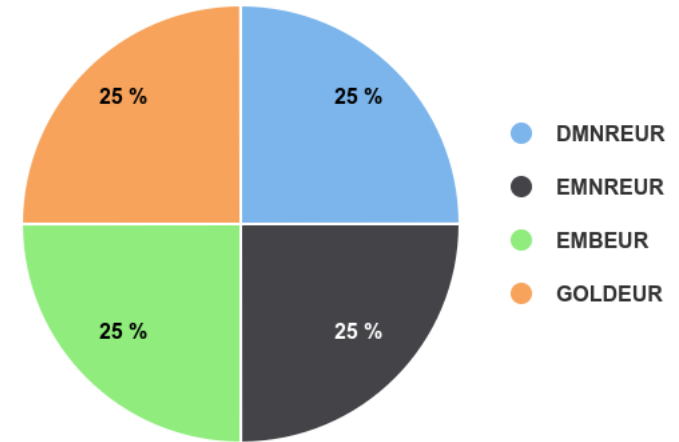


Report Parameters

Start Date	01/01/2001
End Date	11/30/2018
Initial Balance	\$50,000
Periodic Adjustment	None
Rebalancing	Rebalance annually
Reinvest Dividends	Yes

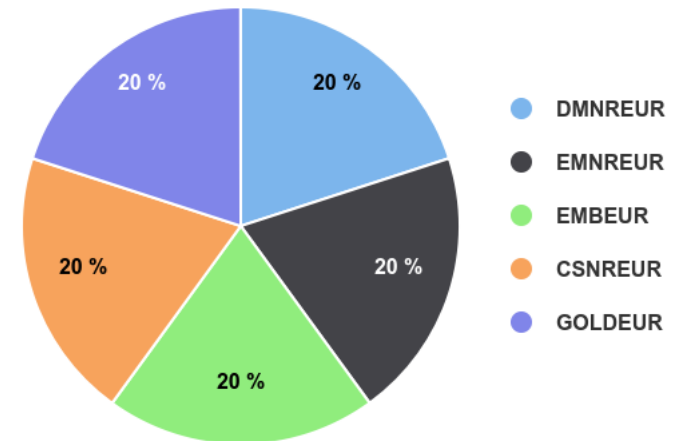
Portfolio 4

Ticker	Name	Allocation
DMNREUR	msci world nr eur	25.00%
EMNREUR	msci em nr eur	25.00%
EMBEUR	emerging markets bonds	25.00%
GOLDEUR	gold	25.00%



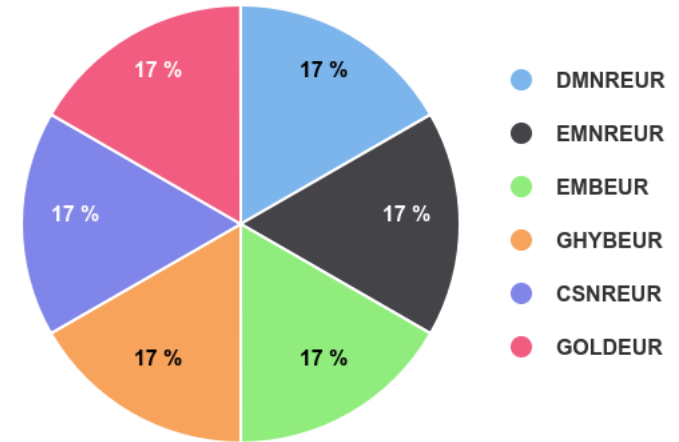
Portfolio 5

Ticker	Name	Allocation
DMNREUR	msci world nr eur	20.00%
EMNREUR	msci em nr eur	20.00%
EMBEUR	emerging markets bonds	20.00%
CSNREUR	msci consumer staples nr eur	20.00%
GOLDEUR	gold	20.00%



Portfolio 6

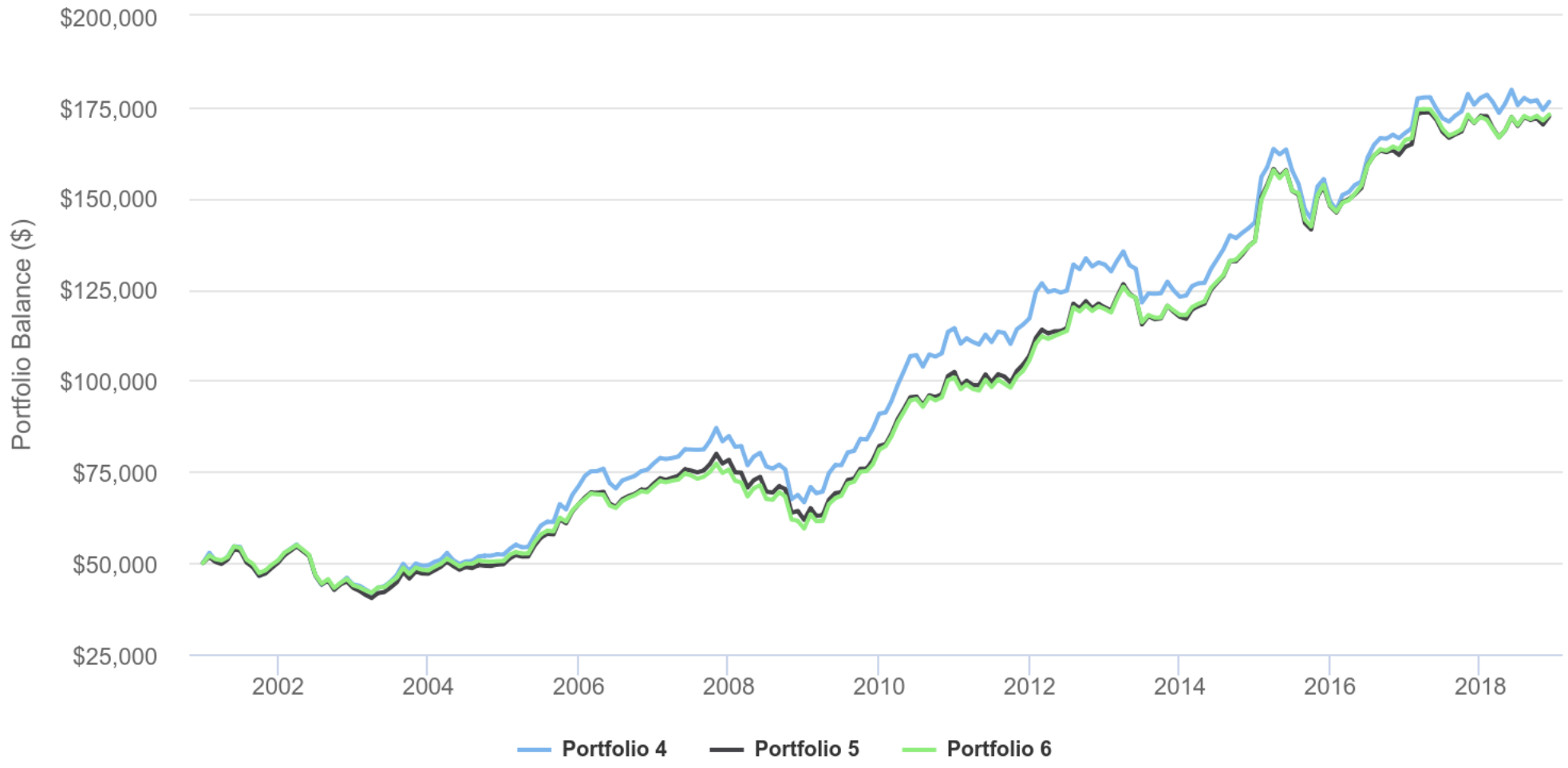
Ticker	Name	Allocation
DMNREUR	msci world nr eur	16.67%
EMNREUR	msci em nr eur	16.67%
EMBEUR	emerging markets bonds	16.67%
GHYBEUR	global high yield euro	16.67%
CSNREUR	msci consumer staples nr eur	16.66%
GOLDEUR	gold	16.66%



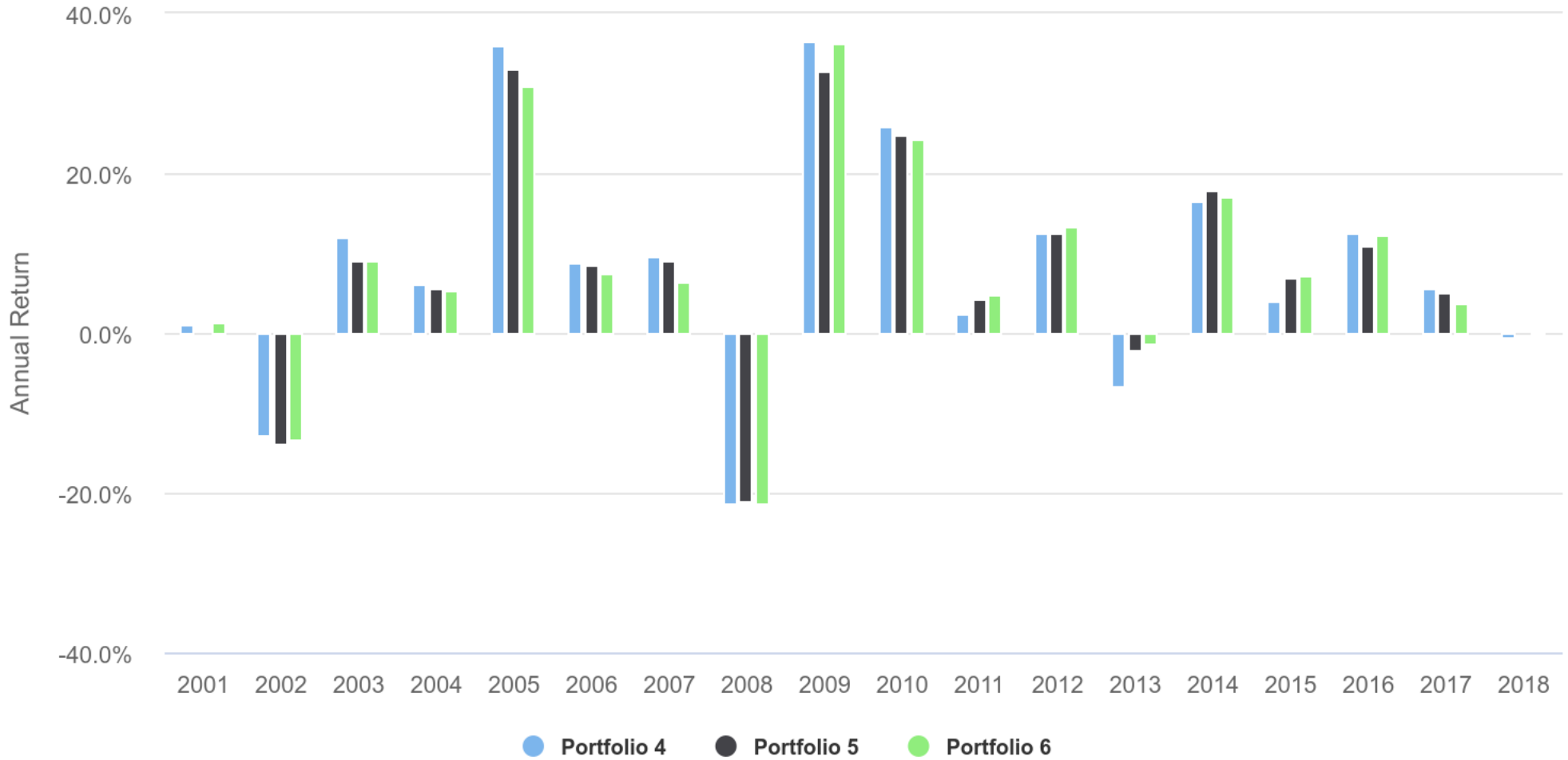
Portfolio Performance

Metric	Portfolio 4	Portfolio 5	Portfolio 6
Start Balance	\$50,000	\$50,000	\$50,000
End Balance	\$176,418	\$172,424	\$172,904
End Balance (inflation adjusted)	\$121,794	\$119,037	\$119,368
CAGR	7.29%	7.15%	7.17%
CAGR (inflation adjusted)	5.09%	4.96%	4.98%
Stdev	10.42%	9.74%	9.48%
Best Year	36.48%	33.13%	36.38%
Worst Year	-21.41%	-21.01%	-21.35%
Max. Drawdown	-24.23%	-25.95%	-23.83%
Sharpe Ratio	0.60	0.62	0.63
Sortino Ratio	0.91	0.94	0.97
US Stock Market Correlation	0.51	0.52	0.51

Portfolio Growth



Annual Returns



Risk and Return Metrics

Metric	Portfolio 4	Portfolio 5	Portfolio 6
Arithmetic Mean (monthly)	0.63%	0.62%	0.62%
Arithmetic Mean (annualized)	7.87%	7.66%	7.65%
Geometric Mean (monthly)	0.59%	0.58%	0.58%
Geometric Mean (annualized)	7.29%	7.15%	7.17%
Volatility (monthly)	3.01%	2.81%	2.74%
Volatility (annualized)	10.42%	9.74%	9.48%
Downside Deviation (monthly)	1.93%	1.80%	1.73%
Max. Drawdown	-24.23%	-25.95%	-23.83%
US Market Correlation	0.51	0.52	0.51
Beta (*)	0.36	0.35	0.33
Alpha (annualized)	4.85%	4.76%	4.90%
R Squared	25.87%	27.37%	25.71%
Sharpe Ratio	0.60	0.62	0.63
Sortino Ratio	0.91	0.94	0.97
Treynor Ratio (%)	17.23	17.35	18.37
Calmar Ratio	0.81	0.88	0.84
Active Return	0.58%	0.45%	0.46%
Tracking Error	12.94%	12.63%	12.77%
Information Ratio	0.05	0.04	0.04
Skewness	-0.49	-0.48	-0.48
Excess Kurtosis	1.36	1.31	1.62
Historical Value-at-Risk (5%)	-4.60%	-4.74%	-4.41%
Analytical Value-at-Risk (5%)	-4.38%	-4.06%	-3.93%
Conditional Value-at-Risk (5%)	-6.80%	-6.37%	-6.20%
Upside Capture Ratio (%)	48.09	47.05	45.27
Downside Capture Ratio (%)	30.58	29.99	27.36
Safe Withdrawal Rate	8.30%	7.85%	7.84%
Perpetual Withdrawal Rate	5.10%	4.98%	4.99%
Positive Periods	136 out of 215 (63.26%)	132 out of 215 (61.40%)	130 out of 215 (60.47%)
Gain/Loss Ratio	1.01	1.12	1.18

(*) US stock market is used as the benchmark for calculations. Value-at-risk metrics are based on monthly values.

Portfolio 4 Returns

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Inflation	Balance
2001	5.53%	-3.62%	-1.11%	2.88%	5.46%	-0.32%	-7.10%	-2.94%	-5.28%	1.78%	3.44%	3.25%	0.97%	1.55%	\$50,487
2002	4.43%	2.06%	2.30%	-3.02%	-2.60%	-10.44%	-5.45%	2.89%	-5.56%	3.93%	3.29%	-4.07%	-12.73%	2.38%	\$44,062
2003	-0.69%	-2.27%	-2.45%	3.53%	0.94%	2.91%	3.97%	6.66%	-3.82%	4.14%	-1.15%	0.11%	11.92%	1.88%	\$49,312
2004	2.05%	1.03%	3.75%	-3.71%	-2.12%	1.46%	0.17%	2.45%	0.40%	-0.01%	0.78%	-0.18%	6.02%	3.26%	\$52,279
2005	3.09%	2.04%	-1.28%	0.17%	5.79%	4.71%	1.74%	-0.07%	7.96%	-2.17%	6.14%	3.51%	35.94%	3.42%	\$71,068
2006	3.97%	1.65%	0.11%	0.86%	-5.24%	-2.00%	3.12%	0.86%	0.84%	1.76%	0.53%	2.31%	8.79%	2.54%	\$77,315
2007	1.87%	-0.36%	0.37%	0.51%	2.50%	-0.09%	-0.08%	0.14%	2.90%	4.22%	-4.20%	1.73%	9.66%	4.08%	\$84,781
2008	-3.50%	0.28%	-6.42%	3.08%	1.32%	-4.64%	-0.78%	1.41%	-1.67%	-10.76%	1.70%	-2.95%	-21.41%	0.09%	\$66,626
2009	6.28%	-2.40%	0.63%	7.27%	2.97%	-0.03%	4.60%	0.49%	4.07%	-0.20%	3.54%	4.75%	36.48%	2.72%	\$90,933
2010	0.34%	3.36%	4.82%	3.81%	3.98%	0.23%	-2.93%	3.19%	-0.51%	0.81%	5.49%	0.91%	25.78%	1.50%	\$114,373
2011	-3.73%	1.33%	-0.90%	-0.64%	2.47%	-1.81%	2.57%	-0.27%	-2.68%	3.67%	1.10%	1.49%	2.35%	2.96%	\$117,060
2012	6.17%	1.92%	-1.89%	0.39%	-0.51%	0.42%	5.72%	-0.95%	2.29%	-1.68%	0.82%	-0.41%	12.60%	1.74%	\$131,811
2013	-1.43%	2.18%	1.99%	-2.79%	-0.73%	-7.08%	2.02%	-0.07%	0.11%	2.55%	-1.84%	-1.43%	-6.71%	1.50%	\$122,965
2014	0.29%	2.08%	0.61%	0.10%	3.00%	2.02%	2.09%	2.78%	-0.54%	1.07%	0.88%	1.16%	16.63%	0.76%	\$143,412
2015	8.63%	1.69%	3.19%	-0.91%	0.84%	-3.54%	-2.34%	-4.59%	-1.65%	6.11%	1.32%	-3.94%	3.98%	0.73%	\$149,114
2016	-1.53%	2.75%	0.53%	1.30%	0.58%	4.24%	2.17%	1.13%	-0.10%	0.66%	-0.57%	0.89%	12.61%	2.07%	\$167,917
2017	0.73%	4.85%	0.15%	0.03%	-1.77%	-1.52%	-0.52%	0.97%	0.65%	2.75%	-1.63%	1.06%	5.70%	2.11%	\$177,491
2018	0.48%	-1.07%	-1.74%	1.47%	2.16%	-2.35%	1.12%	-0.57%	0.24%	-1.50%	1.27%		-0.60%	1.91%	\$176,418

Portfolio 5 Returns

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Inflation	Balance
2001	3.32%	-2.57%	-1.21%	2.43%	5.48%	-0.52%	-6.19%	-2.61%	-4.79%	1.36%	3.21%	2.94%	0.10%	1.55%	\$50,050
2002	4.13%	2.17%	2.43%	-2.33%	-2.52%	-10.19%	-5.45%	2.50%	-5.73%	3.54%	1.81%	-3.92%	-13.76%	2.38%	\$43,161
2003	-1.91%	-2.51%	-2.15%	3.32%	0.66%	2.91%	3.35%	6.38%	-3.78%	4.16%	-1.10%	-0.14%	8.98%	1.88%	\$47,036
2004	2.00%	1.89%	3.03%	-2.38%	-2.09%	1.56%	-0.67%	1.80%	-0.40%	-0.16%	0.80%	0.20%	5.56%	3.26%	\$49,654
2005	3.32%	1.63%	-0.74%	0.04%	5.82%	3.87%	1.86%	-0.21%	7.18%	-1.82%	5.31%	3.13%	33.13%	3.42%	\$66,103
2006	2.80%	1.96%	-0.09%	0.39%	-4.72%	-1.22%	3.14%	1.33%	0.85%	1.64%	-0.08%	2.48%	8.53%	2.54%	\$71,741
2007	2.07%	-0.62%	0.84%	0.68%	2.40%	-0.42%	-0.68%	0.70%	2.30%	3.68%	-3.33%	1.30%	9.08%	4.08%	\$78,256
2008	-4.39%	-0.09%	-5.48%	2.89%	1.23%	-5.52%	-0.33%	2.53%	-1.12%	-9.22%	0.71%	-3.77%	-21.01%	0.09%	\$61,814
2009	5.16%	-3.21%	0.25%	6.71%	2.71%	0.35%	4.87%	0.50%	3.69%	0.03%	3.16%	4.91%	32.78%	2.72%	\$82,076
2010	0.59%	3.43%	4.78%	3.09%	3.45%	0.18%	-2.47%	2.89%	-0.48%	0.81%	5.17%	1.12%	24.72%	1.50%	\$102,364
2011	-3.79%	1.47%	-1.12%	-0.10%	3.00%	-2.08%	2.15%	-0.56%	-1.67%	3.23%	1.70%	2.30%	4.33%	2.96%	\$106,796
2012	4.57%	2.01%	-0.89%	0.52%	0.06%	0.71%	5.83%	-1.05%	1.65%	-1.62%	1.08%	-0.85%	12.40%	1.74%	\$120,041
2013	-0.64%	3.03%	2.88%	-2.08%	-0.97%	-5.88%	1.97%	-0.72%	0.20%	2.93%	-1.32%	-1.20%	-2.16%	1.50%	\$117,453
2014	-0.44%	2.17%	0.76%	0.57%	3.13%	1.56%	1.49%	3.12%	0.01%	1.40%	1.66%	1.08%	17.73%	0.76%	\$138,282
2015	8.64%	2.23%	2.87%	-1.33%	1.14%	-3.61%	-0.65%	-5.21%	-1.19%	6.40%	1.77%	-3.49%	6.88%	0.73%	\$147,793
2016	-1.16%	1.94%	0.54%	0.89%	1.15%	4.10%	1.66%	0.83%	-0.24%	0.35%	-0.82%	1.38%	11.02%	2.07%	\$164,083
2017	0.43%	5.10%	0.18%	-0.01%	-1.16%	-1.94%	-0.96%	0.58%	0.47%	2.50%	-1.07%	1.09%	5.12%	2.11%	\$172,485
2018	-0.01%	-1.82%	-1.55%	1.14%	2.16%	-1.41%	1.42%	-0.46%	0.28%	-1.00%	1.32%		-0.04%	1.91%	\$172,424

Portfolio 6 Returns

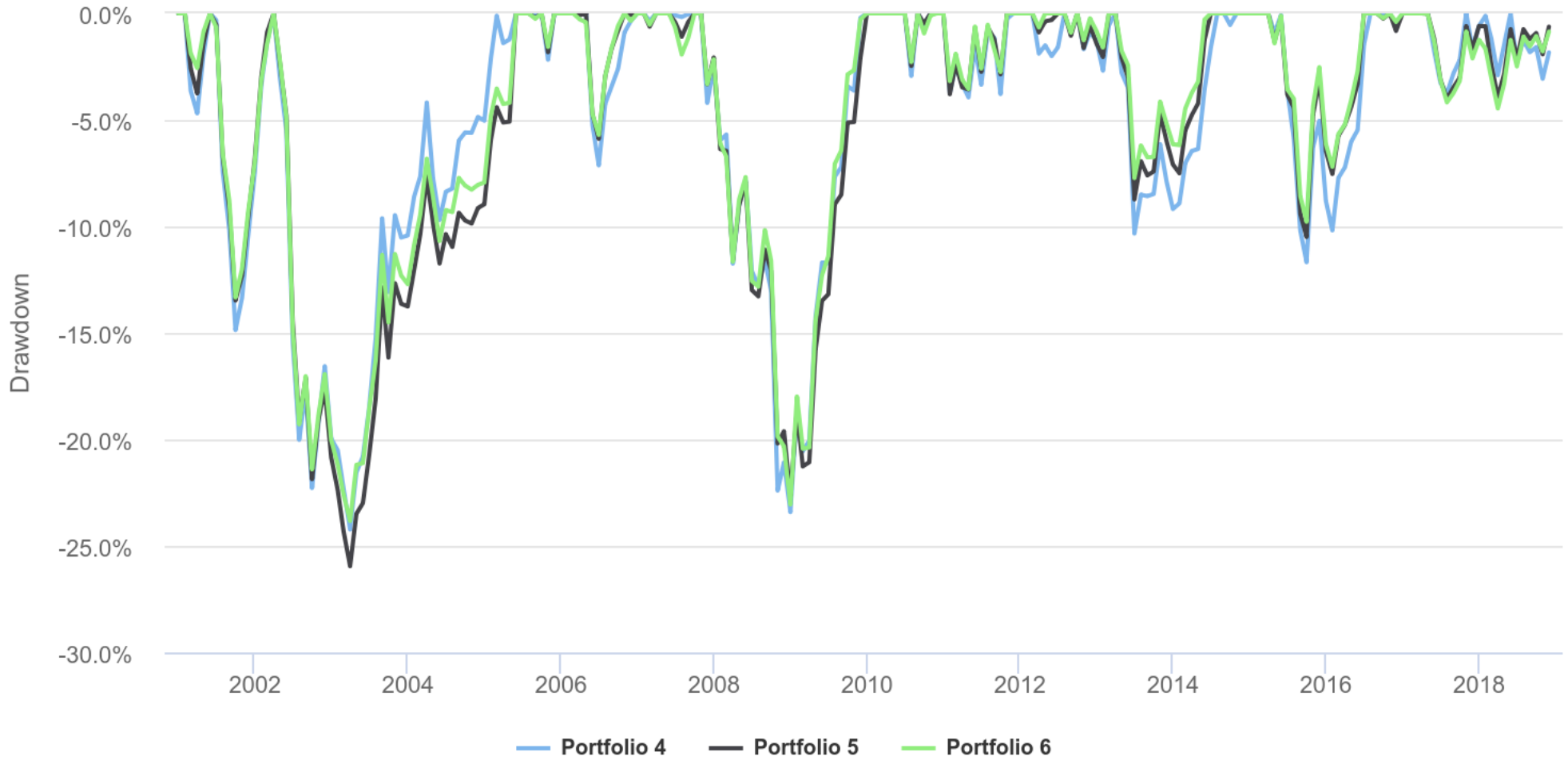
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Inflation	Balance
2001	4.05%	-1.87%	-0.70%	1.74%	5.69%	-0.66%	-5.94%	-2.36%	-5.01%	1.54%	3.13%	2.48%	1.38%	1.55%	\$50,692
2002	4.16%	1.77%	2.18%	-2.22%	-2.73%	-10.43%	-5.26%	2.79%	-5.26%	3.24%	2.36%	-3.74%	-13.40%	2.38%	\$43,897
2003	-1.40%	-1.83%	-1.57%	3.45%	0.11%	3.19%	2.82%	5.92%	-3.57%	3.75%	-1.14%	-0.45%	9.18%	1.88%	\$47,927
2004	2.13%	1.57%	2.89%	-1.92%	-2.27%	1.62%	-0.10%	1.76%	-0.39%	-0.21%	0.24%	0.12%	5.46%	3.26%	\$50,546
2005	3.42%	1.32%	-0.75%	0.06%	5.84%	3.85%	1.72%	-0.25%	6.30%	-1.57%	4.79%	2.83%	30.84%	3.42%	\$66,135
2006	2.20%	2.10%	-0.28%	-0.14%	-4.33%	-1.03%	2.94%	1.37%	1.03%	1.53%	-0.35%	2.33%	7.39%	2.54%	\$71,020
2007	2.07%	-0.53%	0.62%	0.41%	2.27%	-0.67%	-1.27%	0.78%	1.77%	3.05%	-3.32%	1.20%	6.41%	4.08%	\$75,571
2008	-4.05%	-0.65%	-5.28%	3.30%	1.15%	-5.28%	-0.30%	3.04%	-1.60%	-9.34%	-0.57%	-3.43%	-21.35%	0.09%	\$59,434
2009	6.58%	-2.98%	0.07%	7.50%	2.48%	1.02%	4.89%	0.68%	3.81%	0.20%	2.44%	5.25%	36.38%	2.72%	\$81,057
2010	1.22%	3.15%	4.71%	3.21%	3.41%	0.42%	-2.28%	2.86%	-0.94%	0.85%	4.93%	0.76%	24.40%	1.50%	\$100,832
2011	-3.18%	1.32%	-1.24%	-0.45%	3.03%	-1.98%	2.10%	-1.14%	-1.09%	3.13%	1.48%	2.87%	4.71%	2.96%	\$105,578
2012	4.28%	1.87%	-0.66%	0.67%	0.66%	0.62%	5.67%	-0.91%	1.38%	-1.26%	1.04%	-0.59%	13.29%	1.74%	\$119,609
2013	-0.78%	3.11%	2.75%	-1.77%	-0.69%	-5.42%	1.65%	-0.59%	0.02%	2.78%	-1.06%	-1.03%	-1.34%	1.50%	\$118,003
2014	-0.04%	1.83%	0.77%	0.54%	3.02%	1.42%	1.41%	2.97%	0.27%	1.41%	1.34%	0.99%	17.09%	0.76%	\$138,172
2015	8.24%	2.37%	2.98%	-1.40%	1.31%	-3.46%	-0.45%	-4.77%	-1.30%	6.01%	1.92%	-3.68%	7.13%	0.73%	\$148,018
2016	-1.15%	1.66%	0.47%	1.22%	1.45%	3.60%	1.70%	1.07%	-0.22%	0.66%	-0.40%	1.55%	12.13%	2.07%	\$165,978
2017	0.26%	4.75%	0.06%	-0.02%	-1.29%	-1.83%	-1.09%	0.45%	0.59%	2.40%	-1.26%	0.88%	3.77%	2.11%	\$172,232
2018	-0.42%	-1.41%	-1.46%	1.21%	2.12%	-1.25%	1.43%	-0.46%	0.49%	-0.72%	0.94%		0.39%	1.91%	\$172,904

Portfolio Returns Based Style Analysis

Style Category	Portfolio 4	Portfolio 5	Portfolio 6
Large-cap Value	0.00%	0.00%	0.00%
Large-cap Growth	0.00%	7.85%	5.71%
Mid-cap Value	0.00%	0.86%	2.55%
Mid-cap Growth	19.35%	17.07%	18.50%
Small-cap Value	0.00%	0.00%	0.00%
Small-cap Growth	0.00%	0.00%	0.00%
Global ex-US Developed Markets	0.00%	0.00%	0.00%
Emerging Markets	15.14%	9.12%	5.70%
Corporate Bonds	0.00%	0.00%	2.95%
Long-Term Treasuries	3.32%	8.59%	6.23%
Intermediate-Term Treasuries	13.82%	2.16%	0.00%
Short-Term Treasuries	48.38%	54.34%	58.35%
R Squared	28.41%	25.60%	21.86%

Style analysis is based on monthly returns from Apr 2005 to Nov 2018 and uses total portfolio return with monthly rebalancing.

Drawdowns



Drawdowns for Historical Market Stress Periods

Stress Period	Start	End	Portfolio 4	Portfolio 5	Portfolio 6
Subprime Crisis	Nov 2007	Mar 2009	-23.41%	-22.65%	-23.05%

Drawdowns for Portfolio 4 (worst 10)

Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
1	Apr 2002	Mar 2003	1 year	May 2005	2 years 2 months	3 years 2 months	-24.23%
2	Nov 2007	Dec 2008	1 year 2 months	Dec 2009	1 year	2 years 2 months	-23.41%
3	Jun 2001	Sep 2001	4 months	Mar 2002	6 months	10 months	-14.87%
4	Apr 2015	Sep 2015	6 months	Jul 2016	10 months	1 year 4 months	-11.68%
5	Apr 2013	Jun 2013	3 months	Jul 2014	1 year 1 month	1 year 4 months	-10.33%
6	May 2006	Jun 2006	2 months	Dec 2006	6 months	8 months	-7.13%
7	Feb 2001	Mar 2001	2 months	May 2001	2 months	4 months	-4.69%
8	Jan 2011	Apr 2011	4 months	Nov 2011	7 months	11 months	-3.94%
9	May 2017	Jul 2017	3 months	Oct 2017	3 months	6 months	-3.76%
10	Jun 2018	Oct 2018	5 months				-3.07%

Drawdowns for Portfolio 5 (worst 10)

Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
1	Apr 2002	Mar 2003	1 year	May 2005	2 years 2 months	3 years 2 months	-25.95%
2	Nov 2007	Dec 2008	1 year 2 months	Dec 2009	1 year	2 years 2 months	-22.65%
3	Jun 2001	Sep 2001	4 months	Mar 2002	6 months	10 months	-13.48%
4	Apr 2015	Sep 2015	6 months	Jun 2016	9 months	1 year 3 months	-10.49%
5	Apr 2013	Jun 2013	3 months	Jun 2014	1 year	1 year 3 months	-8.73%
6	May 2006	Jun 2006	2 months	Oct 2006	4 months	6 months	-5.89%
7	Apr 2017	Jul 2017	4 months				-4.02%
8	Jan 2011	Jan 2011	1 month	Oct 2011	9 months	10 months	-3.79%
9	Feb 2001	Mar 2001	2 months	May 2001	2 months	4 months	-3.76%
10	Jul 2010	Jul 2010	1 month	Aug 2010	1 month	2 months	-2.47%

Drawdowns for Portfolio 6 (worst 10)

Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
1	Apr 2002	Mar 2003	1 year	May 2005	2 years 2 months	3 years 2 months	-23.83%
2	Nov 2007	Dec 2008	1 year 2 months	Dec 2009	1 year	2 years 2 months	-23.05%
3	Jun 2001	Sep 2001	4 months	Mar 2002	6 months	10 months	-13.33%
4	Apr 2015	Sep 2015	6 months	Jun 2016	9 months	1 year 3 months	-9.78%
5	Apr 2013	Jun 2013	3 months	Jun 2014	1 year	1 year 3 months	-7.73%
6	Mar 2006	Jun 2006	4 months	Oct 2006	4 months	8 months	-5.70%
7	Apr 2017	Mar 2018	1 year				-4.46%
8	Jan 2011	Apr 2011	4 months	Oct 2011	6 months	10 months	-3.55%
9	Feb 2001	Mar 2001	2 months	May 2001	2 months	4 months	-2.56%
10	Jul 2010	Jul 2010	1 month	Aug 2010	1 month	2 months	-2.28%

Portfolio Components

Name	CAGR	Stdev	Best Year	Worst Year	Max DD	Sharpe Ratio	Sortino Ratio	US Mkt Correlation
msci world nr eur	3.80%	13.47%	26.17%	-37.67%	-49.17%	0.24	0.33	0.82
msci em nr eur	7.73%	19.24%	72.97%	-50.92%	-56.24%	0.41	0.61	0.71
emerging markets bonds	6.89%	10.41%	28.22%	-10.27%	-20.73%	0.56	0.90	0.08
gold	7.59%	16.24%	36.60%	-30.92%	-37.03%	0.45	0.75	-0.19
msci consumer staples nr eur	6.26%	10.64%	22.16%	-19.39%	-32.99%	0.50	0.74	0.40
global high yield euro	7.04%	10.20%	54.38%	-23.05%	-29.97%	0.58	0.94	0.33

Monthly Correlations

Name	msci world nr eur	msci em nr eur	emerging markets bonds	gold	msci consumer staples nr eur	global high yield euro
msci world nr eur	-	0.79	0.48	-0.06	0.69	0.67
msci em nr eur	0.79	-	0.43	0.09	0.45	0.59
emerging markets bonds	0.48	0.43	-	0.33	0.57	0.83
gold	-0.06	0.09	0.33	-	0.06	0.18
msci consumer staples nr eur	0.69	0.45	0.57	0.06	-	0.57
global high yield euro	0.67	0.59	0.83	0.18	0.57	-

Portfolio Return Decomposition

Name	Portfolio 4	Portfolio 5	Portfolio 6
msci world nr eur	\$31,011	\$23,305	\$19,491
msci em nr eur	\$36,578	\$27,882	\$23,318
emerging markets bonds	\$30,330	\$22,904	\$19,002
gold	\$28,501	\$21,436	\$17,681
msci consumer staples nr eur		\$26,896	\$22,353
global high yield euro			\$21,057

Portfolio Risk Decomposition

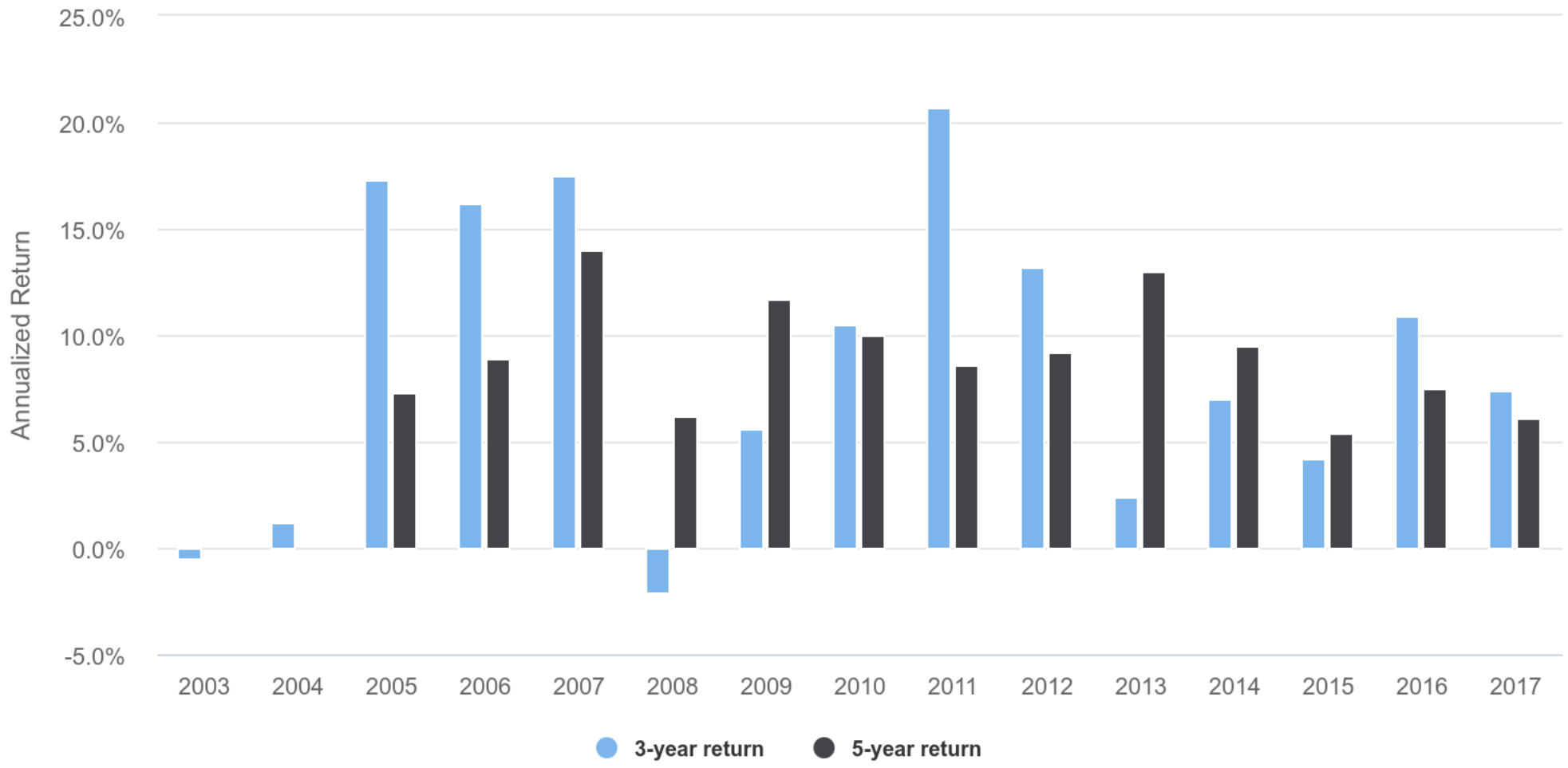
Name	Portfolio 4	Portfolio 5	Portfolio 6
msci world nr eur	24.16%	21.90%	18.89%
msci em nr eur	38.19%	31.89%	26.97%
emerging markets bonds	17.91%	15.77%	14.28%
gold	19.74%	14.91%	11.81%
msci consumer staples nr eur		15.55%	13.29%
global high yield euro			14.76%

Rolling Returns

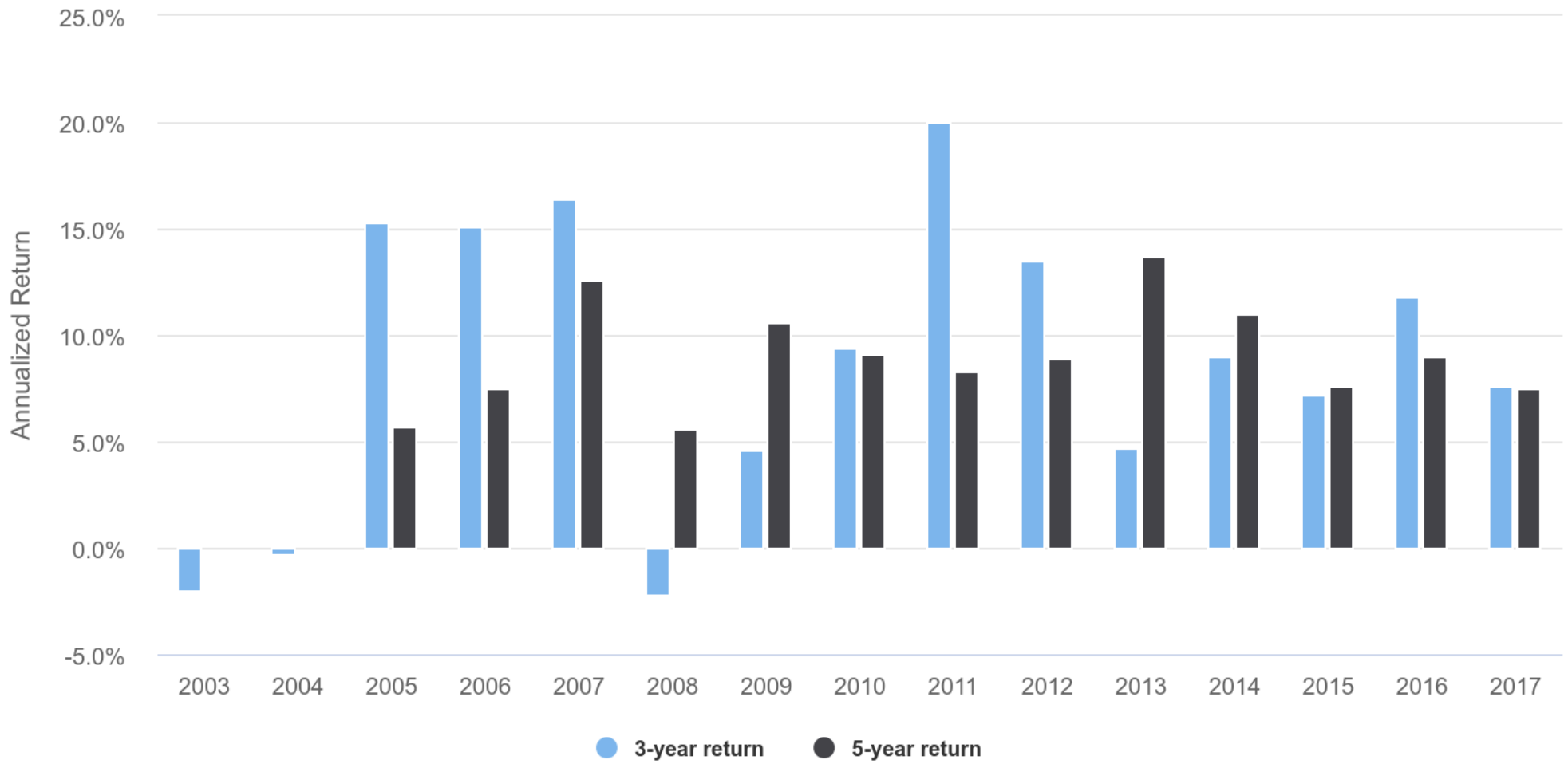
Roll Period	Portfolio 4			Portfolio 5			Portfolio 6		
	Average	High	Low	Average	High	Low	Average	High	Low
1 year	8.74%	36.48%	-21.41%	8.44%	33.13%	-21.01%	8.44%	36.38%	-21.35%
3 years	8.76%	20.67%	-2.13%	8.67%	19.99%	-2.21%	8.62%	21.11%	-3.50%
5 years	9.04%	13.98%	5.45%	9.02%	13.70%	5.62%	8.94%	14.70%	4.40%
7 years	9.04%	12.77%	4.04%	8.97%	13.26%	3.06%	8.90%	13.92%	2.30%
10 years	9.07%	11.58%	7.67%	8.96%	10.79%	7.43%	8.91%	10.58%	7.27%
15 years	8.54%	9.73%	7.56%	8.47%	9.68%	7.49%	8.42%	9.54%	7.50%

Result statistics are based on annualized rolling returns over full calendar year periods

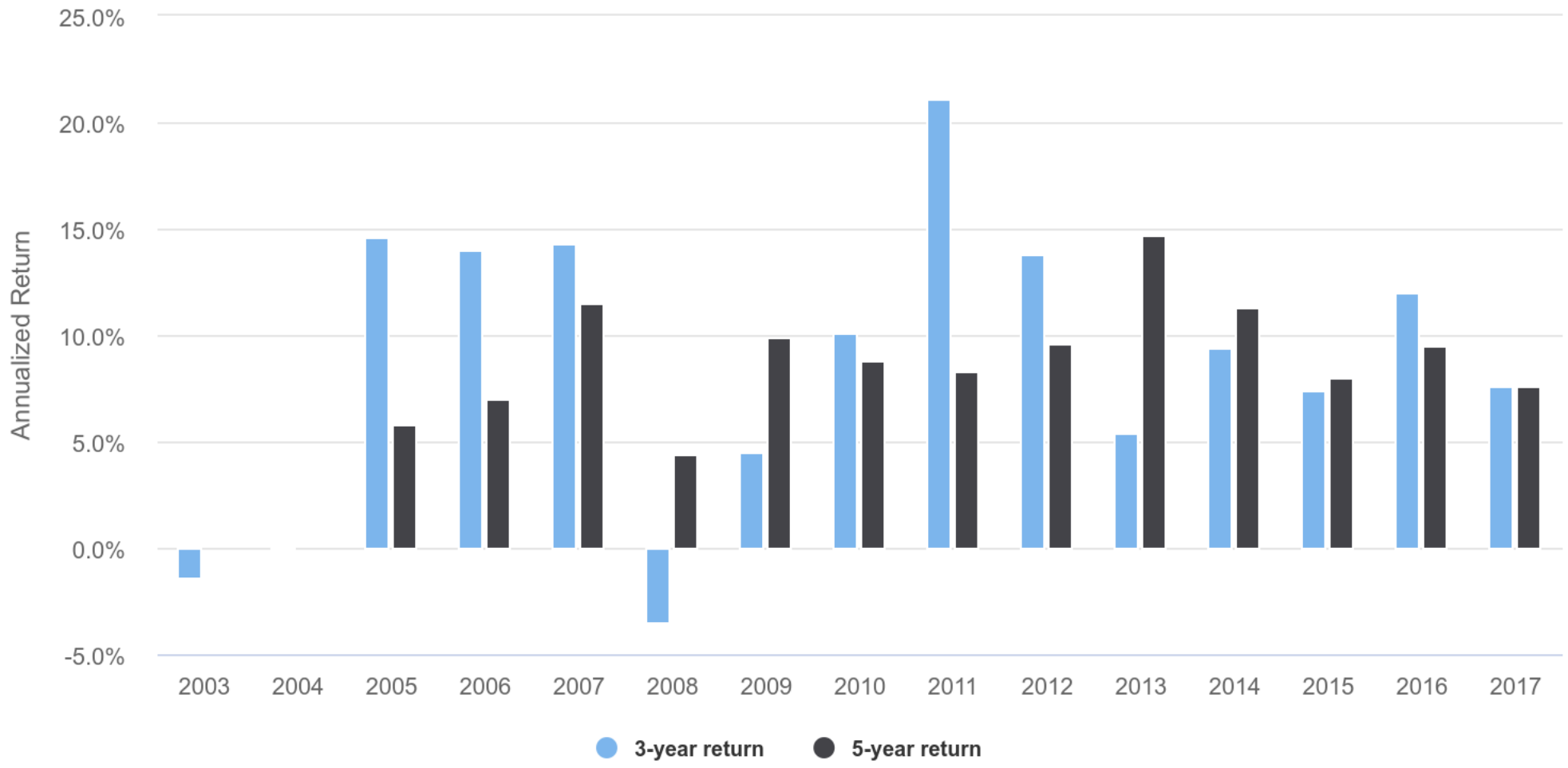
Portfolio 4 Rolling Returns



Portfolio 5 Rolling Returns



Portfolio 6 Rolling Returns



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