q4			

GENERAL (12/31/19)						
Investment	General AUM	%	old XP	new XP	Old Expenses in one qtr	New Expenses in one qtr
Large Value / LSV	$ 9,641,906	17%	97	71	$ 23,382	$ 17,114
Large Growth / JPM	$ 9,664,269	17%	97	76	$ 23,436	$ 18,362
Mid Value / Integrity	$ 2,047,814	4%	112	87	$ 5,734	$ 4,454
Mid Growth / Westfield	$ 2,162,614	4%	115	90	$ 6,218	$ 4,866
Small Value / Kennedy	$ 2,695,040	5%	120	100	$ 8,085	$ 6,738
Small Growth / Brown Advisory	$ 2,675,088	5%	102	107	$ 6,821	$ 7,156
Interntional Blend / Pictet	$ 7,089,672	12%	113	93	$ 20,028	$ 16,483
CBEI / PGIM	$ 6,333,874	11%	37	17	$ 5,859	$ 2,692
Government Securities Enhanced Index / PGIM	$ 3,093,734	5%	42	37	$ 3,248	$ 2,862
High Grade Bond / GSAM	$ 3,191,211	6%	44	39	$ 3,510	$ 3,111
CPB / PGIM	$ 6,546,200	11%	37	37	$ 6,055	$ 6,055
Guaranteed Deposit Account	$ 2,030,713	4%	70	70	$ 3,554	$ 3,554
	$ 57,172,135		81	65	$ 115,930	$ 93,447

Quarter	ERISA budget tracking	Assumed 7.5% additional Return	Old Budget Account Credit
2019 Q2	$ 21,018	$ 394	$ 17,064
2019 Q3	$ 21,139	$ 396	$ 17,654
2019 Q4	$ 22,211	$ 416	$ 18,133
2020 Q1			
2020 Q2			
2020 Q3			
2020 Q4			

City of Apopka Municipal Police Officers' Retirement Trust Fund

October 1, 2019
Actuarial Valuation Report

For the Fiscal Year Ending September 30, 2021

February 2020

Contribution Payment Information

Basic Plan Information:

Plan Contract Number:	IN-17301
Plan Name:	City of Apopka Municipal Police Officers' Retirement Trust Fund

Defined Benefit Wire Instructions:

* Bank:	JP Morgan Chase - NY, NY
* A. B. A. #	021000021
* Credit:	DB PRIAC Client Wire Contributions (GDA / SEP)
* Account #	304617059
* Reference:	Please put your Plan Contract Number and your Plan Name in the OBI 6000 Reference Field

Defined Benefit Lockbox Address:

JP Morgan Chase
4 Chase Metrotech Center
7th Floor
PO Box 6037
Brooklyn, NY 11245 0003

* Check must be made payable to PRIAC
* GR/IN number should be noted on the check (i.e. IN-17301)

Table of Contents

Section I — Summary of Valuation Results

This report summarizes valuation results for the City of Apopka Municipal Police Officers' Retirement Trust Fund based upon actuarial valuations as of October 1, 2018 and October 1, 2019.

Valuation Date:	October 1, 2018	October 1, 2019
Applicable Fiscal Year:	September 30, 2020	September 30, 2021
1. Contributions		
* Total Required Contribution	$2,880,196	$2,851,746
Percentage of Payroll	39.91%	42.96%
* Estimated Employee Contribution	$649,462	$597,476
Percentage of Payroll	9.00%	9.00%
* State Contribution[1]	$427,230	$462,900
Percentage of Payroll	5.92%	6.97%
* City Contribution[2]	$1,803,503	$1,791,370
Percentage of Payroll	24.99%	26.99%
2. Pension Plan Asset Information		
* Actuarial Value of Assets	$56,536,903	$62,041,254
* Market Value of Assets	$54,768,453	$57,662,870
3. Liability Information		
* Present Value of Projected Benefits	$78,005,285	$83,518,446
* Unfunded Actuarial Accrued Liability	$3,082,288	$3,527,096
* Present Value of Accrued Benefits	$51,676,544	$57,766,040
4. Participant Information		
* Active Participant Life Count	102	95
* Total Participant Life Count	160	161
* Total Covered Payroll	$6,811,815	$6,323,063
* Present Value of Future Salaries	$53,892,644	$50,060,423

[1] The estimated state contribution is equal to the actual amount received during the preceding fiscal year.

[2] The City is required to contribute a minimum of 4% of reported Payroll.

Section I Changes Since Last Year's Valuation

Actuarial Assumptions

Effective with the October 1, 2019 valuation, the discount rate assumption has been reduced to 7.00% from 7.25% to better anticipate future expected returns.

Impact of the Changes on the Valuation Results. Increase / (Decrease)

		Discount Rate
Impact on the Actuarial Liability	$	1,819,692
Impact on the Normal Cost[1]	$	120,654
Impact on the Administrative Expense[1]	$	(78)
Impact on the Annual Amortization[1]	$	97,956
Impact on the Total Required Contribution[1]	$	218,532

Pension Plan

There have been no changes made to the Pension Plan recognized in this actuarial valuation.

Funding Method

There have been no changes to the liability funding method this year.

Asset Valuation Method

There have been no changes to the asset valuation method this year.

New Legislation

There have been no changes made to the pension code during the previous year impacting the current valuation.

[1] As applicable to calculations for the fiscal year ending on September 30, 2021.

This report has been prepared for the plan sponsor and it summarizes the results of the Funding Actuarial Valuation.

This report relies on the census data submitted to us by the plan sponsor, as summarized in "Participant Data", and the retirement plan provisions as outlined in "Plan Provisions". It also relies on the plan asset information as described in Statement of Net Assets Available for Benefits. Appropriate tests for consistency and reasonableness have been completed on the information relied upon.

The liabilities and costs were determined using the method summarized in "Actuarial Cost Method" and the actuarial assumptions described in "Actuarial Assumptions". In our opinion, the actuarial assumptions used in this report are reasonable, as adopted by the Board of Trustees, and reflect our best estimate of the anticipated future long term experience under the Plan.

This report was completed in accordance with generally accepted actuarial standards and procedures and conforms to the Guidelines for Professional Conduct of the American Academy of Actuaries. The undersigned credentialed actuary meets the Qualification standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. This report also meets the requirements of Florida Statute 112 and 185.

This actuarial valuation was prepared and completed by me, or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account.

David V. Pappalardo

David V. Pappalardo, F.S.A., E.A.
Vice President & Consulting Actuary
Enrolled Actuary #17-05283
Phone: (860) 534-2262
Email: David.Pappalardo@Prudential.com

Assisted by:

Kerri Dantos

Jose Brocero

Kerri Dantos, A.S.A., E.A., M.A.A.A.
Associate Actuary
Phone: (860) 534-6006
Email: Kerri.Dantos@Prudential.com

Jose Brocero
Actuarial Specialist
Phone: (860) 534-6033
Email: Jose.Brocero@Prudential.com

Prudential Financial
P. O. Box 2975, H08
280 Trumbull Street
Hartford, CT 06103

The measurement of pension obligations and actuarially determined contributions may be impacted by actual future measurements that may differ significantly from expected future measurements. The information below identifies the most important risks that can lead to these differences and the impacts they can have on pension obligations, funded status and actuarially determined contributions in the future.

Interest Rate and Plan Maturity Risk

Understanding the maturity of a pension plan's obligations may help a sponsor better assess the financial risks of the plan. The duration of the Actuarial Accrued Liability is one way to measure the maturity. The duration of a liability measurement explains how much it would change if the funding interest rate were to change by one percent. As a result, a more mature plan with shorter duration will have a smaller change in their Actuarial Accrued Liability and actuarially determined contributions compared to a less mature plan. To understand the impact of duration, we have determined the impact on the actuarially determined contribution for the current plan year due to a change in funding interest rate.

The actuarially determined contribution for the plan is based on a funding interest rate of 7.00%. If a funding interest rate of 6.00% were used, there would be an increase in the plan's funding deficit of $8,249,163 and a corresponding increase in the plan's actuarially determined contribution of $956,822.

Investment Risk

If the value of plan assets were 1.00% lower, the plan's funding deficit would increase by $620,413 and the plan's actuarially determined contribution would increase by $35,176.

Demographic and Other Risks

A deviation of actual plan experience from the demographic assumptions used for measuring the Actuarial Accrued Liability may also result in increased future contributions. The key assumptions for the plan include termination rates, retirement rates, mortality rates, and payroll growth.

A 1.00% increase in the Actuarial Accrued Liability caused by actual experience different than assumed would increase the plan's actuarially determined contribution by $62,443.

If the actual contributions to the plan are less than the policy implicit in the annual actuarially determined contributions, then an increase in future contributions can occur. For example, if only 90% of the current year actuarially determined contribution is contributed, then future years actuarially determined contribution can be 0.5% higher.

Historical Information

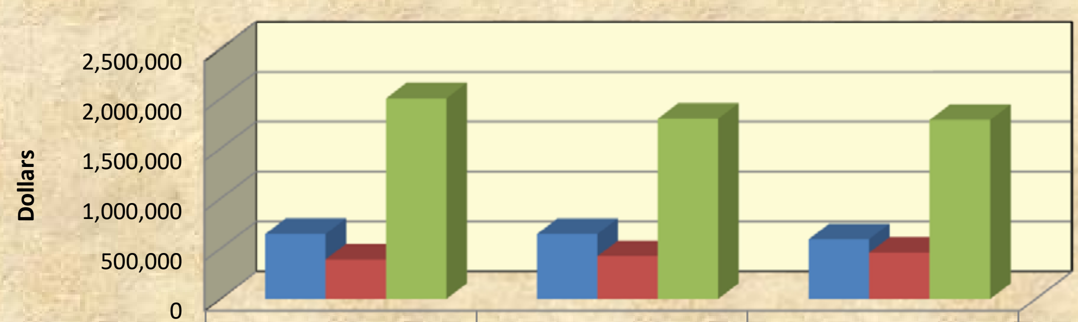
Reviewing key historical information may clarify the risks associated with the plan's financial condition. Below is a five-year history of certain key financial metrics of the plan.

	Valuation Year				
Measurement	**10/1/2014**	**10/1/2015**	**10/1/2016**	**10/1/2017**	**10/1/2018**
Funding (Surplus)/Deficit	$1,648,340	$3,508,774	$4,226,915	$4,585,812	$3,082,288
(Gain)/Loss	($1,311,726)	$2,176,039	$741,991	$488,948	($1,594,046)
Actuarially Determined Contribution	$1,431,922	$1,597,836	$1,773,360	$2,007,835	$1,803,504
Funding Interest Rate	7.50%	7.50%	7.50%	7.25%	7.25%

Conclusion

A more detailed assessment of the risks to the plan including, but not limited to, those identified above may be beneficial in assessing the risk that actual future measurements may differ significantly from expected future measurements. A more detailed assessment could include stochastic modeling to assess the distribution of potential outcomes.

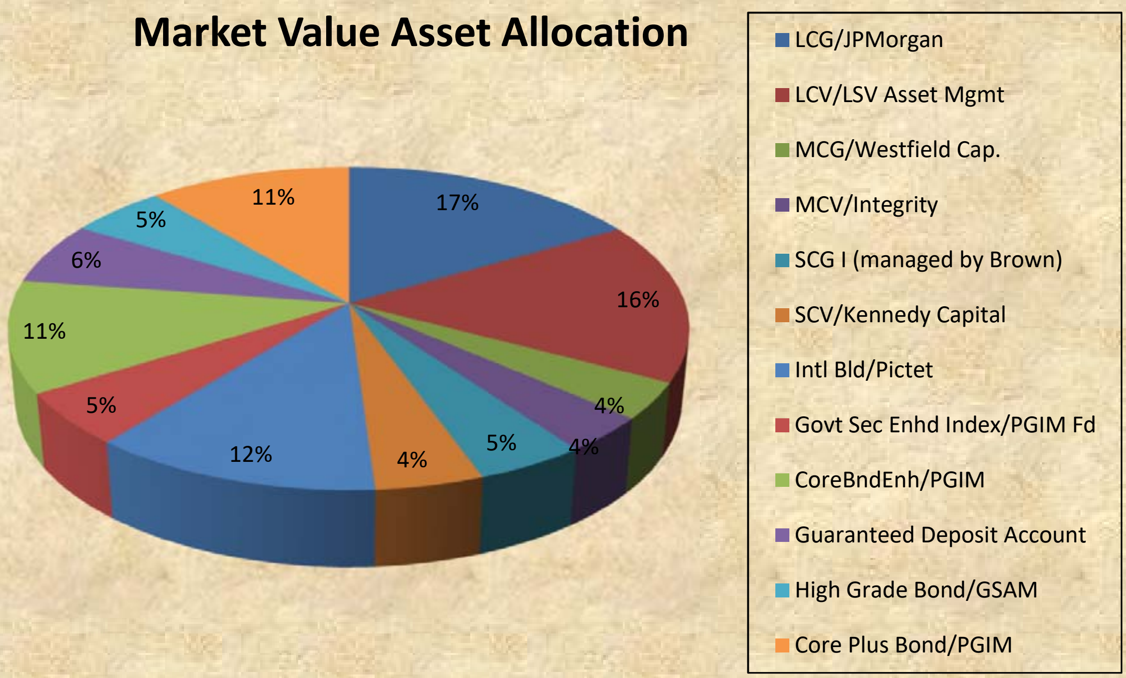
History of Required Contributions



	2019	2020	2021
Est. EE Contrib	649,923	649,462	597,476
State Contrib	395,841	427,230	462,900
City Contrib	2,007,835	1,803,503	1,791,370

The following graph illustrates how plan assets were invested as of the valuation date. The Market Value of Assets on the valuation date is $57,662,869.94*.

Market Value Asset Allocation

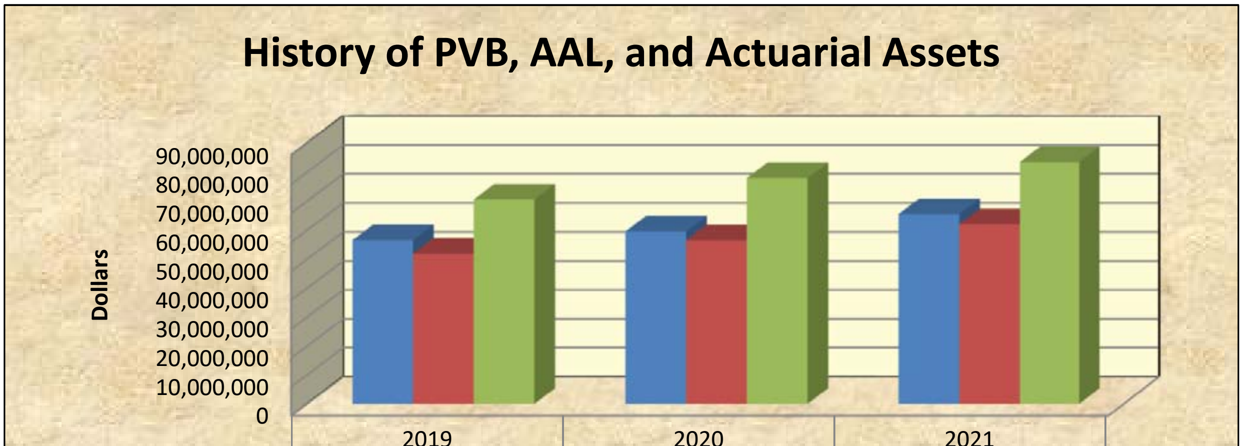


* This value represents the Market Value of Assets including contribution receivables of $510,785.21.

Section I — Funded Status and Liability Breakdown

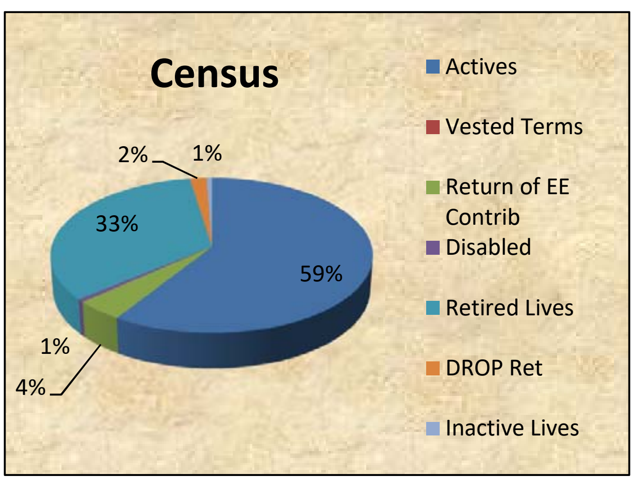
The funded status, on an employer contribution basis, is measured by comparing the Actuarial Value of Assets with the Actuarial Accrued Liability.

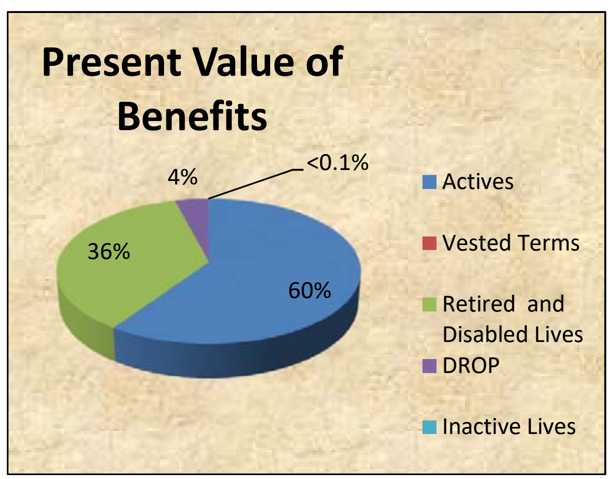
For each valuation, the Plan's total liability for all benefits is measured on the valuation date. This liability includes benefits which have accrued as well as benefits which are expected to accrue. The liability is called the Present Value of Benefits (PVB). The Plan's AAL is equal to the excess of this liability over the present value of future normal costs. Under any cost method, the excess PVB over assets is funded systematically over future years through contributions.



	2019	2020	2021
AAL	56,570,474	59,619,191	65,568,350
Actuarial Assets	51,984,662	56,536,903	62,041,254
PVB	70,615,114	78,005,285	83,518,446

Below is a breakdown of your Plan's census data and Present Value of Benefits for the current plan year.





Section II Statement of Net Assets Available for Benefits

	September 30, 2018	September 30, 2019
1. Assets		
Cash and Equivalents		
Guaranteed Deposit Account[1]	3,529,225.25	3,585,232.07
Total Cash and Cash Equivalents	$3,529,225.25	$3,585,232.07
U.S. Bonds & Bills		
CoreBndEnh/PGIM	6,032,778.84	6,387,912.14
Govt Sec Enhd Index / PGIM Fd	2,797,219.75	3,007,899.39
High Grade Bond/GSAM	2,766,534.86	3,005,102.79
Core Plus Bond/PGIM	5,805,128.75	6,375,905.42
Total U.S. Bonds & Bills	$17,401,662.20	$18,776,819.74
Stocks		
LCG/JPMorgan	9,430,872.43	9,466,508.57
LCV/LSV Asset Mgmt	8,955,907.59	9,263,701.31
MCG/Westfield Cap.	1,999,955.29	2,076,148.19
MCV/Integrity	1,936,991.88	2,064,076.05
SCG I (managed by Brown)	2,605,772.00	2,574,808.37
SCV/Kennedy Capital	2,410,873.53	2,535,588.85
Intl Bld/Pictet	6,327,134.03	6,809,201.58
Total Stocks	$33,667,506.75	$34,790,032.92
Receivables		
Member Contributions	61,390.91	11,711.01
City Contributions	108,667.99	36,173.97
State Contributions	0.00	462,900.23
Transfer of Assets	0.00	0.00
Total Receivables	$170,058.90	$510,785.21
Total Assets	$54,768,453.10	$57,662,869.94
2. Liabilities and Net Assets		
Payables		
Unpaid Administrative Expenses	0.00	0.00
Total Liabilities	$0.00	$0.00
Active and Retired Members' Equity	54,768,453.10	57,662,869.94
Total Net Assets	$54,768,453.10	$57,662,869.94
Total Liabilities and Net Assets	$54,768,453.10	$57,662,869.94
3. Adjustment of Asset Value	$0.00	$0.00
4. Total Market Value of Assets	$54,768,453.10	$57,662,869.94
5. Rate of Return:		
Market Value Rate of Return on Assets	8.40%	3.69%

[1] Includes a market value adjustment based on a factor of 1.03732 for September 30, 2019 and a factor of .995739 for September 30, 2018. Without the adjustment factors, the book value for each year is $3,456,245.01 and $3,544,327.63, respectively.

Section II Development of Actuarial Value of Assets

Actuarial Assets for funding purposes are developed by increasing the Actuarial Assets used in the most recent actuarial valuation of the Fund by the average annual market value rate of return for the past four years, but are limited to the corridor of 80% to 120% of Market Value.

Plan Year End	Actual Rate of Return	Assumed Rate of Return
9/30/2016	8.06%	7.50%
9/30/2017	12.68%	7.50%
9/30/2018	8.40%	7.25%
9/30/2019	3.69%	7.25%

Annualized Rate of Return for Prior four years	8.16%

a. Actuarial Value of Assets as of 10/1/2018	$56,536,902.76
i. Adjustment to Actuarial Value of Assets	$0.00
ii. Adjusted Actuarial Value of Assets	$56,536,902.76
b. Calculation of Expected Value of Assets	
i. Contributions during Plan Year[1]	$3,133,358.81
ii. Miscellaneous Income	$0.00
iii. Distributions during the Plan Year	$2,277,344.26
iv. Expected Value of Assets (a.ii. + b.i. + b.ii. - b.iii.)	$57,392,917.31
c. Calculation of Net Investment Income	
i. Interest, Dividends, and Other Income	1,001,367.30
ii. Realized Gains / (Losses)	784,865.06
iii. Unrealized Gains / (Losses)	108,080.49
iv. Change in Market Value Adjustment for Guaranteed Deposit Account	144,089.44
v. Change in Actuarial Value	2,609,934.37
vi. Net Investment Income	4,648,336.66
d. Preliminary Actuarial Value of Assets as of 10/1/2019	$62,041,253.97
Actuarial Asset Rate of Return ([2 * c.vi.] / [a.ii. + d. - c.vi.])	8.16%
Final Actuarial Value of Assets as of 10/1/2019 (Preliminary Actuarial Value of Assets limited to within 80% / 120% of Market Value)	$62,041,253.97

	October 1, 2018	October 1, 2019
Total Actuarial Value of Assets	$56,536,902.76	$62,041,253.97
Actuarial Rate of Return on Assets	7.37%	8.16%

[1] Includes buyback contributions of $100,684.88 for Mr. Fernandez.

Section II Change in Net Assets Available for Benefits

	Market Value	Actuarial Value
Net Assets Beginning of Year	54,768,453.10	56,536,902.76
- Adjustment to Beginning of Year Asset Value	0.00	0.00
Adjusted Net Assets Beginning of Year	54,768,453.10	56,536,902.76
Income		
Contributions:		
- City	1,941,037.03	1,941,037.03
- State	462,900.23	462,900.23
- Members[1]	729,421.55	729,421.55
Total Contributions	3,133,358.81	3,133,358.81
Miscellaneous Income	0.00	0.00
Earnings from Investments		
- Interest, Dividends, and Other Income	1,001,367.30	1,001,367.30
- Net Realized Gains / (Losses)	784,865.06	784,865.06
- Net Unrealized Gains / (Losses)	108,080.49	108,080.49
- Change in Market Value Adjustment for Guaranteed Deposit Accou	144,089.44	144,089.44
- Change in Actuarial Value	N/A	2,609,934.37
Total Earnings and Investment Gain	2,038,402.29	4,648,336.66
Expenses		
Administrative Expenses	60,451.36	60,451.36
Distributions to Members		
- Benefit Payments	2,118,588.72	2,118,588.72
- Lump Sum DROP Balances	0.00	0.00
- Refund of Contributions / Termination Payments	98,304.18	98,304.18
Total Distributions	2,277,344.26	2,277,344.26
Valuation Asset Method Change	N/A	0.00
Change in Net Assets for the Year	2,894,416.84	5,504,351.21
Net Assets End of Year	$57,662,869.94	$62,041,253.97

[1] Includes buyback contributions of $100,684.88 for Mr. Fernandez.

Present Value of Projected Plan Benefits: at 7.25% for the preceding year and 7.00% for the current year.

	October 1, 2018	October 1, 2019
Actives		
Retirement Benefits	46,907,266	46,556,285
Disability Benefits	1,121,464	1,050,291
Death Benefits	239,428	217,728
Termination Benefits	1,666,851	1,681,055
Subtotal for Actives	49,935,009	49,505,359
Inactives		
Retired Lives	24,637,141	29,705,935
Vested Termination	64,019	69,283
Disabled	186,939	188,225
DROP Accumulated Benefit	318,816	668,636
DROP Future Benefit Payments	2,863,361	3,381,008
Subtotal for Inactives	28,070,276	34,013,087
Total Present Value of Benefits	78,005,285	83,518,446

Actuarial Accrued Liability: at 7.25% for the preceding year and 7.00% for the current year.

Actives		
Retirement Benefits	30,470,568	30,523,784
Disability Benefits	468,069	427,029
Death Benefits	129,822	115,731
Termination Benefits	480,456	488,719
Subtotal for Actives	31,548,915	31,555,263
Inactives (from above)	28,070,276	34,013,087
Total Actuarial Accrued Liability	59,619,191	65,568,350
Unfunded Actuarial Accrued Liability	3,082,288	3,527,096

Section II Reconciliation of Unfunded Actuarial Liability

1. Unfunded Actuarial Accrued Liability as of October 1, 2018	$3,082,288
2. City and State Normal Cost Applicable for the year[1]	1,834,427
3. Interest on (1) and (2)	356,462
4. Sponsor Contributions during the year ending September 30, 2019	2,403,937
5. Interest on (4)	87,143
6. Change in Unfunded Actuarial Accrued Liability due to Actuarial (Gain)/Loss and Assumption/Asset Method Changes	744,999
7. Unfunded Actuarial Accrued Liability as of October 1, 2019 (1) + (2) + (3) - (4) - (5) + (6)	$3,527,096

Date Established	Years Remaining	10/1/2019 Amount	Amortization Amount
10/1/2004	15	291,554	24,581
10/1/2005	16	(10,559)	(848)
10/1/2006	17	(144,708)	(11,114)
10/1/2007	18	(172,596)	(12,719)
10/1/2008	19	146,275	10,374
10/1/2009	20	734,323	50,251
10/1/2010	21	672,487	44,513
10/1/2011	22	1,394,337	89,465
10/1/2012	23	(169,702)	(10,576)
10/1/2013	24	(642,111)	(38,936)
10/1/2014	25	(969,830)	(57,314)
10/1/2015	26	1,974,759	113,910
10/1/2016	27	676,676	38,151
10/1/2017	28	458,400	25,293
10/1/2018	29	(1,457,208)	(78,782)
10/1/2019	30	744,999	39,508
Total		$3,527,096	$225,757

[1] Includes $38,944 for administrative expenses.

Section II Exhibits Satisfying Requirements of Chapter 112, Florida Statutes

1. Schedule Illustrating the Amortization of Total Unfunded Actuarial Accrued Liability as of:

Year	Projected Unfunded Accrued Liability
2019	3,527,096
2020	3,532,449
2021	3,530,189
2026	3,374,745
2031	2,878,855
2041	570,967
2049	0

2. 3 Year Comparison of Actual and Assumed Increase in Pensionable Compensation:

		Actual	Assumed
Year Ended	9/30/2019	2.48%	5.50%
Year Ended	9/30/2018	4.80%	5.50%
Year Ended	9/30/2017	4.53%	5.50%

3. 3 Year Comparison of Investment Return on Actuarial Value:

		Actual	Assumed
Year Ended	9/30/2019	8.16%	7.25%
Year Ended	9/30/2018	7.37%	7.25%
Year Ended	9/30/2017	7.53%	7.50%

4. Average Annual Payroll Growth:

a. Payroll as of:	10/1/2019	6,323,063
	10/1/2009	4,569,611
b. Total increase		38.37%
c. Number of Years		10.00
d. Average Annual Rate		3.30%

Valuation Date:	10/1/2017	10/1/2018	10/1/2019
Applicable to Fiscal Year Ending:	9/30/2019	9/30/2020	9/30/2021
1. Pension Cost			
Normal Cost from Retirement	2,475,869	2,314,991	2,233,324
Normal Cost from Termination	186,847	198,726	203,744
Normal Cost from Death	9,700	17,243	15,702
Normal Cost from Disability	71,476	99,044	92,975
Normal Cost (with interest)	$2,743,892	$2,630,004	$2,545,745
% of Projected Annual Payroll[1]	38.00%	36.44%	38.35%
Administrative Expense (with interest)	$42,386	$41,937	$64,632
% of Projected Annual Payroll[1]	0.59%	0.58%	0.97%
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 30 years (with interest)	$267,321	$208,255	$241,369
% of Projected Annual Payroll[1]	3.70%	2.89%	3.64%
Total Required Contribution	$3,053,599	$2,880,196	$2,851,746
% of Projected Annual Payroll[1]	42.29%	39.91%	42.96%
Expected Member Contributions	$649,923	$649,462	$597,476
% of Projected Annual Payroll[1]	9.00%	9.00%	9.00%
Expected State Contributions	$395,841	$427,229	$462,900
% of Projected Annual Payroll[1]	5.49%	5.92%	6.97%
Expected City Contributions	$2,007,836	$1,803,504	$1,791,370
% of Projected Annual Payroll[1]	27.80%	24.99%	26.99%

2. Past Contributions	
Plan Year Ending	9/30/2019
Total Required Contribution	3,053,599
Expected Member Contribution	(649,923)
State Requirement	(395,841)
City Requirement	$2,007,836
Actual Contributions Made:	
Total	3,032,674
Member[2]	(628,737)
State	(462,900)
City	$1,941,037

[1] Contributions developed as of 10/1/2019 are expressed as a percentage of projected annual payroll at 4/1/2021 of $6,638,623.

[2] Excluded $100,684.88 of buyback contributions for Mr. Fernandez.

Section II Present Value of Accumulated Plan Benefits

Actuarial Present Value of Accumulated Plan Benefits

	October 1, 2018		October 1, 2019	
	Lives	Present Value	Lives	Present Value
Vested Benefits				
Actives	102	17,018,946	95	17,016,698
Active Contributions		3,959,097		3,970,174
Subtotal for Actives		$20,978,043		20,986,872
Inactives	58	28,028,299	66	33,970,077
Inactive Contributions		41,977		43,010
Subtotal for Inactives		$28,070,276		34,013,087
Total	160	$49,048,319	161	54,999,959
Non-Vested Benefits		$2,628,225		2,766,081
Total Present Value Accumulated Benefits		$51,676,544		57,766,040

The actuarial assumptions used in calculating the Present Value of Accumulated Plan Benefits are described in "Plan Assumptions".

The assumed rate of investment return is 7.00% for October 1, 2019 and 7.25% for October 1, 2018.

Assets and Liabilities presented in this report are based on an "ongoing plan" assumption. Therefore, the values shown in this report should not be used to represent the plan's funded status in the event of plan termination, merger, spin-off, transfer of liabilities, or settlement of benefit obligations.

Reconciliation of Present Value of Accumulated Plan Benefits

Present Value of Accumulated Benefits as of 10/1/2018	$51,676,544
Interest at 7.25%	$3,746,549
Benefits Paid and Weighted Interest	($2,295,849)
Benefits Accumulated and Gains/Losses	$3,008,300
Present Value of Accumulated Benefits as of 10/1/2019 (before changes)	$56,135,544
Plan Amendments	$0
Assumption Changes	$1,630,496
Present Value of Accumulated Benefits as of 10/1/2019	$57,766,040

Deferred Retirement Option Plan Activity

October 1, 2018 through September 30, 2019

Name	9/30/2018 Balance	Additions	Investment Return	Distributions	9/30/2019 Balance
Stephen W Brick	$119,664.21	114,513.12	10,211.66	0.00	244,388.99
David L Call	$199,152.04	123,732.48	11,548.09	0.00	334,432.61
Carlos E Joseph	$0.00	64,206.81	3,183.87	0.00	67,390.68
Edwin F Chittenden	$0.00	22,328.40	95.45	0.00	22,423.85
Total	$318,816.25	$324,780.81	$25,039.07	$0.00	$668,636.13

Lifecount and Data Reconciliation:

Description	Actives	Vested Term	REF of EECs	Transfers	Disabled	Retirees	DROP	Total
Participants 10/1/2018	102	0	5	1	1	49	2	160
New Participant	5							5
Vested Term								0
Non-Vested Term	-4		4					0
Rehired								0
Disabled								0
Retired	-5					5	0	0
Transfers								0
DROP	-2						2	0
Cash Out	-1		-2					-3
Death						-1		-1
Data Adjustments								0
Beneficiary								0
Participants 10/1/2019	95	0	7	1	1	53	4	161

Active Participant Data Summary	October 1, 2018	October 1, 2019
Average Attained Age	37.5	37.8
Average Service	8.7	9.1
Average Pay	$66,783	$66,559
Total Reported Payroll	$6,811,815	$6,323,063

Non-Active Participant Data Summary	October 1, 2018	October 1, 2019
Average Age - Deferred Benefits[1]	33.9	34.9
Average Age - Receiving Benefits[2]	57.2	57.0
Average Monthly Benefit - Deferred Benefits[1]	$442	$442
Average Monthly Benefit - Receiving Benefits[2]	$3,709	$4,614

[1] Excludes participants entitled to a refund of employee contributions only.

[2] Includes DROP participants

Past Service

Age	0	1	2	3	4	5-10	10-15	15-20	20-25	25-30	30+	Total
15 - 19			3									3
20 - 24	1	4	4	2		1						12
25 - 29	1		1	5		4	4					15
30 - 34	1	1	1	4		4	8	1				20
35 - 39	1			1		7	5	4	1			19
40 - 44	1			1			5	3	5			15
45 - 49						1	1	4	1	1		8
50 - 54					1			1	1			3
55 - 59												0
60 - 64												0
65+												0
Total	5	5	9	13	1	17	23	13	8	1	0	95

Eligibility	Full-time employees who are classified as full-time sworn police officers.
Credited Service	Total years and fractional parts of years of contributing service as a Police Officer with the City.
Salary	Total W-2 compensation plus tax deferred, tax-sheltered, and tax-exempt income.
Final Average Earnings	Average Salary for the best 3 years during the 5 years immediately preceding retirement or termination. A year is 12 consecutive months.
Member Contributions	All members are required to make contributions in the amount of 9%, of compensation, which are designated as employer contributions under 414(h) (contributions are excluded from income for federal income tax purposes).
City and State Contributions	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Part VII of Florida Statutes, Chapter 112. In no event will the City contributions be less than 4% of the total salary of the Members.
Form of Annuity	Ten Years Certain and Life.
Benefit Formula	4.0% of Final Average Earnings for each year of Credited Service.
Normal Retirement	
Eligibility	Attainment of age 45 and completion of 10 years of Credited Service or the completion of 20 years of Credited Service.
Benefit	4.0% of Final Average Earnings for each year of Credited Service.
Form of Benefit	10 Year Certain and Life Annuity (options available).
Supplement	Retirees on of after 3/1/98 receive a lump sum payment of $500 following 5 years of benefit payments and an additional $500 payment on each 5th anniversary thereafter.
Early Retirement	
Eligibility	Age 40 and the completion of 10 years of service.
Benefit	Accrued benefit, reduced by 3% per year before normal retirement date.
Vesting	
Schedule	100% after 10 years of Vesting Service.
Benefit	Member will receive the vested portion of his (her) accrued benefit payable at the otherwise Normal Retirement Date.

Disability

Eligibility

Service Incurred	Covered from Date of Employment.
Non-Service Incurred	10 years of Credited Service.
Exclusions	Disability resulting from use of drugs, illegal participation in riots, service in military, etc.
Benefit	Benefit accrued to date of disability (based on 3.6% multiplier) but not less than 42% of Final Average Earnings (Service Incurred). Minimum benefit for disability resulting from an intentional act of violence assumes 20 years of Credited Service.
Duration	Payable for life and 10 years certain or until recovery (as determined by the Board; options available).

Death Benefits

Pre-Retirement

Vested	Monthly accrued benefit payable to designated beneficiary for 10 years at Member's Early or Normal Retirement Date.
Non-Vested	Refund of accumulated contributions without interest.
Post-Retirement	Benefits payable to beneficiary in accordance with options selected at retirement.

Board of Trustees

a. Two Council appointees,

b. Two Members of the Department elected by the membership, and

c. Fifth Member elected by other 4 and appointed by Council.

Deferred Retirement Option Plan Activity

Eligibility	Satisfaction of Normal Retirement requirements (Age 45 and 10 years of Credited Service or 20 years of Credited Service).
Participation	Not to exceed 96 months.
Rate of Return	Actual net rate of investment return (total return net of brokerage commissions, management fees, and transaction costs) credited each fiscal quarter.
Form of Distribution	Cash lump sum at termination of employment (options available).

1. ACTUARIAL COST METHOD

Costs have been computed in accordance with the Entry Age Normal Cost Method and reflect the actuarial assumptions described in "Plan Assumptions" of this report.

NORMAL COST

The Normal Cost is the sum of individual normal costs for all active participations. For an active participant, the Normal Cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

The normal cost accrual rate equals the present value of future benefits for the participant, determined as ofthe participant's entry age, divided by the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age. In calculating the present value of future compensation, the salary scale must be applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

Entry Age for each participant is defined as the age on the first valuation date following a participants date of employment.

ACTUARIAL ACCRUED LIABILITY

The Actuarial Accrued Liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's Actuarial Accrued Liability equals the present value, at the participant's attained age, of future benefits less, the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's Actuarial Accrued Liability equals the present value, at the beneficiary's attained age, of future benefits. The Unfunded Actuarial Accrued Liability equals the total Actuarial Accrued Liability less the Actuarial Value of Assets.

II. ASSET VALUATION METHOD

Assets have been valued using Smoothing Value Method in accordance with generally accepted procedures as described below. The Actuarial Value of Assets in the Plan is determined in the following manner:

Definitions:

j	Assumed growth rate, equal to the annualized of the prior four market value rate of returns
i(t)	Actuarial market value rate of return in Plan Year t
C(t)	Sum of contributions and other additions to the fund from all sources other than investment transactions in Plan Year t
W(t)	Sum of all withdrawals and other decreases to the fund including benefit payments and non investment related expenses from all sources other than investment transactions in Plan Year t
AV(t)	Actuarial Value of Assets as of Plan Year t
T(t)	Transfers of assets during Plan Year t
EV(t)	Expected Value of Assets without interest as of Plan Year t
NII(t)	Net Investment Income during Plan Year t

Method

$$j = [\ (1+i(t-3)) * (1+i(t-2)) * (1+i(t-1)) * (1+i(t))\ ]\ ^\wedge .25$$

$$EV(t) = AV(t-1) + C(t) + T(t) - W(t)$$

$$NII(t) = \frac{[\ AV(t-1) + EV(t)\ ]}{2} * j$$

$$AV(t) = EV(t) + NII(t)$$

Corridor Limits

The resulting actuarial value of assets may not be less than 80% or more than 120% of the current market value of plan assets as of the applicable valuation date.

Mortality Rates

Males

During Employment	RP2000 Generational, 10% Combined White Collar/90% Combined Blue Collar, projected with Scale BB
Post Employment	RP2000 Generational, 10% Annuitant White Collar/90% Annuitant Blue Collar, projected with Scale BB

Females

During Employment	RP2000 Generational, 100% Combined White Collar, projected with Scale BB
Post Employment	RP2000 Generational, 100% Combined White Collar, projected with Scale BB

Mortality Rates for Disabled Participants

Males	60% RP-2000 Male Disabled Set Back 4 Years/40% Annuitant White Collar with no Set Back, no projection
Females	60% RP-2000 Female Disabled Set Back 4 Years/40% Annuitant White Collar with no Set Back, no projection

Termination Rates

Age	% Terminating During the Year
20	6.00%
30	5.00%
40	2.60%
50	0.80%
60	0.20%

Disability Rates

Age	% Become Disabled During the Year
20	0.09%
30	0.12%
40	0.21%
50	0.54%
60	2.70%

75% of those who become disabled assumed to be due to a service connected event.

Expenses: Equal to the actual expenses incurred in prior year. Thus, this year's Normal Cost includes $60,451 for non-investment expenses.

Investment Return: 7.00% per annum, net of investment expenses, compounded annually.

Retirement Age

Age	10 - 19 Years of Service	20 - 24 Years of Service	25+ Years of Service
< 40	0%	0%	0%
40 - 44	5%	75%	100%
45 - 46	6%	75%	100%
47 - 48	7%	75%	100%
49 - 50	8%	75%	100%
51 - 52	9%	75%	100%
53 - 64	10%	75%	100%
>= 65	100%	100%	100%

Also, any member who has reached Normal Retirement is assumed not to retire within the next year.

Early Retirement

Commencing with the attainment of Early Retirement Status (age 40 with 10 years of service), members are assumed to retire with an immediate subsized benefit at the rate of 5% per year.

Salary Increases

Salary is assumed to increase at the rate of 5.50% per annum. Projected salary at retirement is increased 20% to account for non-regular compensation.

Payroll Growth

4.50% per annum, but not to exceed the 10 year average annual rate, which for this year is 3.30%.

City of Apopka Municipal Firefighters' Retirement Trust Fund

October 1, 2019
Actuarial Valuation Report

For the Fiscal Year Ending September 30, 2021

February 2020

Contribution Payment Information

Basic Plan Information:

Plan Contract Number:	IN-17302
Plan Name:	City of Apopka Municipal Firefighters' Retirement Trust Fund

Defined Benefit Wire Instructions:

* Bank:	JP Morgan Chase - NY, NY
* A. B. A. #	021000021
* Credit:	DB PRIAC Client Wire Contributions (GDA / SEP)
* Account #	304617059
* Reference:	Please put your Plan Contract Number and your Plan Name in the OBI 6000 Reference Field

Defined Benefit Lockbox Address:

JP Morgan Chase
4 Chase Metrotech Center
7th Floor
PO Box 6037
Brooklyn, NY 11245 0003

* Check must be made payable to PRIAC
* GR/IN number should be noted on the check (i.e. IN-17302)

Table of Contents

Section I Summary of Valuation Results

This report summarizes valuation results for the City of Apopka Municipal Firefighters' Retirement Trust Fund based upon actuarial valuations as of October 1, 2018 and October 1, 2019.

Valuation Date:	October 1, 2018	October 1, 2019
Applicable Fiscal Year:	September 30, 2020	September 30, 2021
1. Contributions		
* Total Required Contribution	$2,198,015	$2,497,120
Percentage of Payroll	32.05%	33.98%
* Estimated Employee Contribution	$637,826	$683,343
Percentage of Payroll	9.30%	9.30%
* State Contribution[1]	$284,001	$294,800
Percentage of Payroll	4.14%	4.01%
* City Contribution[2]	$1,276,188	$1,518,977
Percentage of Payroll	18.61%	20.67%
2. Pension Plan Asset Information		
* Actuarial Value of Assets	$43,860,656	$47,768,057
* Market Value of Assets	$42,511,628	$44,394,241
3. Liability Information		
* Present Value of Projected Benefits	$63,171,072	$69,549,232
* Unfunded Actuarial Accrued Liability	$4,813,553	$5,773,845
* Present Value of Accrued Benefits	$40,224,355	$43,931,330
4. Participant Information		
* Active Participant Life Count	97	99
* Total Participant Life Count	155	161
* Total Covered Payroll	$6,455,324	$6,878,300
* Present Value of Future Salaries	$57,923,486	$61,217,384

[1] The estimated state contribution is equal to the actual amount received during the preceding fiscal year.

[2] The City is required to contribute a minimum of 4% of reported Payroll.

Section I Changes Since Last Year's Valuation

Actuarial Assumptions

Effective with the October 1, 2019 valuation, the discount rate assumption has been reduced to 7.00% from 7.25% to better anticipate future return expectations.

Impact of the Changes on the Valuation Results. Increase / (Decrease)

		Discount Rate
Impact on the Actuarial Liability	$	1,551,939
Impact on the Normal Cost[1]	$	105,194
Impact on the Administrative Expense[1]	$	(74)
Impact on the Annual Amortization[1]	$	68,868
Impact on the Total Required Contribution[1]	$	173,988

Pension Plan

There have been no changes made to the Pension Plan recognized in this actuarial valuation.

Funding Method

There have been no changes to the liability funding method this year.

Asset Valuation Method

There have been no changes to the asset valuation method this year.

New Legislation

There have been no changes made to the pension code during the previous year impacting the current valuation.

[1] As applicable to calculations for the fiscal year ending on September 30, 2021.

Section I Enrolled Actuary Certification

This report has been prepared for the plan sponsor and it summarizes the results of the Funding Actuarial Valuation.

This report relies on the census data submitted to us by the plan sponsor, as summarized in "Participant Data", and the retirement plan provisions as outlined in "Plan Provisions". It also relies on the plan asset information as described in Statement of Net Assets Available for Benefits. Appropriate tests for consistency and reasonableness have been completed on the information relied upon.

The liabilities and costs were determined using the method summarized in "Actuarial Cost Method" and the actuarial assumptions described in "Actuarial Assumptions". In our opinion, the actuarial assumptions used in this report are reasonable, as adopted by the Board of Trustees, and reflect our best estimate of the anticipated future long term experience under the Plan.

This report was completed in accordance with generally accepted actuarial standards and procedures and conforms to the Guidelines for Professional Conduct of the American Academy of Actuaries. The undersigned credentialed actuary meets the Qualification standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. This report also meets the requirements of Florida Statute 112 and 175.

This actuarial valuation was prepared and completed by me, or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account.

David V. Pappalardo, F.S.A., E.A.
Vice President & Consulting Actuary
Enrolled Actuary #17-05283
Phone: (860) 534-2262
Email: David.Pappalardo@Prudential.com

Assisted by:

Kerri Dantos, A.S.A., E.A., M.A.A.A.
Associate Actuary
Phone: (860) 534-6006
Email: Kerri.Dantos@Prudential.com

Jose Brocero
Actuarial Specialist
Phone: (860) 534-6033
Email: Jose.Brocero@Prudential.com

Prudential Financial
P. O. Box 2975, H08
280 Trumbull Street
Hartford, CT 06103

The measurement of pension obligations and actuarially determined contributions may be impacted by actual future measurements that may differ significantly from expected future measurements. The information below identifies the most important risks that can lead to these differences and the impacts they can have on pension obligations, funded status and actuarially determined contributions in the future.

Interest Rate and Plan Maturity Risk

Understanding the maturity of a pension plan's obligations may help a sponsor better assess the financial risks of the plan. The duration of the Actuarial Accrued Liability is one way to measure the maturity. The duration of a liability measurement explains how much it would change if the funding interest rate were to change by one percent. As a result, a more mature plan with shorter duration will have a smaller change in their Actuarial Accrued Liability and actuarially determined contributions compared to a less mature plan. To understand the impact of duration, we have determined the impact on the actuarially determined contribution for the current plan year due to a change in funding interest rate.

The actuarially determined contribution for the plan is based on a funding interest rate of 7.00%. If a funding interest rate of 6.00% were used, there would be an increase in the plan's funding deficit of $7,100,768 and a corresponding increase in the plan's actuarially determined contribution of $777,991.

Investment Risk

If the value of plan assets were 1.00% lower, the plan's funding deficit would increase by $477,681 and the plan's actuarially determined contribution would increase by $23,763.

Demographic and Other Risks

A deviation of actual plan experience from the demographic assumptions used for measuring the Actuarial Accrued Liability may also result in increased future contributions. The key assumptions for the plan include termination rates, retirement rates, mortality rates, and payroll growth.

A 1.00% increase in the Actuarial Accrued Liability caused by actual experience different than assumed would increase the plan's actuarially determined contribution by $46,285.

If the actual contributions to the plan are less than the policy implicit in the annual actuarially determined contributions, then an increase in future contributions can occur. For example, if only 90% of the current year actuarially determined contribution is contributed, then future years actuarially determined contribution can be 0.4% higher.

Historical Information

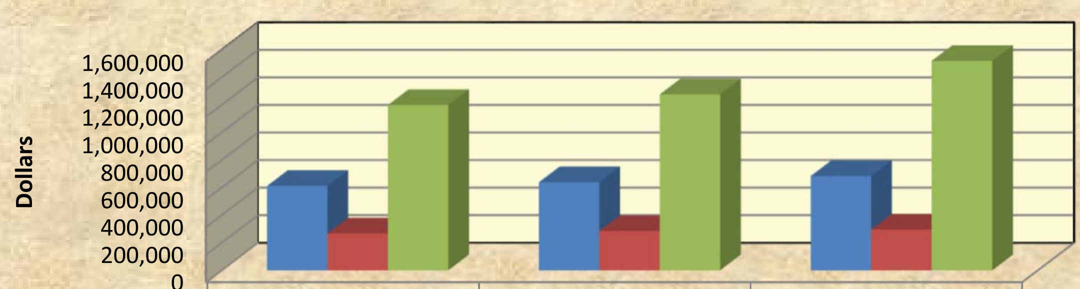
Reviewing key historical information may clarify the risks associated with the plan's financial condition. Below is a five-year history of certain key financial metrics of the plan.

	Valuation Year				
Measurement (in thousands)	**10/1/2014**	**10/1/2015**	**10/1/2016**	**10/1/2017**	**10/1/2018**
Funding (Surplus)/Deficit	$1,524,365	$3,150,322	$3,594,869	$4,255,850	$4,813,553
(Gain)/Loss	($1,705,432)	$2,012,727	$369,220	$797,537	$664,599
Actuarially Determined Contribution	$596,576	$827,119	$943,541	$1,198,411	$1,276,188
Funding Interest Rate	7.50%	7.50%	7.50%	7.25%	7.25%

Conclusion

A more detailed assessment of the risks to the plan including, but not limited to, those identified above may be beneficial in assessing the risk that actual future measurements may differ significantly from expected future measurements. A more detailed assessment could include stochastic modeling to assess the distribution of potential outcomes.

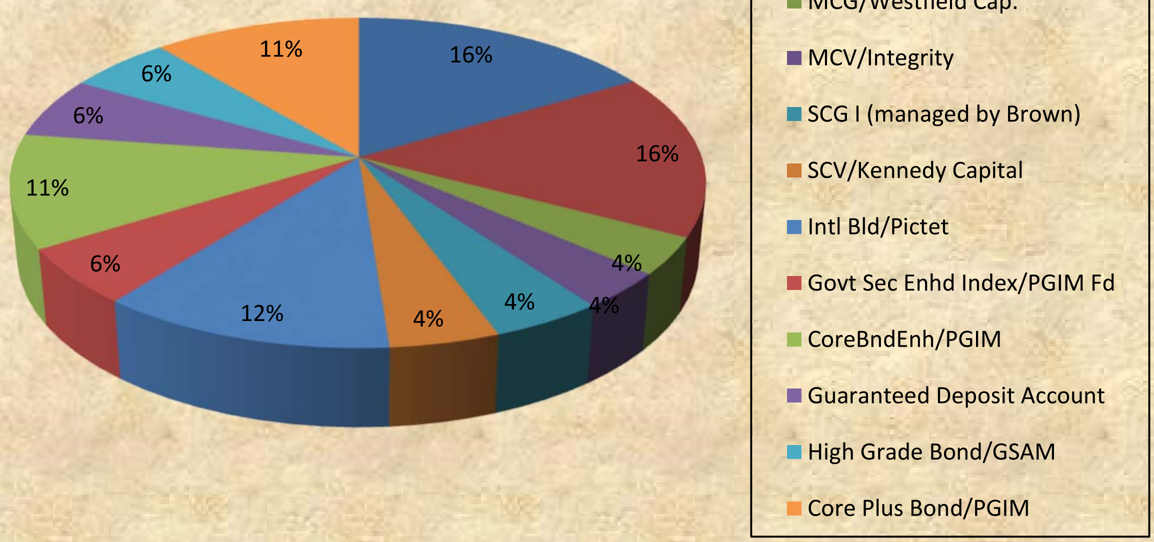
History of Required Contributions



	2019	2020	2021
Est. EE Contrib	611,077	637,826	683,343
State Contrib	266,644	284,001	294,800
City Contrib	1,198,411	1,276,188	1,518,977

The following graph illustrates how plan assets were invested as of the valuation date.
The Market Value of Assets on the valuation date is $44,394,240.53*.

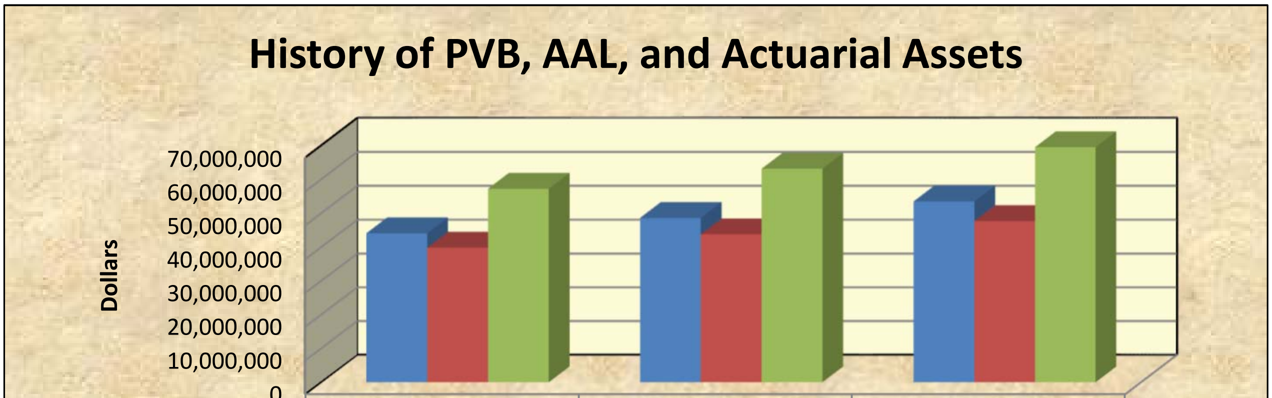
Market Value Asset Allocation



* This value represents the Market Value of Assets including contribution receivables of $338,811.84.

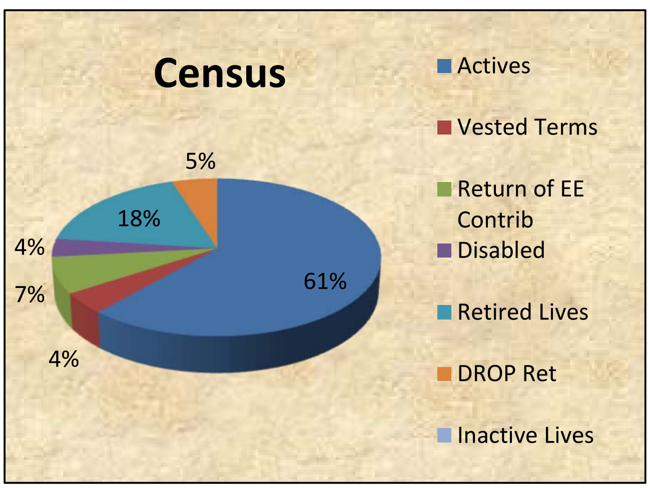
The funded status, on an employer contribution basis, is measured by comparing the Actuarial Value of Assets with the Actuarial Accrued Liability.

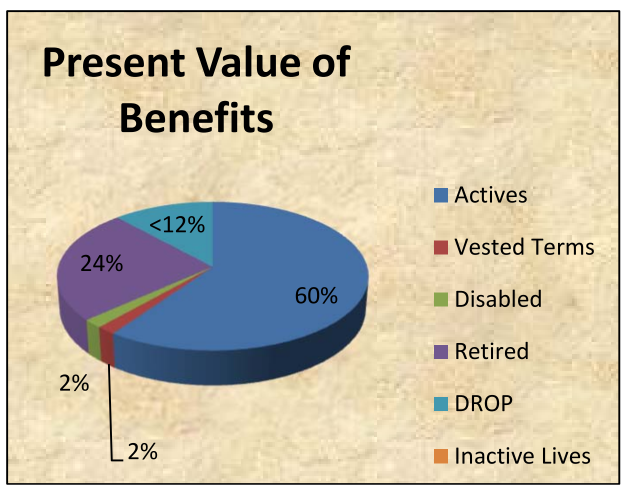
For each valuation, the Plan's total liability for all benefits is measured on the valuation date. This liability includes benefits which have accrued as well as benefits which are expected to accrue. The liability is called the Present Value of Benefits (PVB). The Plan's AAL is equal to the excess of this liability over the present value of future normal costs. Under any cost method, the excess PVB over assets is funded systematically over future years through contributions.



	2019	2020	2021
AAL	44,165,416	48,674,209	53,541,902
Actuarial Assets	39,909,566	43,860,656	47,768,057
PVB	57,290,667	63,171,072	69,549,232

Below is a breakdown of your Plan's census data and Present Value of Benefits for the current plan year.





Section II — Statement of Net Assets Available for Benefits

	September 30, 2018	September 30, 2019
1. Assets		
Cash and Equivalents		
Guaranteed Deposit Account[1]	3,201,883.80	2,629,172.75
Total Cash and Cash Equivalents	$3,201,883.80	$2,629,172.75
U.S. Bonds & Bills		
CoreBndEnh/PGIM	4,329,158.71	4,882,589.01
Govt Sec Enhd Index / PGIM Fd	2,131,923.02	2,441,311.74
High Grade Bond/GSAM	2,164,086.30	2,451,865.59
Core Plus Bond/PGIM	4,465,284.95	4,927,032.55
Total U.S. Bonds & Bills	$13,090,452.98	$14,702,798.89
Stocks		
LCG/JPMorgan	7,283,757.20	7,273,567.21
LCV/LSV Asset Mgmt	6,915,158.40	7,113,973.05
MCG/Westfield Cap.	1,542,586.14	1,596,943.14
MCV/Integrity	1,486,929.57	1,584,923.98
SCG I (managed by Brown)	2,013,205.72	1,980,287.57
SCV/Kennedy Capital	1,876,689.06	1,944,814.87
Intl Bld/Pictet	4,888,987.41	5,228,947.23
Total Stocks	$26,007,313.50	$26,723,457.05
Receivables		
Member Contributions	59,854.07	14,862.21
City Contributions	152,123.98	29,149.19
State Contributions	0.00	294,800.44
Transfer of Assets	0.00	0.00
Total Receivables	$211,978.05	$338,811.84
Total Assets	$42,511,628.33	$44,394,240.53
2. Liabilities and Net Assets		
Payables		
Unpaid Administrative Expenses	0.00	0.00
Total Liabilities	$0.00	$0.00
Active and Retired Members' Equity	42,511,628.33	44,394,240.53
Total Net Assets	$42,511,628.33	$44,394,240.53
Total Liabilities and Net Assets	$42,511,628.33	$44,394,240.53
3. Adjustment of Asset Value	$0.00	$0.00
4. Total Market Value of Assets	$42,511,628.33	$44,394,240.53
5. Rate of Return:		
Market Value Rate of Return on Assets	8.39%	3.68%

[1] Includes a market value adjustment based on a factor of 1.03422 for September 30, 2019 and a factor of .994222 for September 30, 2018. Without the adjustment factors, the book value for each year is $2,542,179.37 and $3,220,491.80, respectively.

Section II Development of Actuarial Value of Assets

Actuarial Assets for funding purposes are developed by increasing the Actuarial Assets used in the most recent actuarial valuation of the Fund by the average annual market value rate of return for the past four years, but are limited to the corridor of 80% to 120% of Market Value.

Plan Year End	Actual Rate of Return	Assumed Rate of Return
9/30/2016	8.07%	7.50%
9/30/2017	12.72%	7.50%
9/30/2018	8.39%	7.25%
9/30/2019	3.68%	7.25%
Annualized Rate of Return for Prior four years	8.17%	

a. Actuarial Value of Assets as of 10/1/2018	$43,860,655.87
i. Adjustment to Actuarial Value of Assets	$0.00
ii. Adjusted Actuarial Value of Assets	$43,860,655.87
b. Calculation of Expected Value of Assets	
i. Contributions during Plan Year[1]	$2,438,326.81
ii. Miscellaneous Income	$0.00
iii. Distributions during the Plan Year	$2,127,056.38
iv. Expected Value of Assets (a.ii. + b.i. + b.ii. - b.iii.)	$44,171,926.30
c. Calculation of Net Investment Income	
i. Interest, Dividends, and Other Income	777,698.17
ii. Realized Gains / (Losses)	664,847.89
iii. Unrealized Gains / (Losses)	23,194.33
iv. Change in Market Value Adjustment for Guaranteed Deposit Account	105,601.38
v. Change in Actuarial Value	2,024,789.21
vi. Net Investment Income	3,596,130.98
d. Preliminary Actuarial Value of Assets as of 10/1/2019	$47,768,057.28
Actuarial Asset Rate of Return ([2 * c.vi.] / [a.ii. + d. - c.vi.])	8.17%
Final Actuarial Value of Assets as of 10/1/2019 (Preliminary Actuarial Value of Assets limited to within 80% / 120% of Market Value)	$47,768,057.28

	October 1, 2018	October 1, 2019
Total Actuarial Value of Assets	$43,860,655.87	$47,768,057.28
Actuarial Rate of Return on Assets	7.38%	8.17%

[1] Includes buyback contributions of $118,092.20 for Mr. Force, Mr. Gabella, and Mr. Sharbono.

Section II Change in Net Assets Available for Benefits

	Market Value	Actuarial Value
Net Assets Beginning of Year	42,511,628.33	43,860,655.87
- Adjustment to Beginning of Year Asset Value	0.00	0.00
Adjusted Net Assets Beginning of Year	42,511,628.33	43,860,655.87
Income		
Contributions:		
- City	1,340,927.07	1,340,927.07
- State	294,800.44	294,800.44
- Members[1]	802,599.30	802,599.30
Total Contributions	2,438,326.81	2,438,326.81
Miscellaneous Income	0.00	0.00
Earnings from Investments		
- Interest, Dividends, and Other Income	777,698.17	777,698.17
- Net Realized Gains / (Losses)	664,847.89	664,847.89
- Net Unrealized Gains / (Losses)	23,194.33	23,194.33
- Change in Market Value Adjustment for Guaranteed Deposit Accoun	105,601.38	105,601.38
- Change in Actuarial Value	N/A	2,024,789.21
Total Earnings and Investment Gain	1,571,341.77	3,596,130.98
Expenses		
Administrative Expenses	57,039.65	57,039.65
Distributions to Members		
- Benefit Payments	1,287,488.88	1,287,488.88
- Lump Sum DROP Balances	775,886.75	775,886.75
- Refund of Contributions / Termination Payments	6,641.10	6,641.10
Total Distributions	2,127,056.38	2,127,056.38
Valuation Asset Method Change	N/A	0.00
Change in Net Assets for the Year	1,882,612.20	3,907,401.41
Net Assets End of Year	$44,394,240.53	$47,768,057.28

[1] Includes buyback contributions of $118,092.20 for Mr. Force, Mr. Gabella, and Mr. Sharbono.

Present Value of Projected Plan Benefits: at 7.25% for the preceding year and 7.00% for the current year.

	October 1, 2018	October 1, 2019
Actives		
Retirement Benefits	33,135,866	37,095,336
Disability Benefits	638,730	654,606
Death Benefits	124,070	122,336
Termination Benefits	2,259,096	2,595,607
Subtotal for Actives	36,157,762	40,467,885
Inactives		
Retired Lives	11,686,262	16,551,006
Vested Termination	771,219	1,200,071
Disabled	1,233,323	1,250,702
DROP Accumulated Benefit	2,013,331	2,063,923
DROP Future Benefit Payments	11,309,175	8,015,645
Subtotal for Inactives	27,013,310	29,081,347
Total Present Value of Benefits	63,171,072	69,549,232

Actuarial Accrued Liability: at 7.25% for the preceding year and 7.00% for the current year

Actives		
Retirement Benefits	20,692,269	23,328,542
Disability Benefits	207,736	221,964
Death Benefits	61,880	61,777
Termination Benefits	699,014	848,272
Subtotal for Actives	21,660,899	24,460,555
Inactives (from above)	27,013,310	29,081,347
Total Actuarial Accrued Liability	48,674,209	53,541,902
Unfunded Actuarial Accrued Liability	4,813,553	5,773,845

1. Unfunded Actuarial Accrued Liability as of October 1, 2018	$4,813,553
2. City and State Normal Cost Applicable for the year[1]	1,091,568
3. Interest on (1) and (2)	428,121
4. Sponsor Contributions during the year ending September 30, 2019	1,635,728
5. Interest on (4)	59,295
6. Change in Unfunded Actuarial Accrued Liability due to Actuarial (Gain)/Loss and Assumption/Asset Method Changes	1,135,626
7. Unfunded Actuarial Accrued Liability as of October 1, 2019 (1) + (2) + (3) - (4) - (5) + (6)	$5,773,845

Date Established	Years Remaining	10/1/2019 Amount	Amortization Amount
10/1/1997	8	482,254	65,386
10/1/1998	9	22,409	2,732
10/1/1999	10	108,192	12,006
10/1/2001	12	(1,076,449)	(101,821)
10/1/2004	15	2,446,783	191,476
10/1/2005	16	(27,666)	(2,052)
10/1/2006	17	12,960	915
10/1/2007	18	(390,250)	(26,308)
10/1/2008	19	(435,522)	(28,121)
10/1/2009	20	625,386	38,782
10/1/2010	21	(217,286)	(12,973)
10/1/2011	22	1,193,313	68,749
10/1/2012	23	231,461	12,893
10/1/2013	24	(792,562)	(42,766)
10/1/2014	25	(1,291,776)	(67,634)
10/1/2015	26	1,973,699	100,426
10/1/2016	27	349,340	17,299
10/1/2017	28	773,064	37,306
10/1/2018	29	650,869	30,646
10/1/2019	30	1,135,626	52,232
Total		$5,773,845	$349,173

[1] Includes $36,310 for administrative expenses.

Prudential

Section II Exhibits Satisfying Requirements of Chapter 112, Florida Statutes

1. Schedule Illustrating the Amortization of Total Unfunded Actuarial Accrued Liability as of:

Year	Projected Unfunded Accrued Liability
2019	5,773,845
2020	5,804,393
2021	5,820,272
2026	5,611,296
2031	5,217,444
2041	2,625,772
2049	0

2. 3 Year Comparison of Actual and Assumed Increase in Pensionable Compensation:

		Actual	Assumed
Year Ended	9/30/2019	6.49%	5.50%
Year Ended	9/30/2018	6.53%	5.50%
Year Ended	9/30/2017	3.35%	5.50%

3. 3 Year Comparison of Investment Return on Actuarial Value:

		Actual	Assumed
Year Ended	9/30/2019	8.17%	7.25%
Year Ended	9/30/2018	7.38%	7.25%
Year Ended	9/30/2017	7.54%	7.50%

4. Average Annual Payroll Growth:

a. Payroll as of:	10/1/2019	6,878,300
	10/1/2009	4,115,814
b. Total increase		67.12%
c. Number of Years		10.00
d. Average Annual Rate		5.27%

Section II Exhibits Satisfying Requirements of Chapter 112, Florida Statute

Valuation Date:	10/1/2017	10/1/2018	10/1/2019
Applicable to Fiscal Year Ending:	9/30/2019	9/30/2020	9/30/2021
1. Pension Cost			
Normal Cost from Retirement	1,487,843	1,564,616	1,770,764
Normal Cost from Termination	192,483	193,245	220,269
Normal Cost from Death	8,377	8,335	8,457
Normal Cost from Disability	54,604	55,732	58,280
Normal Cost (with interest)	$1,743,308	$1,821,928	$2,057,770
% of Projected Annual Payroll[1]	26.53%	26.57%	28.01%
Administrative Expense (with interest)	$39,254	$39,176	$61,693
% of Projected Annual Payroll[1]	0.60%	0.57%	0.84%
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 30 years (with interest)	$293,570	$336,911	$377,657
% of Projected Annual Payroll[1]	4.47%	4.91%	5.13%
Total Required Contribution	$2,076,132	$2,198,015	$2,497,120
% of Projected Annual Payroll[1]	31.60%	32.05%	33.98%
Expected Member Contributions	$611,077	$637,826	$683,343
% of Projected Annual Payroll[1]	9.30%	9.30%	9.30%
Expected State Contributions	$266,644	$284,001	$294,800
% of Projected Annual Payroll[1]	4.06%	4.14%	4.01%
Expected City Contributions	$1,198,411	$1,276,188	$1,518,977
% of Projected Annual Payroll[1]	18.24%	18.61%	20.67%

2. Past Contributions

Plan Year Ending	9/30/2019
Total Required Contribution	2,076,132
Expected Member Contribution	(611,077)
State Requirement	(266,644)
City Requirement	$1,198,411
Actual Contributions Made:	
Total	2,320,235
Member[2]	(684,507)
State	(294,800)
City	$1,340,927

[1] Contributions developed as of 10/1/2019 are expressed as a percentage of projected annual payroll at 4/1/2021 of $7,347,770.

[2] Excluded buyback contributions of $118,092.20 for Mr. Force, Mr. Gabella, and Mr. Sharbono.

Section II Present Value of Accumulated Plan Benefits

Actuarial Present Value of Accumulated Plan Benefits

	October 1, 2018		October 1, 2019	
	Lives	Present Value	Lives	Present Value
Vested Benefits				
Actives	97	6,606,138	99	7,402,351
Active Contributions		4,021,358		4,366,461
Subtotal for Actives		$10,627,496		$11,768,812
Inactives	58	26,668,685	62	28,598,614
Inactive Contributions		344,625		482,733
Subtotal for Inactives		$27,013,310		29,081,347
Total	155	$37,640,806	161	$40,850,159
Non-Vested Benefits		$2,583,549		$3,081,171
Total Present Value Accumulated Benefits		$40,224,355		$43,931,330

The actuarial assumptions used in calculating the Present Value of Accumulated Plan Benefits are described in "Plan Assumptions".

The assumed rate of investment return is 7.00% for October 1, 2019 and 7.25% for October 1, 2018.

Assets and Liabilities presented in this report are based on an "ongoing plan" assumption. Therefore, the values shown in this report should not be used to represent the plan's funded status in the event of plan termination, merger, spin-off, transfer of liabilities, or settlement of benefit obligations.

Reconciliation of Present Value of Accumulated Plan Benefits

Present Value of Accumulated Benefits as of 10/1/2018	$40,224,355
Interest at 7.25%	$2,916,266
Benefits Paid and Weighted Interest	($2,143,742)
Benefits Accumulated and Gains/Losses	$1,687,233
Present Value of Accumulated Benefits as of 10/1/2019 (before changes)	$42,684,112
Plan Amendments	$0
Assumption Changes	$1,247,218
Present Value of Accumulated Benefits as of 10/1/2019	$43,931,330

Section II — Deferred Retirement Option Plan Activity

Deferred Retirement Option Plan Activity

October 1, 2018 through September 30, 2019

Name	9/30/2018 Balance	Additions	Investment Return	Distributions	9/30/2019 Balance
Todd A Bengston	349,033.76	106,399.56	17,514.29	0.00	472,947.61
Scott A Bruehl	135,426.62	84,156.96	9,177.92	0.00	228,761.50
Charles L Carnesale[1]	68,363.36	121,699.38	8,450.81	0.00	198,513.55
Mary J Hutsell	59,400.72	22,931.84	-7,706.34	74,626.22	0.00
Steven J Jones	83,749.26	107,894.88	8,730.58	0.00	200,374.72
Donald Klouse	404,183.91	0.00	0.00	404,183.91	0.00
Kevin Kwader	323,587.35	66,065.40	14,427.23	0.00	404,079.98
Michael Seefeldt	169,662.44	73,247.04	9,709.72	0.00	252,619.20
William Stokes	297,076.62	0.00	0.00	297,076.62	0.00
Ray C Thompson Jr	122,847.42	117,622.92	10,561.18	0.00	251,031.52
Stacy M Roney	$0.00	52,667.88	2,926.54	0.00	55,594.42
Total	$2,013,331.46	$752,685.86	$73,791.93	$775,886.75	$2,063,922.50

[1]Charles Carnesale exited the DROP by 9/30/2019 without receiving his accumulated DROP distribution.

He is included at 9/30/2019 with their accumulated DROP distribution.

Lifecount and Data Reconciliation:

Description	Actives	Vested Term	REF of EECs	Transfers	Disabled	Retirees	DROP	Total
Participants 10/1/2018	97	5	12	0	6	25	10	155
New Participant	6							6
Vested Term	-2	2						0
Non-Vested Term								0
Rehired								0
Disabled								0
Retired	-1					4	-3	0
Transfers	1							1
DROP	-1						1	0
Cash Out	-1							-1
Death								0
Data Adjustments								0
Expired Participants								0
Participants 10/1/2019	99	7	12	0	6	29	8	161

Active Participant Data Summary	October 1, 2018	October 1, 2019
Average Attained Age	35.3	35.3
Average Service	8.3	8.7
Average Pay	$66,550	$69,478
Total Reported Payroll	$6,455,324	$6,878,300

Non-Active Participant Data Summary	October 1, 2018	October 1, 2019
Average Age - Deferred Benefits[1]	43.4	44.3
Average Age - Receiving Benefits[2]	59.1	59.7
Average Monthly Benefit - Deferred Benefits[1]	$1,709	$1,993
Average Monthly Benefit - Receiving Benefits[2]	$4,029	$4,330

[1] Excludes participants entitled to a refund of employee contributions only.

[2] Includes DROP participants

Past Service

Age	0	1	2	3	4	5-10	10-15	15-20	20-25	25-30	30+	Total
15 - 19		4	3									7
20 - 24			11	3	2							16
25 - 29	1		3	1	1	8						14
30 - 34			3		2	4	3					12
35 - 39		1	3			5	7	4				20
40 - 44		1					7	7	1			16
45 - 49							2	5	1			8
50 - 54								3	3			6
55 - 59												0
60 - 64												0
65+												0
Total	1	6	23	4	5	17	19	19	5			99

Eligibility	Full-time employees who are classified as full-time Firefighters shall participate in the System as a condition of employment.
Credited Service	Total years and fractional parts of years of contributing service as a Firefighter with the City.
Salary	Total W-2 compensation, plus tax deferred, tax-sheltered, and tax-exempt income.
Final Average Earnings	Average Salary for the best 5 years during the 10 years immediately preceding retirement or termination. A year is 12 consecutive months.
Member Contributions	All members are required to make contributions in the amount of 9.3%, of compensation, which are designated as employer contributions under 414(h) (contributions are excluded from income for federal income tax purposes).
City and State Contributions	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Part VII of Florida Statutes, Chapter 112. In no event will the City contributions be less than 4% of the total salary of the Members.
Form of Annuity	Ten Years Certain and Life.
Benefit Formula	3.0% of Final Average Earnings for each year of Credited Service during the first 10 years of service, 3.5% of Final Average Earnings for years of Credited Service in excess of 10 years but not in excess of 20 years, and 4% of Final Average Earnings for each year of Credited Service in excess of 20 years.
Normal Retirement	
Eligibility	Attainment of age 55 and completion of 10 years of Credited Service or the completion of 22 years of Credited Service.
Benefit	3.0% of Final Average Earnings for each year of Credited Service during the first 10 years of service, 3.5% of Final Average Earnings for years of Credited Service in excess of 10 years but not in excess of 20 years, and 4% of Final Average Earnings for each year of Credited Service in excess of 20 years.
Early Retirement	
Eligibility	Age 50 and the completion of 10 years of service.
Benefit	Accrued benefit, reduced by 3% per year before normal retirement date.
Vesting	
Schedule	100% after 10 years of Vesting Service.
Benefit	Member will receive the vested portion of his (her) accrued benefit payable at the otherwise Normal Retirement Date.

Disability

Eligibility	
Service Incurred	Covered from Date of Employment.
Non-Service Incurred	10 years of Credited Service.
Exclusions	Disability resulting from use of drugs, illegal participation in riots, service in military, etc.
Benefit	Benefit accrued to date of disability (based on 2.5% multiplier) but not less than 42% of Final Average Earnings (Service Incurred).
Duration	Payable for life and 10 years certain or until recovery (as determined by the Board; options available).

Death Benefits

Pre-Retirement	
Vested	Monthly accrued benefit payable to designated beneficiary for 10 years at Member's Early or Normal Retirement Date.
Non-Vested	Refund of accumulated contributions without interest.
Post-Retirement	Benefits payable to beneficiary in accordance with options selected at retirement.

Board of Trustees

a. Two Council appointees,

b. Two Members of the Department elected by the membership, and

c. Fifth Member elected by other 4 and appointed by Council.

Deferred Retirement Option Plan Activity

Eligibility	Satisfaction of Normal Retirement requirements (Age 55 and 10 years of Credited Service or 22 years of Credited Service).
Participation	Not to exceed 96 months.
Rate of Return	Actual net rate of investment return (total return net of brokerage commissions, management fees, and transaction costs) credited each fiscal quarter.
Form of Distribution	Cash lump sum at termination of employment (options available).

1. ACTUARIAL COST METHOD

Costs have been computed in accordance with the Entry Age Normal Cost Method and reflect the actuarial assumptions described in "Plan Assumptions" of this report.

NORMAL COST

The Normal Cost is the sum of individual normal costs for all active participations. For an active participant, the Normal Cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

The normal cost accrual rate equals the present value of future benefits for the participant, determined as of the participant's entry age, divided by the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age. In calculating the present value of future compensation, the salary scale must be applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

Entry Age for each participant is defined as the age on the first valuation date following a participants date of employment.

ACTUARIAL ACCRUED LIABILITY

The Actuarial Accrued Liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's Actuarial Accrued Liability equals the present value, at the participant's attained age, of future benefits less, the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's Actuarial Accrued Liability equals the present value, at the beneficiary's attained age, of futurebenefits. The Unfunded Actuarial Accrued Liability equals the total Actuarial Accrued Liability less the Actuarial Value of Assets.

II. ASSET VALUATION METHOD

Assets have been valued using Smoothing Value Method in accordance with generally accepted procedures as described below. The Actuarial Value of Assets in the Plan is determined in the following manner:

Definitions:

j	Assumed growth rate, equal to the annualized of the prior four market value rate of returns
i(t)	Actuarial market value rate of return in Plan Year t
C(t)	Sum of contributions and other additions to the fund from all sources other than investment transactions in Plan Year t
W(t)	Sum of all withdrawals and other decreases to the fund including benefit payments and non investment related expenses from all sources other than investment transactions in Plan Year t
AV(t)	Actuarial Value of Assets as of Plan Year t
T(t)	Transfers of assets during Plan Year t
EV(t)	Expected Value of Assets without interest as of Plan Year t
NII(t)	Net Investment Income during Plan Year t

Method

$$j = [\ (1+i(t-3)) * (1+i(t-2)) * (1+i(t-1)) * (1+i(t))\ ]\ ^\wedge .25$$

$$EV(t) = AV(t-1) + C(t) + T(t) - W(t)$$

$$NII(t) = \frac{[\ AV(t-1) + EV(t)\ ]}{2} * j$$

$$AV(t) = EV(t) + NII(t)$$

Corridor Limits

The resulting actuarial value of assets may not be less than 80% or more than 120% of the current market value of plan assets as of the applicable valuation date.

Mortality Rates

Males

During Employment	RP2000 Generational, 10% Combined White Collar/90% Combined Blue Collar, projected with Scale BB
Post Employment	RP2000 Generational, 10% Annuitant White Collar/90% Annuitant Blue Collar, projected with Scale BB

Females

During Employment	RP2000 Generational, 100% Combined White Collar, projected with Scale BB
Post Employment	RP2000 Generational, 100% Annuitant White Collar, projected with Scale BB

Mortality Rates for Disabled Participants

Males	60% RP-2000 Male Disabled Set Back 4 Years/40% Annuitant White Collar with no Set Back, no projection
Females	60% RP-2000 Female Disabled Set Back 4 Years/40% Annuitant White Collar with no Set Back, no projection

Termination Rates

Age	% Terminating During the Year
20	6.00%
30	5.00%
40	2.60%
50	0.80%
60	0.20%

Disability Rates

Age	% Become Disabled During the Year
20	0.09%
30	0.12%
40	0.21%
50	0.54%
60	2.70%

75% of those who become disabled assumed to be due to a service connected event.

Retirement Age

The earlier of attainment of age 55 with 10 years of credited service, or 22 years of credited service, regardless of age. Also, any member who has reached Normal Retirement is assumed not to retire within the next year.

Vested terminated participants are assumed to commence benefits on Normal Retirement Date.

Early Retirement	Commencing with the attainment of Early Retirement Status (age 50 with 10 years of service), members are assumed to retire with an immediate subsized benefit at the rate of 5% per year.
Expenses	Equal to the actual expenses incurred in prior year. Thus, this year's Normal Cost includes $57,040 for non-investment expenses.
Investment Return	7.00% per annum, net of investment expenses, compounded annually.
Salary Increases	Salary is assumed to increase at the rate of 5.50% per annum. Projected salary at retirement is increased 20% to account for non-regular compensation.
Payroll Growth	4.50% per annum, but not to exceed the 10 year average annual rate, which for this year is 5.27%.

City of Apopka General Employees' Retirement Trust Fund

October 1, 2019
Actuarial Valuation Report

For the Fiscal Year Ending September 30, 2021

February 2020

Contribution Payment Information

Basic Plan Information:

Plan Contract Number:	IN-17303
Plan Name:	City of Apopka General Employees' Retirement Trust Fund

Defined Benefit Wire Instructions:

* Bank:	JP Morgan Chase - NY, NY
* A. B. A. #	021000021
* Credit:	DB PRIAC Client Wire Contributions (GDA / SEP)
* Account #	304617059
* Reference:	Please put your Plan Contract Number and your Plan Name in the OBI 6000 Reference Field

Defined Benefit Lockbox Address:

JP Morgan Chase
4 Chase Metrotech Center
7th Floor
PO Box 6037
Brooklyn, NY 11245 0003

* Check must be made payable to PRIAC
* GR/IN number should be noted on the check (i.e. IN-17303)

Table of Contents

Section I Summary of Valuation Results

This report summarizes valuation results for the City of Apopka General Employees' Retirement Trust Fund based upon actuarial valuations as of October 1, 2018 and October 1, 2019.

Valuation Date:	October 1, 2018	October 1, 2019
Applicable Fiscal Year:	September 30, 2020	September 30, 2021
1. Contributions		
* Total Required Contribution	$2,684,088	$2,909,599
Percentage of Payroll	22.34%	23.20%
* Estimated Employee Contribution	$588,802	$614,593
Percentage of Payroll	4.90%	4.90%
* City Contribution	$2,095,286	$2,295,006
Percentage of Payroll	17.44%	18.30%
2. Pension Plan Asset Information		
* Actuarial Value of Assets	$55,178,312	$59,083,832
* Market Value of Assets	$53,228,222	$54,537,542
3. Liability Information		
* Present Value of Projected Benefits	$72,081,817	$77,571,329
* Unfunded Actuarial Accrued Liability	$5,663,480	$6,123,064
* Present Value of Accrued Benefits	$52,770,301	$56,780,316
4. Participant Information		
* Active Participant Life Count	229	230
* Total Participant Life Count	430	438
* Total Covered Payroll	$11,637,290	$11,946,517
* Present Value of Future Salaries	$75,011,509	$77,995,024

Section I Changes Since Last Year's Valuation

Actuarial Assumptions

Effective with the October 1, 2019 valuation, the discount rate assumption has been reduced to 7.00% from 7.25% to to better anticipate future return expectations.

Impact of the Changes on the Valuation Results. Increase / (Decrease)

		Discount Rate
Impact on the Actuarial Liability	$	1,809,346
Impact on the Normal Cost[1]	$	97,101
Impact on the Administrative Expense[1]	$	(80)
Impact on the Annual Amortization[1]	$	96,542
Impact on the Total Required Contribution[1]	$	193,563

Pension Plan

There have been no changes made to the Pension Plan recognized in this actuarial valuation.

Funding Method

There have been no changes to the liability funding method this year.

Asset Valuation Method

There have been no changes to the asset valuation method this year.

New Legislation

There have been no changes made to the pension code during the previous year impacting the current valuation.

[1] As applicable to calculations for the fiscal year ending on September 30, 2021.

This report has been prepared for the plan sponsor and it summarizes the results of the Funding Actuarial Valuation.

This report relies on the census data submitted to us by the plan sponsor, as summarized in "Participant Data", and the retirement plan provisions as outlined in "Plan Provisions". It also relies on the plan asset information as described in Statement of Net Assets Available for Benefits. Appropriate tests for consistency and reasonableness have been completed on the information relied upon.

The liabilities and costs were determined using the method summarized in "Actuarial Cost Method" and the actuarial assumptions described in "Actuarial Assumptions". In our opinion, the actuarial assumptions used in this report are reasonable, as adopted by the Board of Trustees, and reflect our best estimate of the anticipated future long term experience under the Plan.

This report was completed in accordance with generally accepted actuarial standards and procedures and conforms to the Guidelines for Professional Conduct of the American Academy of Actuaries. The undersigned credentialed actuaries meet the Qualification standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. This report also meets the requirements of Florida Statute 112.

This actuarial valuation was prepared and completed by me, or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account.

David V. Pappalardo

David V. Pappalardo, F.S.A., E.A.
Vice President & Consulting Actuary
Enrolled Actuary #17-05283
Phone: (860) 534-2262
Email: David.Pappalardo@Prudential.com

Assisted by:

Kerri Dantos

Kerri Dantos, A.S.A., E.A., M.A.A.A.
Associate Actuary
Phone: (860) 534-6006
Email: Kerri.Dantos@Prudential.com

Jose Brocero

Jose Brocero
Actuarial Specialist
Phone: (860) 534-6033
Email: Jose.Brocero@Prudential.com

Prudential Financial
P. O. Box 2975, H08
280 Trumbull Street
Hartford, CT 06103

The measurement of pension obligations and actuarially determined contributions may be impacted by actual future measurements that may differ significantly from expected future measurements. The information below identifies the most important risks that can lead to these differences and the impacts they can have on pension obligations, funded status and actuarially determined contributions in the future.

Interest Rate and Plan Maturity Risk

Understanding the maturity of a pension plan's obligations may help a sponsor better assess the financial risks of the plan. The duration of the Actuarial Accrued Liability is one way to measure the maturity. The duration of a liability measurement explains how much it would change if the funding interest rate were to change by one percent. As a result, a more mature plan with shorter duration will have a smaller change in their Actuarial Accrued Liability and actuarially determined contributions compared to a less mature plan. To understand the impact of duration, we have determined the impact on the actuarially determined contribution for the current plan year due to a change in funding interest rate.

The actuarially determined contribution for the plan is based on a funding interest rate of 7.00%. If a funding interest rate of 6.00% were used, there would be an increase in the plan's funding deficit of $8,185,236 and a corresponding increase in the plan's actuarially determined contribution of $829,238.

Investment Risk

If the value of plan assets were 1.00% lower, the plan's funding deficit would increase by $590,838 and the plan's actuarially determined contribution would increase by $33,500.

Demographic and Other Risks

A deviation of actual plan experience from the demographic assumptions used for measuring the Actuarial Accrued Liability may also result in increased future contributions. The key assumptions for the plan include termination rates, retirement rates, and mortality rates, and payroll growth.

A 1.00% increase in the Actuarial Accrued Liability caused by actual experience different than assumed would increase the plan's actuarially determined contribution by $59,451.

If the actual contributions to the plan are less than the policy implicit in the annual actuarially determined contributions, then an increase in future contributions can occur. For example, if only 90% of the current year actuarially determined contribution is contributed, then future years actuarially determined contribution can be 0.8% higher.

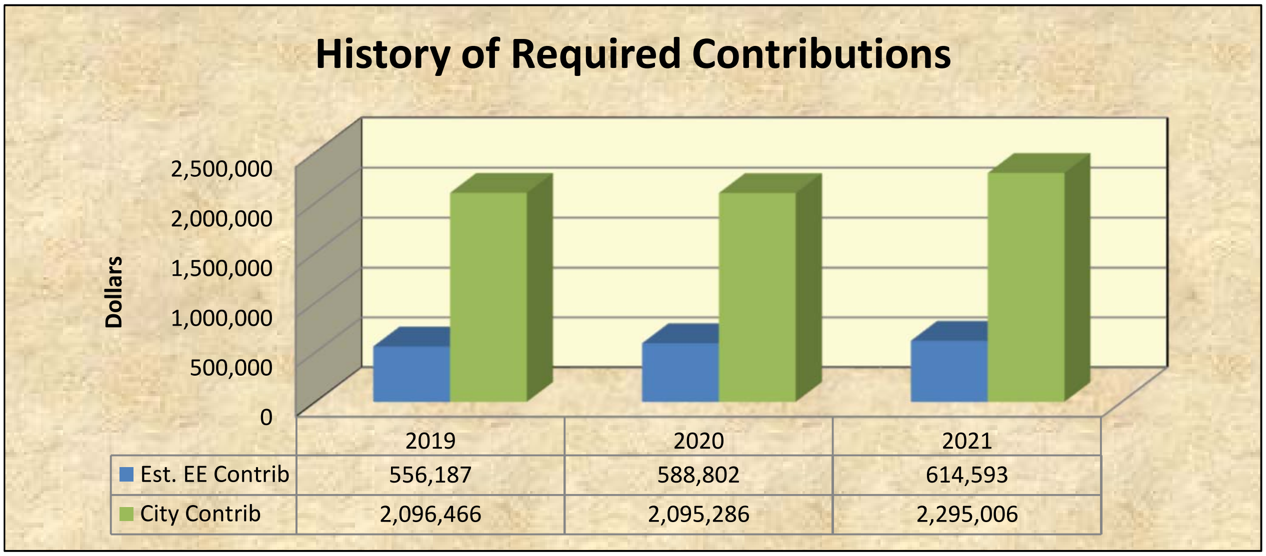
Historical Information

Reviewing key historical information may clarify the risks associated with the plan's financial condition. Below is a five-year history of certain key financial metrics of the plan.

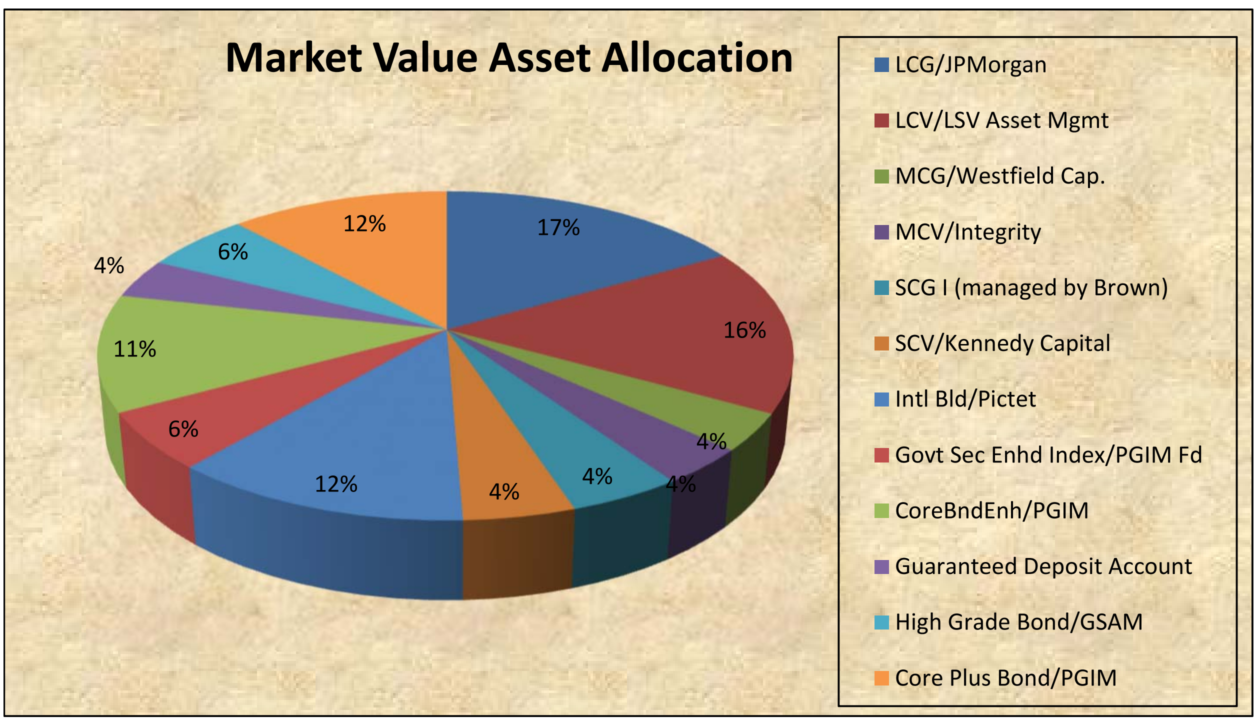
	Valuation Year				
Measurement (in thousands)	**10/1/2014**	**10/1/2015**	**10/1/2016**	**10/1/2017**	**10/1/2018**
Funding (Surplus)/Deficit	$6,212,257	$6,373,387	$6,151,468	$6,210,151	$5,663,480
(Gain)/Loss	($1,637,347)	$305,603	($89,216)	$504,818	($263,949)
Actuarially Determined Contribution	$1,674,255	$1,826,874	$1,854,869	$2,096,466	$2,095,286
Funding Interest Rate	7.50%	7.50%	7.50%	7.25%	7.25%

Conclusion

A more detailed assessment of the risks to the plan including, but not limited to, those identified above may be beneficial in assessing the risk that actual future measurements may differ significantly from expected future measurements. A more detailed assessment could include stochastic modeling to assess the distribution of potential outcomes.



The following graph illustrates how plan assets were invested as of the valuation date.
The Market Value of Assets on the valuation date is $54,537,541.57*.

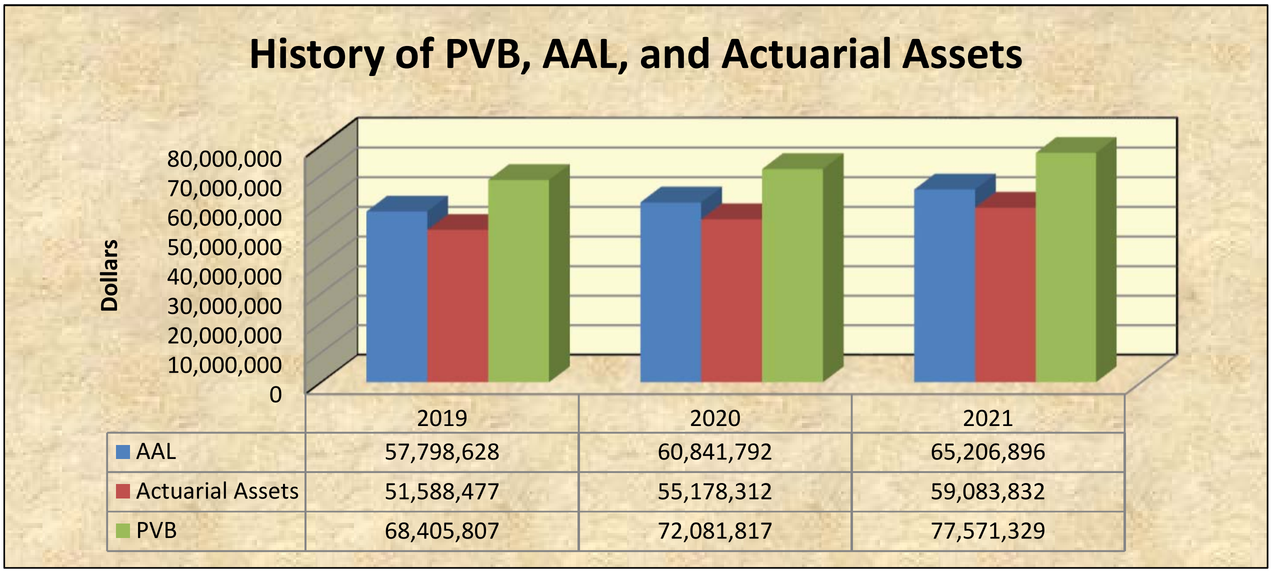


* This value represents the Market Value of Assets including contribution receivables of $59,363.72.

Section Funded Status and Liability Breakdown

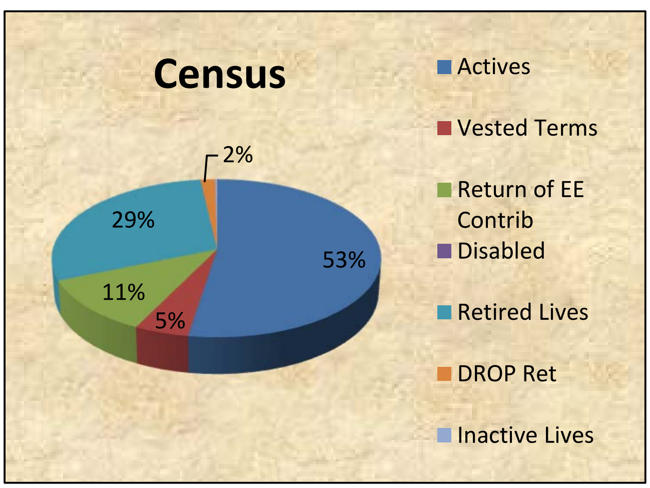
The funded status, on an employer contribution basis, is measured by comparing the Actuarial Value of Assets with the Actuarial Accrued Liability.

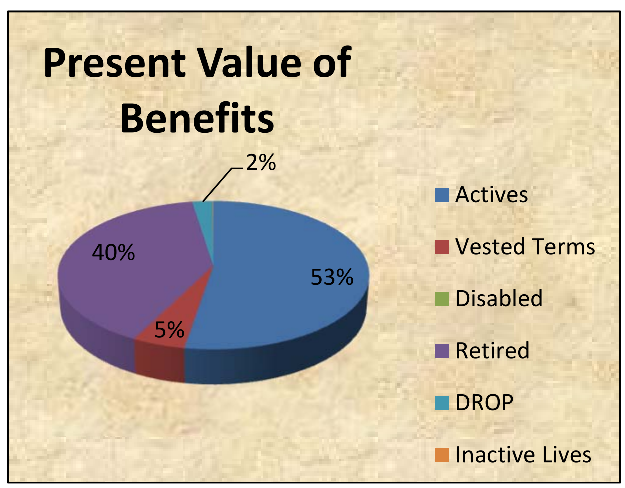
For each valuation, the Plan's total liability for all benefits is measured on the valuation date. This liability includes benefits which have accrued as well as benefits which are expected to accrue. The liability is called the Present Value of Benefits (PVB). The Plan's AAL is equal to the excess of this liability over the present value of future normal costs. Under any cost method, the excess PVB over assets is funded systematically over future years through contributions.



	2019	2020	2021
AAL	57,798,628	60,841,792	65,206,896
Actuarial Assets	51,588,477	55,178,312	59,083,832
PVB	68,405,807	72,081,817	77,571,329

Below is a breakdown of your Plan's census data and Present Value of Benefits for the current plan year.





Section II Statement of Net Assets Available for Benefits

		September 30, 2018	September 30, 2019
1. Assets			
	Cash and Equivalents		
	Guaranteed Deposit Account[1]	2,978,982.55	2,112,273.33
	Total Cash and Cash Equivalents	$2,978,982.55	$2,112,273.33
	U.S. Bonds & Bills		
	CoreBndEnh/PGIM	5,652,278.09	6,250,117.08
	Govt Sec Enhd Index / PGIM Fd	2,790,458.64	3,081,649.75
	High Grade Bond/GSAM	2,839,584.75	3,145,792.83
	Core Plus Bond/PGIM	5,827,926.53	6,446,169.99
	Total U.S. Bonds & Bills	$17,110,248.01	$18,923,729.65
	Stocks		
	LCG/JPMorgan	9,220,555.46	9,100,006.28
	LCV/LSV Asset Mgmt	8,757,067.19	8,901,417.50
	MCG/Westfield Cap.	1,952,956.40	1,995,014.36
	MCV/Integrity	1,910,314.34	1,985,787.16
	SCG I (managed by Brown)	2,547,112.98	2,473,445.66
	SCV/Kennedy Capital	2,354,010.55	2,438,022.93
	Intl Bld/Pictet	6,180,972.40	6,548,480.98
	Total Stocks	$32,922,989.32	$33,442,174.87
	Receivables		
	Member Contributions	56,632.54	12,446.82
	City Contributions	159,369.11	46,916.90
	State Contributions	0.00	0.00
	Transfer of Assets	0.00	0.00
	Total Receivables	$216,001.65	$59,363.72
	Total Assets	$53,228,221.53	$54,537,541.57
2. Liabilities and Net Assets			
	Payables		
	Unpaid Administrative Expenses	0.00	0.00
	Total Liabilities	$0.00	$0.00
	Active and Retired Members' Equity	53,228,221.53	54,537,541.57
	Total Net Assets	$53,228,221.53	$54,537,541.57
	Total Liabilities and Net Assets	$53,228,221.53	$54,537,541.57
3. Adjustment of Asset Value		$0.00	$0.00
4. Total Market Value of Assets		$53,228,221.53	$54,537,541.57
5. Rate of Return:			
	Market Value Rate of Return on Assets	8.54%	3.62%

[1] Includes a market value adjustment based on a factor of 1.03151 for September 30, 2019 and a factor of .998434 for September 30, 2018. Without the adjustment factors, the book value for each year is $2,047,748.77 and $2,983,654.95, respectively.

Section II Development of Actuarial Value of Assets

Actuarial Assets for funding purposes are developed by increasing the Actuarial Assets used in the most recent actuarial valuation of the Fund by the average annual market value rate of return for the past four years, but are limited to the corridor of 80% to 120% of Market Value.

Plan Year End	Actual Rate of Return	Assumed Rate of Return
9/30/2016	8.15%	7.50%
9/30/2017	12.77%	7.50%
9/30/2018	8.54%	7.25%
9/30/2019	3.62%	7.25%
Annualized Rate of Return for Prior four years	8.22%	

a. Actuarial Value of Assets as of 10/1/2018	$55,178,311.74
i. Adjustment to Actuarial Value of Assets	$0.00
ii. Adjusted Actuarial Value of Assets	$55,178,311.74
b. Calculation of Expected Value of Assets	
i. Contributions during Plan Year[1]	$2,949,613.85
ii. Miscellaneous Income	$0.00
iii. Distributions during the Plan Year	$3,554,874.84
iv. Expected Value of Assets (a.ii. + b.i. + b.ii. - b.iii.)	$54,573,050.75
c. Calculation of Net Investment Income	
i. Interest, Dividends, and Other Income	958,728.82
ii. Realized Gains / (Losses)	962,896.03
iii. Unrealized Gains / (Losses)	(76,240.78)
iv. Change in Market Value Adjustment for Guaranteed Deposit Account	69,196.96
v. Change in Actuarial Value	2,596,199.97
vi. Net Investment Income	4,510,781.00
d. Preliminary Actuarial Value of Assets as of 10/1/2019	$59,083,831.75
Actuarial Asset Rate of Return ([2 * c.vi.] / [a.ii. + d. - c.vi.])	8.22%
Final Actuarial Value of Assets as of 10/1/2019	$59,083,831.75
(Preliminary Actuarial Value of Assets limited to within 80% / 120% of Market Value)	

	October 1, 2018	October 1, 2019
Total Actuarial Value of Assets	$55,178,311.74	$59,083,831.75
Actuarial Rate of Return on Assets	7.45%	8.22%

[1] Includes buyback contributions of $23,994.51 for Mr. Brooks and coordination of benefits contributions of $925.49 for Mr. Vavrek.

Section II Change in Net Assets Available for Benefits

	Market Value	Actuarial Value
Net Assets Beginning of Year	53,228,221.53	55,178,311.74
- Adjustment to Beginning of Year Asset Value	0.00	0.00
Adjusted Net Assets Beginning of Year	53,228,221.53	55,178,311.74
Income		
Contributions:		
- City	2,311,235.08	2,311,235.08
- State	0.00	0.00
- Members[1]	638,378.77	638,378.77
Total Contributions	2,949,613.85	2,949,613.85
Miscellaneous Income	0.00	0.00
Earnings from Investments		
- Interest, Dividends, and Other Income	958,728.82	958,728.82
- Net Realized Gains / (Losses)	962,896.03	962,896.03
- Net Unrealized Gains / (Losses)	(76,240.78)	(76,240.78)
- Change in Market Value Adjustment for Guaranteed Deposit Accou	69,196.96	69,196.96
- Change in Actuarial Value	N/A	2,596,199.97
Total Earnings and Investment Gain	1,914,581.03	4,510,781.00
Expenses		
Administrative Expenses	61,797.50	61,797.50
Distributions to Members		
- Benefit Payments	2,670,147.08	2,670,147.08
- Lump Sum DROP Balances	428,576.20	428,576.20
- Refund of Contributions / Termination Payments	394,354.06	394,354.06
Total Distributions	3,554,874.84	3,554,874.84
Valuation Asset Method Change	N/A	0.00
Change in Net Assets for the Year	1,309,320.04	3,905,520.01
Net Assets End of Year	$54,537,541.57	$59,083,831.75

[1] Includes buyback contributions of $23,994.51 for Mr. Brooks and coordination of benefits contributions of $925.49 for Mr. Vavrek.

Present Value of Projected Plan Benefits: at 7.25% for the preceding year and 7.00% for the current year.

	October 1, 2018	October 1, 2019
Actives		
Retirement Benefits	35,403,073	37,359,784
Disability Benefits	873,062	900,558
Death Benefits	216,386	221,718
Termination Benefits	1,856,134	1,967,129
Subtotal for Actives	38,348,655	40,449,189
Inactives		
Retired Lives	27,217,732	30,744,281
Vested Termination	3,236,464	3,842,716
Disabled	0	0
DROP Accumulated Benefit	975,314	703,636
DROP Future Benefit Payments	2,303,652	1,831,507
Subtotal for Inactives	33,733,162	37,122,140
Total Present Value of Benefits	72,081,817	77,571,329

Actuarial Accrued Liability: at 7.25% for the preceding year and 7.00% for the current year

	October 1, 2018	October 1, 2019
Actives		
Retirement Benefits	25,897,892	26,845,764
Disability Benefits	583,194	590,265
Death Benefits	145,839	147,488
Termination Benefits	481,705	501,239
Subtotal for Actives	27,108,630	28,084,756
Inactives (from above)	33,733,162	37,122,140
Total Actuarial Accrued Liability	60,841,792	65,206,896
Unfunded Actuarial Accrued Liability	5,663,480	6,123,064

Section II Reconciliation of Unfunded Actuarial Liability

1. Unfunded Actuarial Accrued Liability as of October 1, 2018	$5,663,480
2. City and State Normal Cost Applicable for the year[1]	1,405,923
3. Interest on (1) and (2)	512,532
4. Sponsor Contributions during the year ending September 30, 2019	2,311,235
5. Interest on (4)	83,782
6. Change in Unfunded Actuarial Accrued Liability due to Actuarial (Gain)/Loss and Assumption/Asset Method Changes	936,146
7. Unfunded Actuarial Accrued Liability as of October 1, 2019 (1) + (2) + (3) - (4) - (5) + (6)	$6,123,064

Date Established	Years Remaining	10/1/2019 Amount	Amortization Amount
10/1/1995	6	122,480	22,250
10/1/1997	8	183,537	25,865
10/1/1998	9	368,099	46,888
10/1/1999	10	743,348	86,647
10/1/2001	12	(757,311)	(76,024)
10/1/2004	15	3,563,377	300,432
10/1/2005	16	(291,791)	(23,436)
10/1/2006	17	(389,723)	(29,932)
10/1/2007	18	(667,116)	(49,161)
10/1/2008	19	737,773	52,322
10/1/2009	20	342,291	23,424
10/1/2010	21	1,125,027	74,467
10/1/2011	22	2,578,478	165,442
10/1/2012	23	31,296	1,950
10/1/2013	24	(1,479,740)	(89,727)
10/1/2014	25	(1,432,557)	(84,660)
10/1/2015	26	269,301	15,534
10/1/2016	27	(78,754)	(4,440)
10/1/2017	28	469,005	25,878
10/1/2018	29	(250,102)	(13,521)
10/1/2019	30	936,146	49,644
Total		$6,123,064	$519,842

[1] Includes $37,175 for administrative expenses.

1. Schedule Illustrating the Amortization of Total Unfunded Actuarial Accrued Liability as of:

Year	Projected Unfunded Accrued Liability
2019	6,123,064
2020	5,995,453
2021	5,840,549
2026	4,590,390
2031	3,010,568
2041	57,018
2049	0

2. 3 Year Comparison of Actual and Assumed Increase in Pensionable Compensation:

		Actual	Assumed
Year Ended	9/30/2019	2.88%	5.50%
Year Ended	9/30/2018	3.19%	5.50%
Year Ended	9/30/2017	5.66%	5.50%

3. 3 Year Comparison of Investment Return on Actuarial Value:

		Actual	Assumed
Year Ended	9/30/2019	8.22%	7.25%
Year Ended	9/30/2018	7.45%	7.25%
Year Ended	9/30/2017	7.59%	7.50%

4. Average Annual Payroll Growth:

a. Payroll as of:	10/1/2019	11,946,517
	10/1/2009	8,630,755
b. Total increase		38.42%
c. Number of Years		10.00
d. Average Annual Rate		3.30%

Valuation Date:	10/1/2017	10/1/2018	10/1/2019
Applicable to Fiscal Year Ending:	9/30/2019	9/30/2020	9/30/2021
1. Pension Cost			
Normal Cost from Retirement	1,754,507	1,788,849	1,983,786
Normal Cost from Termination	203,508	227,218	232,065
Normal Cost from Death	13,565	14,336	14,833
Normal Cost from Disability	51,707	55,462	57,052
Normal Cost (with interest)	$2,023,287	$2,085,865	$2,287,736
% of Projected Annual Payroll[1]	17.83%	17.36%	18.24%
Administrative Expense (with interest)	$41,921	$39,355	$66,071
% of Projected Annual Payroll[1]	0.37%	0.33%	0.53%
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 30 years (with interest)	$587,445	$558,868	$555,792
% of Projected Annual Payroll[1]	5.18%	4.65%	4.43%
Total Required Contribution	$2,652,653	$2,684,088	$2,909,599
% of Projected Annual Payroll[1]	23.37%	22.34%	23.20%
Expected Member Contributions	$556,187	$588,802	$614,593
% of Projected Annual Payroll[1]	4.90%	4.90%	4.90%
Expected City Contributions	$2,096,466	$2,095,286	$2,295,006
% of Projected Annual Payroll[1]	18.47%	17.44%	18.30%

2. Past Contributions

Plan Year Ending	9/30/2019
Total Required Contribution	2,652,653
Expected Member Contribution	(556,187)
City Requirement	$2,096,466
Actual Contributions Made:	
Total	2,924,694
Member[2]	(613,459)
City	$2,311,235

[1] Contributions developed as of 10/1/2019 are expressed as a percentage of projected annual payroll at 4/1/2021 of $12,542,722.

[2] Excludes buyback contributions of $23,994.51 for Mr. Brooks and coordination of benefits contributions of $925.49 for Mr. Vavrek

Section II Present Value of Accumulated Plan Benefits

Actuarial Present Value of Accumulated Plan Benefits

	October 1, 2018		October 1, 2019	
	Lives	Present Value	Lives	Present Value
Vested Benefits				
Actives	229	13,280,682	230	12,932,189
Active Contributions		3,809,295		3,927,794
Subtotal for Actives		$17,089,977		$16,859,983
Inactives	201	33,142,866	208	36,497,088
Inactive Contributions		590,296		625,052
Subtotal for Inactives		$33,733,162		$37,122,140
Total	430	$50,823,139	438	$53,982,123
Non-Vested Benefits		$1,947,162		$2,798,193
Total Present Value Accumulated Benefits		$52,770,301		$56,780,316

The actuarial assumptions used in calculating the Present Value of Accumulated Plan Benefits are described in "Plan Assumptions".

The assumed rate of investment return is 7.00% for October 1, 2019 and 7.25% for October 1, 2018.

Assets and Liabilities presented in this report are based on an "ongoing plan" assumption. Therefore, the values shown in this report should not be used to represent the plan's funded status in the event of plan termination, merger, spin-off, transfer of liabilities, or settlement of benefit obligations.

Reconciliation of Present Value of Accumulated Plan Benefits

Present Value of Accumulated Benefits as of 10/1/2018	$52,770,301
Interest at 7.25%	3,825,847
Benefits Paid and Weighted Interest	(3,617,486)
Benefits Accumulated and Gains/Losses	2,358,514
Present Value of Accumulated Benefits as of 10/1/2019 (before changes)	55,337,176
Plan Amendments	0
Assumption Changes	1,443,140
Present Value of Accumulated Benefits as of 10/1/2019	56,780,316

Section II Deferred Retirement Option Plan Activity

Deferred Retirement Option Plan Activity

October 1, 2018 through September 30, 2019

Name	9/30/2018 Balance	Additions	Investment Return	Distributions	9/30/2019 Balance
Anderson, Samuel	$52,463.20	7,865.28	2,228.27	0.00	$62,556.75
Blair, John	$232,366.32	14,813.28	8,742.95	0.00	$255,922.55
Boland, Joyce	$49,182.99	5,156.40	1,964.24	0.00	$56,303.63
Dufresne, RJ	$351,875.39	8,083.05	(36,691.02)	323,267.42	$0.00
Miller, Mark	$163,521.85	51,462.84	8,461.14	0.00	$223,445.83
Navarro, Anastacio	$101,432.45	3,876.33	0.00	105,308.78	$0.00
Hardy, Phil	$1,809.08	21,708.96	1,282.76	0.00	$24,800.80
Murray, Carl	$17,275.54	22,249.20	1,839.62	0.00	$41,364.36
Williams, Eric M	$5,387.12	31,878.00	1,976.58	0.00	$39,241.70
Total	$975,313.94	$167,093.34	($10,195.46)	$428,576.20	$703,635.62

Section II Participant Data

Lifecount and Data Reconciliation:

Description	Actives	Vested Term	REF of EECs	Inactives	Disabled	Retirees	DROP	Total
Participants 10/1/2018	229	21	50	1	0	120	9	430
New Participant	26		1					27
Vested Term	-2	2						0
Non-Vested Term	-4		5	-1				0
Inactive								0
Rehired	1	-1						0
Disabled								0
Retired	-7	-2				11	-2	0
Transfers	-1			1				0
DROP								0
Cash Out	-12		-5					-17
Death								0
Data Adjustments		1	-1					0
Expired Participants						-2		-2
Participants 10/1/2019	230	21	50	1	0	129	7	438

Active Participant Data Summary	October 1, 2018	October 1, 2019
Average Attained Age	44.0	44.1
Average Service	8.0	8.0
Average Pay	$50,818	$51,941
Total Reported Payroll	$11,637,290	$11,946,517

Non-Active Participant Data Summary	October 1, 2018	October 1, 2019
Average Age - Deferred Benefits[1]	48.7	49.8
Average Age - Receiving Benefits[2]	66.5	67.0
Average Monthly Benefit - Deferred Benefits[1]	$1,611	$1,783
Average Monthly Benefit - Receiving Benefits[2]	$1,802	$1,850

[1] Excludes participants entitled to a refund of employee contributions only.

[2] Includes DROP participants

Section II — Age and Service Distribution

Past Service

Age	0	1	2	3	4	5-10	10-15	15-20	20-25	25-30	30+	Total
15 - 19		1	1	2								4
20 - 24	1	2	5	2								10
25 - 29	3	5	6	3	1	1						19
30 - 34	7	2	1	6	3	6	2					27
35 - 39	3	5	4	3	6	8	5	6				40
40 - 44	1	1	3	1	2	6	6	2	1			23
45 - 49	2	5		5	2	5	4	4	2			29
50 - 54		3	4	2		7	7	5	3	1	2	34
55 - 59		2	1	2	2	9	6	3	1	1	1	28
60 - 64						3		2	4	3		12
65+						2		1	1			4
Total	17	26	25	26	16	47	30	23	12	5	3	230

Eligibility	General Employees become members as a conditon of employment.
Credited Service	Total years and fractional parts of years of contributing service as a General Employee with the City.
Salary	Total W-2 compensation, plus tax deferred, tax-sheltered, and tax-exempt income.
Final Average Earnings	Average salary for the best 5 years during the 10 years preceding retirement or termination.
Member Contributions	All members are required to make contributions in the amount of 4.9%, of compensation, which are designated as employer contributions under 414(h) (contributions are excluded from income for federal income tax purposes).
City and State Contributions	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Part VII of Florida Statutes, Chapter 112.
Form of Annuity	Life Annuity
Benefit Formula	2.75% of Final Average Earnings times Credited Service.
Normal Retirement	
Eligibility	Attainment of age 57 and completion of 5 years of Credited Service
Benefit	2.75% of Final Average Earnings times Credited Service.
Form of Benefit	Life Annuity
Early Retirement	
Eligibility	Age 47 and the completion of 10 years of service.
Benefit	Accrued benefit, reduced 1/15th for each of the first 5 years and 1/30th for each of the next 5 years prior to Normal Retirement.
Vesting	
Schedule	100% after 10 years of Vesting Service.
Benefit	Member will receive the vested portion of his (her) accrued benefit payable at the otherwise Normal Retirement Date.

Disability

Eligibility	Vested Participant
Benefit	Member will receive the vested portion of his (her) accrued benefit payable at the otherwise Normal Retirement Date.

Death Benefits

Pre-Retirement	
Vested	Monthly accrued benefit payable to designated beneficiary for 10 years at Member's Early or Normal Retirement Date.
Non-Vested	Refund of accumulated contributions without interest.
Post-Retirement	Benefits payable to beneficiary in accordance with options selected at retirement.

Board of Trustees

a. Two Council appointees,

b. Two Members of the Department elected by the membership, and

c. Fifth Member elected by other 4 and appointed by Council.

Deferred Retirement Option Plan Activity

Eligibility	Satisfaction of Normal Retirement requirements (Age 57 and 5 years of Credited Service)
Participation	Not to exceed 96 months.
Rate of Return	Actual net rate of investment return (total return net of brokerage commissions, management fees, and transaction costs) credited each fiscal quarter.
Form of Distribution	Cash lump sum at termination of employment (options available).

1. ACTUARIAL COST METHOD

Costs have been computed in accordance with the Entry Age Normal Cost Method and reflect the actuarial assumptions described in "Plan Assumptions" of this report.

NORMAL COST

The Normal Cost is the sum of individual normal costs for all active participations. For an active participant, the Normal Cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

The normal cost accrual rate equals the present value of future benefits for the participant, determined as of the participant's entry age, divided by the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age. In calculating the present value of future compensation, the salary scale must be applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
Entry Age for each participant is defined as the age on the first valuation date following a participants date of employment.

ACTUARIAL ACCRUED LIABILITY

The Actuarial Accrued Liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's Actuarial Accrued Liability equals the present value, at the participant's attained age, of future benefits less, the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's Actuarial Accrued Liability equals the present value, at the beneficiary's attained age, of futurebenefits. The Unfunded Actuarial Accrued Liability equals the total Actuarial Accrued Liability less the Actuarial Value of Assets.

II. ASSET VALUATION METHOD

Assets have been valued using Smoothing Value Method in accordance with generally accepted procedures as described below. The Actuarial Value of Assets in the Plan is determined in the following manner:

Definitions:

j	Assumed growth rate, equal to the annualized of the prior four market value rate of returns
i(t)	Actuarial market value rate of return in Plan Year t
C(t)	Sum of contributions and other additions to the fund from all sources other than investment transactions in Plan Year t
W(t)	Sum of all withdrawals and other decreases to the fund including benefit payments and non investment related expenses from all sources other than investment transactions in Plan Year t
AV(t)	Actuarial Value of Assets as of Plan Year t
T(t)	Transfers of assets during Plan Year t
EV(t)	Expected Value of Assets without interest as of Plan Year t
NII(t)	Net Investment Income during Plan Year t

Method

$$j = [\ (1+i_{t-3}) * (1+i_{t-2}) * (1+i_{t-1}) * (1+i_t)\ ]\ ^\wedge .25$$

$$EV(t) = AV(t-1) + C(t) + T(t) - W(t)$$

$$NII(t) = \frac{[\ AV(t-1) + EV(t)\ ]}{2} * j$$

$$AV(t) = EV(t) + NII(t)$$

Corridor Limits

The resulting actuarial value of assets may not be less than 80% or more than 120% of the current market value of plan assets as of the applicable valuation date.

Mortality Rates

Males

During Employment	RP2000 Generational, 50% Combined White Collar/50% Combined Blue Collar projected with Scale BB
Post Employment	RP2000 Generational, 50% Annuitant White Collar/50% Annuitant Blue Collar projected with Scale BB

Females

During Employment	RP2000 Generational, 100% Combined White Collar projected with Scale BB
Post Employment	RP2000 Generational, 100% Annuitant White Collar projected with Scale BB

Mortality Rates for Disabled Participants

Males	RP2000, Disabled Male set back four years, no projection scale
Females	RP2000, 100% Disabled Female set forward two years, no projection scale

Termination Rates

Age	% Terminating During the Year
20	38.6%
30	19.4%
40	7.3%
50	2.7%
60	1.2%

Disability Rates

Age	% Become Disabled During the Year
20	0.07%
30	0.11%
40	0.19%
50	0.51%
60	1.66%

Retirement Age

Age 57 with 5 years of credited service. Also, any member who has reached Normal Retirement is assumed not to retire within the next year.

Vested terminated participants are assumed to commence benefits on Normal Retirement Date.

Early Retirement

Commencing with the attainment of Early Retirement Status (age 47 with 10 years of service), members are assumed to retire with an immediate subsized benefit at the rate of 2% per year.

Expenses	Equal to the actual expenses incurred in prior year. Thus, this year's Normal Cost includes $61,798 for non-investment expenses.
Investment Return	7.00% per annum, net of investment expenses, compounded annually.
Salary Increases	Salary is assumed to increase at the rate of 5.50% per annum.
Payroll Growth	4.50% per year, but not to exceed the 10 year average annual rate, which for this year is 3.30%.

Fiduciary Investment Review™

Prepared for:

City of Apopka Retirement Plans

December 31, 2019

Presented by:

Lee Shane

Insurance Office of America
1855 West State Road 434
Longwood, FL 32750

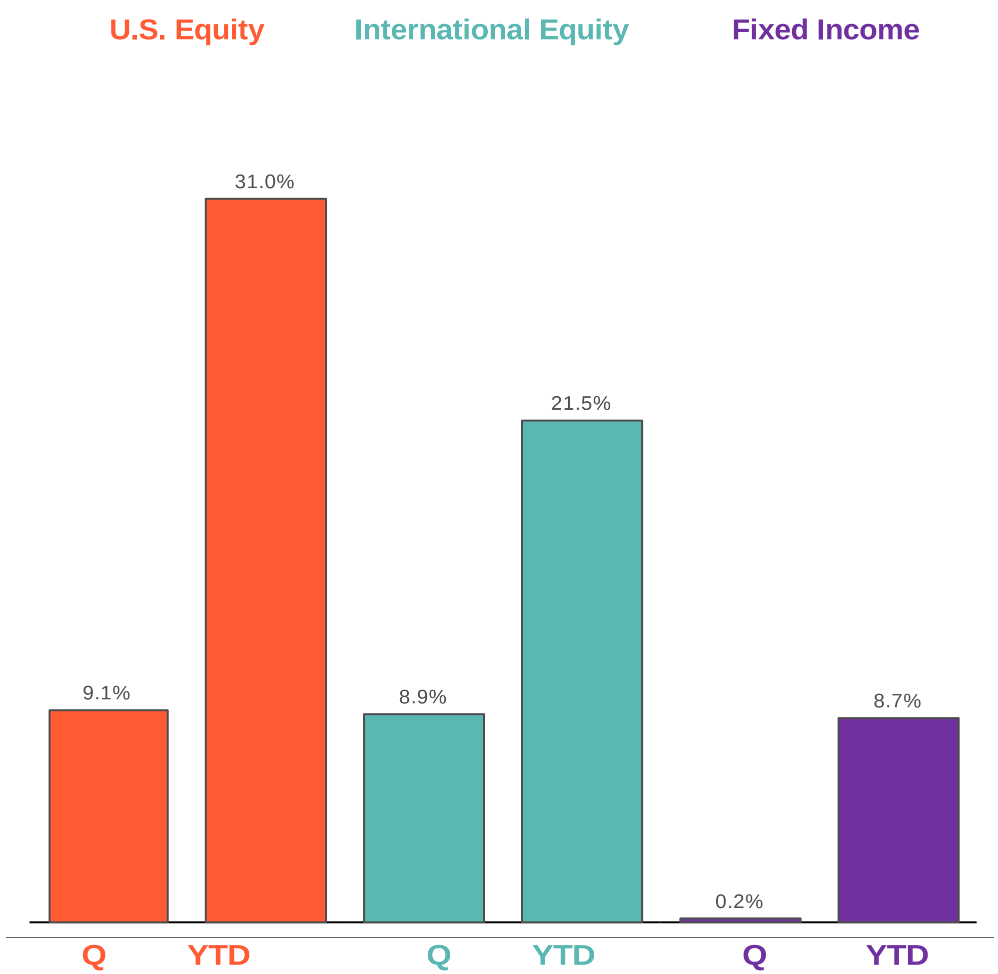
Table of Contents

Q4 2019 Market Review

SUMMARY

- U.S. equity markets finished the year strong, up 9.1% (Russell 3000) in the fourth quarter on improving economic data and trade discussions between China and the U.S.
- International equities rallied as well, posting an 8.9% gain over the quarter (MSCI ACWI ex U.S.).
- The U.S. fixed income market was up slightly with a 0.2% gain for the quarter (Bloomberg Barclays U.S. Aggregate) as market interest rates remained relatively steady quarter-over-quarter.
- The U.S. labor market remained tight with December unemployment at 3.5%.
- U.S. GDP growth was reported up 2.1%, a slight acceleration from the prior quarter.
- Growth stocks continued their outperformance this quarter with the Russell 1000 Growth outperforming the Russell 1000 Value by 3.2%.
- The Federal Reserve cut rates by 0.25% during the quarter and signaled the likelihood of a pause in rate cuts from here.

TRAILING RETURNS (12/31/2019)



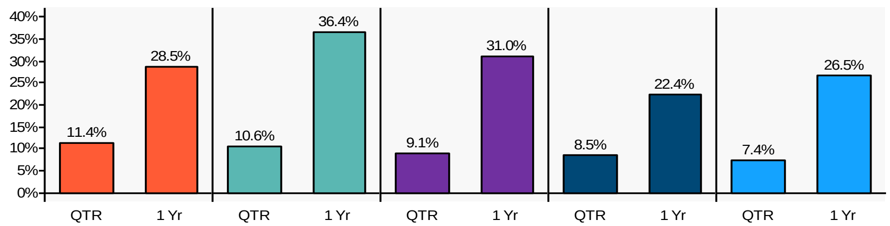
Quarterly and year-to-date returns of the following indices: U.S. Equity (Russell 3000 Index), Fixed Income (Bloomberg Barclays U.S. Aggregate Bond Index) and International Equity (MSCI ACWI ex U.S. Index)

Q4 2019 Market Review - U.S. Equity

U.S. EQUITY

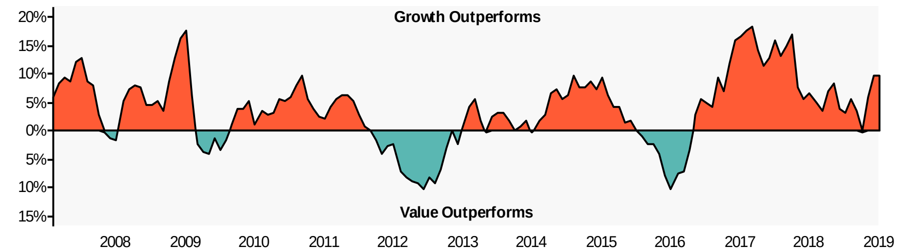
- The broad U.S. equity market, as measured by the Russell 3000 Index, was up 9.1 % for the quarter.
- The best performing U.S. equity index for the quarter was Russell 2000 Growth, returning a positive 11.4%.
- The worst performing U.S. equity index for the quarter was Russell 1000 Value, returning a positive 7.4%.

INDEX PERFORMANCE (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Russell 2000 Growth	11.4	28.5	28.5	12.5	9.3	13.0
Russell 1000 Growth	10.6	36.4	36.4	20.5	14.6	15.2
Russell 3000	9.1	31.0	31.0	14.6	11.2	13.4
Russell 2000 Value	8.5	22.4	22.4	4.8	7.0	10.6
Russell 1000 Value	7.4	26.5	26.5	9.7	8.3	11.8

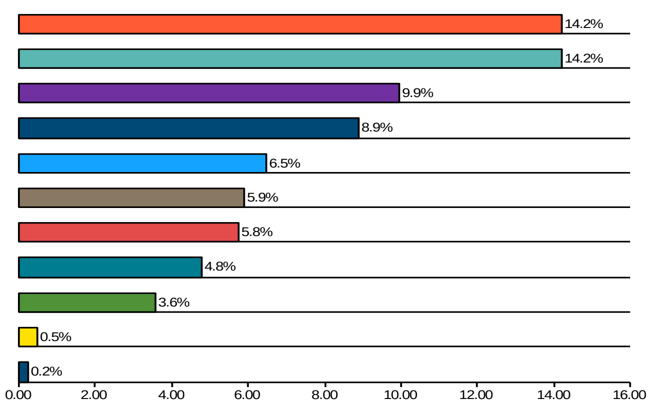
GROWTH VS. VALUE



Over the last year, growth stocks outperformed value stocks by 9.9%. For the trailing quarter, growth stocks outperformed value stocks by 3.2%.

The graph above is plotted using a rolling one-year time period. Growth stock performance is represented by the Russell 1000 Growth Index. Value stock performance is represented by the Russell 1000 Value Index.

SECTOR (Sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Information Technology	14.2	49.7	49.7	26.8	19.9	17.3
Health Care	14.2	20.9	20.9	16.5	10.7	15.2
Financials	9.9	31.2	31.2	11.3	11.2	12.4
Telecommunication Svcs.	8.9	32.2	32.2	4.6	7.8	9.6
Materials	6.5	23.9	23.9	8.5	7.0	9.5
Industrials	5.9	29.8	29.8	10.8	9.8	13.6
Energy	5.8	10.1	10.1	-4.5	-2.9	2.6
Consumer Discretionary	4.8	27.4	27.4	15.6	12.2	16.7
Consumer Staples	3.6	27.0	27.0	9.6	8.1	12.2
Utilities	0.5	25.2	25.2	13.6	10.5	12.2
Real Estate	0.2	28.0	28.0	10.5	8.5	12.8

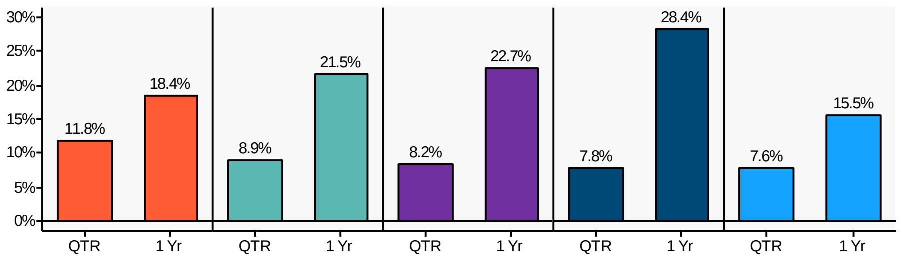
Source: S&P 1500 Sector Indices

Q4 2019 Market Review - International Equity

INTERNATIONAL EQUITY

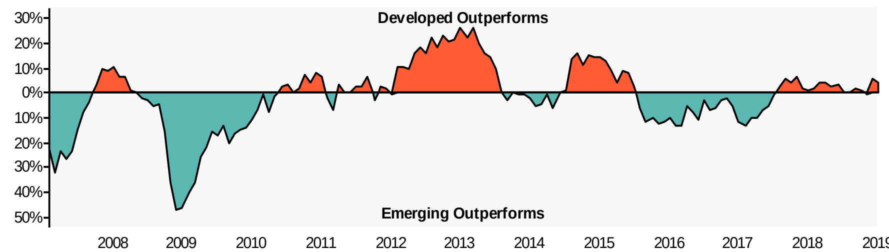
- Developed international equity returned a positive 8.2% in the last quarter (MSCI EAFE).
- Emerging market equity posted a positive 11.8% return (MSCI Emerging Markets Index).

INDEX PERFORMANCE (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
MSCI Emg Markets	11.8	18.4	18.4	11.6	5.6	3.7
MSCI ACWI ex US	8.9	21.5	21.5	9.9	5.5	5.0
MSCI EAFE	8.2	22.7	22.7	10.1	6.2	6.0
MSCI EAFE Large Growth	7.8	28.4	28.4	13.5	7.8	6.9
MSCI EAFE Large Value	7.6	15.5	15.5	5.8	3.0	3.5

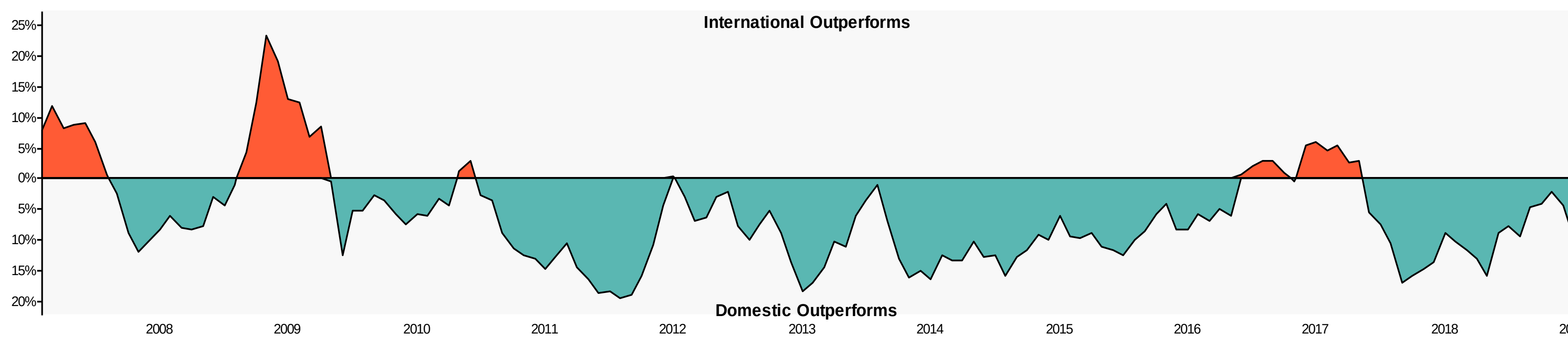
DEVELOPED VS. EMERGING MARKETS



Over the last year, developed international stocks outperformed emerging market stocks by 4.3%.
For the trailing quarter, emerging market stocks outperformed developed international stocks by 3.6%.

The graph above is plotted using a rolling one-year time period. Developed international stock performance is represented by the MSCI EAFE Index. Emerging market stock performance is represented by the MSCI Emerging Markets Index.

INTERNATIONAL VS. DOMESTIC



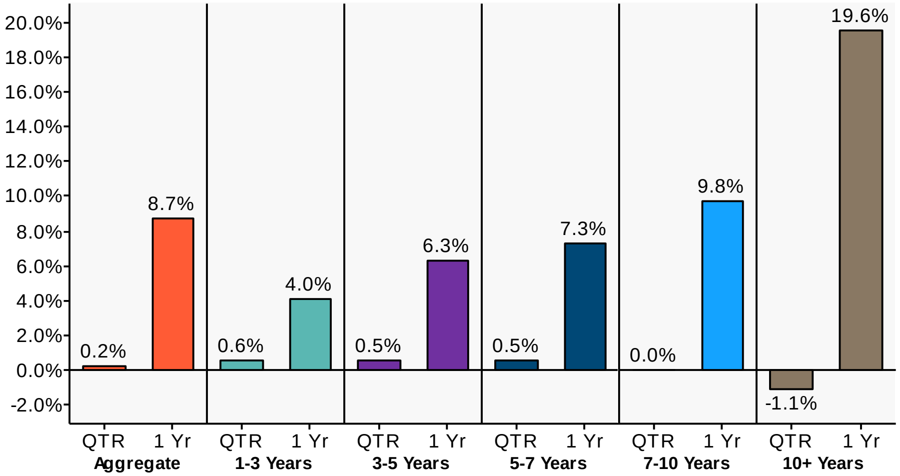
The graph above is plotted using a rolling one-year time period. International stock performance is represented by the MSCI ACWI ex U.S. Index. Domestic stock performance is represented by the Russell 3000 Index.

Q4 2019 Market Review - Fixed Income

FIXED INCOME

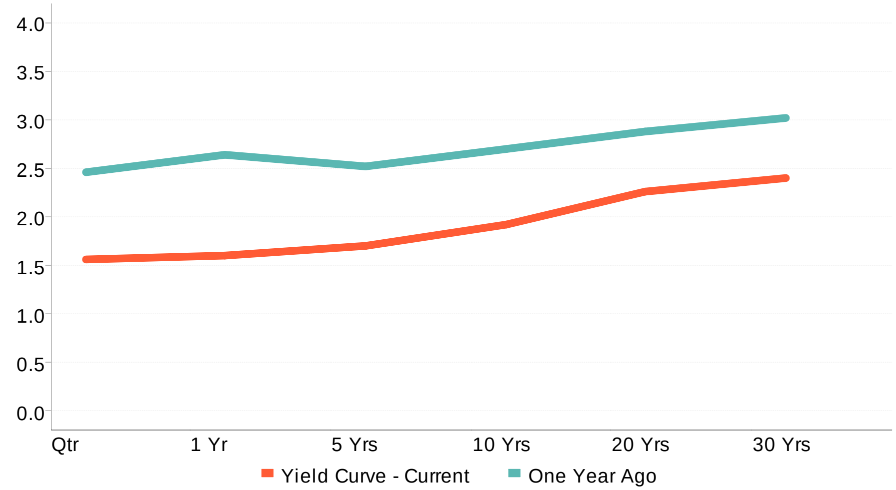
- The broad U.S. fixed income market returned a positive 0.2% (Bloomberg Barclays U.S. Aggregate) for the quarter.
- The best performing sector for the quarter was High Yield Corporate Bond, returning a positive 2.6%. The worst performing sector for the quarter was Government, returning a negative 0.8%.

PERFORMANCE BY MATURITY

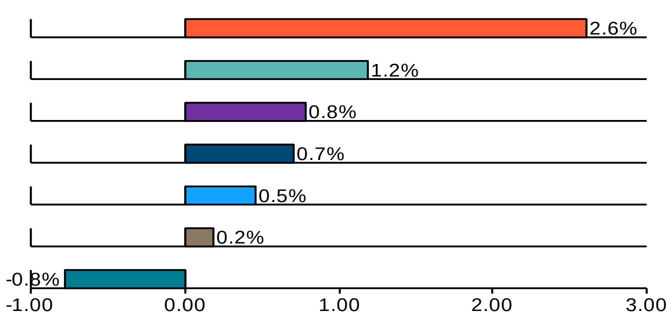


Source: Bloomberg Barclays U.S. Aggregate Indices

YIELD CURVE



SECTOR (Sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
High Yield Corporate Bond	2.6	14.3	14.3	6.4	6.1	7.6
Corporate Investment Grade	1.2	14.5	14.5	5.9	4.6	5.5
TIPS	0.8	8.4	8.4	3.3	2.6	3.4
Mortgage Backed Securities	0.7	6.4	6.4	3.2	2.6	3.2
Cash	0.5	2.3	2.3	1.7	1.1	0.6
Aggregate Bond	0.2	8.7	8.7	4.0	3.0	3.7
Government	-0.8	6.8	6.8	3.3	2.4	3.0

Source: Bloomberg Barclays U.S. Indices

Q4 2019 Market Kaleidoscope

ASSET CLASS RETURNS

The following chart exhibits the volatility of asset class returns from year to year by ranking indices in order of performance, highlighting the importance of diversification.

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
International 41.45	Sm Growth 29.09	Fixed Income 7.84	Global REIT 23.73	Sm Growth 43.30	Global REIT 22.81	Large Growth 5.67	Sm Value 31.74	Large Growth 30.21	Cash 1.87	Large Growth 36.39
Large Growth 37.21	Sm Value 24.50	Large Growth 2.64	Sm Value 18.05	Sm Value 34.52	Large Value 13.45	Global REIT 0.59	Large Value 17.34	International 27.19	Fixed Income 0.01	Sm Growth 28.48
Sm Growth 34.47	Global REIT 23.44	Global REIT 1.70	Large Value 17.51	Large Growth 33.48	Large Growth 13.05	Fixed Income 0.55	Commodities 11.77	Sm Growth 22.17	Large Growth -1.51	Large Value 26.54
Global REIT 33.68	Commodities 16.83	Balanced Index 0.87	International 16.83	Large Value 32.53	Balanced Index 6.61	Cash 0.05	Sm Growth 11.32	Balanced Index 15.46	Global REIT -4.77	Global REIT 24.49
Sm Value 20.58	Large Growth 16.71	Large Value 0.39	Large Growth 15.26	International 15.29	Fixed Income 5.97	Balanced Index -0.62	Balanced Index 7.28	Large Value 13.66	Balanced Index -5.12	Sm Value 22.39
Large Value 19.69	Large Value 15.51	Cash 0.10	Sm Growth 14.59	Balanced Index 13.57	Sm Growth 5.60	Sm Growth -1.38	Large Growth 7.08	Global REIT 8.63	Large Value -8.27	International 21.51
Commodities 18.91	International 11.15	Sm Growth -2.91	Balanced Index 10.55	Global REIT 2.81	Sm Value 4.22	Large Value -3.83	Global REIT 6.90	Sm Value 7.84	Sm Growth -9.31	Balanced Index 21.38
Balanced Index 18.87	Balanced Index 10.74	Sm Value -5.50	Fixed Income 4.22	Cash 0.07	Cash 0.03	International -5.66	International 4.50	Fixed Income 3.54	Commodities -11.25	Fixed Income 8.72
Fixed Income 5.93	Fixed Income 6.54	Commodities -13.32	Cash 0.11	Fixed Income -2.02	International -3.87	Sm Value -7.47	Fixed Income 2.65	Commodities 1.70	Sm Value -12.86	Commodities 7.69
Cash 0.21	Cash 0.13	International -13.71	Commodities -1.06	Commodities -9.52	Commodities -17.01	Commodities -24.66	Cash 0.33	Cash 0.86	International -14.20	Cash 2.28

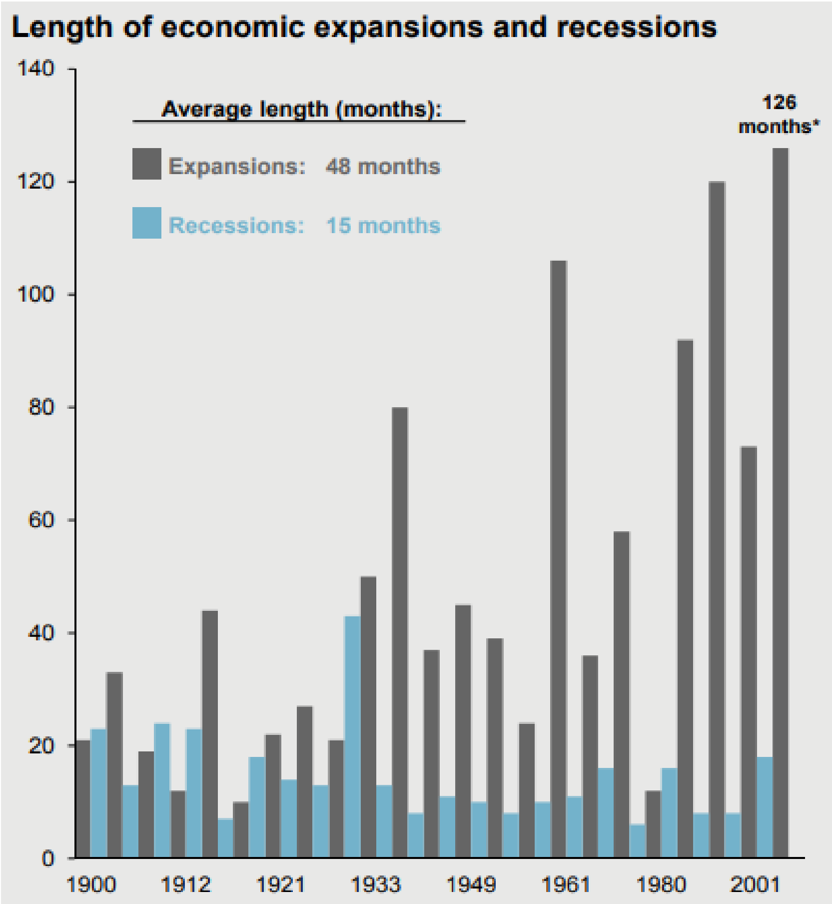
- Large Value (Russell 1000 Value)
- Large Growth (Russell 1000 Growth)
- Small Value (Russell 2000 Value)
- Balanced (40% Russell 3000, 40% Bloomberg Barclay's U.S. Aggregate, 20% MSCI ACWI ex US)
- Small Growth (Russell 2000 Growth)
- International (MSCI ACWI ex-US)
- Fixed Income (Bloomberg Barclays Agg)
- Global REIT (S&P Global REIT)
- Commodities (Bloomberg Commodities)
- Cash (Merrill Lynch 3-Mo T-Bill)

Source: Markov Processes International

Q4 2019 Market Review - Chart of the Quarter

The length and strength of expansions

The current economic expansion that started in July of 2009 has reached record territory in terms of length. Despite that, the current expansion trails several other cycles in magnitude of cumulative GDP growth. Economic cycles typically end when excesses build up in the economy. The muted strength of this recovery may imply this cycle has potential to continue.



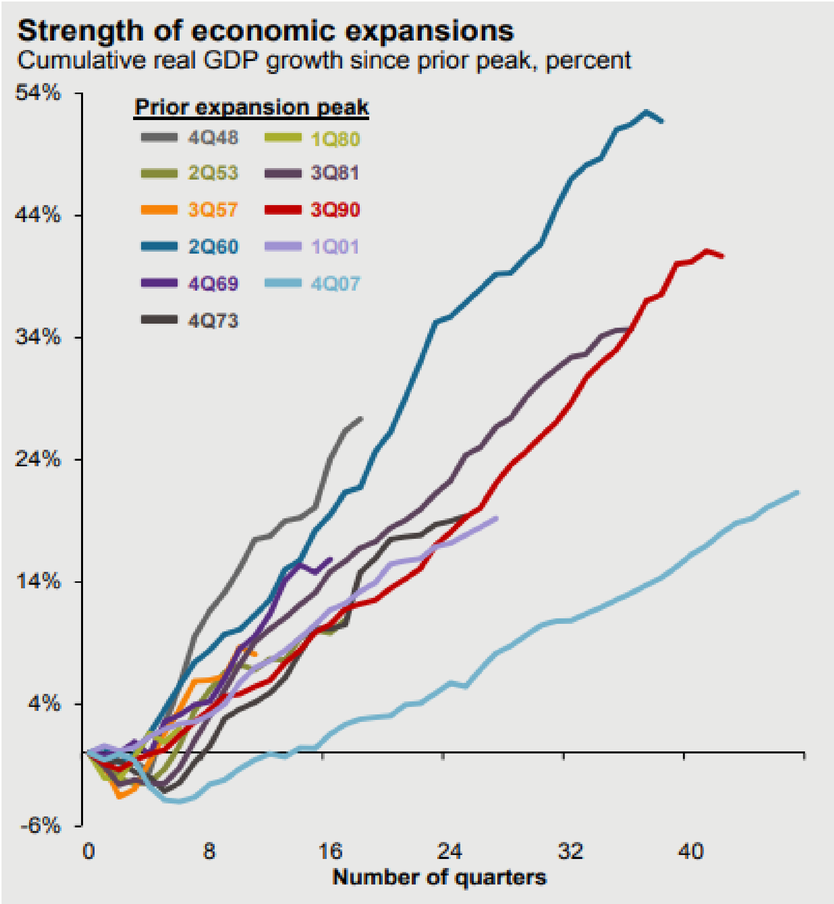


Chart Source: J.P. Morgan Asset Management, BEA, NBER. *Chart assumes expansion started in July 2009.

Q4 2019 Disclosures

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.
Citigroup Corporate Bond is an index which serves as a benchmark for corporate bond performance. You cannot invest directly in an index.

Citigroup Mortgage Master is an index which serves as a benchmark for U.S. mortgage-backed securities performance.

Citigroup WGBI Index is an index which serves as a benchmark for global bond performance, including 22 different government bond markets.

Credit Suisse High Yield Index is an unmanaged, trader priced index constructed to mirror the characteristics of the high yield bond market.

BC (Barclays Capital) U.S. Aggregate Bond Index represents securities that are U. S., domestic, taxable, and dollar denominated. The index covers the U. S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

BC Credit Bond Index includes publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

BC U.S. Corporate Investment Grade represents investment grade corporate securities that are U. S., domestic, taxable, and dollar denominated.

BC High Yield Corporate Bond represents below investment grade corporate securities that are U. S., domestic, taxable, and dollar denominated.
BC TIPS Index includes publicly issued U.S. government treasury inflation protected securities that meet the specified maturity, liquidity and other requirements.

BC Mortgage Backed Securities covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARMs) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

BC Government Index includes publicly issued U.S. government securities that meet the specified maturity, liquidity and other requirements.

BarCap U.S. Aggregate 1-3 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 1 to 3 years.

BarCap U.S. Aggregate 3-5 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 3 to 5 years.

BarCap U.S. Aggregate 5-7 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 5-7 years.

BarCap U.S. Aggregate 7-10 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 7 to 10 years.

BarCap U.S. Aggregate 10+ Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over 10 years.

DJW 5000 (Full Cap) Index measures the performance of all U.S. common equity securities, and serves as an index of all stock trades in the United States.

MSCI FI Emerging Markets is a rules-based index which serves as a benchmark for emerging country fixed income performance.

MSCI FI EAFE International is a rules-based index which serves as a benchmark for developed international country fixed income performance.

MSCI EAFE Index is listed for foreign stock funds (EAFE refers to Europe, Australia, and Far East). Widely accepted as a benchmark for international stock performance, it is an aggregate of 21 individual country indexes.

MSCI EAFE Large Value represents the large cap value stocks within the MSCI EAFE Index.

MSCI EAFE Large Growth represents the large cap growth stocks within the MSCI EAFE Index.

MSCI EM (Emerging Markets) Index serves as a benchmark for each emerging country. The average size of these companies is (U.S.) $400 million, as compared with $300 billion for those companies in the World index.

MSCI World Index is a rules-based index that serves as a benchmark for the developed global equity markets.

MSCI Europe ex UK Index is a rules-based index that serves as a benchmark for the Europe's equity markets, excluding the United Kingdom.

MSCI Pacific ex Japan Index is a rules-based index that serves as a benchmark for Asia Pacific's equity markets, excluding Japan.

MSCI United Kingdom Index is a rules-based index that serves as a benchmark for the United Kindgom's equity markets.MSCI Japan is a rules-based index that serves as a benchmark for Japan's equity markets.

Nareit All Reit Index includes all tax-qualified REITs with common shares that trade on the New York Stock Exchange, the American Stock Exchange or the NASDAQ National Market List.

3-Month T-bills (90 Day T-Bill Index) are government-backed short-term investments considered to be risk-free and as good as cash because the maturity is only three months.

Russell 1000 Growth Index is a market-capitalization weighted index of those firms in the Russell 1000 with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value Index is a market-capitalization weighted index of those firms in the Russell 1000 with lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Growth Index is a market-capitalization weighted index of those firms in the Russell Top 200 with higher price-to-book ratios and higher forecasted growth values.

Russell Top 200 Value Index is a market-capitalization weighted index of those firms in the Russell Top 200 with lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Growth Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratio and higher forecasted growth values.

Russell 2000 Index consists of the smallest 2000 companies in the Russell 3000 Index, representing approximately 7% of the Russell 3000 total market capitalization.

Russell 2000 Value Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratios and lower forecasted growth values.

Russell MidCap Growth Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having higher price-to-book ratios and higher forecasted growth values.

Russell Mid-Cap Index includes firms 201 through 1000, based on market capitalization, from the Russell 3000 Index.

Russell MidCap Value Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap index having lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Index consists of the 200 largest securities in the Russell 3000 Index.

Russell 3000 Index is a market-capitalization weighted index, consisting of 3,000 U.S. common equity securities, reflective of the broad U.S. equity market.

Salomo n 1-10 Yr. Governments is an index which serves as a benchmark for U.S. Government bonds with maturities ranging from 1 to 10 years.

S&P 500 Index measures the performance of the largest 500 U.S. common equity securities, and serves as an index of large cap stocks traded in the United States.

S&P 1500 Energy Index measures the performance of the energy sector in the S&P 1500 Index.

S&P 1500 Industrials measures the performance of the industrial sector in the S&P 1500 Index.

S&P 1500 Financials measures the performance of the financials sector in the S&P 1500 Index.

S&P 1500 Utilities measures the performance of the utilities sector in the S&P 1500 Index.

S&P 1500 Consumer Discretionary Index measures the performance of the consumer discretionary sector in the S&P 1500 Index.

S&P 1500 Consumer Staples Index measures the performance of the consumer staples sector in the S&P 1500 Index.

S&P 1500 Information Technology measures the performance of the information technology sector in the S&P 1500 Index.

S&P 1500 Materials measures the performance of the materials sector in the S&P1500 Index.

S&P 1500 Health Care measures the performance of the health care sector in the S&P 1500 Index.

S&P 1500 Telecommunications Services Index measures the performance of the telecommunications services sector in the S&P 1500 Index.

Q4 2019 Disclosures

General Disclosure:

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Market indexes are included in this report only as context reflecting general market results during the period. Your advisor may provide research on funds that are not represented by such market indexes. Accordingly, no representations are made that the performance or volatility of any fund where your advisor provides research will track or reflect any particular index. Market index performance calculations are gross of management fees.

Research/Outlook Disclosure:

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Scorecard System Methodology™

The **Scorecard System Methodology** incorporates both quantitative and qualitative factors in evaluating fund managers and their investment strategies. The **Scorecard System** is built around pass/fail criteria, on a scale of 0 to 10 (with 10 being the best) and has the ability to measure active, passive and asset allocation investing strategies. Active and asset allocation strategies are evaluated over a five-year time period, and passive strategies are evaluated over a three-year time period.

Eighty percent of the fund's score is quantitative (made up of eight unique factors), incorporating modern portfolio theory statistics, quadratic optimization analysis, and peer group rankings (among a few of the quantitative factors). The other 20 percent of the score is qualitative, taking into account things such as manager tenure, the fund's expense ratio relative to the average fund expense ratio in that asset class category, and the fund's strength of statistics (statistical significance). Other criteria that may be considered in the qualitative score includes the viability of the firm managing the assets, management or personnel issues at the firm, and/or whether there has been a change in direction of the fund's stated investment strategy. The following pages detail the specific factors for each type of investing strategies.

Combined, these factors are a way of measuring the relative performance, characteristics, behavior and overall appropriateness of a fund for inclusion into a plan as an investment option. General fund guidelines are shown in the "Scorecard Point System" table below. The Scorecard Point System is meant to be used in conjunction with our sample Investment Policy Statement, in order to help identify what strategies need to be discussed as a "watch-list" or removal candidate; what strategies continue to meet some minimum standards and continue to be appropriate; and/or identify new top-ranked strategies for inclusion into a plan.

Scorecard Point System	
Good:	9-10 Points
Acceptable:	7-8 Points
Watch:	5-6 Points
Poor:	0-4 Points

Scorecard System Methodology™

Target Date Fund Strategies

Target Date Fund strategies are investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the **Scorecard System** is focused on how well these managers can add value from asset allocation. Asset allocation is measured using our **Asset allocation strategies methodology** and manager selection is measured using either our **Active and/or Passive strategies methodologies**, depending on the underlying fund options utilized within the Target Date Fund strategy.

Risk-based strategies follow the same evaluation criteria and are evaluated on both their asset allocation and security selection.

Weightings	Target Date Fund Strategies	Maximum Points
Asset Allocation Score (Average) 50%	The individual funds in this Score average require five years of time history to be included. See Asset Allocation strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average. The Funds included in this average are from the Conservative, Moderate Conservative, Moderate, Moderate Aggressive and Aggressive categories, where Funds (also referred to as "vintages") are individually Scored according to their standard deviation or risk bucket.	**5**
Selection Score (Average) 50%	**Active strategies:** The individual active funds in this Score average require five years of time history to be Scored. See Active strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average. **Passive strategies:** The individual passive funds in this Score average require three years of time history to be Scored. See Passive strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.	**5**
	Total	**10**

Scorecard System Methodology™

Asset Allocation Strategies

Asset allocation strategies are investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are typically structured in either a risk-based format (the strategies are managed to a level of risk, e.g., conservative or aggressive) or, in an age-based format (these strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the **Scorecard System** is focused on how well these managers can add value, with asset allocation being the primary driver of investment returns and the resulting Score. *Multisector Bond (MSB) asset class* follows the same evaluation criteria with some slightly different tolerance levels where noted. These managers are also evaluated on both their asset allocation and security selection.

Weightings	Asset Allocation Strategies	Maximum Points
Style Factors 30%	**Risk Level:** The fund's standard deviation is measured against the category it is being analyzed in. The fund passes if it falls within the range for that category.	**1**
	Style Diversity: Fund passes if it reflects appropriate style diversity (returns-based) among the four major asset classes (Cash, Fixed Income, U.S. & International Equity) for the given category. *MSB* funds pass if reflect some level of diversity among fixed income asset classes (Cash, U.S. Fixed Income, Non-U.S. Fixed Income and High Yield/Emerging Markets).	**1**
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 90 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	**1**
Risk/Return Factors 30%	**Risk/Return:** Fund passes if its risk is less than the benchmark or its return is greater than the benchmark. Favorable risk/return characteristics are desired.	**1**
	Up/Down Capture Analysis: Measures the behavior of a fund in up and down markets. Fund passes with an up capture greater than its down capture. This analysis measures the relative value by the manager in up and down markets.	**1**
	Information Ratio: Measures a fund's relative risk and return. Fund passes if ratio is greater than 0. This statistic measures the value added above the benchmark, adjusted for risk.	**1**
Peer Group Rankings 20%	**Returns Peer Group Ranking:** Fund passes if its median rank is above the 50th percentile.	**1**
	Sharpe Ratio Peer Group Ranking: Fund passes if its median rank is above the 50th percentile. This ranking ranks risk-adjusted excess return.	**1**
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to manager tenure, fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	**2**
	Total	**10**

Scorecard System Methodology™

Active Strategies

Active strategies are investment strategies where the fund manager is trying to add value and outperform the market averages (for that style of investing). Typically, these investment strategies have higher associated fees due to the active involvement in the portfolio management process by the fund manager(s). For this type of investment strategy, the **Scorecard System** is trying to identify those managers who can add value on a consistent basis within their own style of investing.

Weightings	Active Strategies	Maximum Points
Style Factors 30%	**Style Analysis:** Returns-based analysis to determine the style characteristics of a fund over a period of time. Fund passes if it reflects the appropriate style characteristics. Style analysis helps ensure proper diversification in the Plan.	**1**
	Style Drift: Returns-based analysis to determine the behavior of the fund/manager over multiple (rolling) time periods. Fund passes if the fund exhibits a consistent style pattern. Style consistency is desired so that funds can be effectively monitored within their designated asset class.	**1**
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 80 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	**1**
Risk/Return Factors 30%	**Risk/Return:** Fund passes if its risk is less than the benchmark or its return is greater than the benchmark. Favorable risk/return characteristics are desired.	**1**
	Up/Down Capture Analysis: Measures the behavior of a fund in up and down markets. Fund passes with an up capture greater than its down capture. This analysis measures the relative value by the manager in up and down markets.	**1**
	Information Ratio: Measures a fund's relative risk and return. Fund passes if ratio is greater than 0. This statistic measures the value added above the benchmark, adjusted for risk.	**1**
Peer Group Rankings 20%	**Returns Peer Group Ranking:** Fund passes if its median rank is above the 50th percentile.	**1**
	Information Ratio Peer Group Ranking: Fund passes if its median rank is above the 50th percentile. This ranking ranks risk-adjusted excess return.	**1**
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to manager tenure, fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	**2**
	Total	**10**

Scorecard System Methodology™

Passive Strategies

Passive strategies are investment strategies where the fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager is trying to track/replicate the entire U.S. equity market like the S&P 500) or may be more specific to a particular area of the market (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower fees than active investment strategies due to their passive nature of investing and are commonly referred to as index funds. For this type of investment strategy, the **Scorecard System** is focused on how well these managers track and/or replicate a particular area of the market with an emphasis on how they compare against their peers.

Weightings	Passive Strategies	Maximum Points
Style & Tracking Factors 40%	**Style Analysis:** Returns-based analysis to determine the style characteristics of a fund over a period of time. Fund passes if it reflects the appropriate style characteristics. Style analysis helps ensure proper diversification in the Plan.	**1**
	Style Drift: Returns-based analysis to determine the behavior of the fund/manager over multiple (rolling) time periods. Fund passes if the fund exhibits a consistent style pattern. Style consistency is desired so that funds can be effectively monitored within their designated asset class.	**1**
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 95 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	**1**
	Tracking Error: Measures the percentage of a fund's excess return volatility relative to the benchmark. Fund passes with a tracking error less than 4. This statistic measures how well the fund tracks the benchmark.	**1**
Peer Group Rankings 40%	**Tracking Error Peer Group Ranking:** Fund passes if its median rank is above the 75th percentile.	**1**
	Expense Ratio Peer Group Ranking: Fund passes if its median rank is above the 75th percentile.	**1**
	Returns Peer Group Ranking: Fund passes if its median rank is above the 75th percentile.	**1**
	Sharpe Ratio Peer Group Ranking: Fund passes if its median rank is above the 75th percentile.	**1**
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	**2**
	Total	**10**

Manager Research Methodology

Beyond the Scorecard

The **Scorecard System™** uses an institutional approach which is comprehensive, independent, and utilizes a process and methodology that strives to create successful outcomes for plan sponsors and participants. The **Scorecard** helps direct the additional research the Investment team conducts with fund managers throughout the year. Three of the primary factors that go into the fund manager research are people, process and philosophy.

PEOPLE

Key Factors:

- Fund manager and team experience
- Deep institutional expertise
- Organizational structure
- Ability to drive the process and performance

PROCESS

Key Factors:

- Clearly defined
- Consistent application
- Sound and established
- Clearly communicated
- Successfully executed process

PHILOSOPHY

Key Factors:

- Research and ideas must be coherent and persuasive
- Strong rationale
- Logical and compelling
- Focus on identifying skillful managers

Scorecard System Disclosures

Investment objectives and strategies vary among fund, and may not be similar for funds included in the same asset class.

All definitions are typical category representations. The specific share classes or accounts identified above may not be available or chosen by the Plan. Share class and account availability is unique to the client's specific circumstances. There may be multiple share classes or accounts available to the client from which to choose. All recommendations are subject to vendor/provider approval before implementation into the Plan. The performance data quoted may not reflect the deduction of additional fees, if applicable. If reflected, additional fees would reduce the performance quoted.

Performance data is subject to change without prior notice.

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

The information used in the analysis has been taken from sources deemed to be reliable, including, third-party providers such as *Markov Processes International, Morningstar,* firms who manage the investments, and/or the retirement plan providers who offer the funds.

Every reasonable effort has been made to ensure completeness and accuracy; however, the final accuracy of the numbers and information is the responsibility of the investment manager(s) of each fund and/or the retirement plan providers offering these funds. Discrepancies between the figures reported in this analysis, and those reported by the actual investment managers and/or retirement plan providers, may be caused by a variety of factors, including: Inaccurate reporting by the manager/provider; Changes in reporting by the manager/provider from the time this report was prepared to a subsequent retro-active audit and corrected reporting; Differences in fees and share-classes impacting net investment return; and, Scriveners error by your advisor in preparing this report.

The enclosed Investment Due Diligence report, including the **Scorecard System**, is intended for plan sponsor and/or institutional use only. The materials are not intended for participant use.

The purpose of this report is to assist fiduciaries in selecting and monitoring investment options. A fund's score is meant to be used by the Plan sponsor and/or fiduciaries as a tool for selecting the most appropriate fund.

Fund scores will change as the performance of the funds change and as certain factors measured in the qualitative category change (e.g., manager tenure). Fund scores are not expected to change dramatically from each measured period, however, there is no guarantee this will be the case. Scores will change depending on the changes in the underlying pre-specified Scorecard™ factors.

Neither past performance nor statistics calculated using past performance are guarantees of a fund's future performance. Likewise, a fund's score using the **Scorecard System™** does not guarantee the future performance or style consistency of a fund.

This report was prepared with the belief that this information is relevant to the Plan sponsor as the Plan sponsor makes investment selections.

Fund selection is at the discretion of the investment fiduciaries, which are either the Plan sponsor or the Committee appointed to perform that function.

Cash Equivalents (e.g., money market fund) and some specialty funds are not scored by the **Scorecard System**.

The enclosed Investment Due Diligence report and Scorecard™ is not an offer to sell mutual funds. An offer to sell may be made only after the client has received and read the appropriate prospectus.

For the most current month-end performance, please contact your advisor.

The Strategy Review notes section is for informational purposes only. The views expressed here are those of your advisor and do not constitute an offer to sell an investment. An offer to sell may be made only after the client has received and read the appropriate prospectus.

Carefully consider the investment objectives, risk factors and charges and expenses of the investment company before investing. This and other information can be found in the fund's prospectus, which may be obtained by contacting your Investment Advisor/Consultant or Vendor/Provider. Read the prospectus carefully before investing.

For a copy of the most recent prospectus, please contact your Investment Advisor/Consultant or Vendor/Provider.

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Scorecard™

Core Lineup

Active	Category	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R^2	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q4 2019	Q3 2019	Q2 2019	Q1 2019
Large Cap Value / LSV Asset Management DB	LCV	PR007591.pru	1	1	1	0	0	0	0	1	2	**6**	6	7	7
			-97.4/ 47.1	15.7	95.6	14.2/ 7.7	109.4/ 117.0	-0.16	52.0	50.0		**LCV**	LCV	LCV	LCV
Large Cap Growth/JP Morgan Investment Mgmt DB	LCG	PR007574.pru	1	1	1	1	0	1	1	1	2	**9**	10	10	9
			100.0/ 90.7	7.9	89.7	14.7/ 15.2	106.7/ 108.2	0.12	4.0	5.0		**LCG**	LCG	LCG	LCG
Mid Cap Value / Integrity Fund DB	MCV	PR005302.pru	1	1	1	0	0	0	1	1	2	**7**	7	7	7
			-81.5/ -19.7	9.2	97.1	13.9/ 7.6	108.1/ 111.1	-0.02	22.0	21.0		**MCV**	MCV	MCV	MCV
Mid Cap Growth / Westfield Capital Fund DB	MCG	PR039282.pru	1	1	1	1	1	1	1	1	2	**10**	10	10	10
			72.7/ 14.8	16.7	94.2	13.9/ 13.0	103.6/ 96.2	0.42	31.0	31.0		**MCG**	MCG	MCG	MCG
Small Cap Value / Kennedy Capital Fund DB	SCV	PR007641.pru	1	1	1	0	0	0	0	0	2	**5**	6	7	8
			-59.5/ -92.7	7.7	96.9	16.1/ 5.8	95.5/ 100.9	-0.43	51.0	57.0		**SCV**	SCV	SCV	SCV
Small Cap Growth I (Brown Advisory) DB	SCG	PR042785.pru	1	0	1	1	0	0	0	0	2	**5**	5	5	5
			92.3/ -39.2	25.8	87.1	15.5/ 7.4	81.8/ 86.6	-0.32	93.0	89.0		**SCG**	SCG	SCG	SCG
International Blend / Pictet Asset Management DB	ILCB	PR037006.pru	0	0	1	1	1	1	1	1	2	**8**	8	5	5
			48.1/ 1.1	39.4	91.1	13.0/ 6.4	103.1/ 99.5	0.18	44.0	43.0		**ILCB**	ILCB	ILCB	ILCB
Core Plus Bond / PGIM Fund DB	CFI	PR007521.pru	1	1	1	1	1	1	1	1	2	**10**	10	10	10
			-20.4/ 74.4	14.5	89.3	3.4/ 4.4	122.5/ 97.1	1.16	5.0	2.0		**CFI**	CFI	CFI	CFI
High Grade Bond / GSAM Fund DB	CFI	PR007650.pru	1	1	1	1	1	1	0	1	2	**9**	7	9	9
			-11.9/ 44.4	11.3	97.3	3.0/ 3.1	98.7/ 96.2	0.06	51.0	49.0		**CFI**	CFI	CFI	CFI

Scorecard™

continued

Active	Category	Ticker/ ID	Style: Style	Style: Style Drift	Style: R^2	Risk/Return: Risk/ Return	Risk/Return: Up/ Down	Risk/Return: Info Ratio	Peer Group: Return Rank	Peer Group: Info Ratio Rank	Qual: 2pt Max	Score: Q4 2019	Score: Q3 2019	Score: Q2 2019	Score: Q1 2019
Core Bond Enhanced Index / PGIM Fund DB	CFI	PR008037.pru	1	1	1	0	0	0	0	0	2	**5**	5	5	6
			-12.5/ 43.9	4.3	99.2	3.1/ 2.8	99.4/ 106.6	-0.74	56.0	73.0		**CFI**	CFI	CFI	CFI
Government Securities Enhanced Index / PGIM DB	IG	PR007902.pru	1	1	1	1	0	1	1	1	2	**9**	9	9	9
			98.0/ 96.3	1.4	94.8	3.7/ 2.1	139.6/ 170.7	0.07	31.0	32.0		**IG**	IG	IG	IG

Score History

Core Lineup

Active	Category	Ticker/ ID	Score							
			Q4 2019	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018
Large Cap Value / LSV Asset Management DB	LCV	PR007591.pru	**6**	6	7	7	7	9	10	10
			LCV	LCV	LCV	LCV	LCV	LCV	LCV	LCV
Large Cap Growth/JP Morgan Investment Mgmt DB	LCG	PR007574.pru	**9**	10	10	9	7	9	9	9
			LCG	LCG	LCG	LCG	LCG	LCG	LCG	LCG
Mid Cap Value / Integrity Fund DB	MCV	PR005302.pru	**7**	7	7	7	7	9	9	9
			MCV	MCV	MCV	MCV	MCV	MCV	MCV	MCV
Mid Cap Growth / Westfield Capital Fund DB	MCG	PR039282.pru	**10**	10	10	10	10	10	10	9
			MCG	MCG	MCG	MCG	MCG	MCG	MCG	MCG
Small Cap Value / Kennedy Capital Fund DB	SCV	PR007641.pru	**5**	6	7	8	8	9	10	10
			SCV	SCV	SCV	SCV	SCV	SCV	SCV	SCV
Small Cap Growth I (Brown Advisory) DB	SCG	PR042785.pru	**5**	5	5	5	5	5	5	5
			SCG	SCG	SCG	SCG	SCG	SCG	SCG	SCG
International Blend / Pictet Asset Management DB	ILCB	PR037006.pru	**8**	8	5	5	5	8	9	9
			ILCB	ILCB	ILCB	ILCB	ILCB	ILCB	ILCB	ILCB
Core Plus Bond / PGIM Fund DB	CFI	PR007521.pru	**10**	10	10	10	10	10	10	10
			CFI	CFI	CFI	CFI	CFI	CFI	CFI	CFI
High Grade Bond / GSAM Fund DB	CFI	PR007650.pru	**9**	7	9	9	8	9	10	10
			CFI	CFI	CFI	CFI	CFI	CFI	CFI	CFI

Score History

continued

Active	Category	Ticker/ ID	Score							
			Q4 2019	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018
Core Bond Enhanced Index / PGIM Fund DB	CFI	PR008037.pru	**5**	5	5	6	6	6	6	6
			CFI	CFI	CFI	CFI	CFI	CFI	CFI	CFI
Government Securities Enhanced Index / PGIM DB	IG	PR007902.pru	**9**	9	9	9	9	9	9	8
			IG	IG	IG	IG	IG	IG	IG	IG

Summary of Considerations

Watchlist	Asset Class	Fund	Assets	Score
🚩	LCV	Large Cap Value / LSV Asset Management DB	$0.00	6
🚩	SCV	Small Cap Value / Kennedy Capital Fund DB	$0.00	5
🚩	SCG	Small Cap Growth I (Brown Advisory) DB	$0.00	5
🚩	ILCB	International Blend / Pictet Asset Management DB	$0.00	8
🚩	CFI	Core Bond Enhanced Index / PGIM Fund DB	$0.00	5

Considerations: Add Delete Watchlist

Glossary

Active strategies: investment strategies where the fund manager is trying to add value and outperform the market averages (for that style of investing). Typically, these investment strategies have higher associated costs due to the active involvement in the portfolio management process by the fund manager(s). For this type of investment strategy, the **Scorecard System™** is trying to identify those managers who can add value on a consistent basis within their own style of investing.
Alpha: a measure used to quantify a fund manager's value added. Alpha measures the difference between a portfolio's actual returns and what it might be expected to deliver based on its level of risk. A positive alpha means the fund has beaten expectations and implies a skillful manager. A negative alpha means that the manager failed to match performance with the given risk level.
Asset allocation strategies: investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are typically structured in either a risk-based format (the strategies are managed to a level of risk, e.g., conservative or aggressive) or, in an age-based format (these strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the Scorecard System is focused on how well these managers can add value from both asset allocation and manager selection.
Beta: a measure of risk that gauges the sensitivity of a manager to movements in the benchmark (market). If the market returns change by some amount x, then the manager returns can be expected to change by Beta times x. A Beta of 1 implies that you can expect the movement of a fund's return series to match that of the benchmark. A portfolio with a beta of 2 would move approximately twice as much as the benchmark.
Downside deviation: also referred to as downside risk. The downside standard deviation shows the average size of the deviations (from the mean) when the return is negative.
Excess return: the difference between the returns of a mutual fund and its benchmark.
Explained variance: the explained variance measures the variance of the fund that is explained by the benchmark (similar to the R-squared statistic).
Information ratio: a measure of the consistency of excess return. The ratio is calculated by taking the annualized excess return over a benchmark (numerator) and dividing it by the standard deviation of excess return (denominator). The result is a measure of the portfolio management's performance against risk and return relative to a benchmark. This is a straightforward way to evaluate the return a fund manger achieves, given the risk they take on.
Median rank: refers to the midpoint of the range numbers that are arranged in order of value (lowest to highest).
Passive strategies: investment strategies where the fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager is trying to track/replicate the entire U.S. equity market like the S&P 500) or may be more specific to a particular area of the market (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower costs than active investment strategies due to their passive nature of investing and are commonly referred to as index funds. For this type of investment strategy, the Scorecard System is focused on how well these managers track and/or replicate a particular area of the market with an emphasis on how they compare against their peers.
R-squared: measures (on a scale of 0 t o100) the amount of movement of a fund's return that can be explained by that fund's benchmark. An R-squared of 100 means that all movements of a fund are completely explained by movements in the associated index (benchmark).
Returns-based style analysis: uses a fund's return series to help identify the style of the fund. This is done by comparing those returns across a specific time period to a series of index returns of various styles (Large Cap Growth, Small Cap Value, etc.) over the same period. Through quadratic optimization, the best fit style is calculated. Once the best fit is found, the fund's style can then be analyzed and weightings toward each asset class can be made.
Sharpe ratio: a ratio developed by Bill Sharpe to measure risk-adjusted performance. It is calculated by subtracting the risk-free rate from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns to measure reward on a per unit of risk basis. For example, if a bond fund returns 6% and has a standard deviation of 4% and the risk-free rate is 2% then the Sharpe Ratio for this fund will be 1. (6-2)/4=1.
Significance level: indicates the level of confidence (on a percentage basis) with which the statement "the manager's annualized excess return over the benchmark is positive" or "the manager's annualized excess return over the benchmark is negative," as the case may be, holds true.
Standard deviation: of return measures the average deviations of a return series from its mean (average) return. A large standard deviation implies that there have been large swings in the return series of the manager. The larger the swing, the more volatile the fund's returns and hence more implied risk. For smaller swings the opposite is true. Standard deviation helps us analyze risk by revealing how much the return on the fund is deviating.
Style drift: is the tendency of a fund to deviate from its investment style over time is style drift. This generally occurs because of a change in the fund's strategy, the manager's philosophy or even a portfolio manager change. During the 1990's dotcom boom, for example, many managers – regardless of the strategies they were initially bound by – were able to justify buying tech stocks for their portfolio, in hopes of capitalizing on the tech boom in the market at that time. Consequently, their styles "drifted" from their original strategy.
Tracking error: refers to the standard deviation of excess returns or the divergence between the return behavior of a portfolio and the return behavior of a benchmark. Tracking error is reported as a "standard deviation percentage" difference that accounts for the volatility between the return of a fund versus its benchmark.
Volatility of rank: is measured by taking the median of a series of numbers, or taking the absolute value of the distance of each individual number to that median, then finding the median of those distances. Volatility is used because it makes a better companion to the median than the standard deviation. Standard deviation is commonly used when measuring volatility around the mean (average), while volatility of rank is used for medians.
Up/Down capture: a measure of how well a manager was able to replicate or improve on periods of positive benchmark returns, and how badly the manager was affected by periods of negative benchmark returns. For example, if a fund has an up capture of 120 that means that the fund goes up 12% when the benchmark moves up 10%. The same fund has a down capture of 90 so that means the fund returns a -9% when the benchmark returns a -10%.

Asset Class Definitions

Conservative (CON): a diversified asset allocation strategy including equity with an emphasis on fixed income. Demonstrates a lower overall volatility (risk) level when compared to the other asset allocation categories.
Moderate Conservative (MC): a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON, but lower volatility level when compared to MOD, MA and AGG.
Moderate (MOD): a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON and MC, but lower volatility level when compared to MA and AGG.
Moderate Aggressive (MA): a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON, MC and MOD, but lower volatility level when compared to AGG.
Aggressive (AGG): a diversified asset allocation strategy including fixed income with an emphasis on equity. Demonstrates a higher overall volatility (risk) level when compared to the other asset allocation categories.
Large Cap Value (LCV): large capitalization companies who have lower prices in relation to their earnings or book value.
Large Cap Blend (LCB): large capitalization companies who display both value and growth-like characteristics.
Large Cap Growth (LCG): large capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher forecasted or expected growth rate.
Mid Cap Value (MCV): mid-capitalization companies who have lower prices in relation to their earnings or book value.
Mid Cap Blend (MCB): mid-capitalization companies who display both value and growth-like characteristics.
Mid Cap Growth (MCG): mid-capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher expected growth rate.
Small Cap Value (SCV): small capitalization companies who have lower prices in relation to their earnings or book value.
Small Cap Blend (SCB): small capitalization companies who display both value and growth-like characteristics.
Small Cap Growth (SCG): small capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher forecasted or expected growth rate.
SMid Value (SMCV): includes any fund categorized as SCV or MCV within Morningstar and whose primary prospectus benchmark is the Russell 2500 Value, which consists primarily of small and mid-capitalization companies who have lower prices in relation to their earnings or book value.
SMid Growth (SMCG): includes any fund categorized as SCG or MCG within Morningstar and whose primary prospectus benchmark is the Russell 2500 Growth, which consists primarily of small and mid-capitalization companies who have higher prices in relation to their earnings or book value, generally due to a higher forecasted or expected growth rate.
SMid Blend (SMCB): includes any fund categorized as SCB or MCB within Morningstar and whose primary prospectus benchmark is the Russell 2500, which consists primarily of small and mid-capitalization companies who display both value and growth-like characteristics.
Bank Loans (BL): an array of loans to corporations made by banks and other financial outfits that do not pay a fixed interest rate, but rather an adjustable one and are therefore often referred to as floating rate loans.
International Equity (IE): includes any fund whose primary prospectus benchmark is the MSCI ACWI ex USA, which includes both developed and emerging markets, and is intended to provide a broad measure of stock performance throughout the world, with the exception of U.S. based companies.
International Large Cap Value (ILCV): primarily large capitalization foreign companies displaying both value-like characteristics.
International Large Cap Blend (ILCB): primarily large capitalization foreign companies displaying both value and growth-like characteristics.
International Large Cap Growth (ILCG): primarily large capitalization foreign companies displaying growth-like characteristics.
International Small-Mid Cap Value (ISMCP): primarily small and mid-capitalization foreign companies displaying both value-like characteristics.
International Small-Mid Cap Growth (ISMG): primarily small and mid-capitalization foreign companies displaying both growth-like characteristics.
Emerging Market Equity (EME): foreign companies in countries that are not considered to have fully developed markets or economies.
Global Equity (GE): large capitalization domestic and foreign companies displaying both value and growth-like characteristics.
Core Fixed Income (CFI): domestic fixed income securities representing a broad array of fixed income securities including government, credit and mortgage-backed securities.
Intermediate Government (IG): domestic Government or Government-backed fixed income securities.
U.S. Government TIPS (UGT): treasury inflation protected securities which are Government securities designed to offer inflation protection by adjusting the principal based on changes in the Consumer Price Index.
Short-Term Bond (STB): a broad array of fixed income securities that have short durations and/or maturities (typically 1-3 years).
High Yield (HY): below investment grade domestic fixed income securities, which have a higher likelihood of default.
Global Fixed Income (GFI): a broad array of fixed income securities across many different countries.
Multisector Bond (MB): a broad array of fixed income securities across many different sectors including domestic government, corporate, sovereign and emerging markets debt. They generally have a few limitations when it comes to domicile, sectors, maturities or credit ratings.
Specialty Fixed Income (SFI): a particular segment of the stock market focused on utility companies.
Stable Value (SV): a conservative fixed income strategy that is designed to preserve capital.
Money Market (MM): conservative, short-term oriented money market securities.
Guaranteed Investment Contract (GIC): products that have some type of guarantee from the issuer or provider.
REIT (RE): real estate securities traded on a stock exchange.
Technology (TEC): a particular segment of the stock market focused on technology related companies.
Natural Resources (NR): a particular segment of the stock market focused on natural resource related companies.
HealthCare (HC): a particular segment of the stock market focused on healthcare related companies.
Communication (COM): a particular segment of the stock market focused on communications related companies.
Financial Services (FS): a particular segment of the stock market focused on financial services related companies.
Utilities (UTI): a particular segment of the stock market focused on utility companies.
Specialty (SPC): a unique area of the market
-P: Asset class abbreviations with a “-P” after the abbreviation indicate that the strategy was classified as passively managed. When not indicated, all other strategies are classified as actively managed an/or asset allocation.

CITY OF APOPKA
GENERAL EMPLOYEES' RETIREMENT TRUST FUND

ACTUARIAL IMPACT STATEMENT
February 10, 2020
(Page 1)

This statement outlines the projected impact on the Total Required Contribution (per Chapter 112, Florida Statutes) and the Required City Contribution resulting from the following proposed amendments to the Code of Ordinances, Chapter 54, Sections 19, 24, and 44.

1.) Sec. 54-19. – Definitions.
    a. The proposed definition amendments do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.
2.) Sec. 54-24. - Benefit amounts and eligibility.
    a. The proposed amendment to the provisions of coordination of benefits does not substantiate any changes to our valuation assumptions or methods and therefore has no impact on the plan's projected Total Required Contribution.
3.) Sec. 54-44. - Deferred retirement option plan
    a. The proposed amendment to the DROP provisions do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.

*Please also note that all assumptions and methods used in the Impact Statement are the same as those reflected in the 10/1/2019 Actuarial Valuation Report.

CITY OF APOPKA
GENERAL EMPLOYEES' RETIREMENT TRUST FUND

ACTURIAL IMPACT STATEMENT

February 10, 2020
(Page 2)

The changes presented are in compliance with Part VII, Chapter 112, Florida Statutes and Section 14, Article X of the State Constitution.

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David V. Pappalardo, FSA, EA, FCA, MAAA
Enrolled Actuary #17-5283

STATEMENT OF PLAN ADMINISTRATOR

The prepared information presented reflects the cost of the benefit improvement.

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Chairman, Board of Trustees

CITY OF APOPKA
MUNICIPAL POLICE OFFICERS' RETIREMENT TRUST FUND

ACTUARIAL IMPACT STATEMENT
February 10, 2020
(Page 1)

This statement outlines the projected impact on the Total Required Contribution (per Chapter 112, Florida Statutes) and the Required City Contribution resulting from the following proposed amendments to the Code of Ordinances, Chapter 54, Sections 119, 124, 125, and 146.

1.) Sec. 54-119. - Definitions and rules of construction
    a. The proposed definition amendments do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.
2.) Sec. 54-124. - Benefit amounts and eligibility.
    a. The proposed amendment to the provisions of coordination of benefits does not substantiate any changes to our valuation assumptions or methods and therefore has no impact on the plan's projected Total Required Contribution.
3.) Sec. 54-125. - Pre-retirement death.
    a. The proposed addition of a line-of-duty death benefit equal to 100% of the participant's monthly salary, payable as a life annuity for married participants and a 20-year temporary life annuity for single participants, will have the following impact on the plan's projected Total Required Contribution.

	Prior	Proposed	Change
Total Required Contribution	$2,851,746	$2,869,848	$18,102
Assumed State Contribution	$462,900	$462,900	$0
Estimated Employee Contribution	$597,476	$597,476	$0
Estimated Employer Contribution	$1,791,370	$1,809,472	$18,102

4.) Sec. 54-146. - Deferred retirement option plan
    a. The proposed amendment to the DROP provisions do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.

*Please also note that all assumptions and methods used in the Impact Statement are the same as those reflected in the 10/1/2019 Actuarial Valuation Report.

CITY OF APOPKA
MUNICIPAL POLICE OFFICERS' RETIREMENT TRUST FUND

ACTURIAL IMPACT STATEMENT

February 10, 2020
(Page 2)

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David V. Pappalardo
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David V. Pappalardo, FSA, EA, FCA, MAAA
Enrolled Actuary #17-5283

STATEMENT OF PLAN ADMINISTRATOR

The prepared information presented reflects the cost of the benefit improvement.

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Chairman, Board of Trustees

CITY OF APOPKA
MUNICIPAL FIREFIGHTERS' RETIREMENT TRUST FUND

ACTUARIAL IMPACT STATEMENT
February 10, 2020
(Page 1)

This statement outlines the projected impact on the Total Required Contribution (per Chapter 112, Florida Statutes) and the Required City Contribution resulting from the following proposed amendments to the Code of Ordinances, Chapter 54, Sections 66, 71, 72, 73, and 93.

1.) Sec. 54-66. - Definitions and rules of construction
    a. The proposed definition amendments do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.
2.) Sec. 54-71. - Benefit amounts and eligibility.
    a. The proposed amendment to the provisions of coordination of benefits does not substantiate any changes to our valuation assumptions or methods and therefore has no impact on the plan's projected Total Required Contribution.
3.) Sec. 54-72. - Pre-retirement death.
    a. The proposed addition of a line-of-duty death benefit equal to 100% of the participant's monthly salary, payable as a life annuity for married participants and a 20-year temporary life annuity for single participants, will have the following impact on the plan's projected Total Required Contribution.

	Prior	Proposed	Change
Total Required Contribution	$2,497,120	$2,506,256	$9,136
Assumed State Contribution	$294,800	$294,800	$0
Estimated Employee Contribution	$683,343	$683,343	$0
Estimated Employer Contribution	$1,518,977	$1,528,113	$9,136

4.) Sec. 54-73. - Disability
    a. The proposed amendment to the disability provisions to address disability resulting from cancer do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.
5.) Sec. 54-93. - Deferred retirement option plan
    a. The proposed amendment to the DROP provisions do not substantiate any changes to our valuation assumptions or methods and therefore have no impact to the plan's projected Total Required Contribution.

*Please also note that all assumptions and methods used in the Impact Statement are the same as those reflected in the 10/1/2019 Actuarial Valuation Report.

CITY OF APOPKA
MUNICIPAL FIREFIGHTERS' RETIREMENT TRUST FUND

ACTURIAL IMPACT STATEMENT

February 10, 2020
(Page 2)

The changes presented are in compliance with Part VII, Chapter 112, Florida Statutes and Section 14, Article X of the State Constitution.

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David V. Pappalardo, FSA, EA, FCA, MAAA
Enrolled Actuary #17-5283

STATEMENT OF PLAN ADMINISTRATOR

The prepared information presented reflects the cost of the benefit improvement.

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Chairman, Board of Trustees