

MEANINGFUL WAYS TO CONDUCT INVESTMENT PERFORMANCE EVALUATION

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**Asset
Strategies**
Portfolio Services, Inc.

Independent, Professional Investment Consultants Since 1992.

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Workshop Outline

- I. Introduction***
- II. Definitions***
- III. Performance Measurement***
- IV. Benchmark Rules***
- V. Performance Attribution***
- VI. Performance Appraisal***
- VII. Patience, Focus, Response***
- VIII. Summary & Conclusions***

I. Introduction

Performance Evaluation has Three Components

1) *Measurement*

2) *Attribution*

3) *Appraisal*

II. Definitions

- 1) Performance Measurement is the process of calculating the rate of return of an account (a fund, an asset class, or a manager)**
- 2) Two methods of calculation are common:
Time-Weighted Rate of Return (TWR)
Money-Weighted Rate of Return (MWR)
Both should be reported after accounting for all investment-related fees and expenses**

The TWR is unaffected by the timing of money flows into and out of a fund

The TWR is the appropriate return measure when the account manager has no control over money flows

III. Performance Measurement

...in Accordance with CFA Institute, Global Investment Performance Standards (GIPS)

- 1) Use Time-Weighted Return Methodology*
- 2) Show Results Gross-of-Fees*
- 3) Results greater than one year are Annualized*

IV. Benchmark Rules

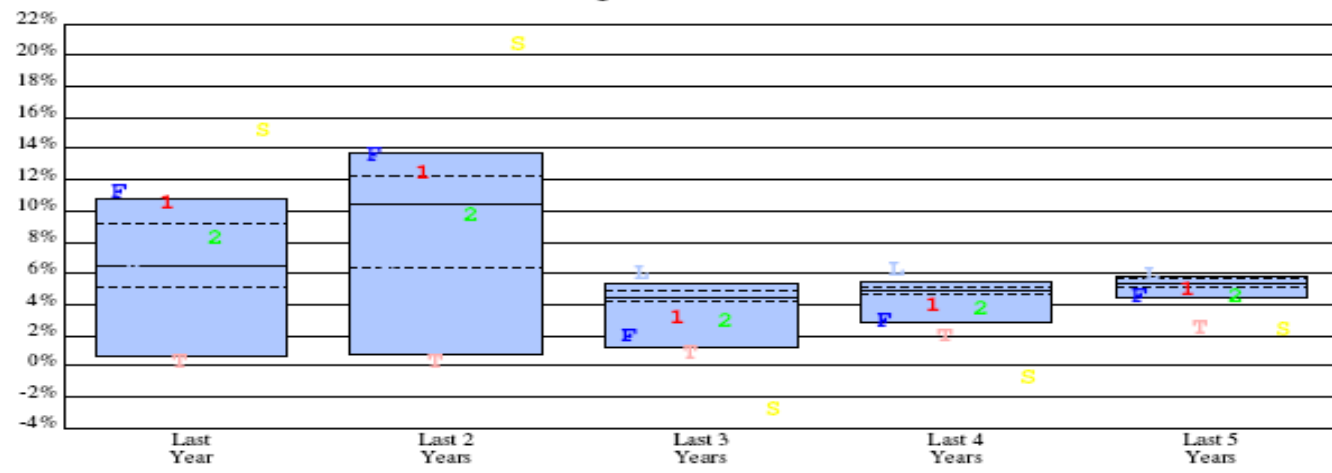
Assessing Investment Performance is done by comparing results to a Valid Benchmark

A Valid Benchmark is:

- a) Unambiguous***
- b) Can be invested in***
- c) Measurable***
- d) Appropriate***
- e) Specified in Advance***
- f) Agreed Upon***

Total Fund Benchmarks – Example 1A

EXHIBIT
Cumulative Performance Comparison
Total Returns of Total Fund Insurance Plans
Periods Ending 12/10

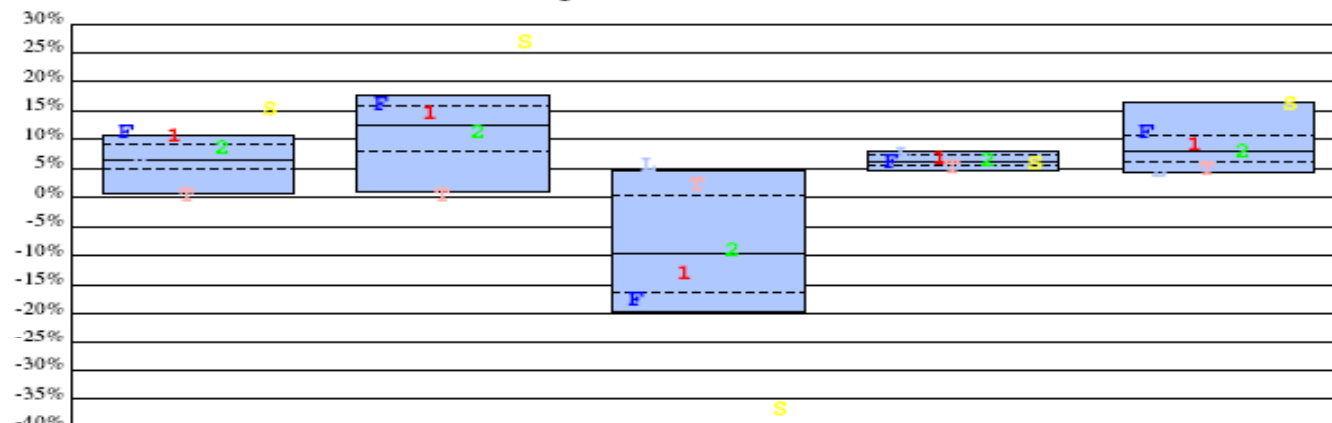


5th Percentile	10.74	13.73	5.39	5.50	5.78
25th Percentile	9.15	12.20	4.95	5.15	5.72
Median	6.52	10.41	4.42	4.85	5.38
75th Percentile	5.09	6.32	4.28	4.71	5.15
95th Percentile	0.58	0.71	1.20	2.91	4.47
F Total Fund Composite	11.09 (1)	13.53 (13)	1.89 (92)	2.91 (99)	4.47 (99)
1 40% SP500 60% Barc Aggregate	10.47 (10)	12.38 (24)	3.12 (85)	3.95 (89)	4.91 (89)
2 30% SP500 50% Agg 20% 91-Day	8.19 (41)	9.62 (52)	2.87 (87)	3.70 (91)	4.51 (95)
S Standard & Poors 500	15.05 (1)	20.61 (1)	-2.86 (100)	-0.83 (100)	2.30 (100)
L Barclays U.S. Aggregate	6.54 (50)	6.24 (76)	5.91 (1)	6.17 (1)	5.80 (1)
T 91-Day Treasury Bill	0.13 (100)	0.16 (100)	0.78 (100)	1.83 (100)	2.42 (100)

Returns for periods greater than one year are annualized.

Total Fund Benchmarks – Example 1B

EXHIBIT
Calendar Year Performance Comparison
Total Returns of Total Fund Insurance Plans
Years Ending December



	2010	2009	2008	2007	2006
5th Percentile	10.74	17.69	4.65	8.03	16.63
25th Percentile	9.15	16.02	0.31	7.39	10.86
Median	6.52	12.48	-9.76	6.11	7.96
75th Percentile	5.09	7.91	-16.30	5.67	6.29
95th Percentile	0.58	0.85	-19.65	4.67	4.25
F Total Fund Composite	11.09 (1)	16.02 (26)	-17.92 (84)	6.00 (53)	10.99 (21)
1 40% SP500 60% Barc Aggregate	10.47 (10)	14.33 (37)	-13.19 (66)	6.49 (46)	8.85 (37)
2 30% SP500 50% Agg 20% 91-Day	8.19 (41)	11.06 (53)	-9.39 (45)	6.23 (46)	7.82 (50)
S Standard & Poors 500	15.05 (1)	26.45 (1)	-36.99 (100)	5.52 (75)	15.81 (13)
L Barclays U.S. Aggregate	6.54 (50)	5.93 (84)	5.24 (1)	6.96 (32)	4.33 (91)
T 91-Day Treasury Bill	0.13 (100)	0.19 (99)	2.04 (21)	5.03 (83)	4.81 (87)

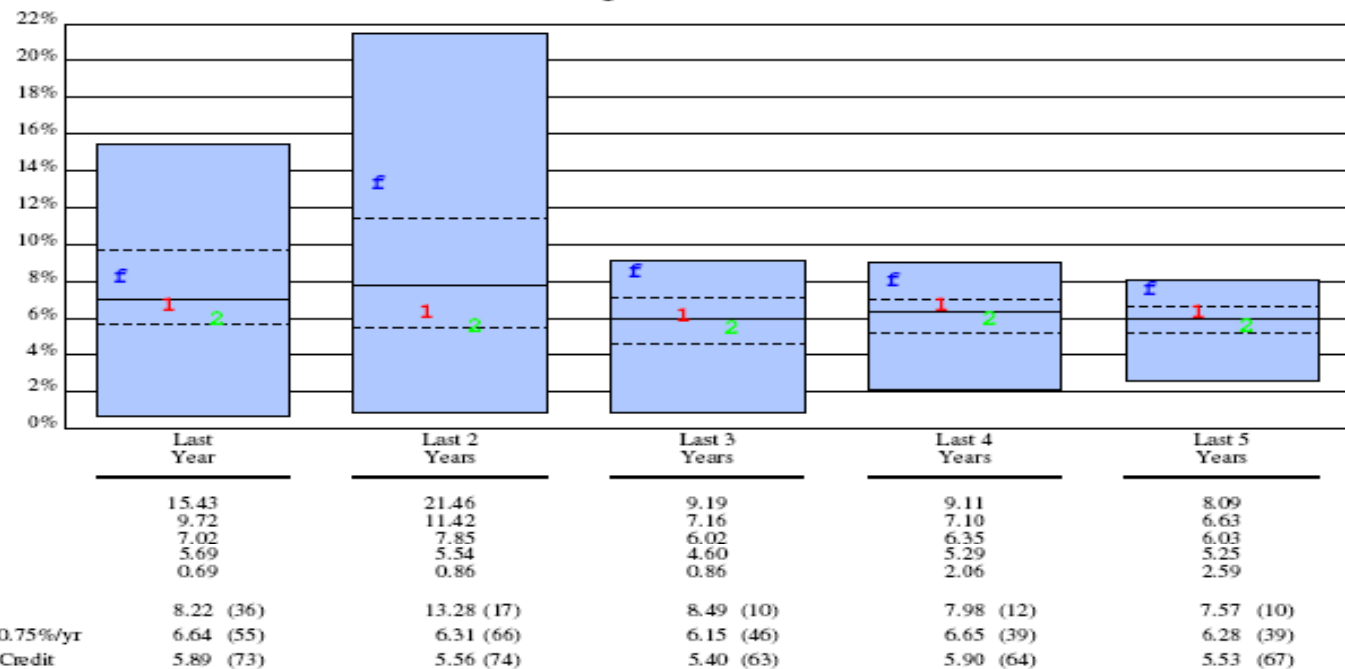
Returns for periods greater than one year are annualized.

Total Fund Benchmark Observations

- 1) 'Universe' or 'Peer Group' Comparison**
- 2) The Policy Index**
 - a. Two different investment mixes: 40% stocks/60% bonds, and**
 - b. 30% stocks/50% bonds/20% cash**
- 3) Total Fund Results Interpretation**
 - a. Performed well (relative to peers) in 2010, 2009, and 2006**
 - b. 5-year results "weak" due to poor 2008 and moderate 2007**

Bond Portfolio Benchmarks – Example 2A

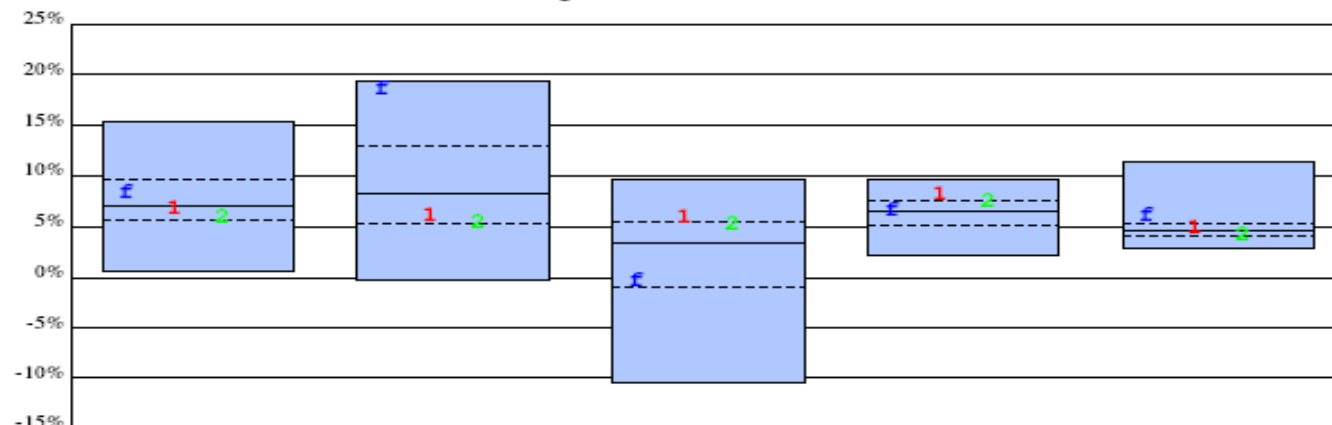
EXHIBIT
Cumulative Performance Comparison
Total Returns of Fixed Income Portfolios
Periods Ending 12/10



Returns for periods greater than one year are annualized.

Bond Portfolio Benchmarks – Example 2B

EXHIBIT
Calendar Year Performance Comparison
Total Returns of Fixed Income Portfolios
Years Ending December



	2010	2009	2008	2007	2006
5th Percentile	15.43	19.37	9.60	9.65	11.38
25th Percentile	9.72	13.01	5.50	7.47	5.30
Median	7.02	8.22	3.47	6.51	4.57
75th Percentile	5.69	5.28	-0.99	5.04	4.13
95th Percentile	0.69	-0.27	-10.58	2.16	2.89
f Fixed Income Manager	8.22 (36)	18.57 (6)	-0.50 (72)	6.47 (50)	5.95 (18)
1 L-T: Barclays Intm G/C +0.75%/yr	6.64 (55)	5.99 (68)	5.83 (20)	8.15 (15)	4.82 (37)
2 Peer: Barclays Intm Govt/Credit	5.89 (73)	5.24 (75)	5.08 (32)	7.40 (26)	4.07 (77)

Returns for periods greater than one year are annualized.

Bond Portfolio Benchmark Observations

1) Two Benchmarks

- a. “L-T” = long-term performance expectation**
- b. “Peer” = short-term expectation**

2) What we see

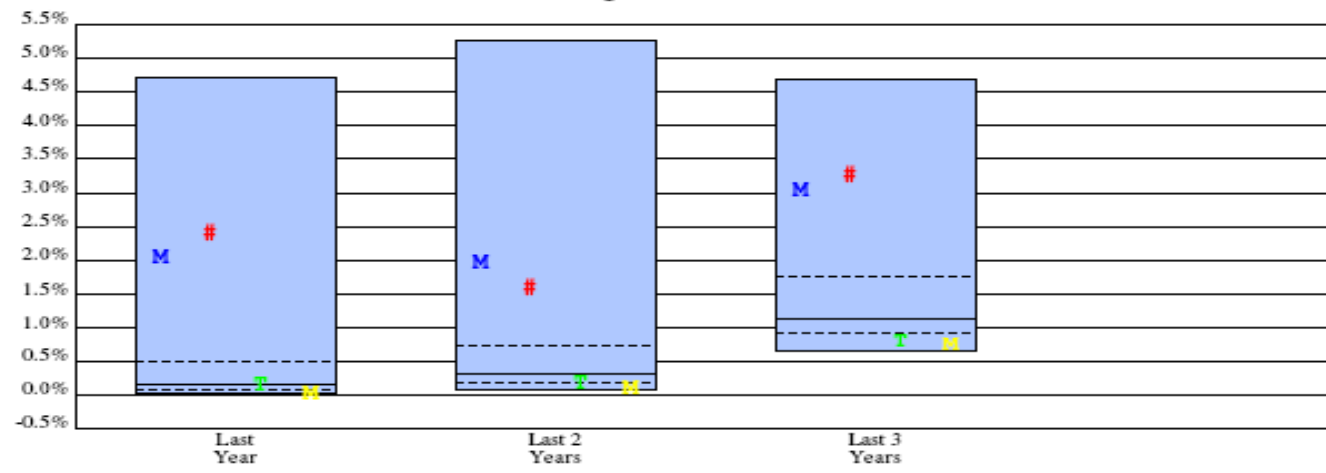
- a. Exceeds benchmark over longer-term periods**
- b. Note strong results in 2006 and 2009**

3) Perception is Not Reality

- a. Cumulative results “mask” poor 2008 performance**
- b. Be aware of Cumulative and Calendar Year differences**

Cash Portfolio Benchmarks – Example 3A

EXHIBIT
Cumulative Performance Comparison
Total Returns of Short Term Portfolios
Periods Ending 12/10



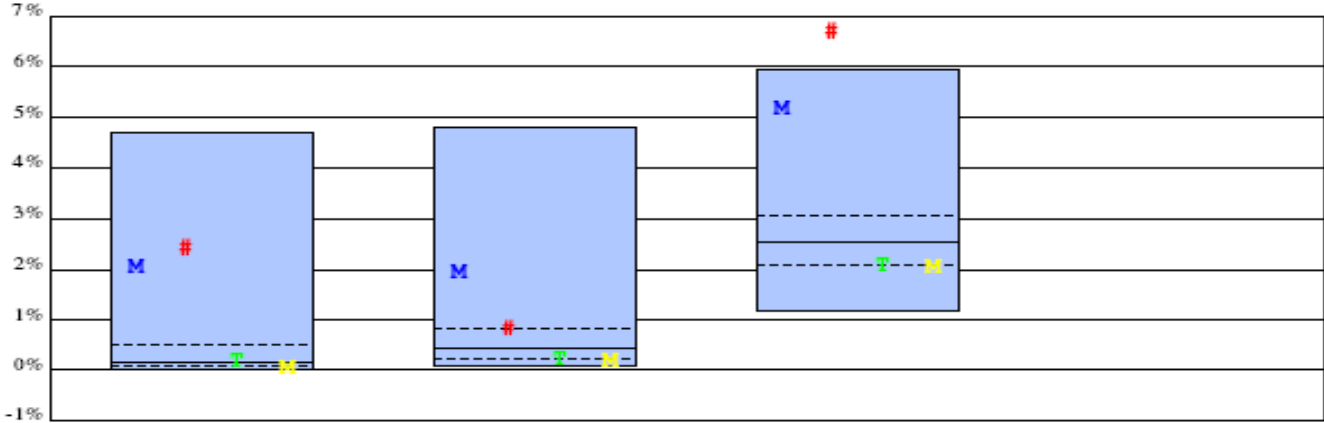
M	Cash Management Portfolio	2.02 (11)
#	Barclays 1-3 Yr Treasury	2.39 (11)
T	91-Day Treasury Bill	0.13 (58)
Y	Avg Money Market Fund	0.00 (100)

	Last Year	Last 2 Years	Last 3 Years
5th Percentile	4.70	5.24	4.68
25th Percentile	0.48	0.73	1.76
Median	0.16	0.31	1.14
75th Percentile	0.06	0.18	0.92
95th Percentile	0.01	0.06	0.65

Returns for periods greater than one year are annualized.

Cash Portfolio Benchmarks – Example 3B

EXHIBIT
 Calendar Year Performance Comparison
 Total Returns of Short Term Portfolios
 Years Ending December



	2010	2009	2008
5th Percentile	4.70	4.78	5.94
25th Percentile	0.48	0.85	3.05
Median	0.16	0.43	2.55
75th Percentile	0.06	0.21	2.08
95th Percentile	0.01	0.06	1.20
M Cash Management Portfolio	2.02 (11)	1.91 (14)	5.16 (7)
# Barclays 1-3 Yr Treasury	2.39 (11)	0.80 (26)	6.67 (3)
T 91-Day Treasury Bill	0.13 (58)	0.19 (80)	2.04 (78)
M Avg Money Market Fund	0.00 (100)	0.16 (84)	2.03 (79)

Returns for periods greater than one year are annualized.

Cash Portfolio Benchmark Observations

1) Three Benchmarks

- a. Barclays 1-3 Treasury is long term expectation**
- b. 91-Day T-Bill is short term expectation**
- c. Average Money Market Fund = typical peer group reference**

2) Actively Managed Cash Portfolio Results

- a. Mirror the Barclays 1-3 Year Index and Average Money Market Fund**

3) Perception and Reality

- a. Contains FNMA (Fannie Mae) and FHLMC (Freddie Mac) bonds**
- b. Fully Invested**
- c. Highest Credit Quality**
- d. Liquid**

V. Performance Attribution

Performance Attribution identifies the 'causes and effect' for investment results

Attribution answers two questions:

- a. what factors contributed to the actual investment return?***
- b. what factors took away from the actual return?***

Attribution Analysis compares the portfolio's causal factors to the benchmarks

Performance Attribution at two different levels of results -

- a. Investment Manager performance is 'micro attribution'***
- b. Total Fund performance is 'macro attribution'***

V. Performance Attribution for Stock Portfolios

SAMPLE REPORT Equity Sector Attribution Analysis Large Cap Growth Equity Portfolio Quarter Ending 12/10

GICS Sectors	Weight		Return		Selection		
	Portfolio	Index	Portfolio	Index	Stock	Sector	Total
Energy	2.69	9.97	30.19	21.57	0.23	-0.71	-0.48
Materials	0.00	4.97		20.01	0.00	-0.41	-0.41
Industrials	15.12	13.18	14.29	12.91	0.21	0.02	0.23
Consumer Discretionary	29.82	14.67	16.13	12.86	0.98	0.15	1.13
Consumer Staples	4.07	9.91	7.92	6.41	0.06	0.32	0.38
Health Care	8.53	10.20	3.12	6.19	-0.26	0.09	-0.17
Financials	6.14	4.64	3.40	10.23	-0.42	-0.02	-0.44
Information Technology	33.63	31.45	15.20	10.62	1.54	-0.03	1.51
Telecom. Services	0.00	0.93		2.50	0.00	0.09	0.09
Utilities	0.00	0.09		3.01	0.00	0.01	0.01
	100.00	100.00	13.69	11.84	2.33	-0.48	1.85

Index - Russell 1000 Growth

Stock Selection Return Attribution

[Portfolio Market Value Sector Percentage] * [Portfolio Sector Return - Index Sector Return]

Sector Selection Return Attribution

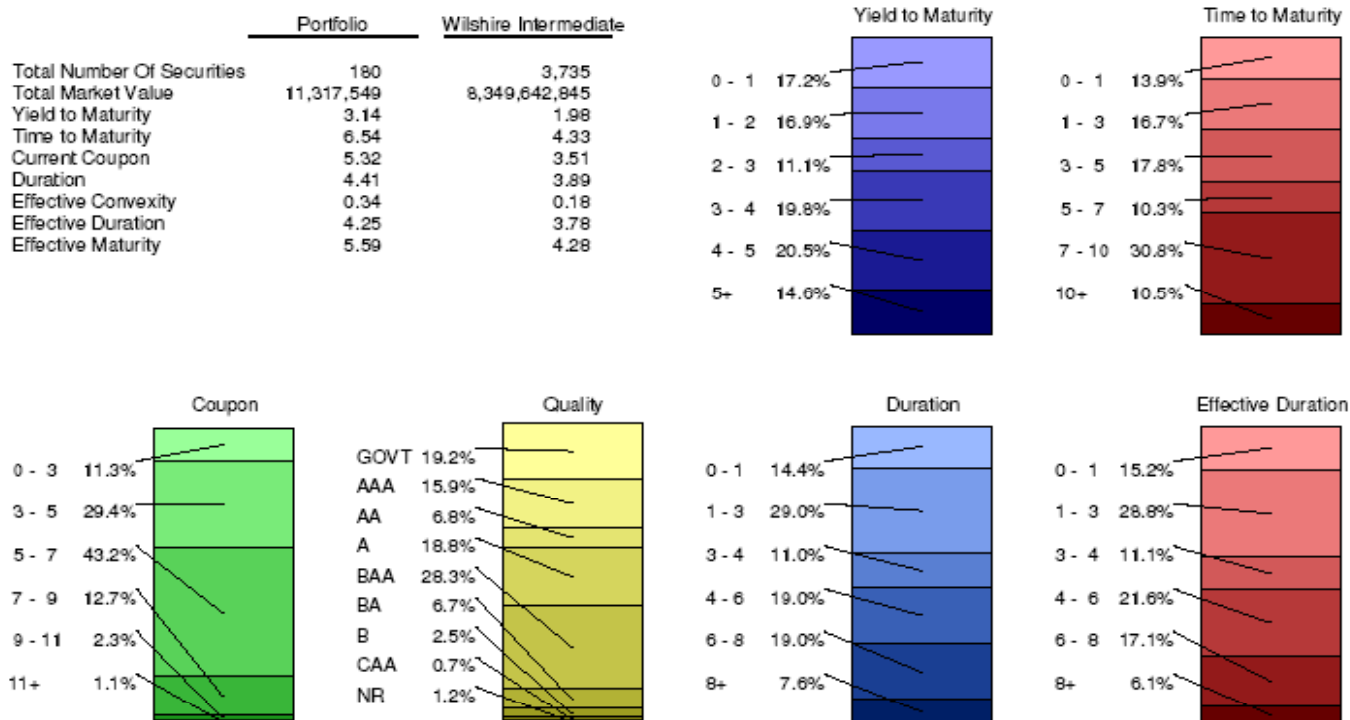
[Portfolio Sector Percentage - Index Sector Percentage] * [Index Sector Return - Index Total Return]

Trading Effect -3.85%

[Actual Return 9.84%] - [Buy Hold Return 13.69%]

V. Performance Attribution for Bond and Cash Funds

SAMPLE REPORT Fixed Income, Mortgage and Municipals Summary Statistics Fixed Income Portfolio Quarter Ending 12/10



VI. Performance Appraisal – Part 1

EXHIBIT
Performance Summary Table
Periods Ending 12/31/10

Manager	1 Qtr	2 Qtrs	3 Qtrs	1 Year	3 Yrs	5 Yrs	10 Yrs	Incept Date	Incept Ret
Large Cap Value Equity Manager									
Total Return	10.55	21.77	8.34	15.69	-4.30	1.18		12/31/02	7.02
Russell 1000 Value	10.54	21.74	8.17	15.51	-4.42	1.27		12/31/02	7.07
Large Cap Growth Equity Manager									
Total Return	11.03	25.07	10.98	15.11	-0.52	3.54	0.90	12/31/95	6.69
S&P 500/Citigroup Growth	11.02	25.04	10.93	15.05	-0.50	3.60	0.94	12/31/95	6.69
Mid-Cap Equity Manager									
Total Return	13.50	28.37	16.13	26.71	3.56	5.77		9/30/01	9.80
S&P MidCap 400	13.50	28.40	16.09	26.65	3.53	5.74		9/30/01	9.76
Fixed Income Manager A									
Total Return	-1.39	0.06	3.08	5.11	4.93	5.13		6/30/04	4.87
L-T: Barclays Intm G/C +0.75%/yr	-1.26	1.65	4.84	6.64	6.15	6.28		6/30/04	5.73
Fixed Income Manager B									
Total Return	-0.27	0.31	1.26	1.59				12/31/09	1.59
Barclays 1-3 Yr Treasury	-0.16	0.48	1.68	2.39				12/31/09	2.39
Cash Management Portfolio									
Total Return	0.03	0.08	0.11	0.12	1.01	2.70	2.61	3/31/95	3.71
91-Day Treasury Bill	0.04	0.08	0.11	0.13	0.78	2.42	2.39	3/31/95	3.50
Total Fund Composite									
Total Return	4.82	11.35	7.20	11.09	1.89	4.47	4.48	12/31/93	6.44
Policy Index	5.28	12.40	7.54	11.48	2.26	4.54	4.89	12/31/93	6.44

VI. Performance Appraisal – Part 2

EXHIBIT
Risk Statistic Summary
Quarterly 3 Year Ending 12/31/10

Manager	Return	Standard Deviation	Tracking Error	R-Squared	Historical Beta	Historical Alpha	Information Ratio	Sharpe Ratio
Large Cap Value Equity Manager	-4.30	26.45	0.13	1.00	1.00	0.03	0.95	-0.19
Russell 1000 Value	-4.42	26.47						
Large Cap Growth Equity Manager	-0.52	23.81	0.08	1.00	1.00	-0.00	-0.06	-0.05
S&P 500/Citigroup Growth	-0.50	23.76						
Mid-Cap Equity Manager	3.56	28.49	0.13	1.00	1.00	0.01	0.38	0.10
S&P MidCap 400	3.53	28.44						
Fixed Income Manager A	4.93	4.26	2.94	0.61	0.82	0.10	-0.17	0.97
L-T: Barclays Intm G/C +0.75%/yr	6.15	4.21						
Fixed Income Manager B	NA	NA	NA	NA	NA	NA	NA	NA
Barclays 1-3 Yr Treasury	NA	NA						
Cash Management Portfolio	1.01	0.64	0.21	0.00	0.00	0.06	1.08	0.35
91-Day Treasury Bill	0.78	0.56						
Total Fund Composite	1.89	11.85	1.53	0.99	0.94	-0.08	-0.29	0.09
Policy Index	2.26	12.60						

VII. Patience, Focus, Response

1. Importance of Investment Policy Documents

- a) Specifies investment roles for the Portfolio Manager and Mgmt.**
- b) Specifies performance criteria and benchmark**
- c) Specifies expectations and timely process for responding to issues**

2. Reasons to place a Manager on Probation or Watch List

- a) Significantly trails the benchmark for consecutive quarters**
- b) Experiences extreme volatility in quarterly results**
- c) Manager-related developments (change of personnel or ownership)**

3. Know when to Replace a Manager

- a) Violates investment guidelines or policies**
- b) Investment style or process has significantly changed**
- c) Fees and transaction costs are not reasonable or competitive**

VIII. Summary & Conclusions

Performance Evaluation is a responsibility and necessity

- 1) Informs Management on Fund progress toward its mission and objectives***
- 2) Establishes a hierarchy of responsibility, authority, and accountability***
- 3) Identifies investment policy strengths and weaknesses***
- 4) Reaffirms commitment to successful policies and decisions***
- 5) Focuses attention on poorly performing strategy***