Ryan ALM

Asset/Liability Management

Presentation to:
FELRA - UFCW

PRESENTED BY

RON RYAN, CFA

CEO

RUSSELL D. KAMP

MANAGING DIRECTOR

Ryan ALM Contract

Provide monthly reports to monitor...
assets cash flows versus liabilities cash flows:

Custom Liability Index (CLI)

Calculates FV, PV, Growth Rate, Interest Rate Sensitivity ($, %)

Performance Attribution Report (PAR)

Calculates 14 risk/reward measurements of assets vs CLI

Extra Reports (no charge):

Liability Beta Portfolio
ASC 715 Discount Rates
Observations

Custom Liability Index (CLI)

Create CLI to Calculate + Monitor Liability Cash Flows that 67% of SFA assets will fully fund

CLI based on actuarial projections of Liabilities: (Benefits + Expenses) thru 12/01/33

	Total Liabilities	SFA Liabilities
Future Value	$3,984,666,667	$1,564,266,667
Present Value	$2,027,745,404	$1,220,440,455
YTM	5.29%	5.25%
Discount Rate	5.36%	5.28%
Duration	10.27	4.60
MDuration	9.75	4.37

SFA Liabilities = liabilities funded by SFA assets

Actuarial Data for the CLI

FELRA & UFCW Pension Fund

($ in millions)

Year	Withdrawal Liability Payments[1]	Estimated Benefit Payments	Estimated Administrative Expenses
2022	$ 56.8	$ (150.2)	$ (6.4)
2023	56.8	(147.8)	(6.6)
2024	56.8	(151.5)	(6.8)
2025	56.4	(152.0)	(7.0)
2026	56.2	(151.4)	(7.1)
2027	56.1	(150.1)	(7.3)
2028	56.1	(148.0)	(7.5)
2029	56.1	(145.4)	(7.7)
2030	56.1	(142.5)	(7.9)
2031	56.1	(139.3)	(8.4)
2032	56.1	(135.9)	(8.3)
2033	56.0	(132.3)	(8.1)
2034	56.0	(128.5)	(7.8)
2035	56.0	(124.7)	(7.6)
2036	56.0	(120.7)	(7.3)
2037	56.0	(116.7)	(7.1)
2038	56.0	(112.5)	(6.8)
2039	56.0	(108.1)	(6.5)
2040	56.0	(103.6)	(6.2)
2041	56.0	(99.0)	(5.9)
2042	56.0	(94.3)	(5.6)
2043	56.0	(89.6)	(5.3)
2044	56.0	(85.0)	(5.0)
2045	56.0	(80.4)	(4.7)

Value of CLI

Custom Liability Index (CLI)

Calculates and monitors "monthly" Liability Cash Flows

CLI provides all data needed for cash flow matching liabilities

- Statistical Summary (YTM, Duration, term structure, etc.)
- Calculates Liability Cash Flows to be funded (B + E)
- Discount rate (ASC 715 = AA corporate YC)
- Interest rate sensitivity analysis
- Liability growth rate
- Monthly reports
- Benchmark

Performance Attribution Report (PAR)

Horizon : 9/30/2022 to 8/31/2023		FELRA (LBP)	FELRA (CLI) (Benchmark)	Difference
RISK				
1. Annualized Standard Deviation	%	5.02	4.88	0.14
2. Volatility to Benchmark (Beta)		1.01		
3. R-Square	%	95.95		
4. Correlation	%	97.95		
5. STD of Differential Return	bp	29		
6. Tracking Deviation	bp	32		
7. Shortfall Frequency	%	18.18		
8. Average Shortfall	bp	25		
REWARD				
9. Annualized Total Return	%	6.87	3.96	2.91
10. Cumulative Total Return	%	6.28	3.63	2.66
11. Excess Return Frequency	%	81.82		
12. Average Excess Return	bp	34		
RISK ADJUSTED RETURNS				
13. Sharpe's Ratio (old)		0.40	-0.18	0.58
14. Information Ratio		2.87		

Value of PAR

Monthly proprietary model that calculates 14 measurements of risk/reward behavior of SFA assets (LBP) versus liabilities (CLI).

Monitor:

Assets behave like liabilities (lines 1 – 8)
But at higher growth rate (lines 9 – 12)
Creates value added = risk adjusted returns (lines 13-14)

Liability Beta Portfolio™ (LBP)

LBP Methodology

- Cash flow match + fully fund SFA liabilities *chronologically* **(01/01/23 – 12/01/33)**

- Investment grade bond portfolio (AAA – BBB+) skewed to A/BBB+

LBP Value

- Cash flow match liabilities at low cost and prudent risk

Note: LBP Trademark – 7/17/18 (Reg. No. 5.516,946)

LBP vs. CLI

LBP Summary

	ASC 715	LBP Model
Future Value	$1,564,266,667	$1,564,266,667
Present Value	$1,220,440,456	$1,199,772,121
YTM	5.246%	5.616%
Discount Rate	5.282%	5.675%
MDuration	4.370	4.078
LBP Model Efficiency		100.181%
Total Assets		$1,225,108,436

LBP Summary

LBP Summary

	ASC 715	LBP Model
Future Value Benefits/LBP Cash Flow	$1,564,266,667	$1,567,100,045
Present Value/Market Value of Assets	$1,220,440,455	$1,225,108,436
LBP YTW/Spot Rate Weighted Yield	5.25%	5.62%
MDuration	4.37	4.08
Average Rating	AA	BBB+
Total Return (mo.)	-0.07%	-0.08%
Total Return (ytd)	1.91%	3.10%
Total Return (Inception)	3.63%	6.28%

LBP Holdings (% of LBP):

Largest Sectors

Banking	21.09%
Technology	11.82%
Electric	7.39%

Largest Issuers

SUMITOMO MITSUI FINL GRP	1.45%
BANCO SANTANDER SA	1.44%
QUALCOMM INC	1.30%

Largest Issues

QCOM 5.400% 05/20/2033	1.30%
AVB 5.000% 02/15/2033	1.29%
CS 5.000% 07/09/2027	1.21%

LBP Rating Distribution *

AAA	2.35%
AA+	0.99%
AA	0.00%
AA-	1.32%
A+	3.15%
A	14.87%
A-	15.81%
BBB+	16.12%
BBB	33.44%
BBB-	11.95%

LBP Maturity Distribution

CASH	0.11%
0.01 - 1.00	11.80%
1.00 - 3.00	19.21%
3.00 - 5.00	21.23%
5.00 - 7.00	23.26%
7.00 - 10.00	24.49%

Total Benefit Payments Paid

$142,083,336

Liability Beta Portfolio™
(Cash Flows)

Payment Year	Cashflow Principal	Cashflow Coupon	Reinvestment Principal	Reinvestment Coupon	Total Cash Flow	Benefit Payment	Difference	Cumulative Difference
11/23/2033	0	0	0	0	0	11,700,000	-11,700,000	2,833,375
10/25/2033	0	0	0	0	0	11,700,000	-11,700,000	14,533,375
09/26/2033	0	0	0	0	0	11,700,000	-11,700,000	26,233,375
08/25/2033	0	0	0	0	0	11,700,000	-11,700,000	37,933,375
07/25/2033	0	0	0	0	0	11,700,000	-11,700,000	49,633,375
06/24/2033	0	0	0	0	0	11,700,000	-11,700,000	61,333,375
05/24/2033	15,160,000	409,320	7,902	213	15,577,435	11,700,000	3,877,435	73,033,375
04/25/2033	0	0	0	0	0	11,700,000	-11,700,000	69,155,940
03/25/2033	3,870,000	126,743	5,045	165	4,001,952	11,700,000	-7,698,048	80,855,940
02/22/2033	15,960,000	399,000	14,560	364	16,373,924	11,700,000	4,673,924	88,553,987
01/25/2033	27,715,000	612,259	36,128	798	28,364,185	11,700,000	16,664,185	83,880,063
12/27/2032	11,960,000	242,073	18,711	379	12,221,162	12,016,667	204,496	67,215,878
11/23/2032	0	409,320	0	160	409,480	12,016,667	-11,607,187	67,011,382
10/25/2032	0	0	0	0	0	12,016,667	-12,016,667	78,618,569
09/24/2032	3,620,000	191,903	10,861	344	3,823,107	12,016,667	-8,193,559	90,635,235
08/25/2032	5,000,000	516,500	22,847	1,057	5,540,404	12,016,667	-6,476,263	98,828,795
07/26/2032	0	612,259	0	878	613,137	12,016,667	-11,403,529	105,305,057
06/24/2032	14,750,000	566,573	44,253	1,258	15,362,083	12,016,667	3,345,417	116,708,587
05/24/2032	11,853,000	594,417	27,978	570	12,475,964	12,016,667	459,298	113,363,170
04/26/2032	21,445,000	384,363	53,477	1,006	21,883,845	12,016,667	9,867,178	112,903,872
03/24/2032	17,770,000	578,508	33,768	1,041	18,383,317	12,016,667	6,366,650	103,036,694
02/23/2032	4,250,000	451,063	10,530	545	4,712,138	12,016,667	-7,304,529	96,670,044
01/26/2032	11,000,000	903,009	15,774	1,203	11,919,986	12,016,667	-96,680	103,974,573
12/24/2031	5,375,000	618,979	16,126	1,415	6,011,520	12,308,333	-6,296,814	104,071,253
11/21/2031	12,000,000	754,454	27,388	731	12,782,573	12,308,333	474,240	110,368,066
10/27/2031	18,015,000	612,744	36,235	1,487	18,665,466	12,308,333	6,357,133	109,893,827
09/24/2031	8,860,000	692,093	12,705	1,204	9,566,002	12,308,333	-2,742,331	103,536,694
08/25/2031	25,530,000	746,103	27,772	981	26,304,855	12,308,333	13,996,522	106,279,025
07/25/2031	0	903,009	0	1,085	904,095	12,308,333	-11,404,239	92,282,503
06/24/2031	24,155,000	931,875	54,451	2,135	25,143,461	12,308,333	12,835,127	103,686,742
05/23/2031	0	754,454	0	904	755,357	12,308,333	-11,552,976	90,851,614
04/24/2031	25,725,000	808,308	37,304	1,133	26,571,745	12,308,333	14,263,411	102,404,590
03/25/2031	6,715,000	924,943	11,663	1,410	7,653,017	12,308,333	-4,655,317	88,141,179
02/24/2031	21,245,000	1,084,393	53,875	1,728	22,384,996	12,308,333	10,076,662	92,796,495
01/27/2031	10,825,000	1,083,909	16,935	1,604	11,927,448	12,308,333	-380,885	82,719,833
12/24/2030	10,800,000	1,080,321	29,580	2,542	11,912,443	12,533,333	-620,890	83,100,718
11/22/2030	14,440,000	880,804	39,550	1,176	15,361,530	12,533,333	2,828,196	83,721,608

LBP Value-Added

Cash flow matching (LBP) best fits SFA requirements by:

Funding benefits + expenses chronologically
Monthly from 01/01/23 thru 12/01/33
Mitigates interest rate risk
Provides timely liquidity

Reduced funding costs (9/30/22)
-$354,424,707
-23.73%

Liability Beta Portfolio™ (LBP)

Interest Rate Sensitivity

- LBP cash flows and benefits are **NOT** interest rate sensitive
  … cash flows match benefit payments (Future Values)

- LBP present value (PV) behaves like liabilities PV
  … similar duration but at a higher yield = higher return (Alpha)

- If interest rates go up, any excess cash flow is reinvested
  … at higher rates & lower costs

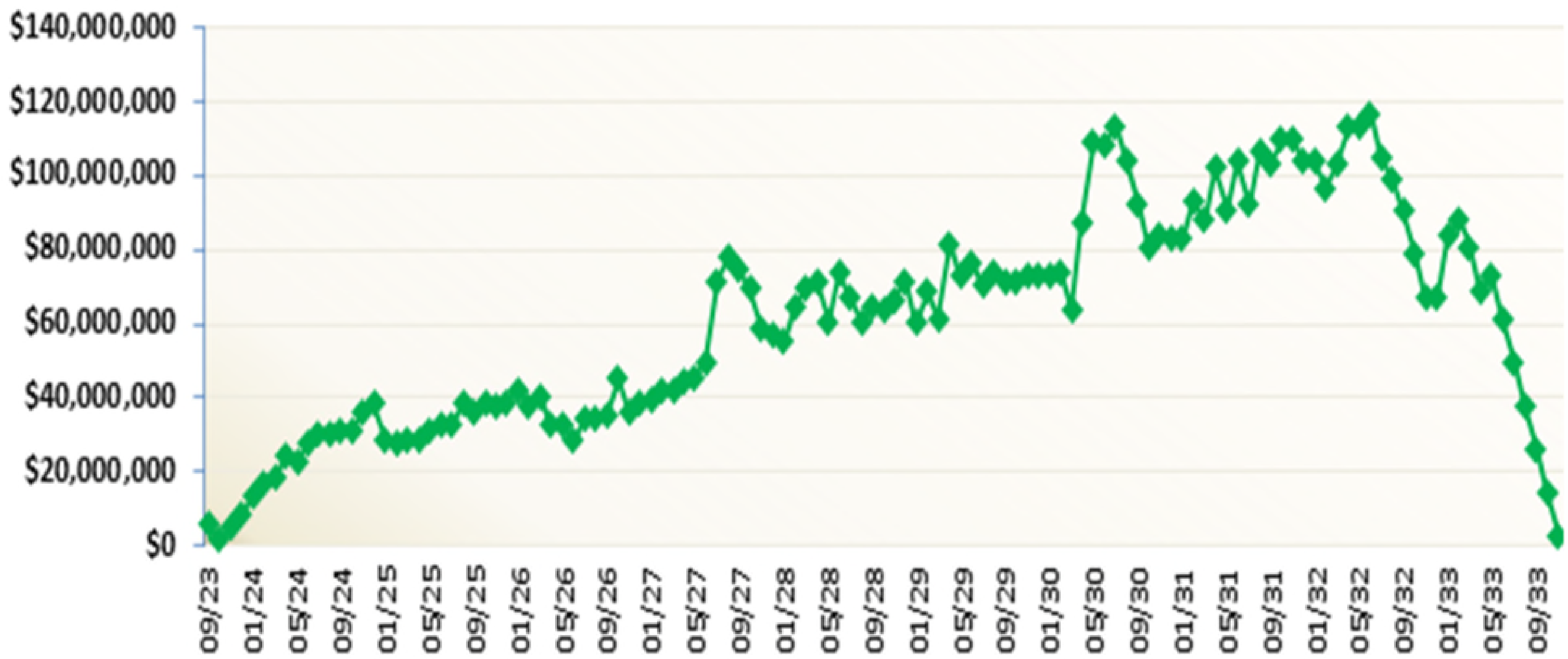
Liability Beta Portfolio™ (LBP)

LBP Performance

- Based on **funding cost savings**… more than total returns
- Cost savings immediate and certain when LBP purchased
- LBP will out-yield liabilities creating some liability Alpha returns
- LBP enhances ROA, funded status, and reduces contribution costs

Observations

Cumulative difference between asset cash flows and liability cash flows



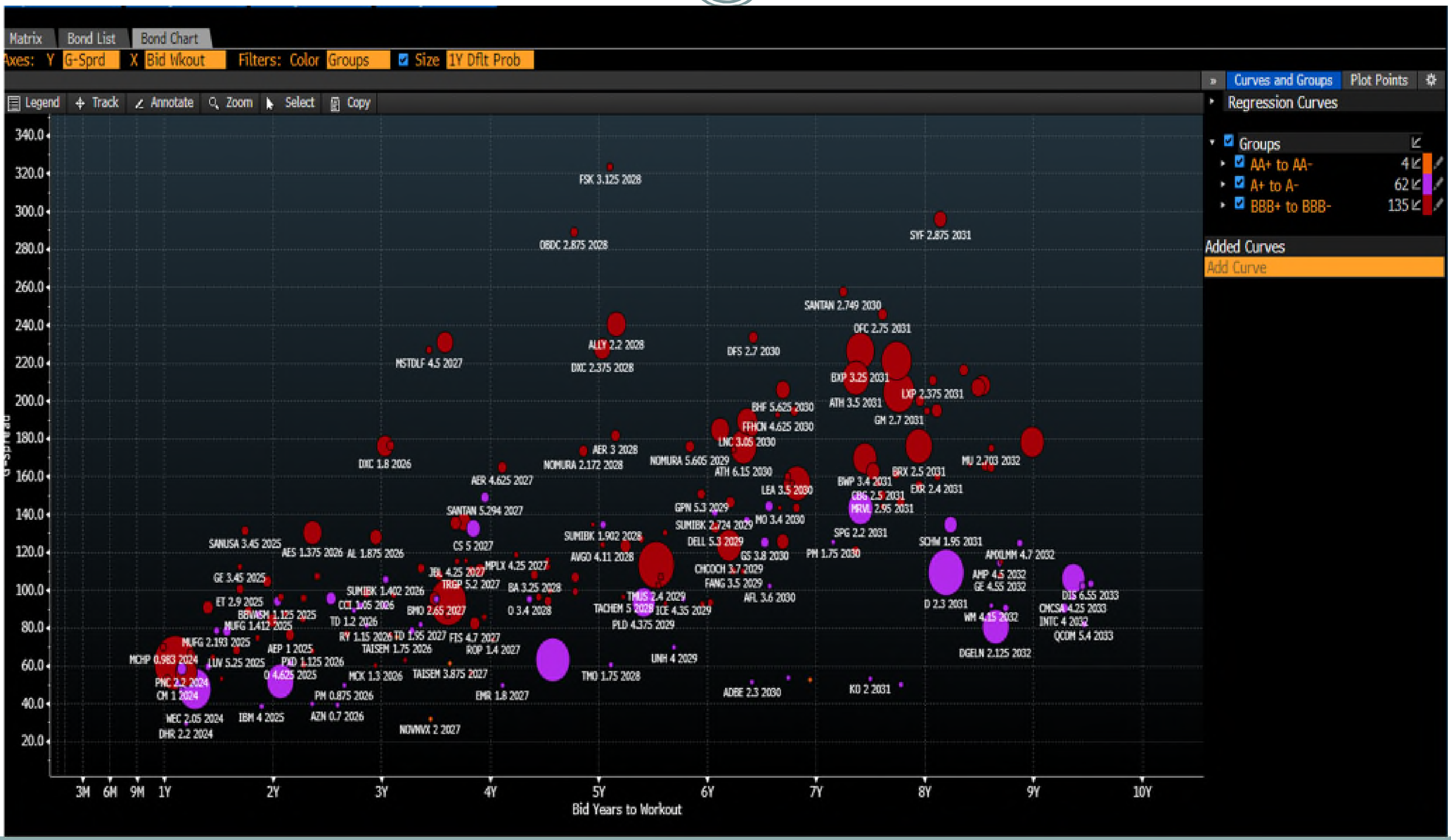
Observations

Credit Watch

Ryan ALM monitors the creditworthiness of each issuer in the LBP through a series of credit filters. We run tests of solvency that are ranked by Bloomberg from IG1 (highest) to DS5 (lowest) and is shown in our LBP under the column BBID (Bloomberg Issuer Default ranking). We find no credits below HY4:

Ticker	Issuer	Coupon	Maturity	BBID
DTE	DTE ELECTRIC CO	1.900	04/2028	HY4
TMUS	T-MOBILE USA INC	3.750	04/2027	HY4
TMUS	T-MOBILE USA INC	2.400	03/2029	HY4
TRPCN	TRANSCANADA PIPELINES	1.000	10/2024	HY4
D	VIRGINIA ELEC & POWER CO	2.300	11/2031	HY4

Observations



The Ryan ALM Team

Asset Management Team – 156 years of combined experience

Ron Ryan
Steve DeVito
Russell Kamp
Martha Monteagudo

Advisors	**Actuarial:**	**Ken Buffin and Bob North**
	Corporate:	**Michael Giarla**
	Public:	**John Girard**
	Programmer:	**Patrick Leung**

Awards

William Sharpe Index Lifetime Achievement Award
Money Management Letter Lifetime Achievement
Book "U.S. Pension Crisis" – IP Gold Award
Bernstein Fabozzi Award of Excellence

Experience

Ron Ryan has over 45 years of experience with Cash Flow Matching:

1977-1982	**Director of Lehman Bros. Fixed Income Research** **Was in charge of Dedication model**
1983-1988	**Founded Ryan Financial Strategy Group (RFSG)** **Hired the 2 Ph.D.s who designed I.P. Sharpe Dedication to build RFSG Dedication model**
1988-2004	**Founded Ryan Labs** **Designed cash flow matching model**
2004 – Now	**Founded Ryan ALM** **Designed cash flow matching model**