

RETURN AND RISK

GOVERNMENT PENSION FUND GLOBAL

PRESS SEMINAR
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Extended information in three publications



RETURN AND RISK

GOVERNMENT
PENSION FUND
GLOBAL

/2017

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RETURN

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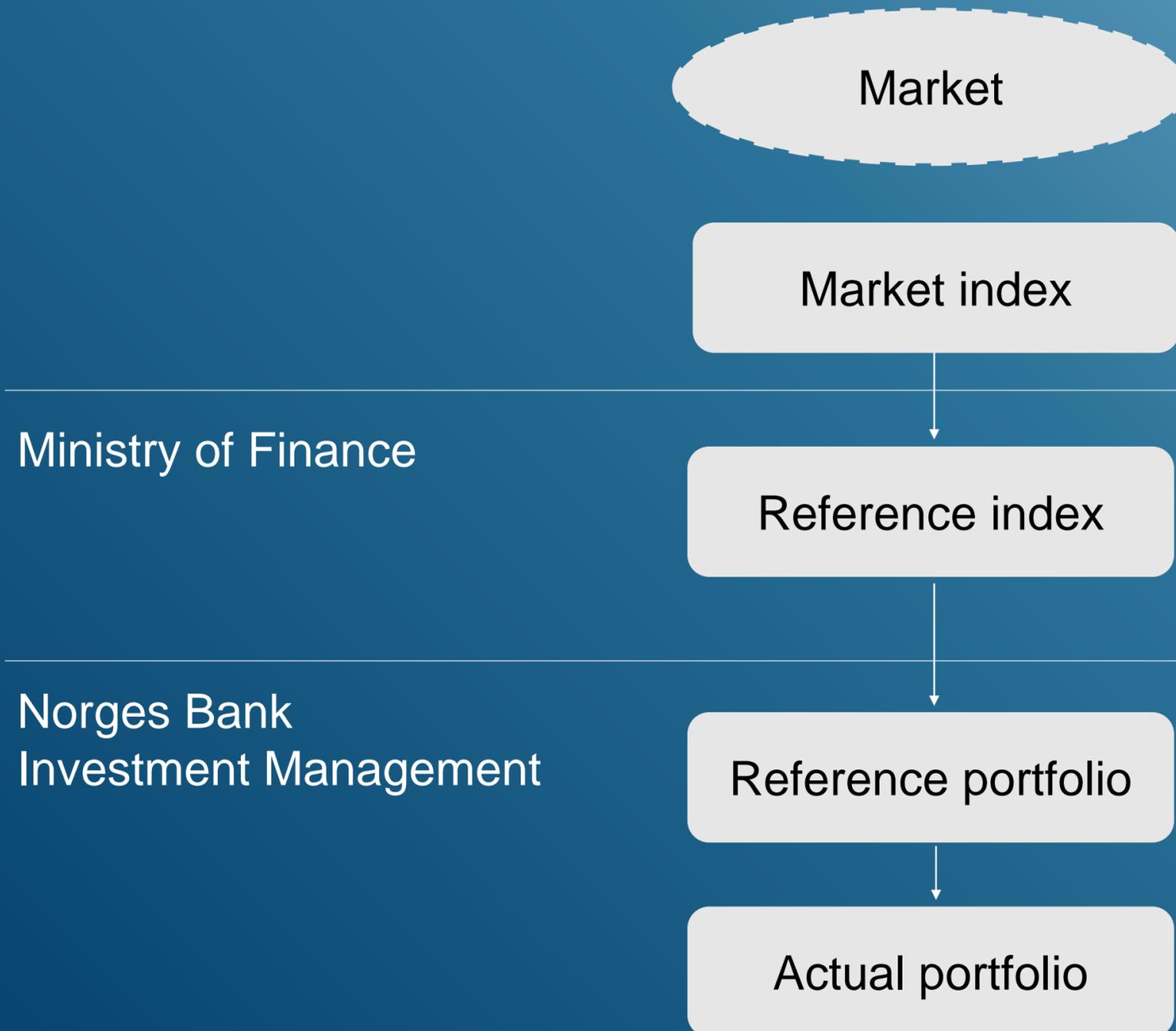
RISK

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APPENDIX

Factor and risk-adjusted returns

Management of the fund

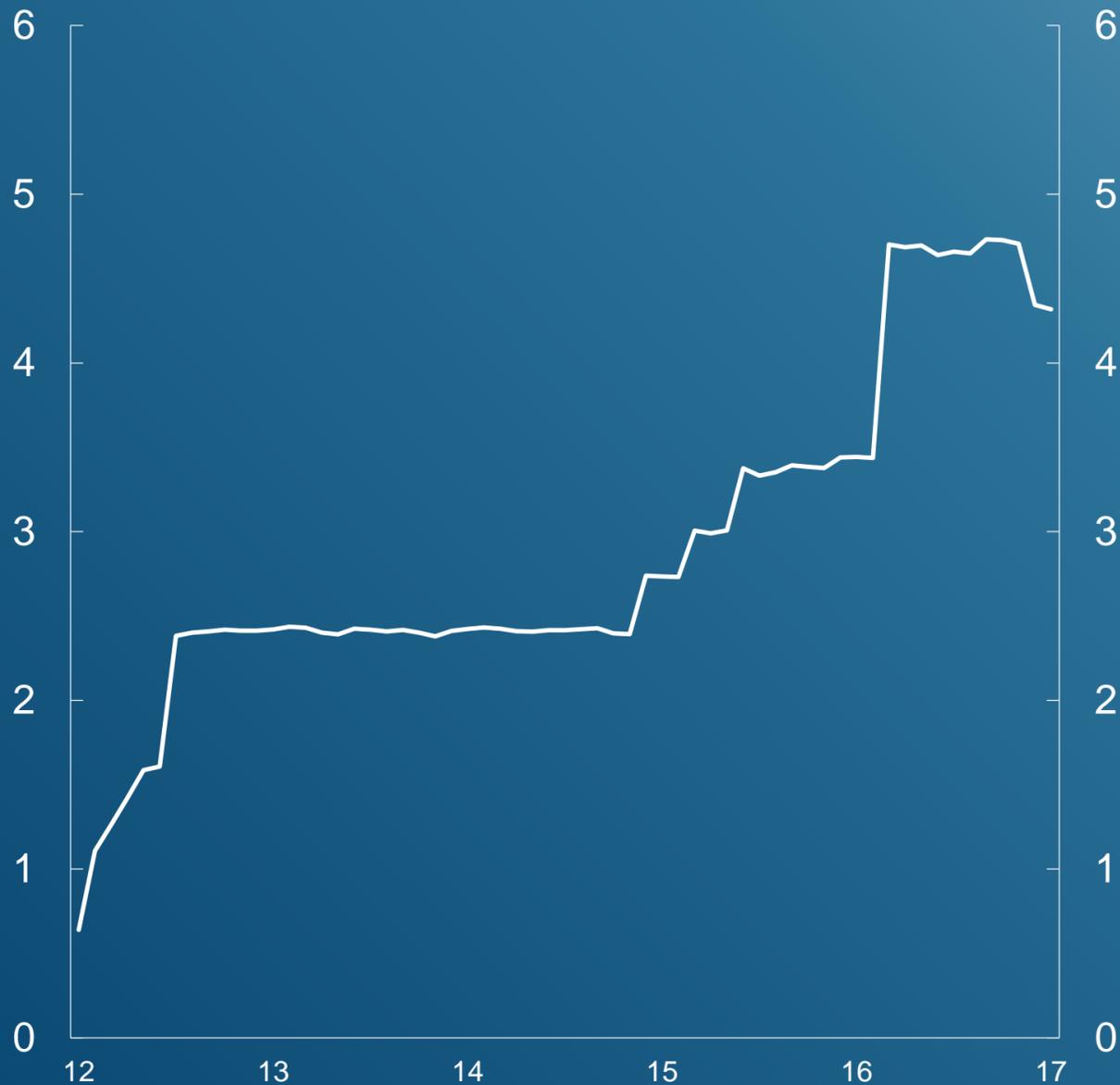


A large, layered mountain peak, possibly a volcano, is reflected in a calm lake. The sky is a clear, light blue. The word "INVESTMENTS" is overlaid in large, white, bold, sans-serif capital letters across the middle of the image.

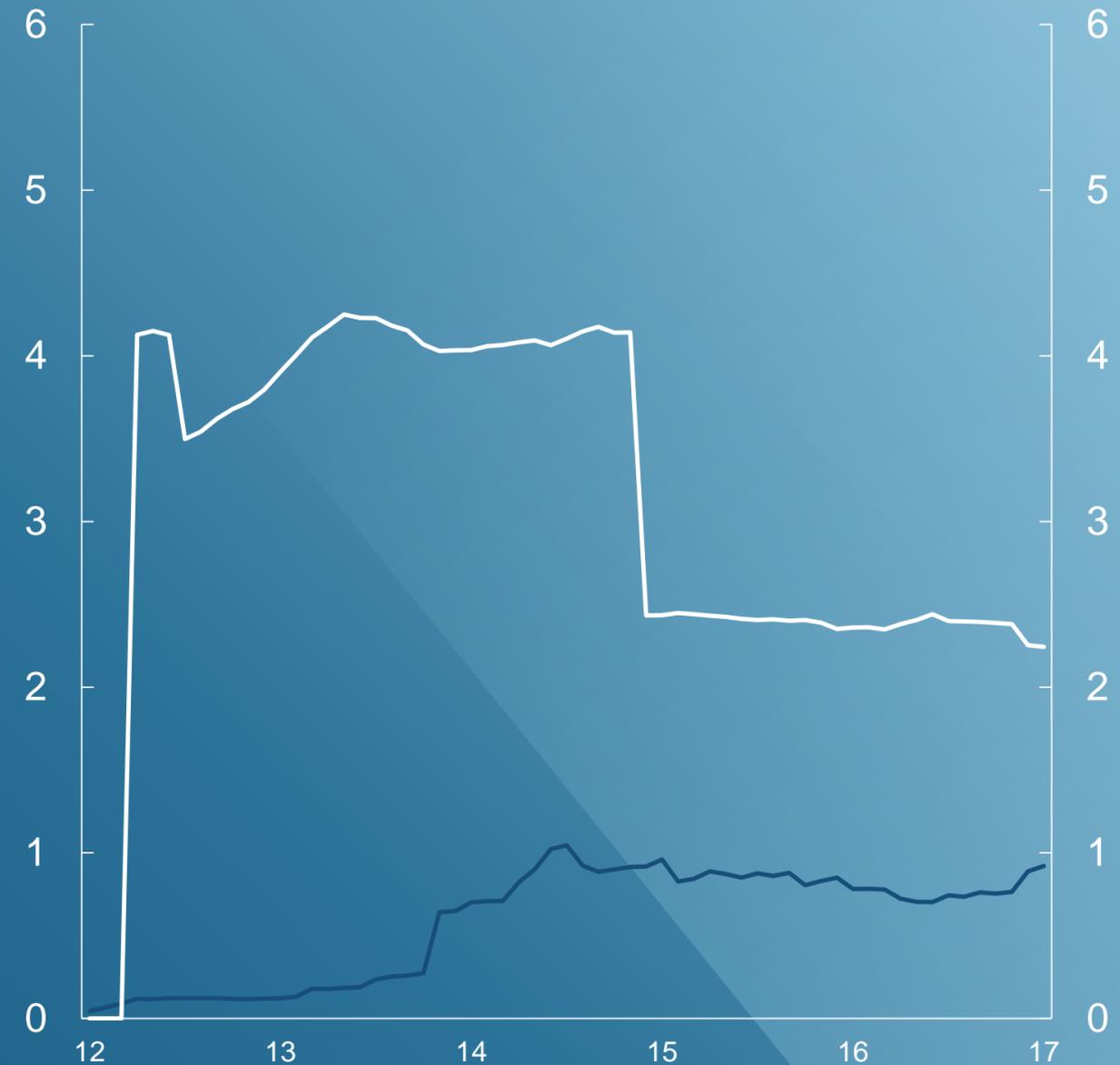
INVESTMENTS

Reference portfolio adjustments for equities

Over-weighted stocks. Percent (chart 5 and 6)



—Systematic factors



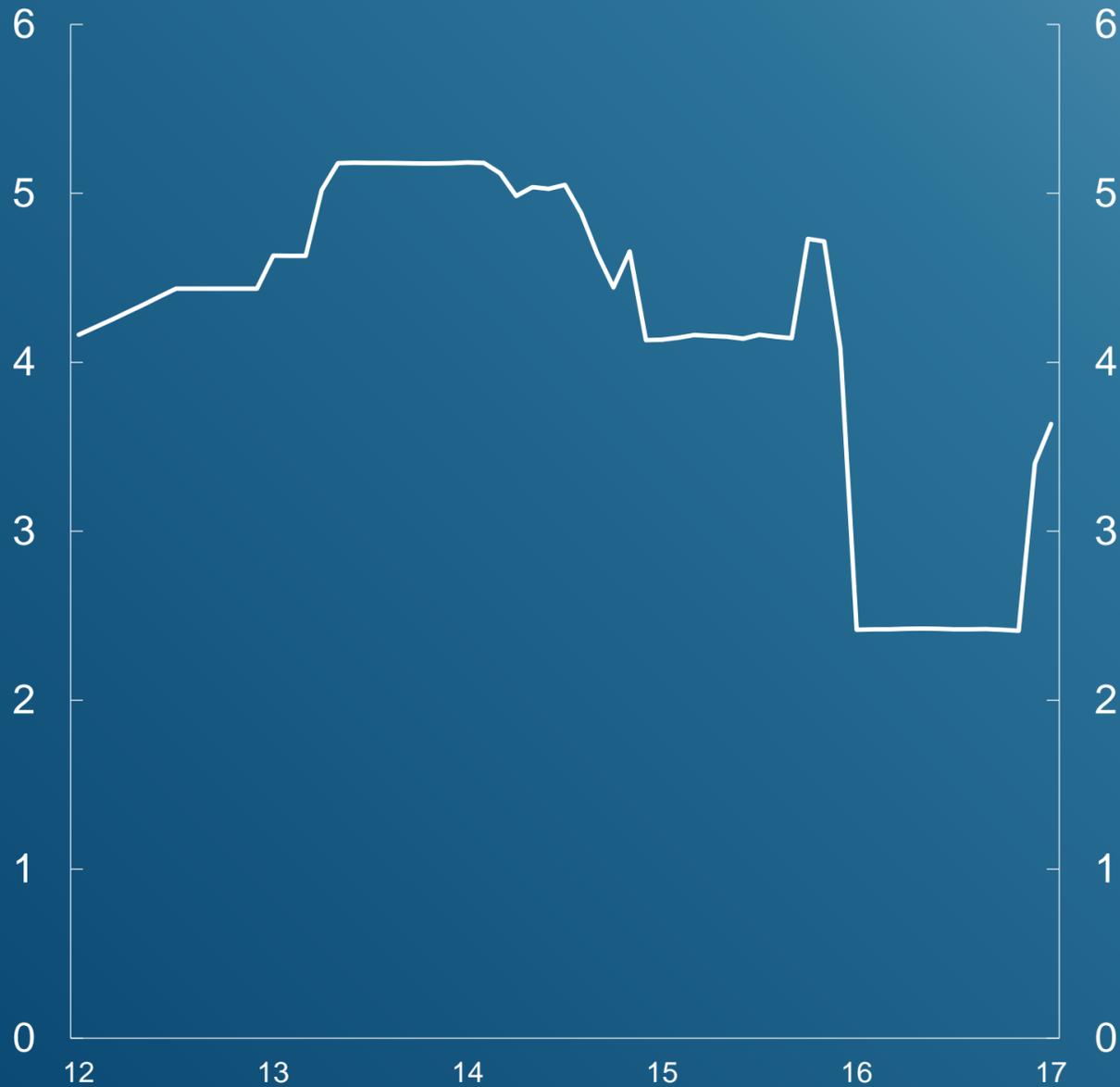
—Universe expansion

—Free float

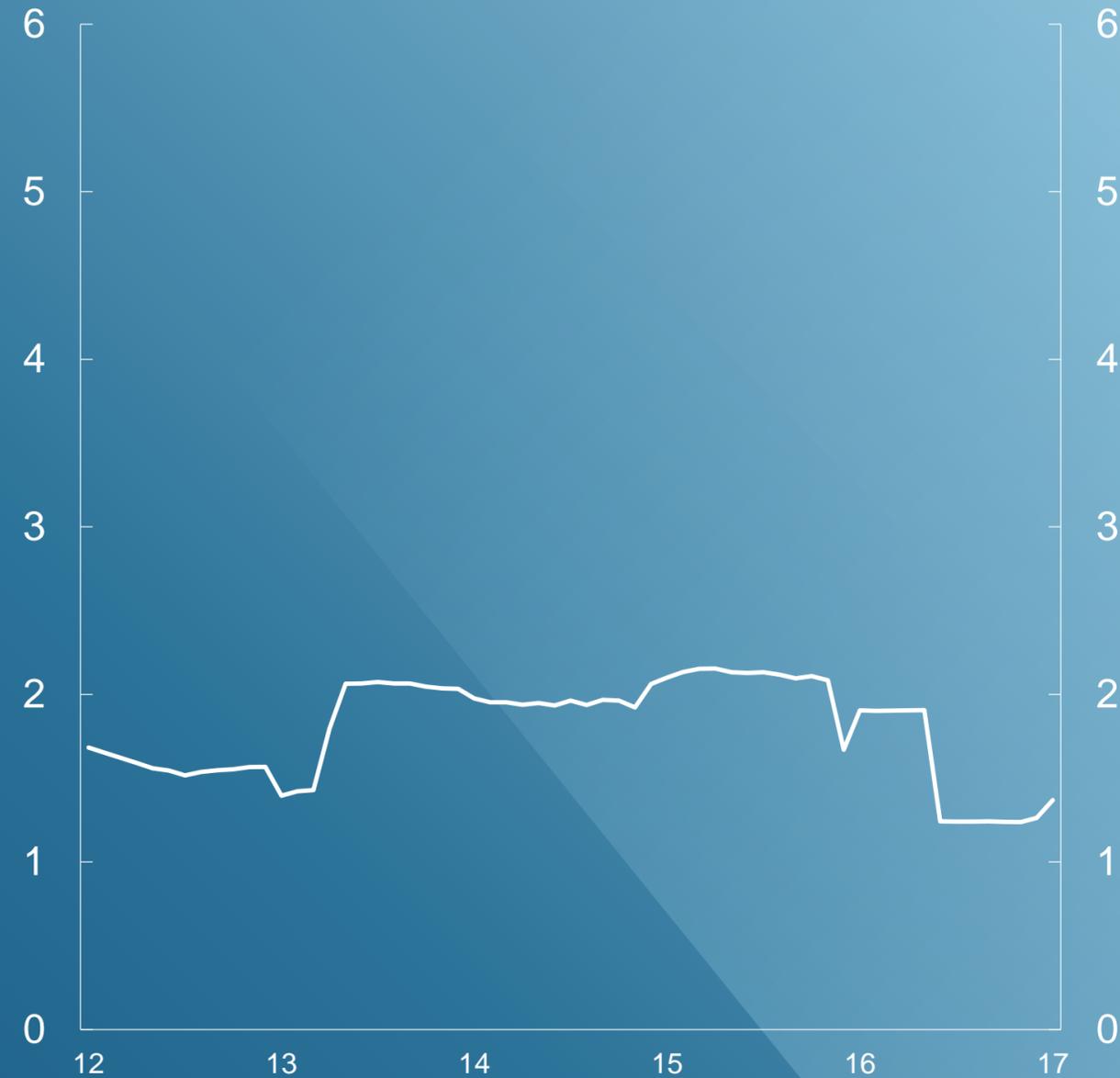


Reference portfolio adjustments for fixed income

Over- and under-weighted bonds. Percent (chart 7 and 8)



—Emerging markets



—Fiscal strength



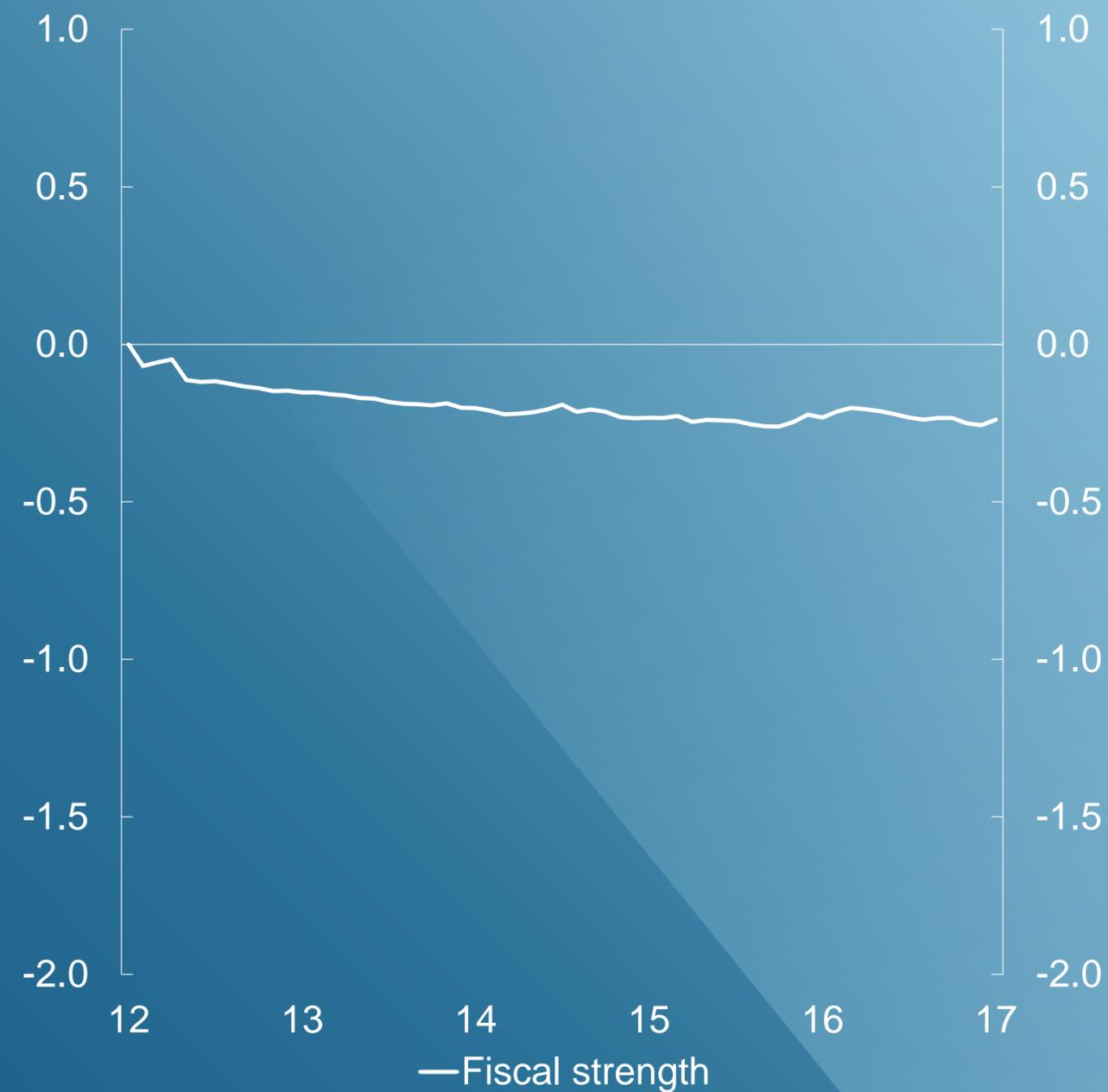
Contributions from equity adjustments

Versus the benchmark index. Percentage points (chart 9 and 10)



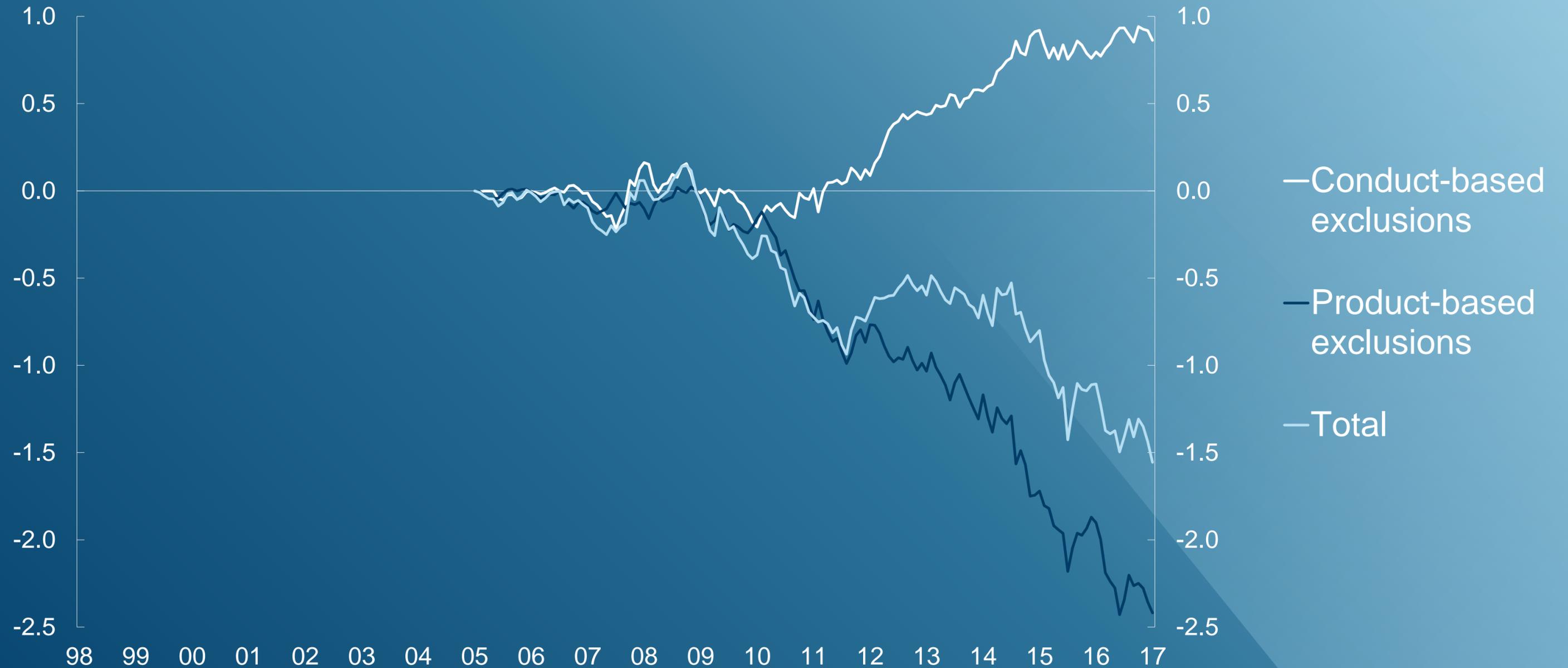
Contributions from fixed-income adjustments

Versus the benchmark index. Percentage points (chart 11 and 12)



Return impact of ethical exclusions

Equities. Percentage points (chart 4)



Source: Norges Bank Investment Management



Contribution to return impact

Equity benchmark index exclusions by exclusion criterion (table 12)

Criterion	Number of excluded companies from benchmark	Market value in benchmark if not excluded	2017	2006-2017 annualised
Product-based exclusions	98	159	-0.02	-0.10
Production of specific weapon types	19	62	-0.18	-0.05
Production of tobacco	17	69	0.13	-0.05
Thermal coal mining or coal based power production	62	28	0.04	0.00
Conduct-based exclusions	27	43	-0.08	0.04
Serious or systematic human rights violations	2	12	-0.04	-0.01
Serious violations of the rights of individuals in situations of war or conflict	1	0	0.00	0.00
Severe environmental damage	19	29	-0.04	0.04
Gross corruption	1	0	0.00	0.00
Other particularly serious violations of fundamental ethical norms	4	2	0.00	0.00
Total	125	202	-0.10	-0.06





RETURN

13.7 percent return

Annual absolute return on the fund. Percent (chart 1)



Source: Norges Bank Investment Management



Absolute return key figures

Currency basket. Annualised. Percent (table 15)

	Since 01.01.1998	Last 10 years	Last 5 years	2017
Return on equity investments ¹	6.15	5.96	12.94	19.44
Return on fixed-income investments	4.76	4.40	2.96	3.31
Return on unlisted real estate investments ²			8.03	7.52
Return on fund	6.09	6.16	9.26	13.66

¹ Since 01.01.1999.

² Includes listed real estate investments from 1 November 2014 to the end of 2016.

Source: Norges Bank Investment Management



Fund return

Measured in different currencies. Annualised. Percent (table 18)

	Since 01.01.1998	Last 10 years	Last 5 years	2017
Currency basket	6.09	6.16	9.26	13.66
Norwegian Krone	7.05	9.24	15.84	13.95
US Dollar	6.45	4.85	7.26	19.92
Euro ¹	5.98	6.94	9.28	5.33
British Pound	7.54	8.98	11.27	9.54

¹ Euro was introduced as currency on 01.01.1999. WM/Reuters' Euro rate is used as estimate for 31.12.1997

Source: Norges Bank Investment Management



The fund's real return

Measured in the fund's currency basket. Annualised. Percent (table 17)

	Since 01.01.1998	Last 10 years	Last 5 years	2017
Fund return (nominal)	6.09	6.16	9.26	13.66
Annual inflation	1.77	1.65	1.30	1.83
Annual management fees	0.09	0.08	0.06	0.06
Real return	4.16	4.36	7.81	11.55

Source: Norges Bank Investment Management



Positive relative return

Quarterly relative return of the fund. Percentage points (chart 15)



Source: Norges Bank Investment Management

Relative return

Currency basket. Annualised (table 27)

	Since 01.01.1998	Last 10 years	Last 5 years	2017
Relative return on fund (percentage points) ¹	0.28	0.15	0.29	0.70
Relative return on equity management (percentage points) ²	0.51	0.20	0.42	0.79
Relative return on fixed-income management (percentage points)	0.15	0.20	-0.02	0.39

¹ Includes real estate management from 01.01.2017. Relative return prior to 2017 is calculated on the equity and fixed-income management only.

² Equity management since 01.01.1999.



Contributions to relative return 2017

Percentage points (table 29)

	Equity management	Fixed-income management	Real estate management	Allocation	Total
Fund allocation	0.10	0.08	0.03	0.01	0.22
Internal reference portfolio	0.13	0.10		0.01	0.23
of which systematic factors	0.02				0.02
of which universe expansion	-0.01	0.08			0.08
Allocation decisions	-0.03	-0.02		0.00	-0.04
Real estate			0.03		0.03
Unlisted real estate			0.02		0.02
Listed real estate			0.01		0.01
Security selection	0.43	-0.03			0.40
Internal security selection	0.22	-0.03			0.19
External security selection	0.21				0.21
Asset management	-0.04	0.10		0.03	0.08
Asset positioning	-0.09	0.08		0.03	0.02
Securities lending	0.04	0.02			0.06
Total	0.49	0.14	0.03	0.04	0.70

Source: Norges Bank Investment Management



Contributions to relative return 2013-2017

Annualised. Percentage points (table 30)

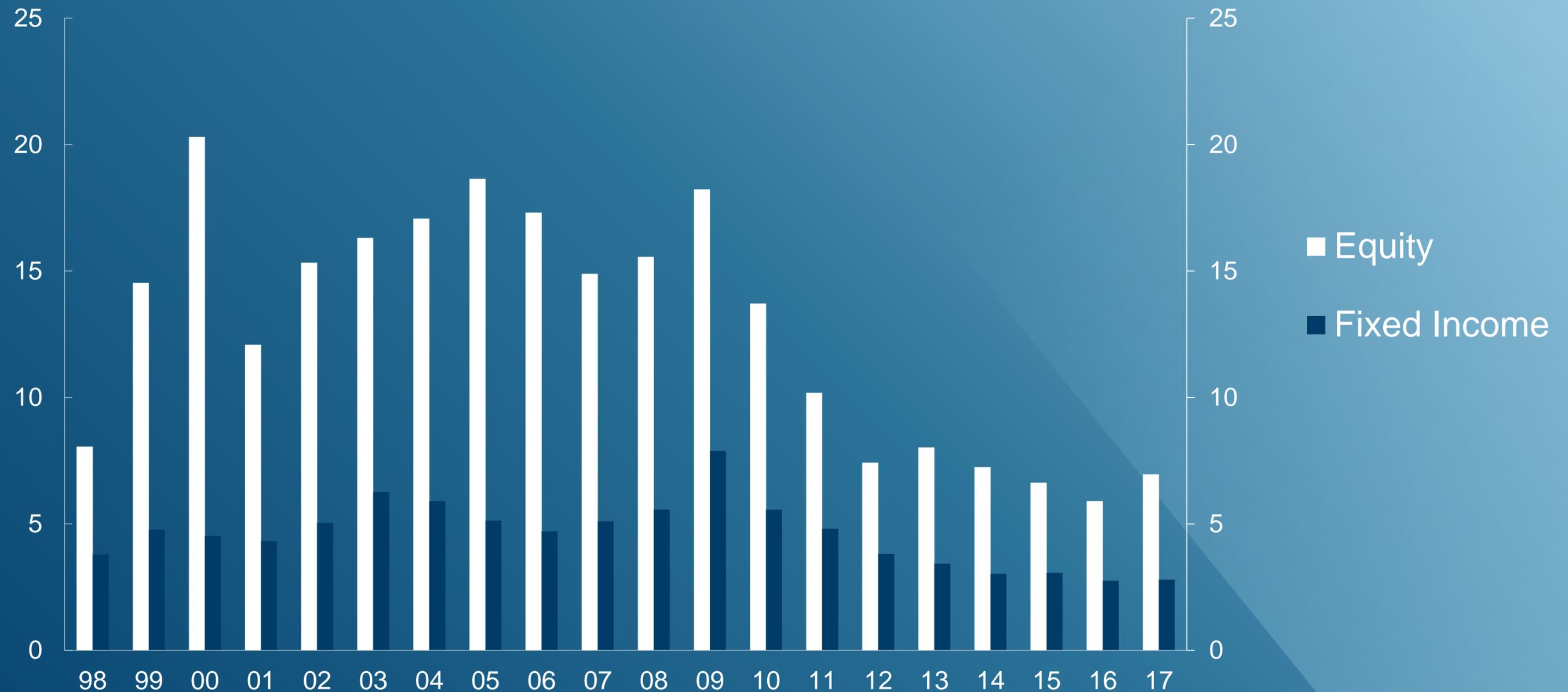
	Equity management	Fixed-income management	Real estate management	Allocation	Total
Fund allocation	-0.01	-0.10	0.01	0.03	-0.07
Internal reference portfolio	0.01	-0.09		0.00	-0.08
of which systematic factors	0.02				0.02
of which universe expansion	0.00	-0.05			-0.05
Allocation decisions	-0.02	0.00		0.03	0.01
Real estate			0.01		0.01
Unlisted real estate			0.00		0.00
Listed real estate			0.00		0.00
Security selection	0.14	-0.01			0.14
Internal security selection	0.03	-0.01			0.02
External security selection	0.11				0.11
Asset management	0.13	0.08		0.01	0.22
Asset positioning	0.08	0.08		0.01	0.16
Securities lending	0.05	0.01			0.06
Total	0.27	-0.02	0.01	0.04	0.29

Source: Norges Bank Investment Management



Management cost per asset class

Basis points (chart 18)



Source: Norges Bank Investment Management



Management costs per investment strategy

2017. Basis points (table 31)

	Contribution to the fund's management costs	Management costs based on assets under management
Fund allocation	0.9	
of which unlisted real estate	0.6	23.3
Security selection	2.9	13.8
Internal	0.7	4.3
External ¹	2.2	46.6
Asset management	2.2	3.0
Total	6.0	

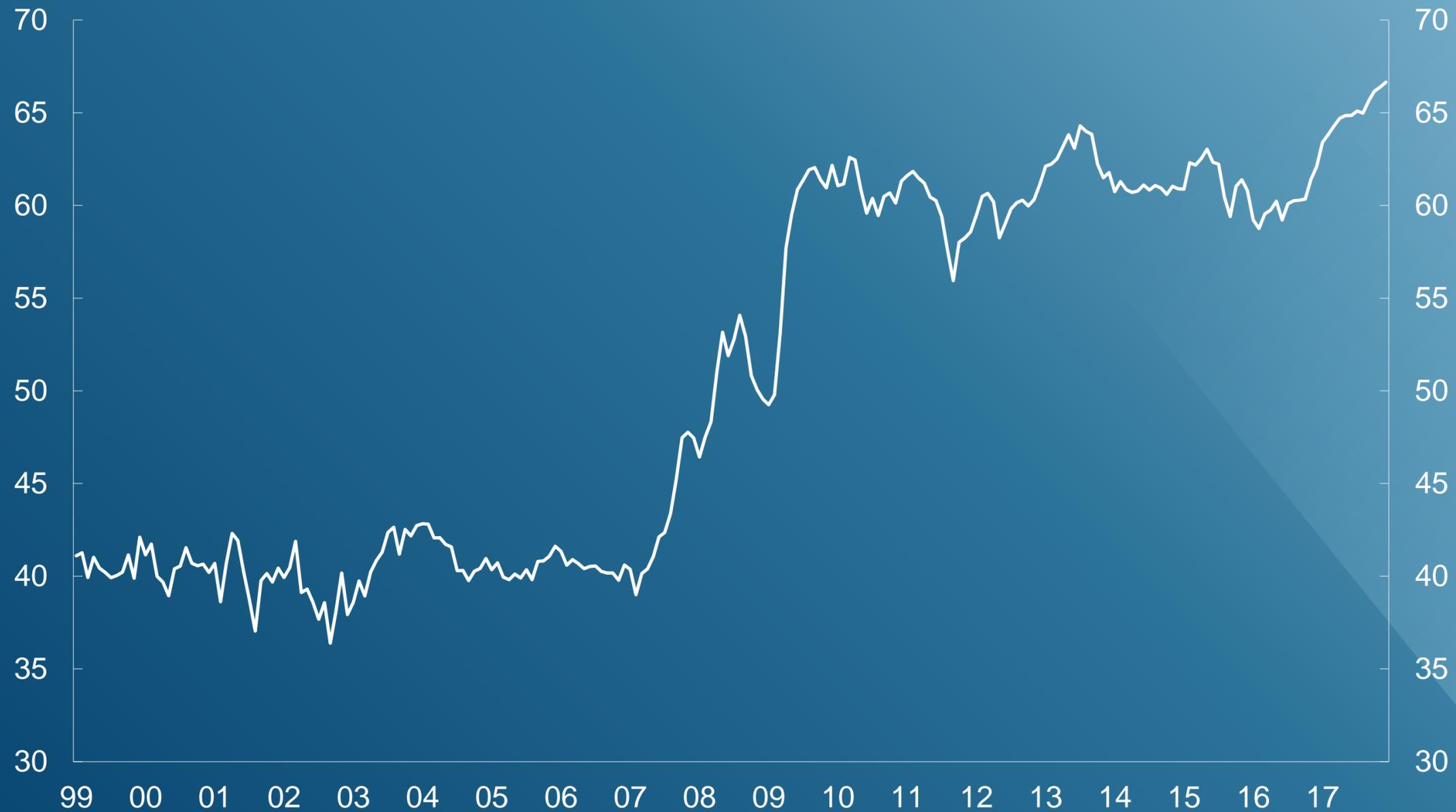
¹ Includes all externally managed capital.

A landscape photograph of a mountain range with a thick layer of mist or fog filling the valleys. The mountains are layered, creating a sense of depth. The foreground shows a dark, dense forest of evergreen trees. The word "RISK" is written in large, bold, white capital letters on the left side of the image.

RISK

The fund's equity exposure

Percent (chart 20)



Source: Norges Bank Investment Management



The fund's equity exposure vs market

Percent (chart 20)

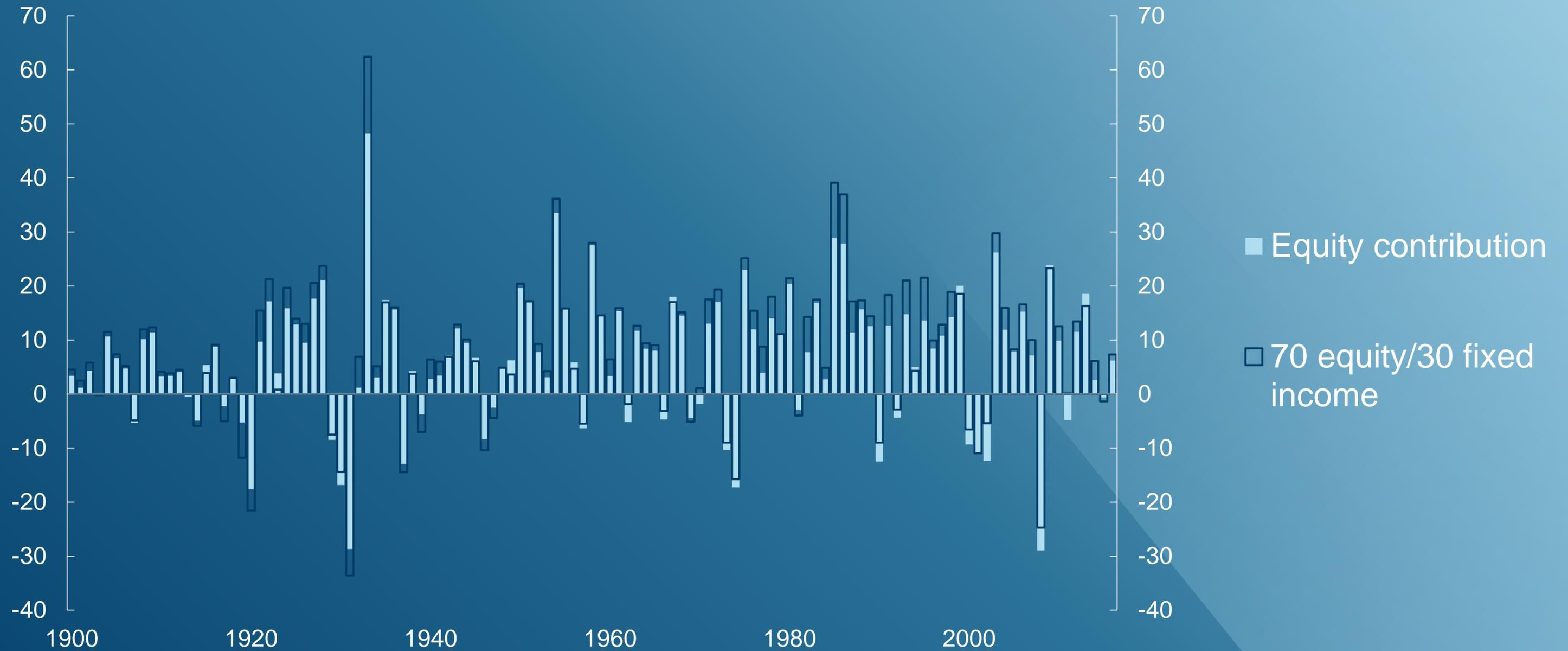


Source: MSCI World index and Bloomberg BGA/NBIM calculations



Annual return of 70/30 portfolio

Hypothetical. US dollars. Percent (chart 22)

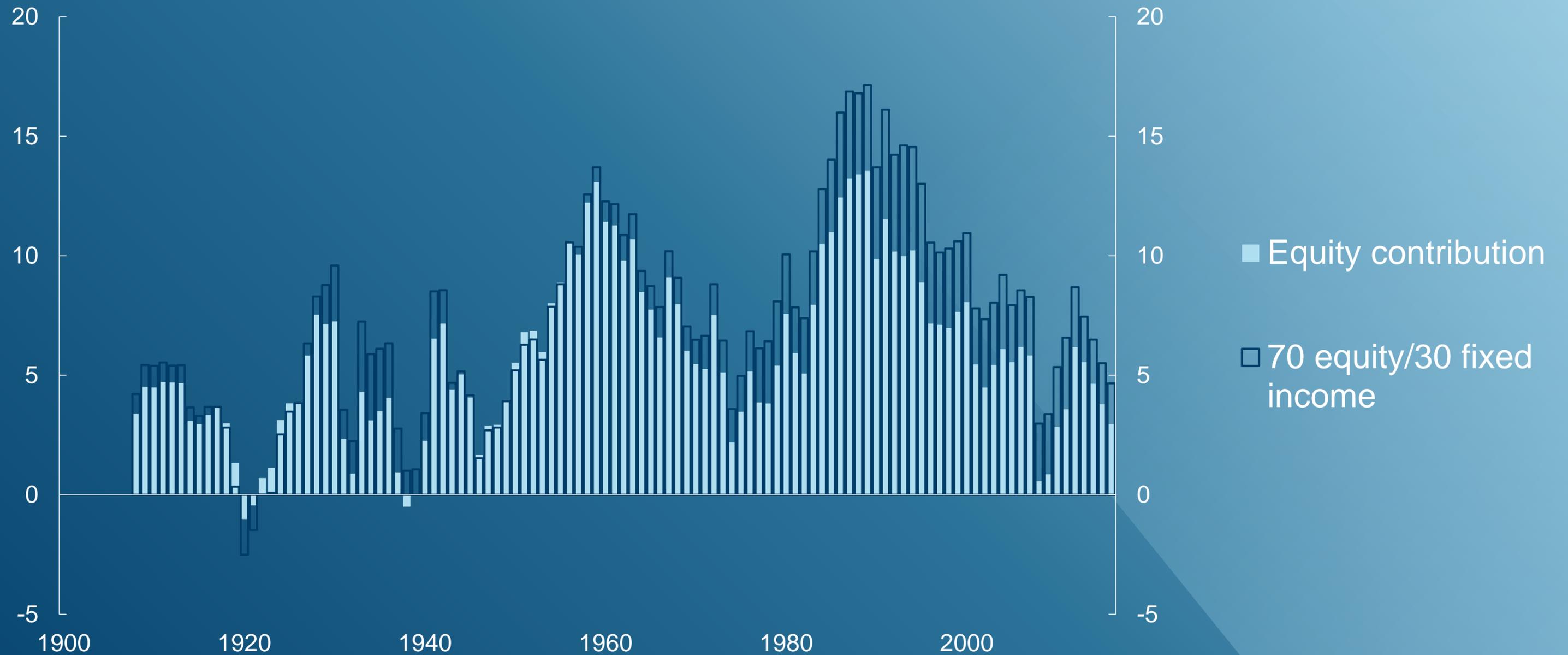


Source: Dimson, Marsh and Staunton's world return time series



10-year rolling return of 70/30 portfolio

Hypothetical. Annualised. US dollars. Percent (chart 24)

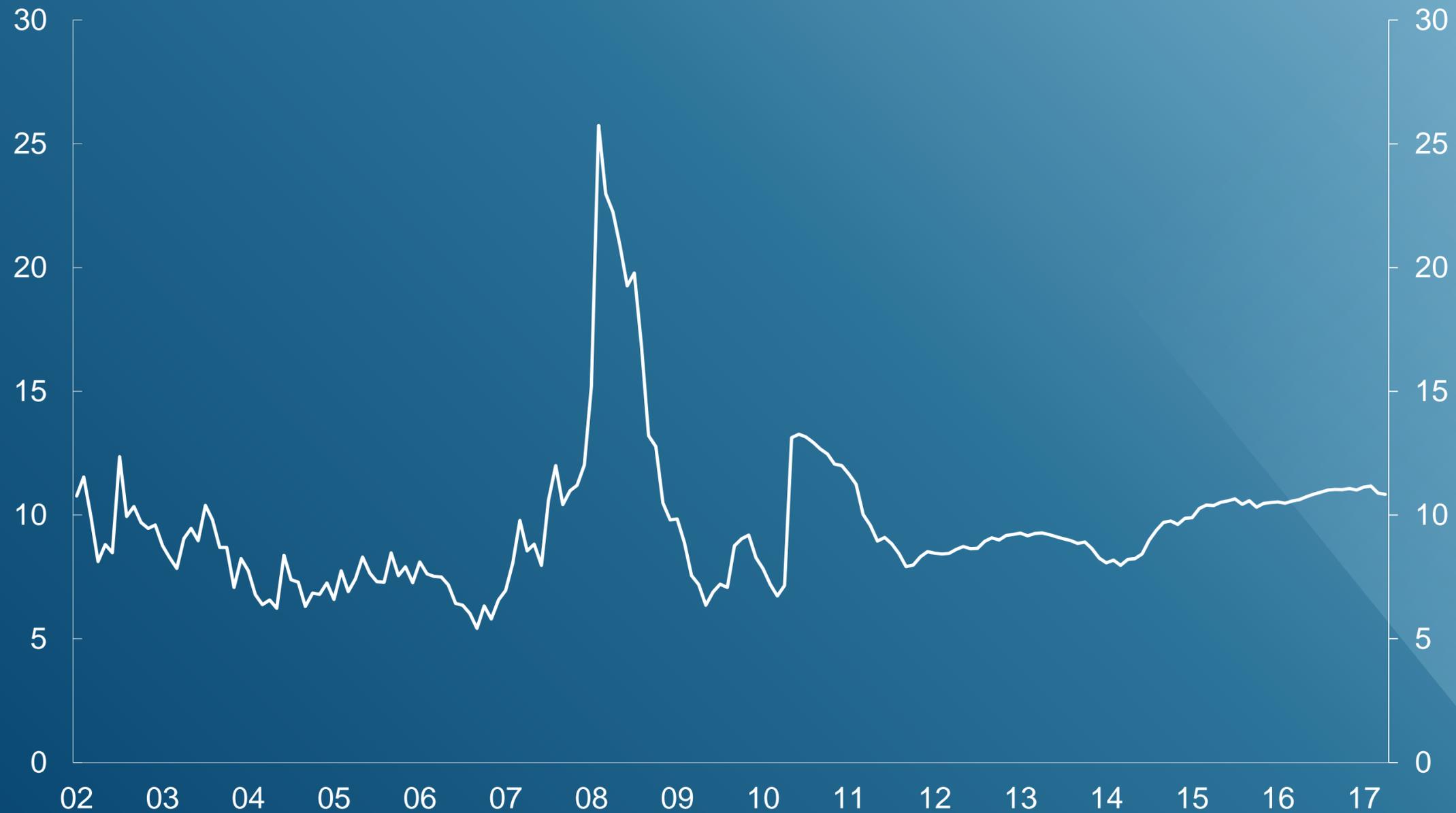


Source: Dimson, Marsh and Staunton's world return time series



Expected absolute volatility

Percent (chart 25)

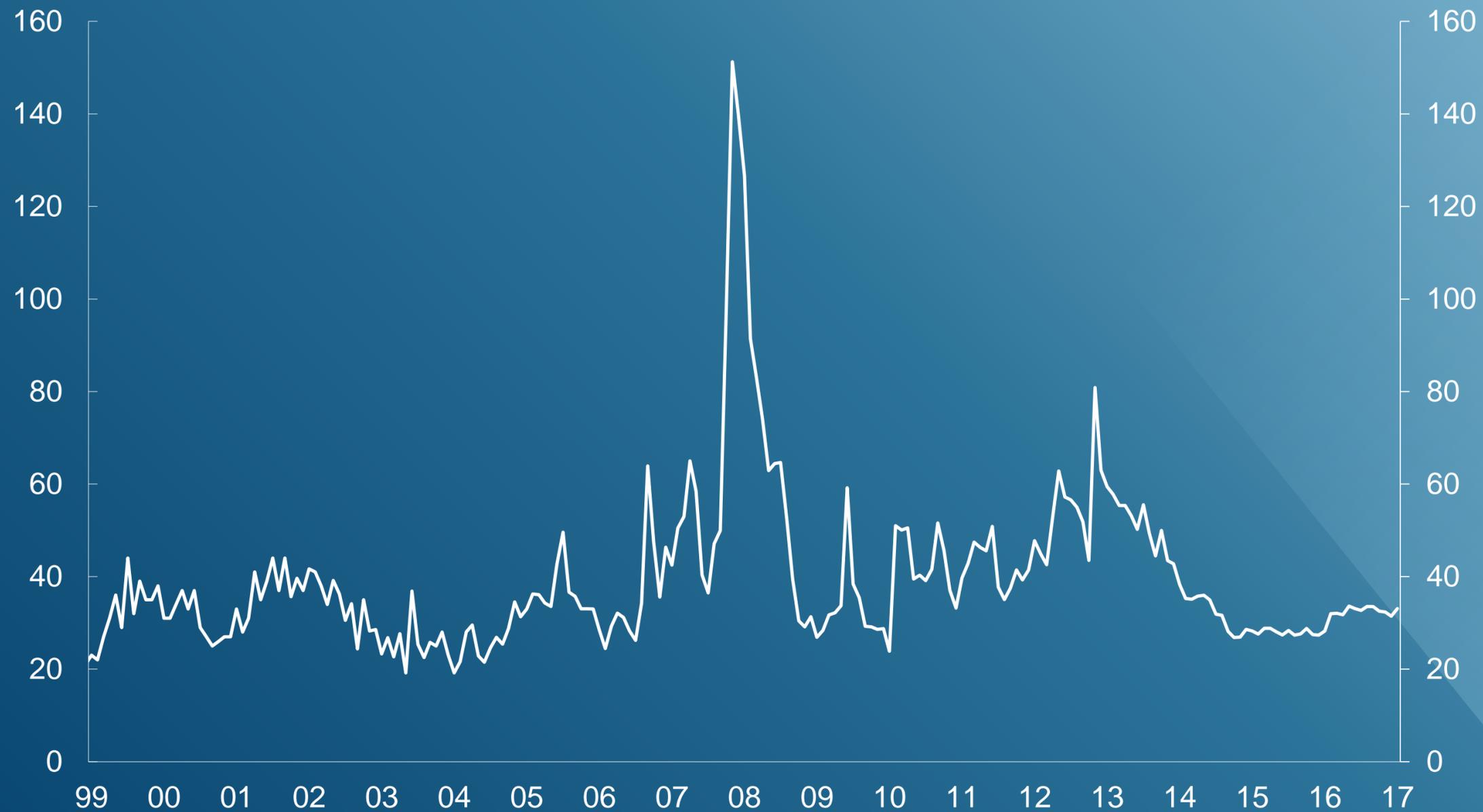


Source: Norges Bank Investment Management



Expected relative volatility

Basis points (chart 27)



Source: Norges Bank Investment Management



Return on the fund and the benchmark index

Currency basket



The fund's benchmark overlap

Percent (chart 29)



Source: Norges Bank Investment Management



Expected relative volatility by strategy

Basis points (table 38)

	Equity management	Fixed-income management	Real estate management	Allocation	Total
Fund allocation	17	10	22	1	28
Internal reference portfolio	13	10		1	15
of which systematic factors ¹	8				8
of which universe expansion	12	9			14
Allocation decisions	6	2			6
Real estate			22		22
Unlisted real estate			16		16
Listed real estate			9		9
Security selection	13	1			13
Internal security selection	10	1			10
External security selection	6				6
Asset management	7	4			8
Asset positioning	7	4			8
Total	23	12	22	1	33

¹ A considerable part of the exposure against systematic factors will in 2018 be managed and reported in a separate substrategy.

Expected relative volatility and shortfall

Basis points (table 42)

	Expected relative volatility 3-years price history	Expected relative volatility 10-years price history	Expected shortfall 10-years price history
Fund allocation	28	37	117
Internal reference portfolio	15	17	43
of which systematic factors	8	8	24
of which universe expansion	14	14	40
Allocation decisions	6	7	19
Real estate	22	32	107
Unlisted real estate	16	22	70
Listed real estate	9	17	54
Security selection	13	14	37
Internal security selection	10	12	30
External security selection	6	7	19
Asset management	8	13	44
Asset positioning	8	13	44
Total	33	46	149

Regression analysis of relative return

Equity management. In US dollars. Before management costs (table 49)

Sample period	Intercept, bps annualised	Regression coefficients					Variance explained in percent (R squared)
		Market (MKT)	Small vs Large (SMB)	Cheap vs Expensive (HML)	Profitable vs unprofitable (RMW)	Conservativ e vs Aggressive Investment (CMA)	
Since 01.01.1999	37	0.02	0.05	-0.01	0.01	-0.02	45
Last 10 years	24	0.02	0.03	0.00	-0.02	-0.04	45
Last 5 years	26	0.02	0.02	0.01	-0.02	-0.03	35

Source: Norges Bank Investment Management, Kenneth French. Bold indicates significance at 5 percent confidence level.

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