

December 31, 2020

**CO Public School Permanent Fund**



**Investment Measurement Service  
Quarterly Review**

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## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2020, with the distribution as of September 30, 2020. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

	December 31, 2020			Inv. Return	September 30, 2020	
	Market Value	Weight	Net New Inv.		Market Value	Weight
<b>Total Equity</b>	<b>\$288,471,936</b>	<b>21.84%</b>	<b>\$(1,840,728)</b>	<b>\$38,660,731</b>	<b>\$251,651,933</b>	<b>19.62%</b>
<b>Domestic Equity</b>	<b>\$172,735,823</b>	<b>13.08%</b>	<b>\$(685,350)</b>	<b>\$22,182,170</b>	<b>\$151,239,002</b>	<b>11.79%</b>
iShares S&P 1500 ETF (1)	172,735,823	13.08%	(685,350)	22,182,170	151,239,002	11.79%
<b>International Equity</b>	<b>\$115,600,442</b>	<b>8.75%</b>	<b>\$(1,155,358)</b>	<b>\$16,478,556</b>	<b>\$100,277,245</b>	<b>7.82%</b>
iShares MSCI Emerging ETF (1)	34,422,088	2.61%	(401,424)	5,528,119	29,295,393	2.28%
iShares MSCI Canada ETF (1)	9,508,188	0.72%	(118,805)	1,176,298	8,450,695	0.66%
iShares Core MSCI EAFE ETF (1)	71,670,166	5.43%	(635,129)	9,774,138	62,531,157	4.88%
Equity Cash	135,671	0.01%	(20)	5	135,686	0.01%
<b>Total Fixed Income</b>	<b>\$965,094,512</b>	<b>73.07%</b>	<b>\$27,020,617</b>	<b>\$4,789,197</b>	<b>\$933,284,698</b>	<b>72.76%</b>
<b>Market Duration</b>	<b>\$867,784,880</b>	<b>65.70%</b>	<b>\$27,614,863</b>	<b>\$3,834,907</b>	<b>\$836,335,110</b>	<b>65.21%</b>
Colorado Treasurer's Portfolio	867,784,880	65.70%	27,614,863	3,834,907	836,335,110	65.21%
<b>Short Duration</b>	<b>\$97,309,632</b>	<b>7.37%</b>	<b>\$(594,246)</b>	<b>\$954,290</b>	<b>\$96,949,587</b>	<b>7.56%</b>
Janus Henderson Short Duration (2)	97,309,632	7.37%	(594,246)	954,290	96,949,587	7.56%
<b>High Income Strategies</b>	<b>\$67,109,481</b>	<b>5.08%</b>	<b>\$(186,471)</b>	<b>\$3,076,589</b>	<b>\$64,219,362</b>	<b>5.01%</b>
<b>High Yield Fixed Income</b>	<b>\$57,408,326</b>	<b>4.35%</b>	<b>\$(110,908)</b>	<b>\$2,664,455</b>	<b>\$54,854,779</b>	<b>4.28%</b>
Mackay Shield US High Yield (3)	57,408,326	4.35%	(110,908)	2,664,455	54,854,779	4.28%
<b>Preferred Securities</b>	<b>\$9,701,155</b>	<b>0.73%</b>	<b>\$(75,563)</b>	<b>\$412,134</b>	<b>\$9,364,583</b>	<b>0.73%</b>
Principal Preferred Securities (3)	9,701,155	0.73%	(75,563)	412,134	9,364,583	0.73%
<b>Cash Available For Investing</b>	<b>\$53,337</b>	<b>0.00%</b>	<b>\$(33,432,211)</b>	<b>\$36,438</b>	<b>\$33,449,110</b>	<b>2.61%</b>
<b>Total Fund</b>	<b>\$1,320,729,265</b>	<b>100.0%</b>	<b>\$(8,438,793)</b>	<b>\$46,562,955</b>	<b>\$1,282,605,103</b>	<b>100.0%</b>

(1) Funded in December 2017.

(2) Funded in November 2018.

(3) Funded in July 2020.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2020. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2020

	Last Quarter	Year to Date	Last 5 Years	Last 10 Years
<b>Total Equity</b>	<b>15.39%</b>	<b>16.61%</b>	-	-
60% Russell 3000/40% ACWI ex US	15.61%	16.75%	12.84%	10.24%
<b>Domestic Equity</b>	<b>14.68%</b>	<b>20.80%</b>	-	-
Russell 3000 Index	14.68%	20.89%	15.43%	13.79%
<b>International Equity</b>	<b>16.48%</b>	<b>10.62%</b>	-	-
MSCI ACWI ex US	17.01%	10.65%	8.93%	4.92%
<b>Total Fixed Income</b>	<b>0.49%</b>	<b>7.63%</b>	<b>4.25%</b>	<b>3.59%</b>
Total Fixed Income Benchmark (1)	0.62%	7.08%	3.97%	3.23%
<b>Market Duration</b>	<b>0.44%</b>	<b>7.94%</b>	<b>4.40%</b>	<b>3.67%</b>
Colorado Treasurer's Portfolio (2)	0.44%	7.94%	4.40%	3.67%
PSPF Custom Benchmark (3)	0.67%	7.51%	4.14%	3.32%
<b>Short Duration</b>	<b>0.99%</b>	<b>4.87%</b>	-	-
Janus Henderson Short Duration	0.99%	4.87%	-	-
Blmbg Gov/Cred 1-3 Yr	0.21%	3.33%	2.21%	1.60%
85% 1-3YR G/C; 15% 1-3YR BB (4)	0.71%	3.74%	2.72%	2.15%
<b>High Income Strategies</b>	<b>4.83%</b>	-	-	-
High Income Strategies Benchmark (5)	6.27%	7.19%	8.34%	-
<b>High Yield Fixed Income</b>	<b>4.86%</b>	-	-	-
Mackay Shield US High Yield	4.86%	-	-	-
Blmbg High Yield	6.45%	7.11%	8.59%	6.80%
<b>Preferred Securities</b>	<b>4.63%</b>	-	-	-
Principal Preferred Securities	4.63%	-	-	-
ICE BofA US All Cap Secs	5.22%	7.63%	6.92%	-
<b>Total Fund w/o CAI (6)</b>	<b>3.64%</b>	<b>9.68%</b>	<b>4.87%</b>	<b>3.90%</b>
Total Fund Benchmark (6)	3.90%	10.31%	4.95%	3.71%

(1) Total Fixed Income Benchmark consists of 100% PSPF Fixed Income Benchmark through December 31, 2018 and 90% Bloomberg Barclays U.S. Aggregate and 10% Bloomberg Barclays Gov/Credit 1-3 Yrs, thereafter.

(2) Includes cash returns starting July 2017.

(3) The PSPF Fixed Income Portfolio Custom Benchmark consisted of 37% U.S. Treasury 1-10 Year Index, 34% Mortgages 0-10 Year WAL Index, 19% AAA U.S. Agencies 1-10 Year Index and 10% U.S. Corporates AAA Rated 1-10 Years Index through March 31, 2017, 100% Bloomberg Barclays U.S. Aggregate, thereafter.

(4) Benchmark consists of 85% Bloomberg Barclays 1-3 Year Government/Credit Index and 15% BofAML 1-3 Year BB US Cash Pay High Yield Index.

(5) Benchmark consists of 85% Blmbg High Yield Index and 15% ICE BofA US All Cap Secs Index.

(6) Total Fund Benchmark consists of 100% PSPF Fixed Income Benchmark through December 31, 2017, 12% Russell 3000, 80% Bloomberg Barclays U.S. Aggregate, 8% MSCI ACWI ex US Index from December 31, 2017 through December 31, 2018, and 12% Russell 3000, 8% MSCI ACWI ex US Index, 72% Bloomberg Barclays U.S. Aggregate, 8% Bloomberg Barclays Gov/Credit 1-3 Yrs from December 31, 2018 through September 30, 2020 and 12.0% Russell 3000, 8.0% MSCI ACWI ex US, 67.5% Bloomberg Barclays U.S. Aggregate, 7.5% Bloomberg Gov/Credit 1-3 Yrs, 4.25% Bloomberg US High Yield and 0.75% ICE BofA U.S. All Capital Securities Index, thereafter. The Total Fund return calculations do not include Cash Available for Investing.

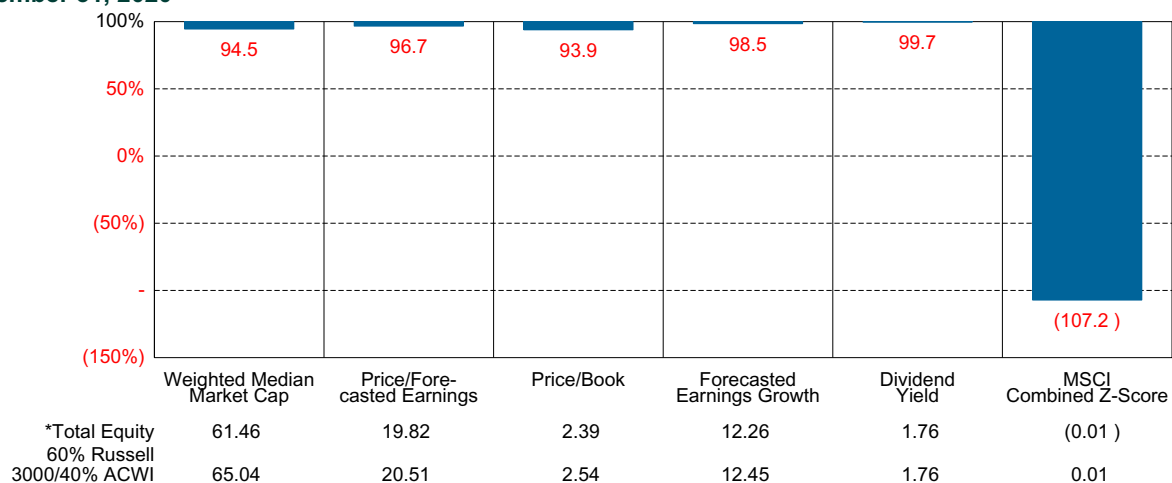
\*All composites and manager returns are shown gross-of-fees.

# Total Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics relative to the benchmark's portfolio characteristics.

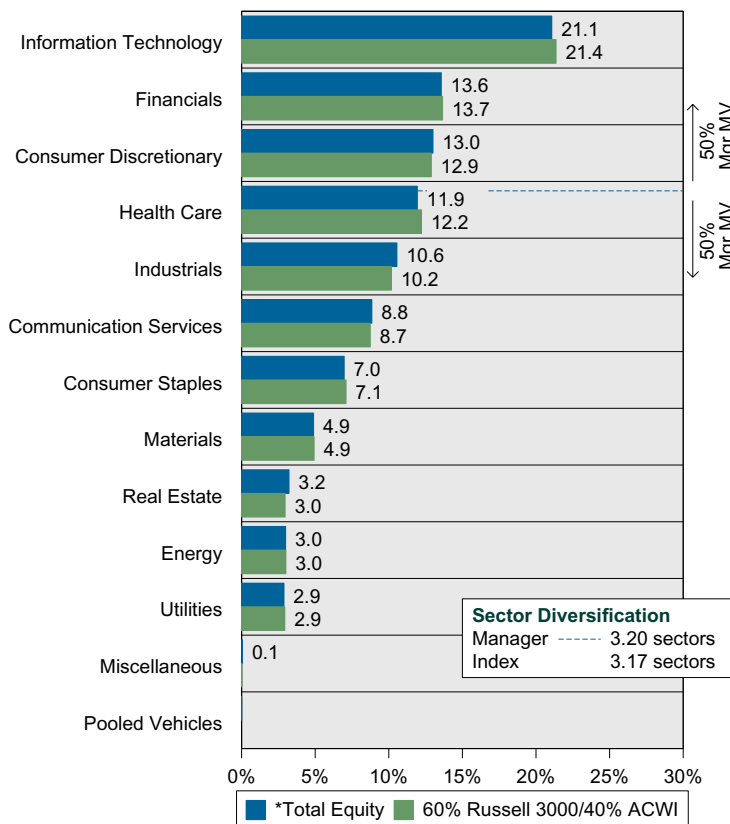
### Portfolio Characteristics Relative to 60% Russell 3000/40% ACWI as of December 31, 2020



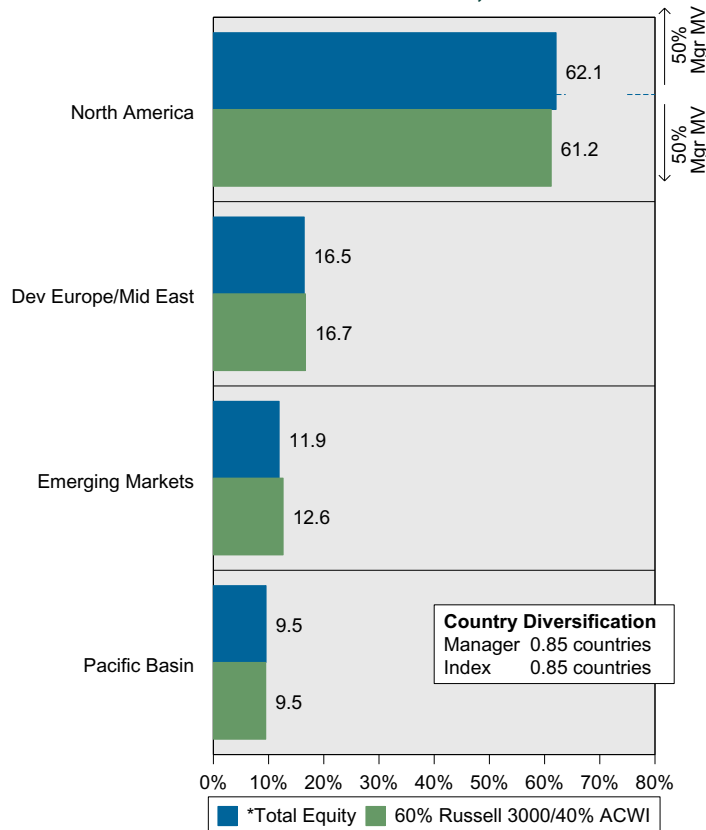
## Sector Weights

The graph below contrasts the manager's sector weights for the most recent quarter with those of the benchmark. The regional allocation chart also compares the manager's geographical region weights with those of the benchmark.

### Sector Allocation December 31, 2020



### Regional Allocation December 31, 2020



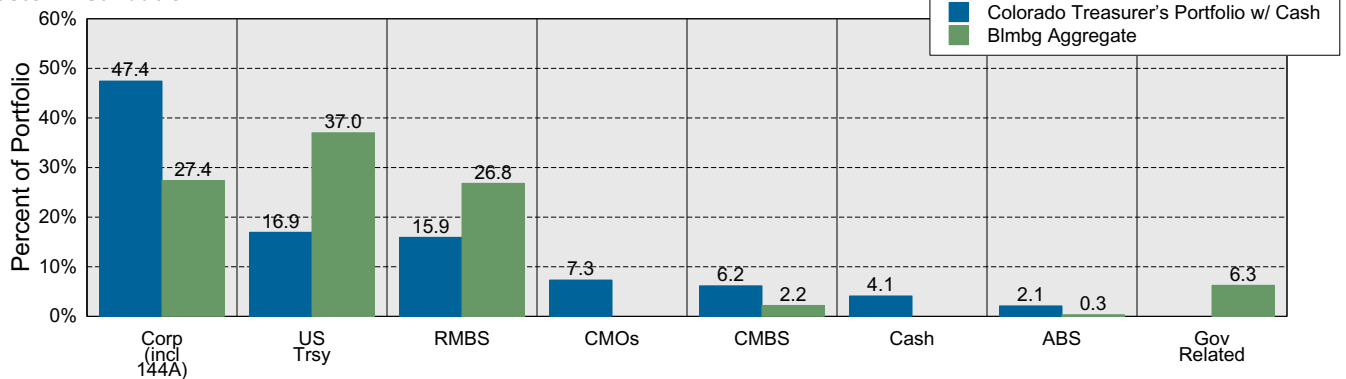
\*12/31/20 portfolio characteristics generated using most recently available holdings (10/31/20) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.

# Colorado Treasurer's Portfolio w/ Cash Portfolio Characteristics Summary As of December 31, 2020

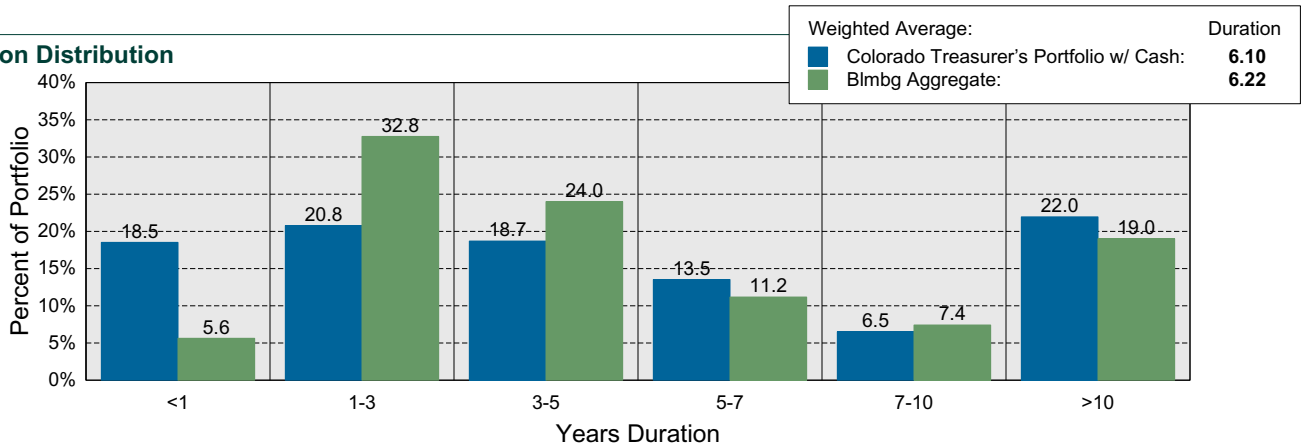
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

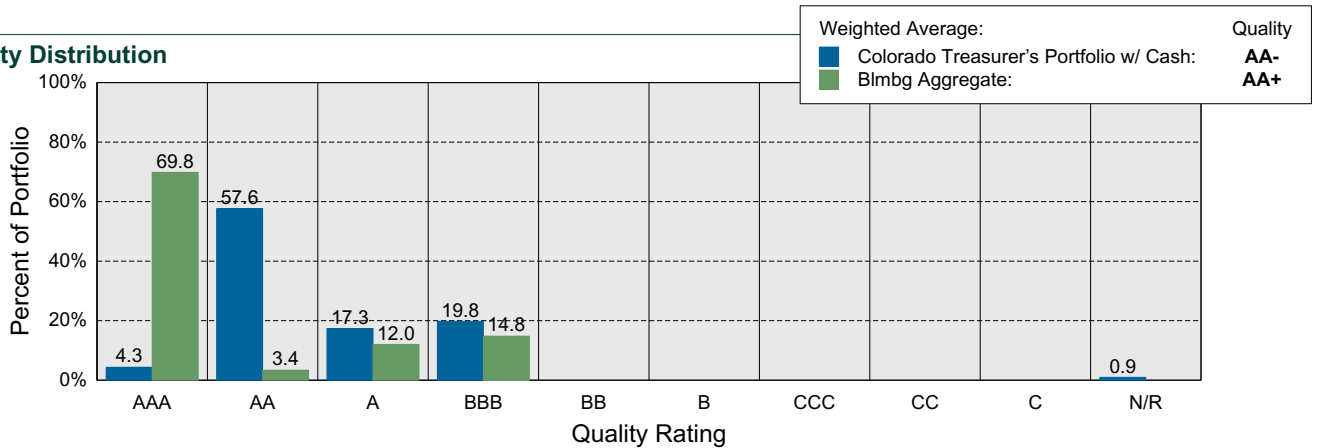
### Sector Distribution



### Duration Distribution



### Quality Distribution

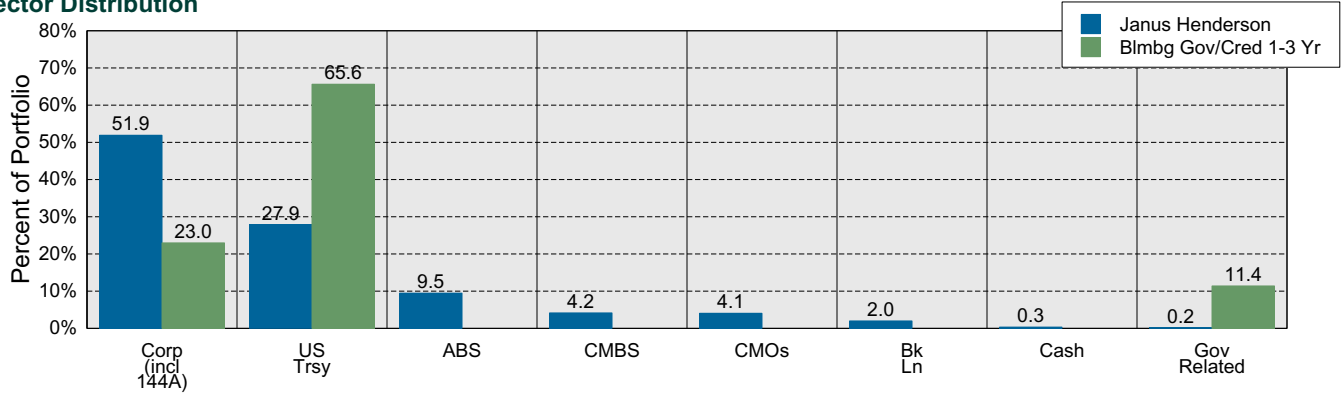


# Janus Henderson Portfolio Characteristics Summary As of December 31, 2020

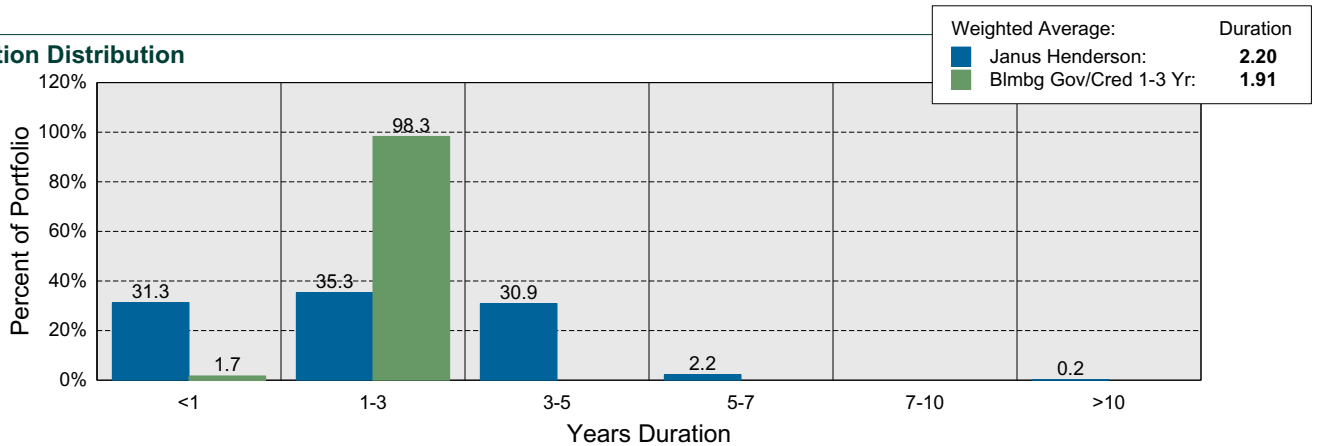
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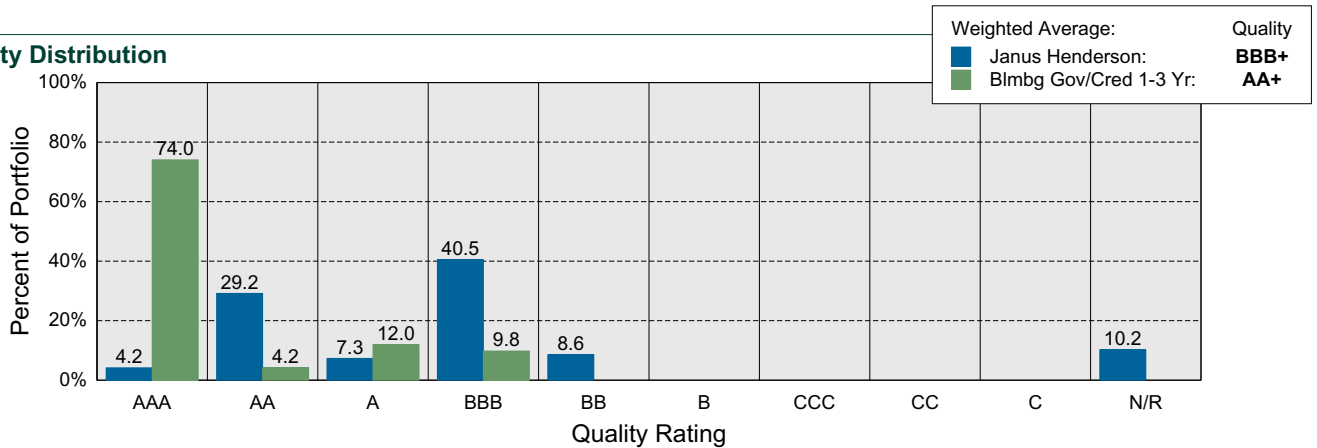
### Sector Distribution



### Duration Distribution



### Quality Distribution

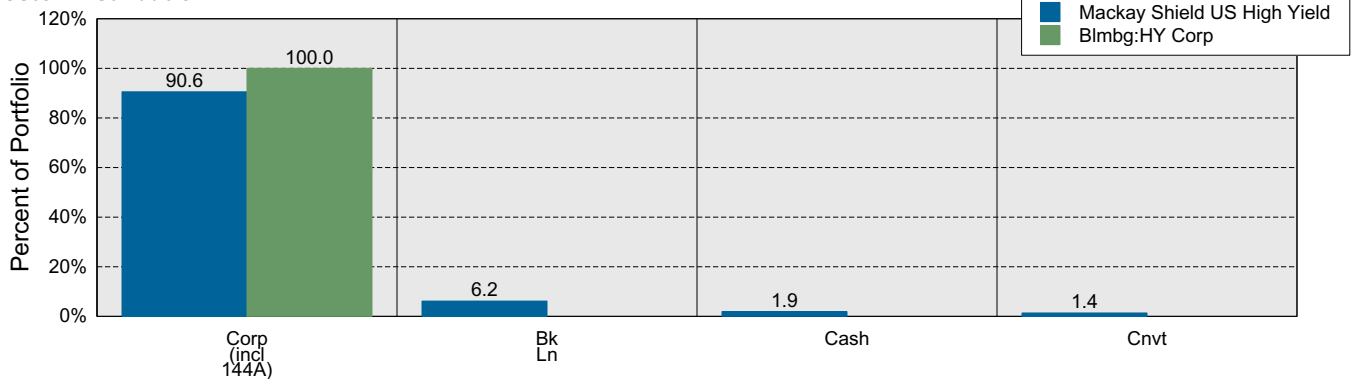


# Mackay Shield US High Yield Portfolio Characteristics Summary As of December 31, 2020

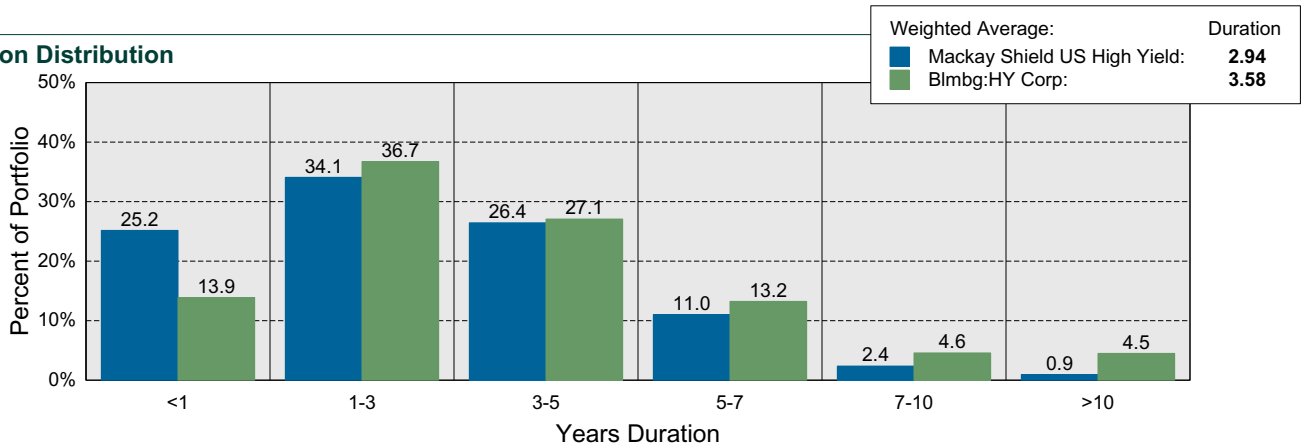
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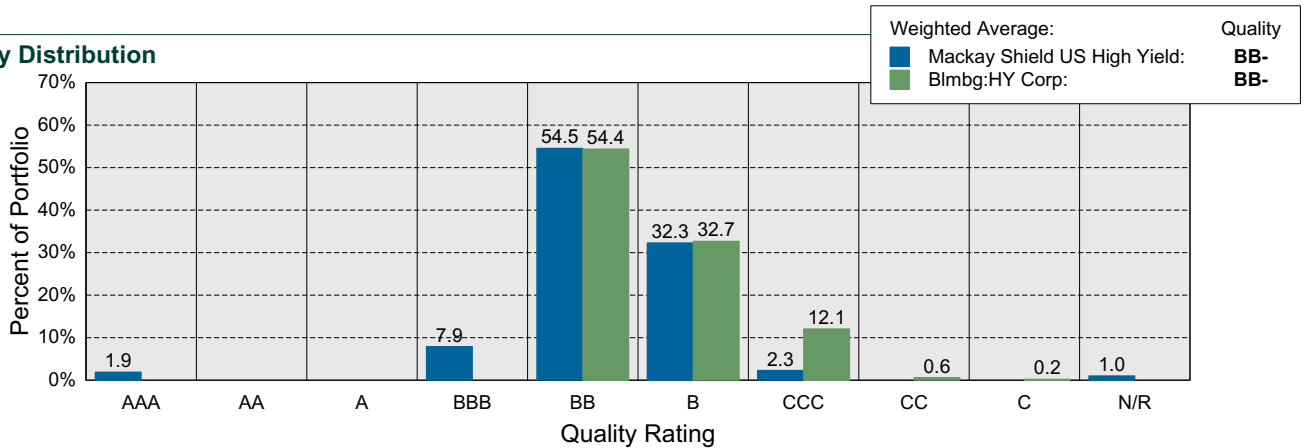
### Sector Distribution



### Duration Distribution



### Quality Distribution

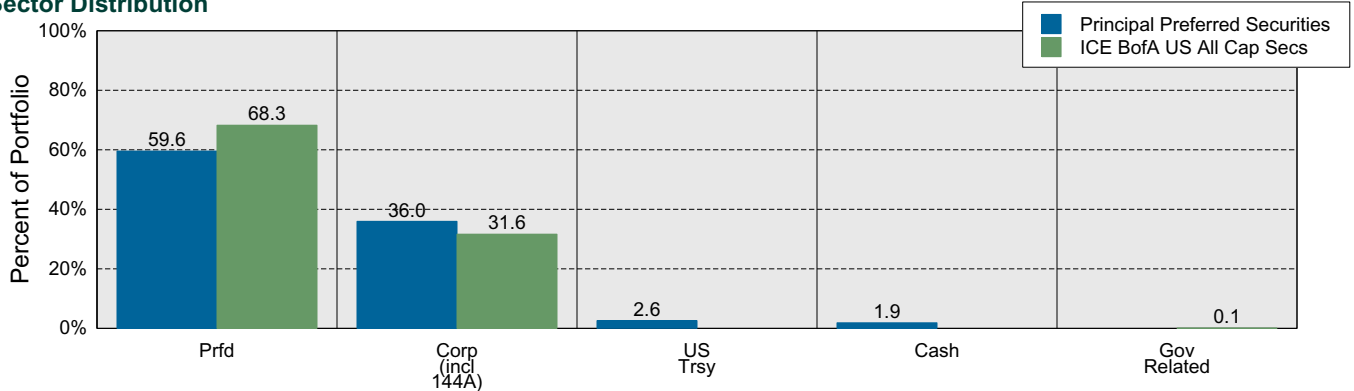


# Principal Preferred Securities Portfolio Characteristics Summary As of December 31, 2020

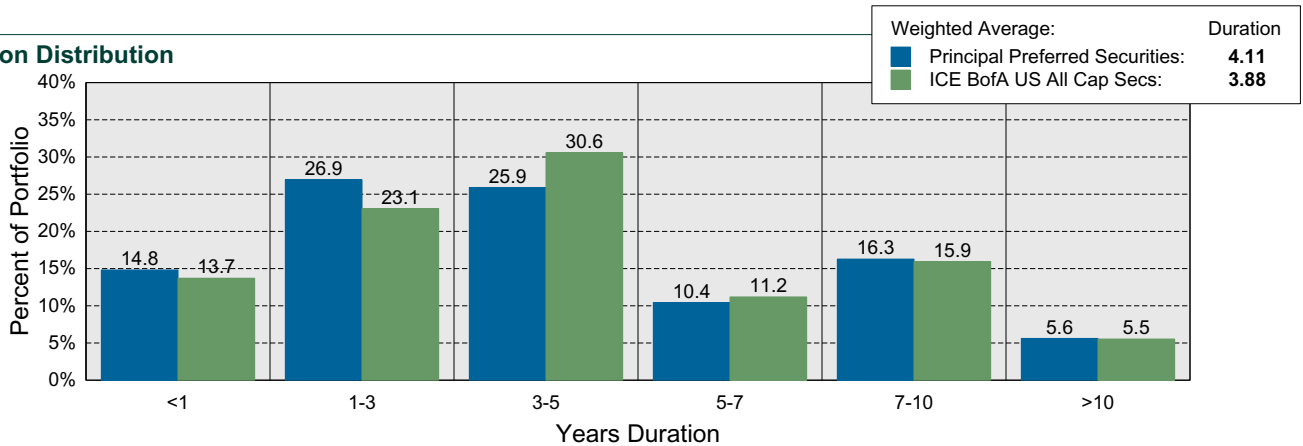
## Portfolio Structure Comparison

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### Sector Distribution



### Duration Distribution



### Quality Distribution

