

**ANNUAL PERFORMANCE EVALUATION  
REPORT - 2010  
NORWEGIAN GOVERNMENT PENSION  
FUND - GLOBAL  
JANUARY 2012**

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# 1

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## The role of Mercer and BNY Mellon Asset Servicing

### 1.1 Background

- This report was commissioned by the Norwegian Ministry of Finance (“the Ministry”) and has been prepared by Mercer Limited (“Mercer”) in accordance with the terms of the contract awarded by the Ministry to Mercer. The terms of reference for this work are set out in the Invitation to Tender issued by the Ministry on 11 February 2008.

### 1.2 Role of Mercer

- The purpose as set out in the Public Procurement document is for Mercer to verify Norges Bank’s internal performance measurements and to strengthen the Ministry’s basis for evaluating the competence and actions of Norges Bank. Mercer outsources the role of performance verification to BNY Mellon Asset Servicing (“BNY MAS”), an independent performance measurer appointed by Mercer.

### 1.3 Role of BNY Mellon Asset Servicing

- The function of calculating and verifying Norges Bank’s internal performance measurement is carried out by BNY MAS under the guidance of Mercer who retains overall responsibility for the process. BNY MAS calculates performance for the Norwegian Government Pension Fund Global (“the Pension Fund”) based on portfolio data and market values supplied by the custodian, JP Morgan Chase (“JPM”).
- BNY MAS employs a Modified Dietz calculation, which is an approximation to a time-weighted rate of return as the base performance statistic. This return takes into account investment income as well as realised and unrealised capital profits or losses. The use of this statistic minimises distortions due to cash flows into and out of a portfolio which are, in general, outside the control of the investment manager. Further details about BNY MAS’ calculation methodology are contained within Appendix A.

# 2

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## Summary of Control Function

### 2.1 Scope of control function

- Mercer has, in conjunction with BNY MAS, performed control and verification functions throughout 2010, in accordance with the terms of the contract awarded by the Ministry.
- The objective of this process has been to check Norges Bank's internal performance measurements and to perform wider verification checks, both at portfolio and benchmark levels, according to instructions received from the Ministry.

### 2.2 Controls conducted in 2010

- During the course of 2010 Mercer has, in conjunction with BNY MAS, measured and verified the monthly returns of the Pension Fund, along with the respective benchmark returns, in both the currency basket measure and Norwegian Kroner terms.
- Throughout the report, performance in respect of the Equity and Fixed Income Segments of the Pension Fund for 2010 and longer periods has been sourced from BNY MAS (with the exception of the currency basket return and benchmark calculations prior to 31 December 2003).
- The monthly performance of the Pension Fund at the Total, Equity and Fixed Income levels has been reported to the Ministry by means of a report issued directly by BNY MAS.
- In the event of discrepancies in performance calculation of greater than 0.015% between Norges Bank's internal performance measurement and BNY MAS's calculations, further checks are made, the results of which are reported to the Ministry by means of a report accompanying the monthly report. Additionally, Norges Bank provides a summary explanation of the differences in market values and performance reporting between Norges Bank and BNY MAS on a monthly basis.
- A comprehensive summary of the data processing and reporting process that BNY MAS carries out as a result of its role in the Control Function is contained within Appendix B.

# 3

## Returns Summary

In accordance with the controls described in Section 2, Mercer has, in conjunction with BNY MAS, performed control and verification functions on a monthly basis during 2010.

A comparison of the twelve month returns in 2010 calculated by Norges Bank and by BNY MAS, in both Norwegian Kroner (NOK) and currency basket terms, is provided in the table below.

The Fund's return in 'currency basket terms' is based on the return as measured in NOK and adjusted geometrically for the return on a basket of currencies ("the currency basket"). The currency basket corresponds to the currency weights in the benchmark portfolio and the return indicates the degree to which NOK has appreciated or depreciated against the currencies in the benchmark portfolio. This adjustment ensures that any currency effects between NOK and the currency basket of the benchmark are stripped out.

### 12 Month Returns

<b>NOK</b>	<b>Equity</b>	<b>Benchmark</b>	<b>Fixed Income</b>	<b>Benchmark</b>	<b>Total Fund</b>	<b>Benchmark</b>
BNY MAS	13.20%	12.47%	3.99%	2.45%	9.49%	8.43%
Norges Bank	13.21%	12.48%	3.99%	2.46%	9.49%	8.43%
Difference	-0.01%	-0.01%	0.01%	0.00%	0.00%	-0.01%
<b>Currency Basket</b>	<b>Equity</b>	<b>Benchmark</b>	<b>Fixed Income</b>	<b>Benchmark</b>	<b>Total Fund</b>	<b>Benchmark</b>
BNY MAS	13.35%	12.61%	4.12%	2.59%	9.62%	8.57%
Norges Bank	13.34%	12.61%	4.11%	2.58%	9.62%	8.57%
Difference	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%

Figures may not sum due to rounding

- A comparison of the twelve month portfolio and benchmark returns in NOK and currency basket terms for the Equity, Fixed Income and Total Fund, show there were no discrepancies noted in excess of the tolerance level stated in Section 2.
- For all individual months during 2010, there were no return discrepancies noted between BNY MAS and Norges Bank (measured in both Norwegian Kroner and the currency basket measure) of greater magnitude than 0.015% for the Equity, Fixed Income and Total Fund returns.

# 4

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## Pension Fund Details

### 4.1 Performance objective

- The Ministry has delegated the operational management of the Pension Fund to Norges Bank who manage the Pension Fund in accordance with a mandate stipulated by the Ministry in public regulations. The performance objective is to maximise returns given the restrictions imposed by the regulations and the desired risk profile. The risk tolerance for the Pension Fund is determined to be an ex-ante tracking error of 1.5% p.a. relative to the benchmark allocation.
- The Ministry specifies the benchmark portfolio, comprised of equity and fixed income instruments reflective of the Pension Fund's investment strategy.

### 4.2 Pension Fund benchmark

- The strategic benchmark for the Pension Fund is set by the Ministry of Finance. Over time, divergent price movements will affect the size of the Fund's holdings in each asset class. A rebalancing plan, as set by the Ministry, is therefore applied to realign the Pension Fund's holdings in each asset class with the strategic benchmark. The current strategic benchmark of the Fund is 60% Equities and 40% Fixed Income.
- A new fixed income benchmark was introduced in 2002, which was constructed from the Lehman Global Aggregate family of indices (Barclays Capital Global Aggregate indices from 20 September 2008). In 2006, the strategic weights within the customised fixed income benchmark were changed from 55% Europe, 35% Americas and 10% Asia/Oceania to 60% Europe, 35% Americas and 5% Asia / Oceania.
- The equity benchmark uses FTSE equity indices for companies in forty-six countries. In 2006, the strategic weights within the customised equity benchmark was changed from 50% Europe and 50% Americas/Asia/Oceania/Africa to 50% Europe, 35% America, Africa and Middle East and 15% Asia / Oceania.
- During 2007 and 2008, the composition of the equity benchmark was extended to include small capitalisation companies and emerging market countries.
- The reader should note that one-off transaction costs are incurred when new transfers are made into the Pension Fund. Such costs are not deducted when the index supplier calculates the return on the benchmark. For the purpose of this report the benchmark return has not been adjusted for such costs, despite the presence of transaction costs detracting from the Pension Fund's returns. In addition to the transaction costs outlined above, the Pension Fund pays tax on share dividends in a number of countries. Since 2004 the equity benchmark is adjusted for tax on share dividends.

- Further detailed information on benchmarks is contained within Appendix B.
- In March 2010, a property mandate was issued by the Ministry to Norges Bank allowing the Fund to invest up to 5% in real estate. In November 2010, Norges Bank announced that the Fund had finalised an agreement to invest in The Crown Estate's portfolio of properties on Regent Street in London. The funding of this agreement was completed in the first quarter of 2011.

# 5

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## Fund Performance

This section of the report analyses the Pension Fund's and corresponding benchmark's monthly performance over the twelve month period to 31 December 2010, along with longer term analysis. Numerical performance shown in the charts and performance commentary is illustrated to two decimal places.

For the purpose of this report all Pension Fund and benchmark returns contained within sections 5.1 and 5.3 of this report are expressed in terms of the basket of currencies contained within the benchmark. The currency basket measure is relevant when assessing the Pension Fund's performance against the stated objective of maximising the Pension Fund's international purchasing power. Section 5.2 shows performance expressed in Norwegian Kroner.

Sections 5.1 and 5.2 consider the Pension Fund's performance along with the monthly performance for the Equity and Fixed Income Segments of the Pension Fund over the twelve month period to 31 December 2010. Section 5.3 considers longer term performance for the Pension Fund.

The Fund's return in 'currency basket terms' is the Fund's return in NOK adjusted geometrically for any currency effects between NOK and a basket of currencies. The adjustment ensures that any currency effects between NOK and the currency basket of the benchmark are stripped out.

Discrepancies between the currency basket returns reported by BNY MAS and Norges Bank may occur due to the following reasons; differences may occur between the returns used for each currency sourced from different providers (BNY MAS use FT Interactive Data Source ("FTS") while Norges Bank obtain values from FTSE) or the asset weights (Fixed Income and Equity) used to calculate the total currency returns. These differences may cause discrepancies of usually no more than 0.01% to two decimal places.

Throughout 2010, currency returns for all segments of the Fund have been calculated using beginning of month market weights in order to ensure consistency of the calculation methodology between BNY MAS and Norges Bank.

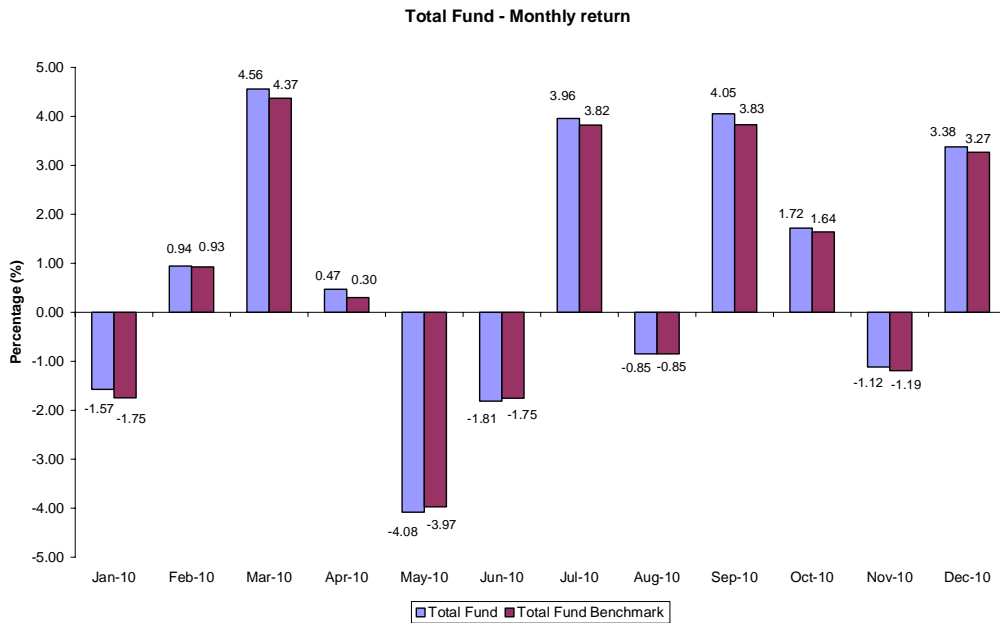
In 2010, Norges Bank restated the returns initially provided to BNY MAS. This was due to currency classification issues involving the Hong Kong Dollar which impacted both portfolio and benchmark returns. The performance values in this report reflect the restated returns.

The following charts and commentary illustrates the performance across the Equity, Fixed Income and Total Fund in both Norwegian Kroner and in currency basket terms over 2010. Please note that differences between performance commentary and the charts may occur due to rounding.



## 5.1 Pension Fund (currency basket)

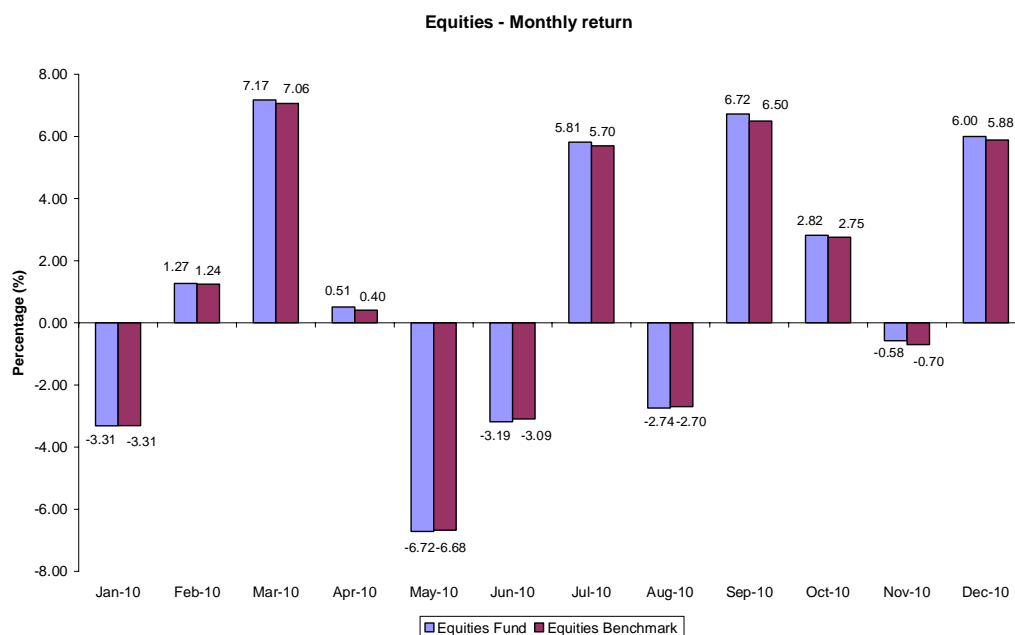
### 5.1.1 Pension Fund – Total returns (currency basket)



Data source: Returns calculated by BNY Mellon Asset Servicing (c) Copyright 2012 BNY Mellon Asset Servicing.

- Over the twelve month period to 31 December 2010, the Pension Fund produced a cumulative return of 9.62%, 1.05% above the benchmark return of 8.57%.
- Over the twelve month period to 31 December 2010, Norges Bank have calculated the Pension Fund return to be 9.62% and the benchmark return to be 8.57%, both consistent with that calculated by BNY MAS.
- Total Fund performance outperformed the benchmark in all months apart from May and June where the Fund underperformed by 0.11% and 0.06% respectively. The months where outperformance was greatest were March, April and September where the Pension Fund outperformed the benchmark returns of 4.37%, 0.30% and 3.83% by 0.19%, 0.17% and 0.22% respectively.

## 5.1.2 Pension Fund - Equity returns (currency basket)

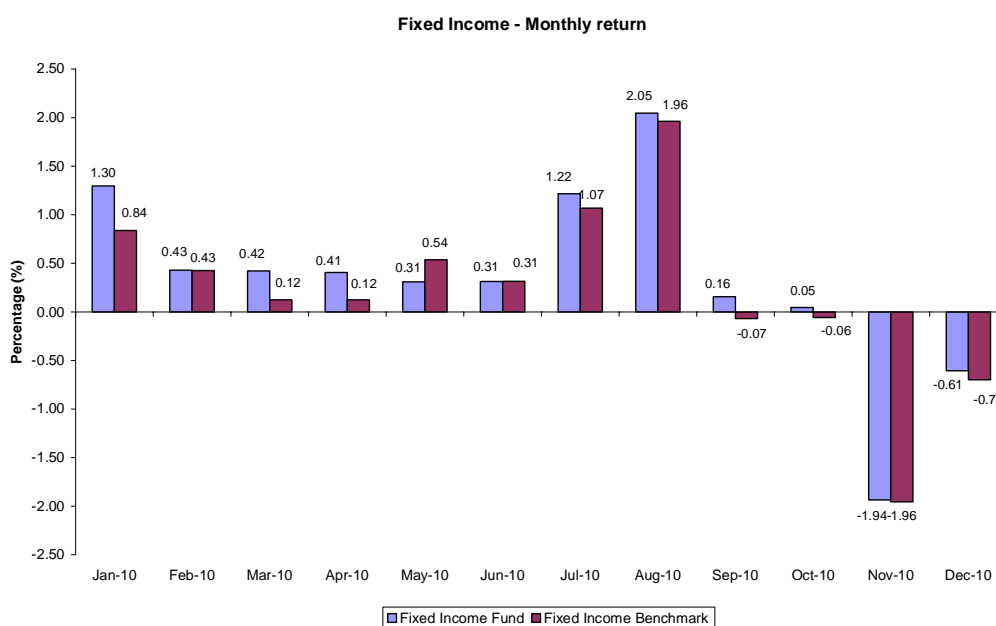


Data source: Returns calculated by BNY Mellon Asset Servicing (c) Copyright 2012 BNY Mellon Asset Servicing.

- Over the twelve month period to 31 December 2010, the Equity Segment of the Pension Fund produced a cumulative return of 13.35%, 0.74% above the benchmark return of 12.61%. Norges Bank have calculated a twelve month Pension Fund return for the Equity Segment to be 13.34%. This 0.01% difference is within the tolerance level as stated in Section 2.
- Over the twelve month period to 31 December 2010, BNY MAS have reported a twelve month benchmark return of 12.61%, in line with that calculated by Norges Bank.
- On a month-by-month basis, the performance of the Pension Fund's Equity Segment outperformed the benchmark with the exception of January, May, June and August, where performance was below the benchmark by 0.01%, 0.04%, 0.09% and 0.05% respectively. Outperformance was greatest during the months of September and November where the Equity Segment outperformed the benchmark returns of 6.50% and -0.70% by 0.23%<sup>1</sup> and 0.12% respectively.

<sup>1</sup> Figures may not sum due to rounding

### 5.1.3 Pension Fund - Fixed income returns (currency basket)



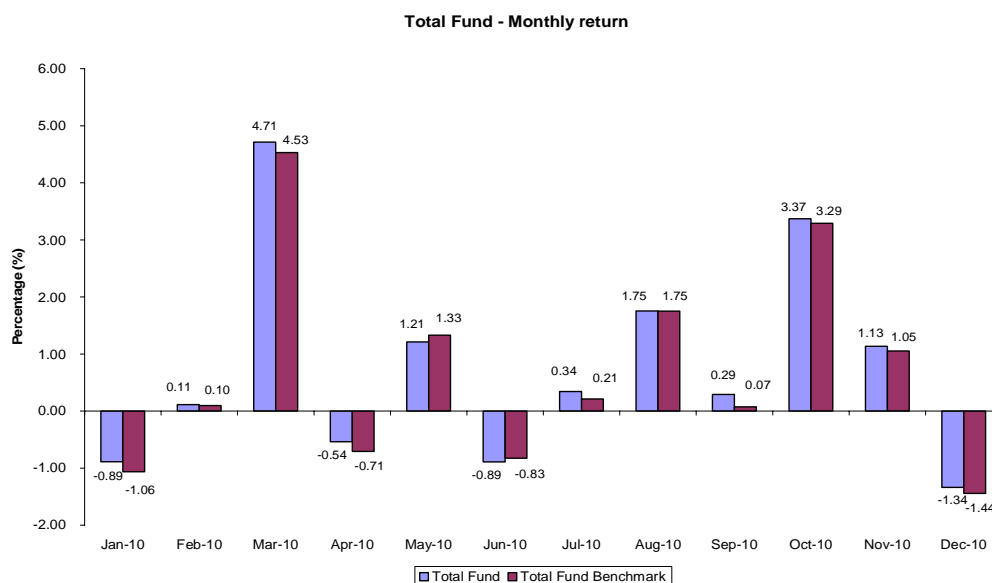
Data source: Returns calculated by BNY Mellon Asset Servicing (c) Copyright 2012 BNY Mellon Asset Servicing.

- Over the twelve month period to 31 December 2010, the Fixed Income Segment of the Pension Fund produced a cumulative return of 4.12%, 1.53% above the benchmark return of 2.59%. Norges Bank have calculated the twelve month Pension Fund return for the Fixed Income Segment to be 4.11%. This 0.01% difference is within the tolerance stated in Section 2.
- Over the twelve month period to 31 December 2010, BNY MAS reported a benchmark return of 2.59% whereas Norges Bank have reported a benchmark return of 2.58%. This 0.01% difference is within the tolerance stated in Section 2.
- On a month-by-month basis, the Pension Fund's Fixed Income Segment exceeded the benchmark in eleven of the twelve month periods. The greatest outperformance occurred in January, March and April where the Fixed Income Segment outperformed the benchmark return of 0.84%, 0.12% and 0.12% by 0.46%, 0.30% and 0.28%<sup>1</sup> respectively. In May the Fixed Income Segment underperformed the benchmark return of 0.54% by 0.23%.

<sup>1</sup> Figures may not sum due to rounding

## 5.2 Pension Fund returns (Norwegian Kroner)

### 5.2.1 Pension Fund - Total returns (Norwegian Kroner)

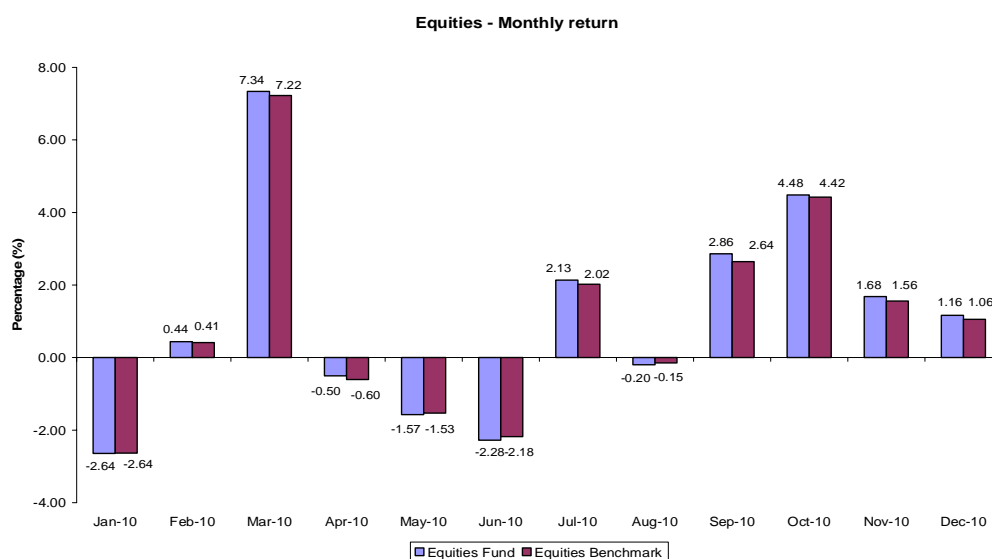


Data source: Returns calculated by BNY Mellon Asset Servicing (c) Copyright 2012 BNY Mellon Asset Servicing.

- Over the twelve month period to 31 December 2010, the Pension Fund produced a cumulative return of 9.49%, outperforming the benchmark return of 8.43% by 1.06%.
- Over the twelve month period to 31 December 2010, Norges Bank have calculated the Pension Fund return to be 9.49% and a benchmark return to be 8.43%, both consistent with that calculated by BNY MAS.
- Total Fund performance outperformed the benchmark in all months with the exception of May and June where performance was below the benchmark returns of 1.33% and -0.83% by 0.12%, and 0.06% respectively. Outperformance was greatest in March, April and September where performance was above the benchmark returns of 4.53%, -0.71% and 0.07% by 0.19%<sup>1</sup>, 0.17% and 0.22% respectively.

<sup>1</sup> Figures may not sum due to rounding

## 5.2.2 Pension Fund - Equity returns (Norwegian Kroner)

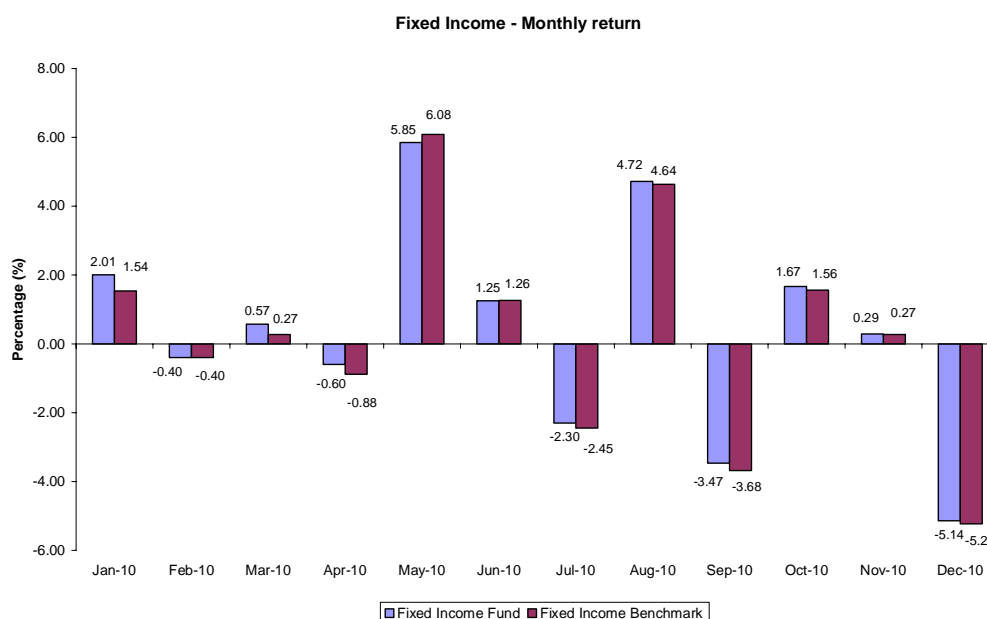


Data source: Returns calculated by BNY Mellon Asset Servicing (c) Copyright 2012 BNY Mellon Asset Servicing.

- Over the twelve month period to 31 December 2010, the Equity Segment of the Pension Fund produced a cumulative return of 13.20%, outperforming the benchmark return of 12.47% by 0.73%. Norges Bank calculated the twelve month return for the Equity Segment of the Pension Fund to be 13.21%. This 0.01% difference is within the tolerance stated in Section 2.
- Over the twelve month period to 31 December 2010, BNY MAS calculated a benchmark return of 12.47% whilst Norges Bank have reported a twelve month benchmark return of 12.48%. This 0.01% difference is within the tolerance stated in Section 2.
- On a month-by-month basis, the performance of the Equity Segment of the Pension Fund exceeded the benchmark in all but four of the twelve months, January, May, June and August with returns below the benchmark by 0.01%<sup>1</sup>, 0.04%, 0.10% and 0.05% respectively. The greatest outperformance occurred during the months of September and November where the Equity Segment outperformed the benchmark returns of 2.64% and 1.56% by 0.22% and 0.13%<sup>1</sup> respectively.

<sup>1</sup> Figures may not sum due to rounding

### 5.2.3 Pension Fund - Fixed income returns (Norwegian Kroner)



Data source: Returns calculated by BNY Mellon Asset Servicing (c) Copyright 2012 BNY Mellon Asset Servicing.

- Over the twelve month period to 31 December 2010, the Fixed Income Segment of the Pension Fund produced a cumulative return of 3.99%, outperforming the benchmark return of 2.45% by 1.54%. Norges Bank have calculated the cumulative return of the Fixed Income portfolio as 3.99% consistent with the return calculated by BNY MAS.
- BNY MAS reported a benchmark return of 2.45% whereas Norges Bank has reported 2.46%. This 0.00%<sup>1</sup> difference is within the tolerance stated in Section 2.
- On a month-by-month basis, the Pension Fund's Fixed Income Segment outperformed the benchmark in ten of the twelve month periods. The Fixed Income Segment underperformed in both May and June with portfolio performance below the benchmark returns of 6.08% and 1.26% by 0.23% and 0.01% respectively. Outperformance was greatest during the months of January, March and April where the Fixed Income Segment outperformed the benchmark of 1.54%, 0.27% and -0.88% by 0.47%, 0.30% and 0.28% respectively.

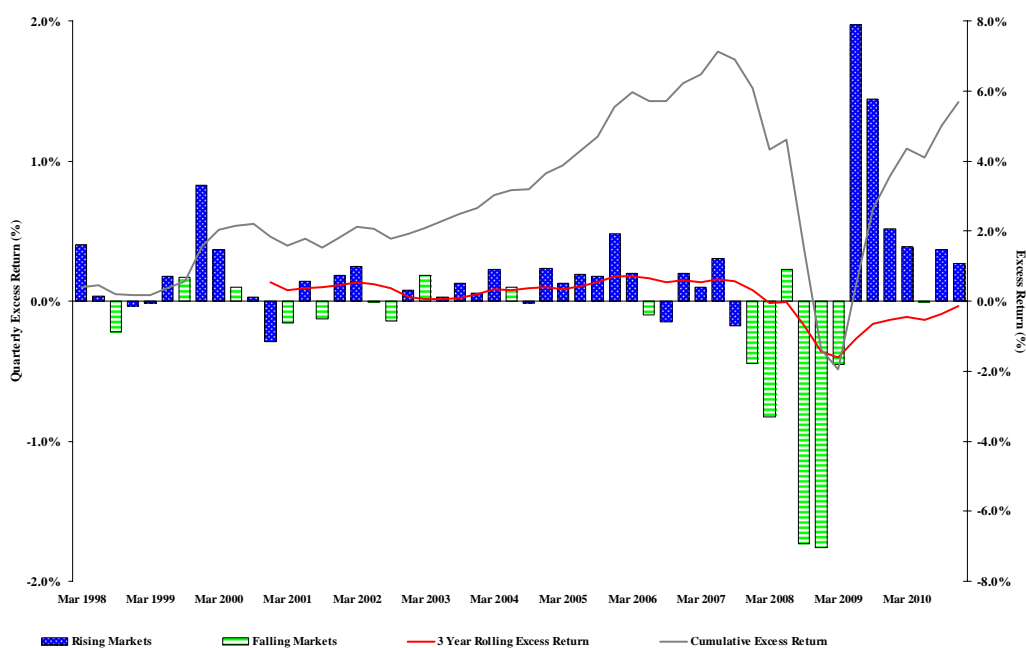
<sup>1</sup> Figures may not sum due to rounding

### 5.3 Pension Fund (currency basket) - Longer term performance

The following charts show quarterly performance relative to benchmark for the thirteen year period ending 31 December 2010 for the Pension Fund and the Fixed Income Segment, and the twelve and three quarter year period ending 31 December 2010 for the Equity Segment. In addition, the charts illustrate the three-year rolling and cumulative excess returns over the period ending 31 December 2010. As the charts evaluate relative performance, they can be used as a measure to assess the manager’s past success at adding value in excess of the benchmark over a period of time.

- The charts are generated using Mercer Manager Performance Analytics (MPA) and use local returns from the currency basket measure. This is done to ensure that the rising/falling market indicator is not influenced by changes in the value of Norwegian Kroner.
- Performance since 1 January 2004 has been sourced from BNY Mellon. Prior performance has been sourced from Norges Bank.

#### 5.3.1 Pension Fund – Total returns (currency basket)



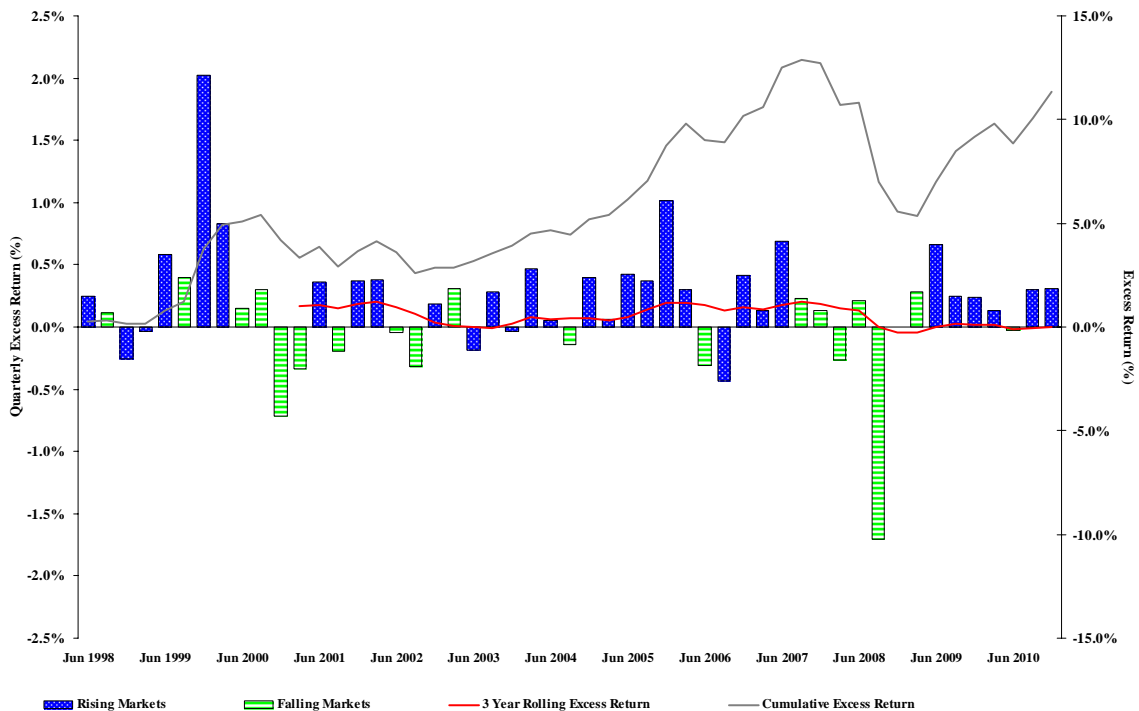
Source: Mercer MPA, Norges Bank and (c) Copyright 2012 BNY Mellon Asset Servicing.

- The Pension Fund has outperformed its benchmark on a quarterly basis in thirty four of the fifty two quarters under review.
- Long term relative performance became negative in 2008, primarily as a result of the significant underperformance in the latter half of the year. The performance of the fund recovered sharply during 2009 following the improvement and stabilisation of global financial markets. Rolling three-year annualised excess performance was -0.1% p.a. as at 31 December 2010.

Although negative, this continues an upward trend after first becoming negative in September 2008.

- Norges Bank have reported a three year annual excess return of 0.0% p.a. The cumulative excess return for the Fund in currency basket terms became negative for the first time in December 2008.
- The cumulative excess return over the thirteen years ending 31 December 2010 stood at 5.7%; the annualised cumulative excess return over the period was 0.3% p.a. Norges Bank calculated the annualised cumulative excess return over thirteen years ending 31 December 2010 to be 0.3% p.a.
- It is notable that during periods of rising markets, the portfolio has had a tendency to outperform and that in falling markets, the portfolio has a tendency to underperform. This is based on observations in that chart above and not statistical analysis.

### 5.3.2 Pension Fund - Equity returns (currency basket)



Source: Mercer MPA, Norges Bank and (c) Copyright 2012 BNY Mellon Asset Servicing.

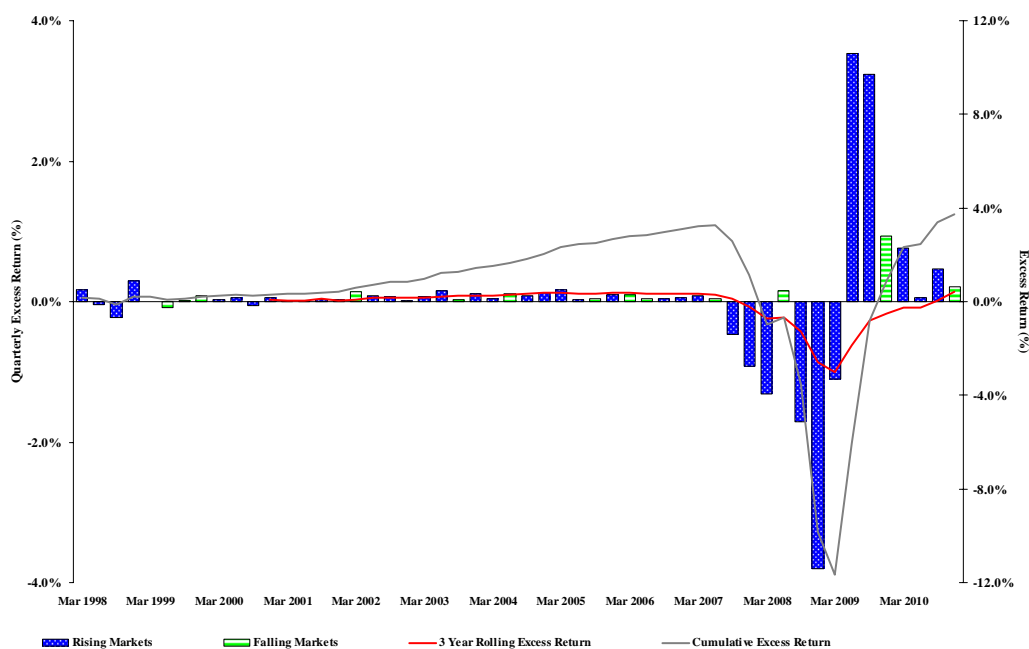
- The Equity Segment has outperformed its benchmark in thirty six out of the fifty one quarters, underperforming in the remainder.
- Rolling three-year excess performance was strong in the periods to 2001 and the first part of 2002. Performance dipped to a low point in mid 2003 before recovering in later quarters. Rolling three-year annualised excess performance became negative during 2008, primarily as a result of underperformance in September 2008. Performance has returned to breakeven as a result of the strong performance across all quarters of 2009.



Rolling three-year annualised excess performance was at 0.0% p.a. as at 31 December 2010, in line with Norges Bank’s calculation of 0.0% p.a.

- The cumulative excess return for the period since inception, 1 February 1998, to 31 December 2010 is positive at 11.4%. The annualised cumulative excess return over the period was 0.7% p.a.
- During periods of rising markets, the portfolio has had a tendency to outperform. This is based on observations in the chart above and not on statistical analysis.

### 5.3.3 Pension Fund - Fixed income returns (currency basket)



Source: Mercer MPA, Norges Bank and (c) Copyright 2012 BNY Mellon Asset Servicing.

- With the exception of the first three years, where performance was mixed, the Fixed Income Segment of the Pension Fund has consistently outperformed its benchmark over the nine and a half year period to 30 June 2007. For the second half of 2007 and over the first quarter of 2008, the Fixed Income Segment underperformed its benchmark. The fund then had marginal outperformance in the quarter to June 2008 with significant underperformance in the following three quarters. With the exception of the first quarter of 2009, the Fixed Income Segment has experienced significant outperformance over the last three quarters of 2009. Although reduced somewhat from 2009, the performance of the Fixed Income portfolio was consistently positive across all four quarters of 2010.
- Rolling three-year excess returns have been consistently positive up to 30 June 2007. However, as a result of underperformance during the second half of 2007 and throughout 2008, rolling three-year annualised excess returns fell into negative territory reaching a low point of -3.0% p.a. in March 2009. Since

then, rolling three-year excess returns have improved significantly reaching 0.4% p.a. as at 31 December 2010. Norges Bank calculated the rolling three-year annualised excess returns to be 0.6 % p.a. as at 31 December 2010. The discrepancy of 0.2% p.a. is a direct result of differences in historical monthly performance calculations for the Fixed Income segment of the Fund as calculated by BNY MAS and Norges Bank, as highlighted in prior Annual Reports, and in particular for the months of October and November 2008, and March and April 2009. The discrepancies in performance calculations during these months can primarily be attributed to differences in the processes and accounting conventions used by JPM and Citigroup in applying exchange rates to value bond transfers impacting the Fixed Income segment of the Fund. (Citigroup held the position of custodian for the Fixed Income segment of the fund prior to October 2009). JPM reported these bond transfers using historic exchange rates to value bonds, while Citigroup used current exchange rates. We have been informed that Norges Bank made an internal correction for this difference. The returns from Norges Bank therefore differ from the returns calculated by BNY MAS which are based on data provided by the custodians. Smaller discrepancies in historical monthly performance calculations in other months throughout the three year period were a further contributing factor, albeit to a lesser extent. In Section 7 of the report we provide an explanation of reasons giving rise to these differences.

- The cumulative excess return has returned to positive levels, with a value of 3.7% over the thirteen year period to 31 December 2010. Cumulative performance rose steadily over the nine and a half year period to 30 June 2007, but fell back sharply following the significant underperformance in 2008. Cumulative excess returns returned to positive levels during 2009 and have further improved due to the continued strong performance of the Fixed Income portfolio during 2010. The annualised cumulative excess return over the period since inception was 0.2% p.a. Norges Bank calculated the annualised cumulative excess return over this period to be 0.2% p.a.

# 6

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## Style research portfolio analysis

### 6.1 Introduction

- This section analyses the style characteristics of the Equity Segment of the Pension Fund over the four quarters to 31 December 2010.
- When analysing the Equity Segment's style characteristics we have used an analytical software package called Style Research Portfolio Analysis ("SRPA") provided by Style Research Limited. SRPA looks at the individual securities held within a portfolio at any one point in time (a "snap-shot") and uses a "bottom-up" approach to analyse the style adopted and risk taken by the investment manager. The snap-shot analysis is based on a detailed, multi-dimensional examination of the Equity Segment's composition at a point in time – it is not based on historical returns.
- The SRPA risk attribution model is different from the risk model used by Norges Bank. Norges Bank uses a risk model called RiskManager (developed by Riskmetrics) to measure expected tracking error.
- The charts shown in Section 6.2 highlight specific style characteristics of the Equity Segment as at 31 March 2010, 30 June 2010, 30 September 2010 and 31 December 2010. In addition, the style characteristics as at 31 December 2008 and 31 December 2009 are also shown to highlight changes over the last three years. The set of charts shown in Section 6.2 emphasise the key style features of the Equity Segment in terms of any "value" tilts (represented by the first group of blue bars) and "growth" tilts (represented by the second group of green bars). The analysis is conducted relative to the customised benchmark of the Equity Segment of the Pension Fund. When interpreting SRPA outputs, tilts (represented as Standard Deviations away from the benchmark mean) greater than  $\pm 1$  but less than  $\pm 2$  are regarded as statistically significant. Tilts greater than  $\pm 2$  are regarded as statistically very significant.
- The second set of charts, shown in Section 6.3, plot the breakdown of the portfolio in terms of industry sector weightings and is again compared with the customised benchmark.
- The term "coverage" referred to in the charts contained within Section 6.3 is a measure of the Equity Segment's exposure to the indices against which it is benchmarked. The output shown in Section 6.3 indicates a coverage level of circa 85% as at 31 December 2010 indicating that the Equity Segment has an overlap of circa 85% with the constituents of the indices against which the Equity Segment is benchmarked. Please refer to Appendix C for a more detailed explanation of the term "coverage".
- The market capitalisation distribution of the Pension Fund and benchmark is illustrated in the charts shown in Section 6.4. The first chart shows a

breakdown to the largest 40%, the next 40% and smallest 20% sized companies, as measured by market capitalisation. The second chart shows a breakdown of the largest 80% and the smallest 20% size companies, as measured by market capitalisation, and broken down between value and growth.

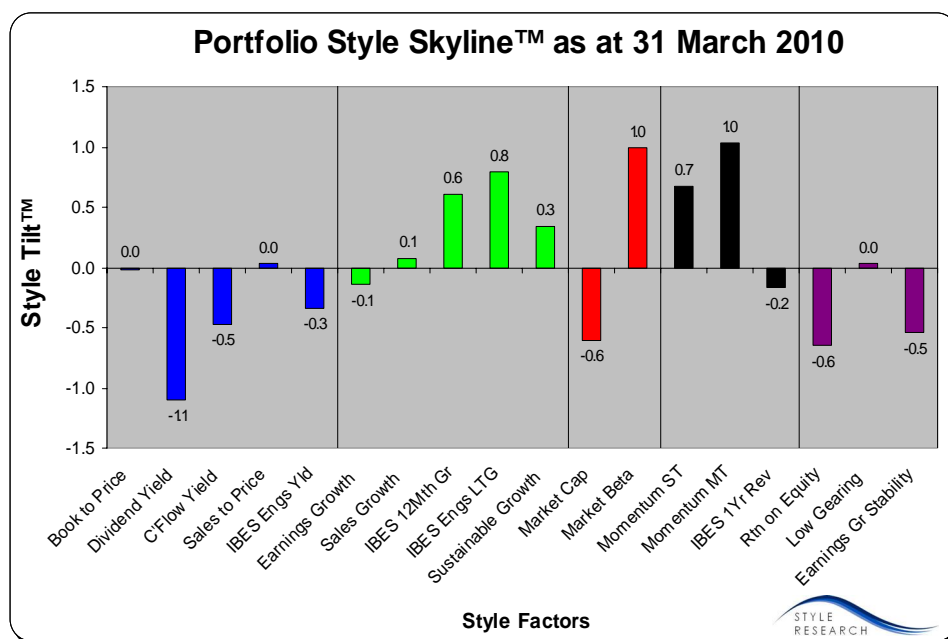
- The final charts shown in Section 6.5 analyse the risk profile of the Equity Segment of the Pension Fund as at 31 March 2010, 30 June 2010, 30 September 2010 and 31 December 2010 which is broken down into its key risk Segments. In addition, the risk profile of the Equity Segment of the Pension Fund as at 31 December 2008 and 31 December 2009 are also shown to highlight changes over the last three years. For further explanation of Style Research Portfolio Analysis definitions please refer to Appendix C.

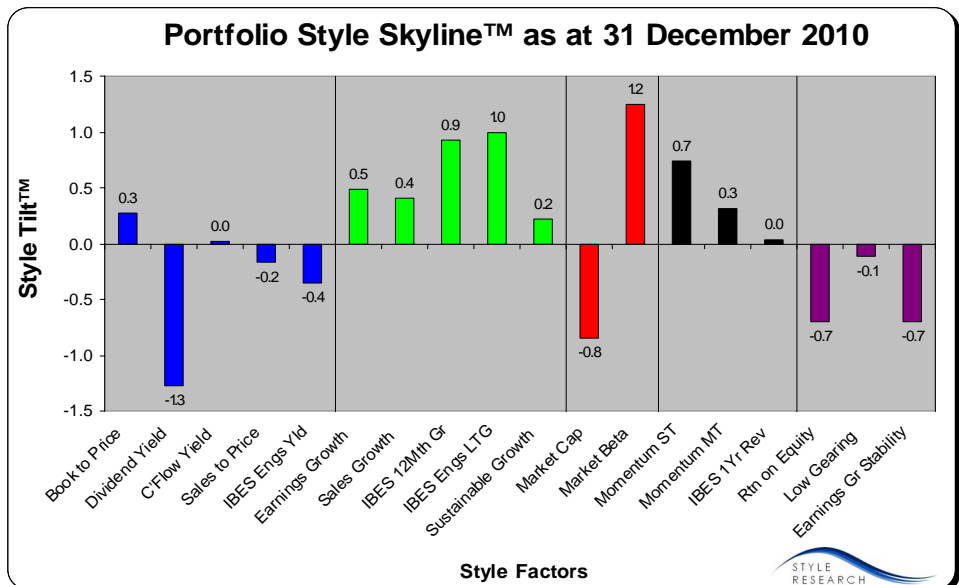
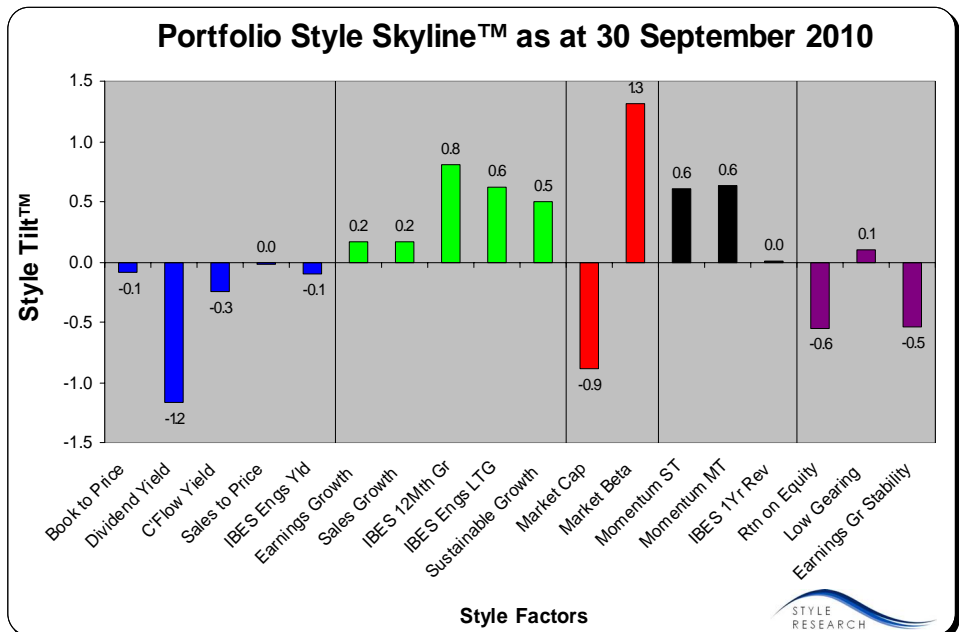
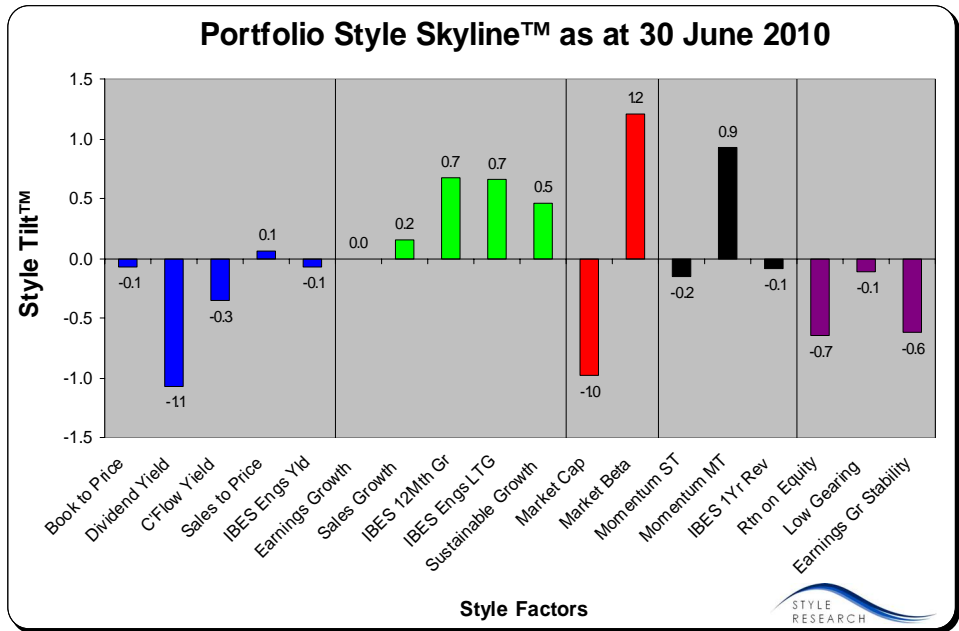
**Notes on data sources:**

- Security holdings have been sourced from BNY Mellon Asset Servicing © Copyright 2012.
- Benchmark data has been sourced from FTSE and adjusted to match the regional weightings as used by Norges Bank.
- Risk Model output has been sourced from SRPA.

**6.2 The portfolio style skyline**

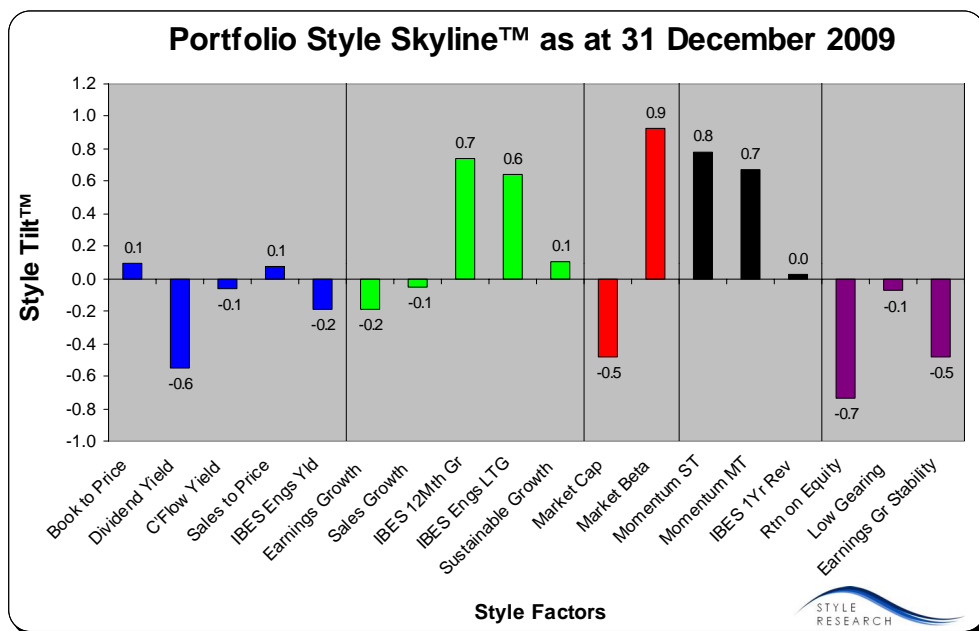
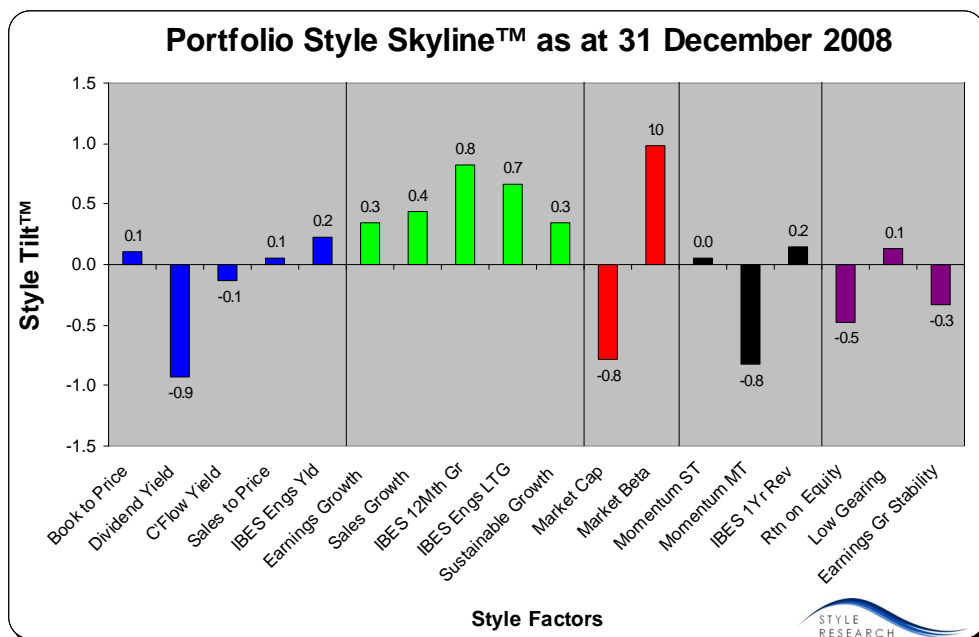
To demonstrate the development of the Equity Segment’s style and risk characteristics, the portfolio style skylines as at the end of each quarter during 2010 are shown below. Please note that each quarter’s analysis is based on a historical “snap-shot” of the stocks held in the Equity Segments at an aggregate level as at the end of each quarter.





- Whilst the overall skyline remained broadly neutral, a marginal trend towards growth and away from value stocks that started in 2008 became more apparent throughout 2010.
- The Equity Segment displayed a statistically significant tilt away from the value factor Dividend Yield which was consistent throughout all four quarters of 2010. Statistically significant tilts are illustrated by standard deviations of greater than +/-1.
- With the exception of a tilt away from Earnings Growth in Q1 2010, the portfolio displayed positive tilts to growth factors throughout 2010. The only statistically significant growth tilt was towards IBES Earnings Long Term Growth (an aggregate of analysts' long-term earnings growth estimate for individual stocks) in the fourth quarter of 2010.
- Although not statistically significant for the majority of 2010, the portfolio continues to exhibit a negative value for the Market Cap indicator. The negative 'Market Cap' indicator demonstrates that the Equity Segment has consistently held a bias to stocks with lower market capitalisations than the benchmark mean. The extent of this bias has increased marginally from 2009.
- The positive 'Market Beta' indicator has remained one of the strongest factors in the portfolio skyline which shows that the Equity Segment has on average been biased towards stocks with a beta higher than the benchmark mean. Market Beta can be characterised as sensitivity to movement in the total market. The extent of this bias has increased since 2009 and remained statistically significant throughout the year.
- More detailed explanations of the terms used in the Portfolio Style Skyline such as 'Dividend Yield', 'IBES Earnings Yield', 'IBES 12 Month Growth Earnings targets', 'IBES Earnings Long Term Growth', 'Market Beta', 'Market Cap', 'Return on Equity' and 'Earnings Growth Stability' can be found in Appendix C.

To demonstrate the development of the Equity Segment’s style and risk characteristics over the last three years, the portfolio style skylines as at 31 December 2008 and 31 December 2009 are shown below.



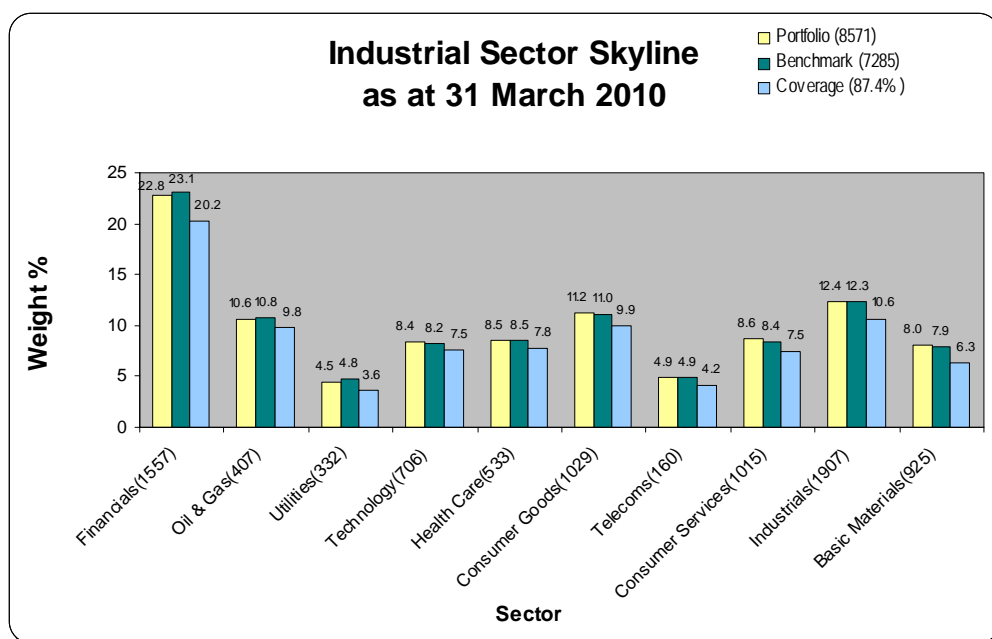
- Relative to previous years, the Equity Segment converged to a more neutral style position during 2008 with no significant value or growth factors as at year end. The Equity Segment displayed significant tilts away from Dividend Yield and IBES Earnings Yield as at the end of March and June 2008 respectively however, the significance of each bias reduced over 2009.
- Prior to 2008, a consistent negative “market cap” indicator reflected the portfolio’s bias towards small cap companies relative to benchmark. The extent of this bias decreased significantly when small cap stocks were included in the Equity Segment benchmark in the fourth quarter of 2007. This was against a market back-drop where smaller companies had a tendency to underperform the broader market benchmark. While a negative

market cap indicator has remained a consistent feature of the Equity Segment, this factor was not significant during 2008 and whilst still negative, became even less statistically significant during 2009. This trend has continued during 2010.

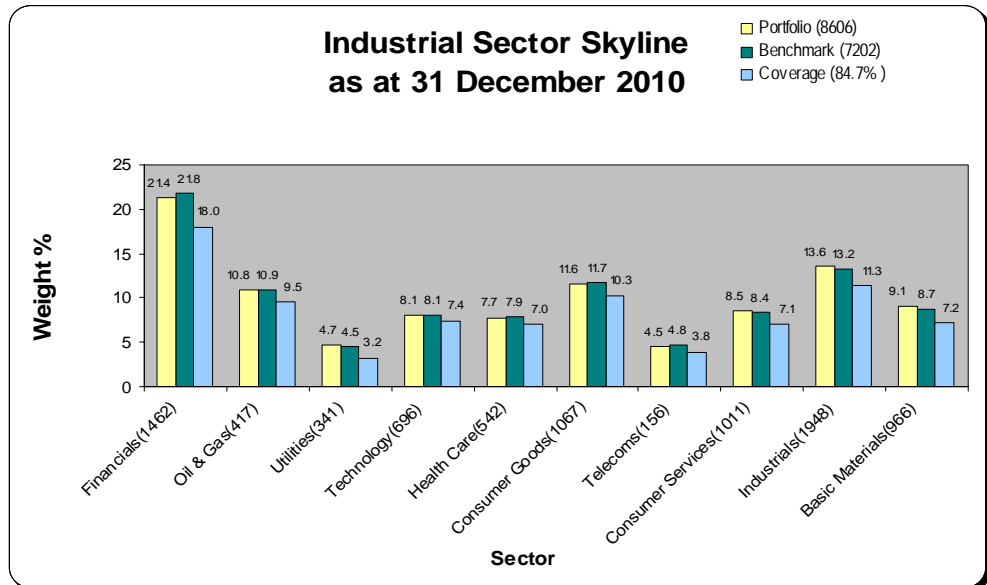
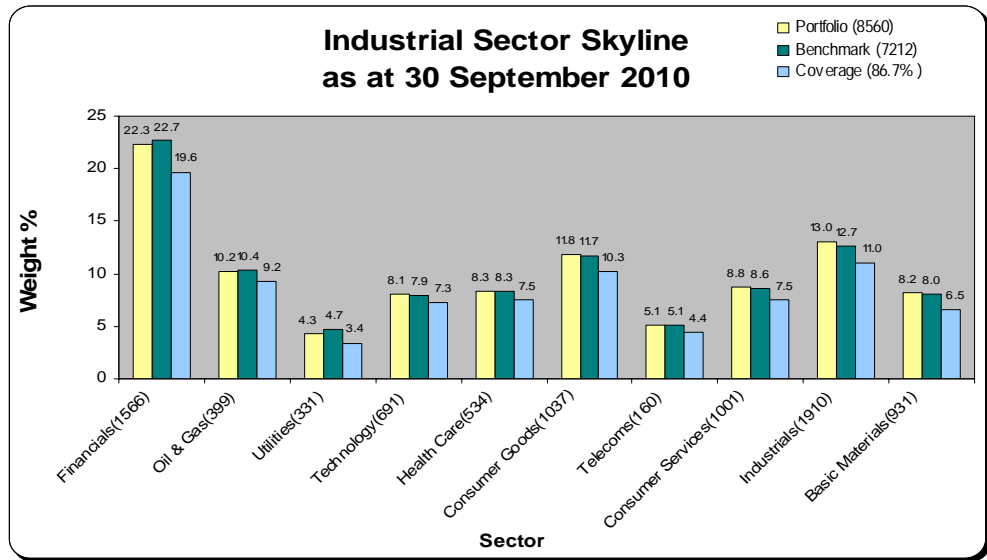
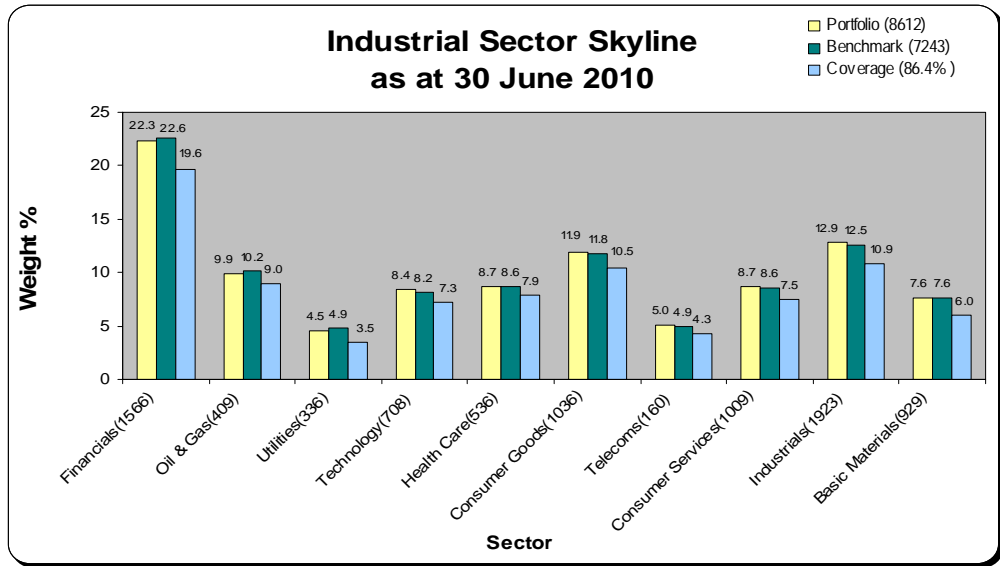
- In 2008, the Equity Segment displayed a bias towards stocks with a beta higher than the benchmark mean. While this factor was not statistically significant during 2009, the factor has become one of the most significant tilts at year end and remained consistently positive throughout 2010.
- Biases within the portfolio skyline of the Equity Segment have become progressively less significant between 2008 and 2009. In part, this can be explained by the extension of the benchmark universe to include small cap stocks in the fourth quarter of 2007 and emerging market stocks in the third quarter of 2008. These changes have resulted in a benchmark that more closely reflects the assets held within the Equity Segment.

### 6.3 The portfolio sector skyline

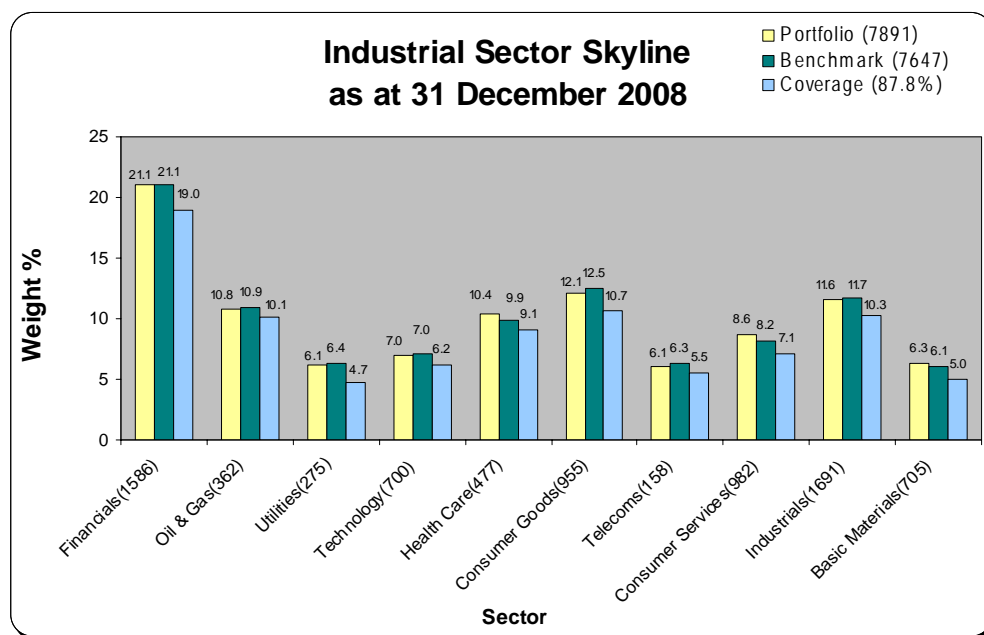
To give a better impression of the development of the sector characteristics of the Equity Segment, industrial sector skylines as at the end of each quarter during 2010 are shown below and overleaf. Please note that each quarter’s analysis is based on a “snap-shot” of the stocks held in the Equity Segment at an aggregate level as at the end of every quarter.

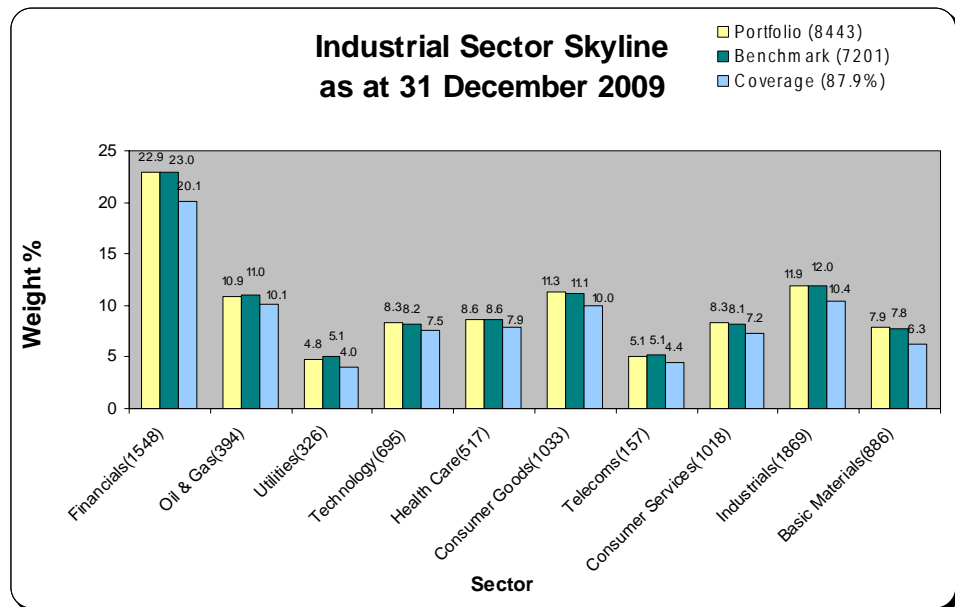






- Small cap companies were phased into the benchmark over the fourth quarter of 2007 and the first quarter of 2008. Further to this, the addition of emerging markets to the benchmark has resulted in a significant decrease in the number of countries held by the portfolio but not represented by the benchmark over the past three years. As at 30 June 2008, before the inclusion of emerging market countries in the benchmark, the portfolio was invested in sixteen countries that were outside of the benchmark universe. As at 31 December 2010, the portfolio had no holdings in two countries that were included in the benchmark. Despite this, the number of stocks held in the portfolio continued to exceed the number of holdings in the benchmark at each quarter end over 2010.
- The excess number of stocks held in the portfolio over the benchmark remained relatively consistent during 2010.
- The industrial sector skyline has remained largely unchanged throughout 2010; furthermore, the charts illustrate that Norges Bank is not taking significant sector positions away from the benchmark in the management of the Equity Segment of the Pension Fund. Relative sector positions are similar to those taken during 2008 and 2009 (as shown in the analysis below).
- To demonstrate the development of the sector characteristics of the Equity Segment over the last three years, industrial sector skylines as at 31 December 2008 and 31 December 2009 are shown below.

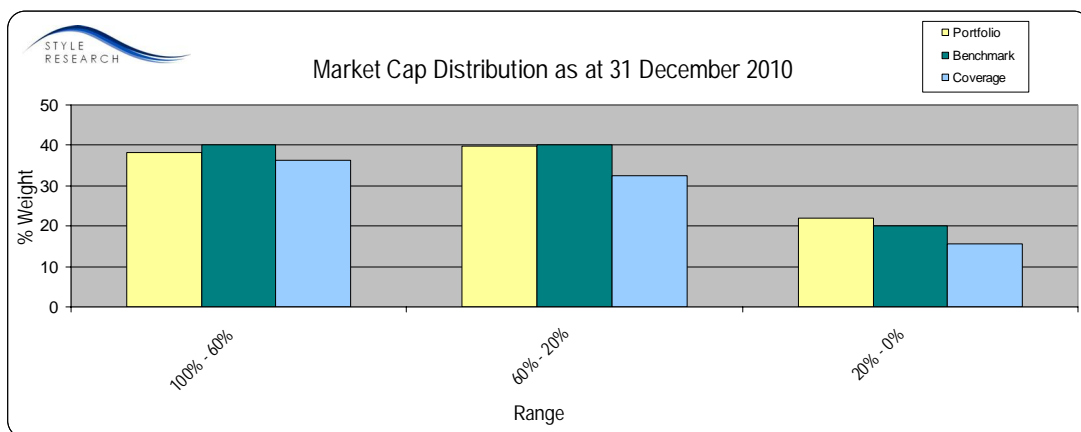




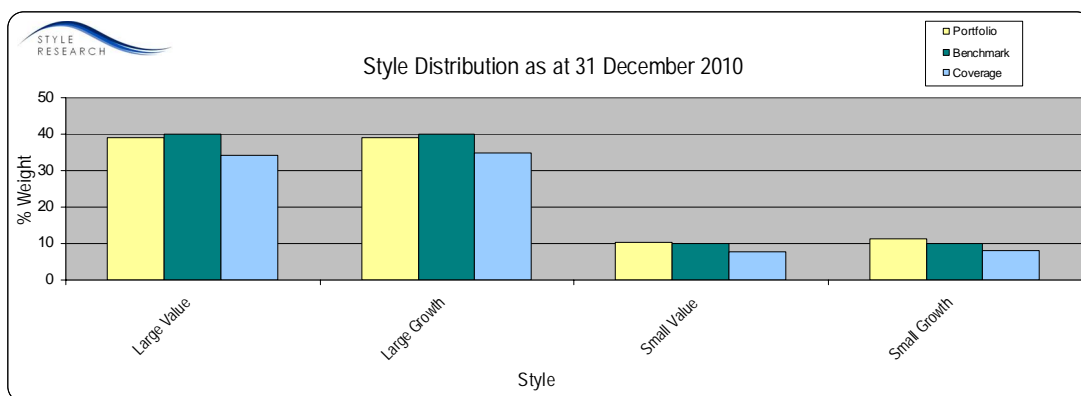
- Consistent over 2010, the number of companies held within the Equity Segment at the end of 2008 and 2009 exceeded the number of holdings within the benchmark. This corresponds with Norges Bank's exposure to companies within emerging markets, which were not contained within the benchmark before the third quarter of 2008.
- Throughout 2008 and 2009, the industrial sector skyline remained largely unchanged; furthermore, the charts illustrate that Norges Bank did not take significant sector positions away from the benchmark in the management of the Equity Segment of the Pension Fund.
- As at 31 December 2008, the largest active sector positions included the Health Care (+0.5%), Utilities (-0.3%) Consumer Goods (-0.4%) and Consumer Services (+0.4%) sectors. Overweighting Consumer Services is a continuation of the Equity Segment's long term position since 2005 and into 2010.
- As at 31 December 2009, the largest active sector positions included the Utilities (-0.3%), Consumer Goods (+0.2%) and Consumer Services (+0.2%) sectors.
- As at 31 December 2010, the largest sector weight differences from the benchmark were Telecoms (-0.3%), Financials (-0.4%) Industrials (+0.4%) and Basic Materials (+0.4%) sectors.
- Coverage of the benchmark has decreased marginally from 87.9% as at 31 December 2009 to 84.7% as at 31 December 2010.

### 6.4 Market capitalisation distribution

- The chart below describes the market capitalisation distribution of the Pension Fund and the benchmark. Smaller cap companies, as defined by SRPA, are the companies held within the portfolio that make up the bottom 20% of the market capitalisation of the benchmark. As at 31 December 2010, in this instance, a company with a market capitalisation of below circa 35bn NOK would be classified as being a small cap company.



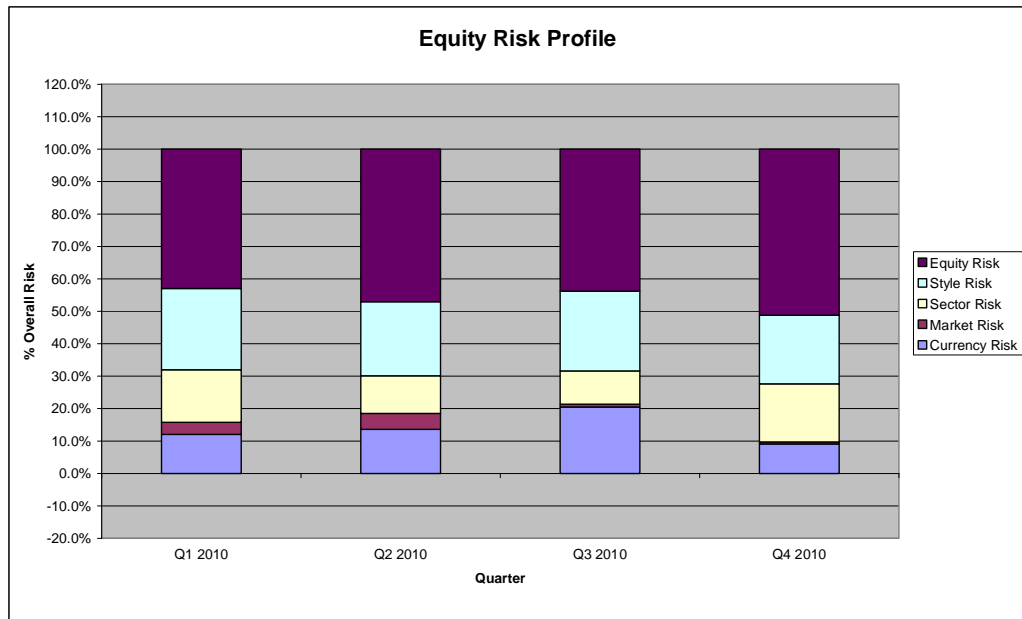
- As at 31 December 2010, the Pension Fund was overweight small cap companies by 1.9%. A marginal small cap bias was observed throughout the year as discussed in the style analysis.
- A small cap bias has been observed throughout the last three years with an overweight position to small cap companies as at the end of 2007 of 2.5%. This bias has fallen significantly since 2007 due to the inclusion of small cap companies in the benchmark in 2007. The bias decreased to 0.6% as at 31 December 2008, increased marginally to 1.2% as at the end of 2009 and has increased further to 1.9% as at 31 December 2010.
- The chart below describes the market capitalisation distribution of the Pension Fund and the benchmark in value and growth terms. Consistent with what has been described above, small cap companies, as defined by SRPA, are the companies held within the portfolio that make up the bottom 20% of the market capitalisation of the benchmark. Conversely, large cap companies, as defined by SRPA, are the companies held by the benchmark that make up the remaining 80% of the market capitalisation of the benchmark.



- As at 31 December 2010, the Pension Fund was marginally overweight in both small cap value and small cap growth companies and marginally underweight in both large cap growth and large cap value companies. A bias towards small cap growth companies is consistent with the position as at 31 December 2008 and 31 December 2009.

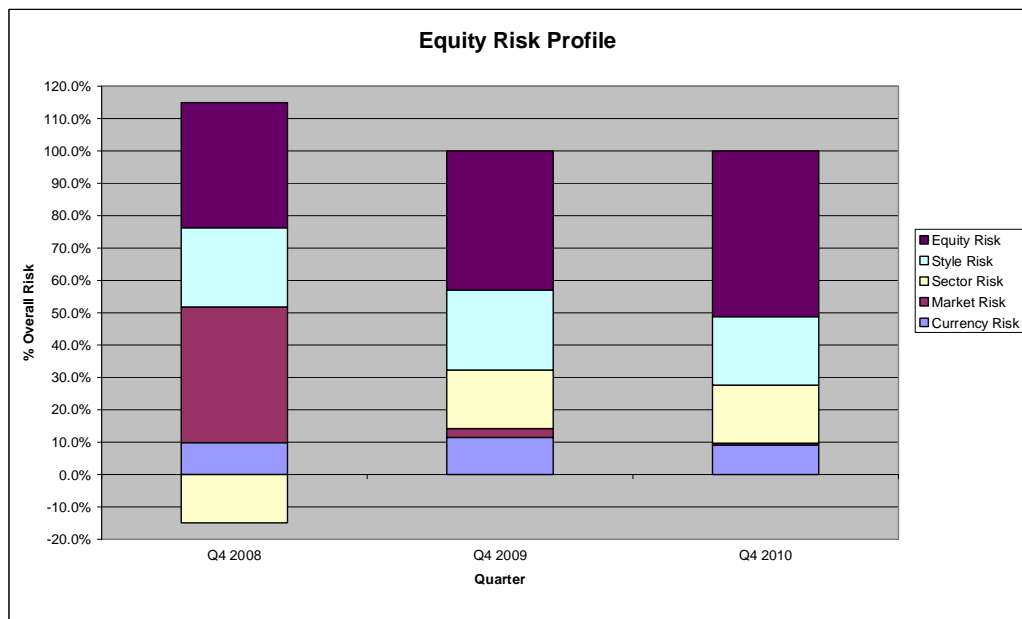
## 6.5 The Pension Fund – equity risk profile

- Portfolio risk can be decomposed into contributions from Stock Selection (“Equity Risk”), Style Tilts, Sector Allocation, Market Allocation and, for multi-currency portfolios Currency Allocation. The Equity Risk Profile charts below decompose the Tracking Variance (the square of Tracking Error) into these components and expresses them as percentages of the overall Tracking Variance. The actual risk level is dependent on the level of deviation from the benchmark and the correlation between the position the Equity Segment has taken and the benchmark position.
- A brief explanation of the risk terms referred to are as follows:
  - Currency Risk is the risk created by holding assets denominated in different currencies in different proportions to the benchmark.
  - Market Risk is the risk created by investing in different markets, or asset classes, in different proportions to the benchmark.
  - Sector risk is the risk created by taking different industrial sector positions to the benchmark.
  - Style Risk is the risk created by investing in stocks with different style attributes to the benchmark. For example, overweight growth stocks would cause style risk.
  - Equity Risk is stock specific risk from individual stocks and is the residual risk after assigning risk to the categories described above.
- The first chart below shows the risk in the Equity Segment broken down into different factors or segments as at the end of each quarter of 2010. The second chart shows the contribution to risk as at 31 December 2008, 31 December 2009 and 31 December 2010. Details of the methodology behind the analysis are set in Appendix C.
- The analysis is prepared according to a SRPA risk model for multi-market risk attribution and provides a “snap - shot” breakdown of the different segments of portfolio risk relative to benchmark.



Note: Security holdings are sourced by (c) Copyright 2012 BNY Mellon Asset Servicing. Benchmark data sourced from FTSE; Risk model output sourced from SRPA.

- With the exception of currency risk during the fourth quarter of 2010 the risk factors have remained relatively consistent during the year.



Note: Security holdings are sourced by (c) Copyright 2012 BNY Mellon Asset Servicing. Benchmark data sourced from FTSE; Risk model output sourced from SRPA.

- The introduction of emerging markets to the benchmark in the third quarter of 2008 resulted in Sector risk becoming negative as at the end of 2008. The calculation methodology used takes into account the correlation of each risk term with other risk terms. The order in which risks are measured impacts the outcome to some extent because as the methodology assumes incremental additions to risk (risk is calculated in the following order: currency, market, sector, style, equity). In Q4 2008, the correlation between

Style Risk and Sector Risk impacted the Sector Risk value to the extent that Sector Risk is shown as negative and therefore the sector positions taken reduced overall the risk taken as at the end of the third and fourth quarters. The net value of all risk components each quarter is 100%.

- Throughout 2008 and 2009, the Style risk component has been broadly consistent. During 2008, Market risk was the dominating contributor to risk. This has reduced significantly during 2009 to become the smallest contributor to risk at year end 2010. Equity risk has now become the most significant contributor to risk.
- In previous years and on a consistent basis since 2004, Currency Risk remained the smallest component of total risk. This has now been replaced by Market risk as the smallest contributor and although Currency risk fluctuated during the third quarter of 2010, it's contribution remains relatively small at year end and similar to that as at the end of 2009.
- Throughout 2010, and consistent with the previous year, the main contributor to risk (as calculated by SRPA), from a size and style perspective, was an active position in larger cap growth and a tilt away from larger cap value (the portfolio was underweight large cap growth until emerging markets were introduced to the benchmark in the third quarter of 2008 upon which the portfolio became overweight large cap growth).
- The risk profile of the portfolio should be assessed within the context of the absolute predicted tracking error as measured by SRPA as at each quarter end. For historical comparison, the predicted tracking error of the Equity Segment fell from c. 0.7% during 2007 to c. 0.3% p.a. during 2008 which can be attributed, in part, to the widening of the portfolio and benchmark investment universe resulting in the portfolios holdings more closely reflecting that of the benchmark. The predicted tracking error was c. 0.3% p.a. as at year end 2009 and has increased to c. 0.4% as at 31 December 2010. It should be noted that due to the relatively small predicted tracking error over 2010, the analysis is more sensitive to the contribution to risk of each component.

## 7

## Pension Fund assets under management

The table below shows the market value of the Pension Fund as at the end of every month during 2010.

Month	Market Values (NOK Millions)		
	Equity	Fixed Income	Total Fund
January	1,603,790	1,018,813	2,622,604
February	1,611,506	1,020,226	2,631,732
March	1,729,978	1,032,889	2,762,867
April	1,724,467	1,034,276	2,758,743
May	1,702,781	1,100,096	2,802,877
June	1,664,005	1,127,899	2,791,904
July	1,698,653	1,116,586	2,815,238
August	1,708,613	1,169,991	2,878,604
September	1,757,830	1,150,111	2,907,941
October	1,837,081	1,190,013	3,027,094
November	1,868,810	1,230,112	3,098,922
December	1,891,074	1,186,191	3,077,266

Data source: Calculations by BNY Mellon Asset Servicing. (c) Copyright 2012 BNY Mellon Asset Servicing. Figures do not sum due to rounding

### Norwegian Ministry of Finance – Explanation of differences

BNY MAS will adjust data from the custodian in order to maintain consistency with Norges Bank in the following situation:

- In the case of price uncertainty adjustments made by Norges Bank relating to the Short Term Bond Fund. These are price uncertainty adjustments undertaken by Norges Bank for bonds held as part of the Fixed Income Security Lending Programme. In order that BNY MAS's calculations reflect the fair market value of the portfolio, BNY MAS have sourced the adjustments to the Short Term Bond Fund independently from the custodian JPM who report separately on these adjustments. The performance returns provided within the body of this report therefore include the price uncertainty adjustments made by Norges Banks.
- In the case of a restating of returns by Norges Bank. In 2010, Norges Bank restated the returns initially provided to BNY MAS. This was due to currency classification issues involving the Hong Kong Dollar which impacted both portfolio and benchmark returns of the Equity and Fixed Income segments of the Fund. The performance values in this report reflect the restated returns.



In any other situation, differences between custodian data and equivalent data at Norges Bank will result in differences in market values and performance reported between BNY MAS and Norges Bank, the majority of which can be explained by one or a combination of reasons;

- Delays in reporting on hedge fund Net Asset Values, thus not correctly reported by JPM.
- Estimated income from securities lending allowed for by Norges Bank but not allowed for by JPM.
- Differences in transfer values were observed between those values reported by Norges Bank and those reported by JPM to BNY MAS.
- Revisions to Overseas Capital Gains Tax accruals. Norges Bank accrue a proportion of the Capital Gains Tax due in certain overseas countries in order to meet future expected tax obligations.
- Cash inflows in the form of foreign currency, may on occasion give rise to discrepancies relating to the currency rates applied to cash inflows to the Fund. Since the accounting reporting currency for the Fund is Norwegian Kroner, inflows and subsequent distributions/allocations needs to be converted to Norwegian Kroner. Norges Bank performs this conversion using exchange rates obtained from WM Reuters 4pm fix. In some instances, the custodian JPM books transfers/subsequent allocations on T+1 or T+2 using the currency rates at that time. This process can lead to discrepancies between Market Values calculated by Norges Bank and BNY MAS. In addition, BNY MAS source exchange rates from FTS, which differs from the source used by Norges Bank.
- The performance measurement methodology employed by BNY MAS is consistent with the one employed by Norges Bank in periods where all cash flows occur at month end. Between June 2007 and June 2009 the strategic equity allocation was gradually increased from 40% to 60%. During this transition period, both mid month and month end transfers/rebalancing between the Equity and Fixed Income Segments were carried out. Norges Bank calculates an exact time weighted rate of return using market values on each of the actual transfer dates. The performance methodology employed by BNY MAS makes an assumption that all cash flows occur at month end. Therefore, any cash flows occurring mid month until June 2009 can lead to differences between the performance returns calculated by BNY MAS and Norges Bank in the range of 0.10% to 1.00%.
- It should be noted that for all individual months during 2010, the reasons provided above did not result in discrepancies between BNY MAS and Norges Bank (measured in both Norwegian Kroner and currency basket terms) of greater magnitude than 0.015% for the Equity, Fixed Income and Total Fund returns.

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# APPENDIX A

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## Calculation Methodology

BNY MAS employs a Modified Dietz calculation, which is an approximation to a time-weighted rate of return as the base performance statistic. This return takes into account investment income as well as realised and unrealised capital profits or losses. The use of this statistic minimises distortions due to cash flows into and out of a portfolio which are, in general, outside the control of the investment manager.

Exact calculation of the time-weighted rate of return requires a full valuation of the portfolio whenever a cash flow occurs which is not available to BNY MAS. As a practical alternative, BNY MAS employs an approximation to the time-weighted return, using monthly valuations, monthly/daily transaction details and monthly/daily cash flows, which give an accurate approximation of the time-weighted rate of return.

At the total fund level BNY MAS calculates time-weighted returns using market values at the start and end of the month and net injection details.

BNY MAS also carry out a number of independent checks on Norges Bank's benchmark return calculations. BNY MAS independently source a customised FTSE Global All Cap index from 31 December 2008 and Barclays Capital customised indices in order to carry out a check on the Equity and Fixed Income benchmark returns. BNY MAS then apply relative Fixed Income and Equity weights within the Norwegian Government Pension Fund - Global to calculate the overall benchmark. Following provision by Norges Bank of the methodology for calculation of the Fixed Income, Equity and Overall benchmark weights BNY MAS have set up independent checks to verify these weights. BNY MAS also independently calculate the fund and benchmark returns in the currency basket.

## APPENDIX B

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### Mercer's role and control function

The purpose as set out in the Public Procurement document is for Mercer to verify Norges Bank's internal performance measurements and to strengthen the Ministry's basis for evaluating the competence and actions of Norges Bank. Mercer outsources the role of performance verification to BNY MAS, an independent performance measurer appointed by Mercer.

Mercer has, in conjunction with BNY MAS, performed control and verification functions throughout 2010, in accordance with the terms of the contract awarded by the Ministry. The objective of this process has been to check Norges Bank's internal performance measurements and to perform wider verification checks, both at portfolio and benchmark level according to instructions received from the Ministry of Finance.

#### **BNY MAS' role and control function**

##### *BNY MAS' role*

The function of calculating and verifying Norges Bank's internal performance measurement is carried out by BNY MAS, under the guidance of Mercer, who retain overall responsibility for the process. BNY MAS calculates performance for the Pension Fund based on portfolio data and market values supplied by the custodians, JP Morgan Chase.

BNY MAS employs a Modified Dietz calculation, which is an approximation to a time-weighted return, using monthly valuations, monthly/daily transaction details and monthly/daily cash flows, which give an accurate approximation of the time-weighted rate of return.

At the total fund level BNY MAS calculates time-weighted returns using market values at the start and end of the month and net injection details.

#### **BNY MAS' control function**

##### *Market value reconciliation check*

Having constructed performance data, BNY MAS will check that the total values for the various segments of the fund agree with those values calculated by Norges Bank. BNY MAS also check that the total value for the fund agrees with Norges Bank's calculated value.

Any significant reconciliation errors here may indicate that there are accounts omitted from the data supplied. If the overall difference is more than 0.015%, BNY MAS will raise queries with the data providers.

## Transfers

When transfers occur at month end BNY MAS ensure that the transfers into the fund shown in the data agree with those detailed in the letter supplied by Norges Bank. BNY MAS create their own independent verification of the transfer portfolio.

## Fund return checks

In addition to the data checks above, BNY MAS carry out sense checks on individual asset class and total returns.

### Asset class return check

BNY MAS carry out sense checks on returns for individual asset classes against the relevant index return. If the asset class return is unexpectedly divergent from the index return then BNY MAS will raise a query with the relevant data provider.

### Total return check

After constructing data for individual portions of the fund, BNY MAS produces a consolidated data set for the fund as a whole. BNY MAS check that the total return calculated for each month is no more than one basis point different to the total return quoted by Norges Bank.

## Benchmark checks

### *Pension Fund benchmark*

### *Fixed income benchmark*

Following provision by Norges Bank of the methodology for calculation, from first principles, of the Fixed Income benchmark weights, BNY MAS set up their own independent verification spreadsheet calculations.

BNY MAS have independently sourced the Barclays Capital Global Aggregate indices (Lehman Aggregate indices prior to 20 September 2008) that constitute the fixed income benchmark. These have been sourced directly from the Barclays website. Using monthly weights and Barclays Capital Global Aggregate indices, BNY MAS will calculate Fixed Income benchmark returns in NOK terms.

On completion of the reconciliation exercise BNY MAS will verify agreement to the Fixed Income benchmark weights and benchmark returns by email notification. If returns and/or weights cannot be agreed then BNY MAS will communicate their findings with commentary.

### **Equity benchmark**

Following provision by Norges Bank of the methodology for calculation, from first principles, of the Equity benchmark weights, BNY MAS have set up their own independent verification spreadsheet calculations.

Customised regional benchmark index values in US\$ terms up to November 2003 calculated by FTI have also been forwarded by Norges Bank. FTSE took over provision of customised benchmark indices from December 2003 onwards. From December 2003 onwards BNY MAS have received customised benchmark indices directly from FTSE.

On completion of the reconciliation exercise BNY MAS will verify agreement to the Equity benchmark weights and benchmark returns by email notification. If returns and/or weights cannot be agreed then BNY MAS will communicate their findings with commentary.

### **Overall Pension Fund benchmark**

Following provision by Norges Bank of the methodology for calculation, from first principles, of the overall benchmark weights, BNY MAS have set up their own independent verification spreadsheet calculations.

Using monthly weights and Fixed Income and Equity benchmark returns calculated above, BNY MAS will calculate overall benchmark returns.

On completion of the reconciliation exercise BNY MAS will verify agreement to the overall benchmark weights and benchmark returns by email notification. If returns and/or weights cannot be agreed then BNY MAS will communicate their findings with commentary.

### **Environmental Fund benchmark (prior to 1 December 2004)**

From December 2003 onwards BNY MAS have received customised benchmark indices directly from FTSE. Benchmark returns are calculated by dividing out customised total return indices in NOK.

As of end November 2004 the Environmental Fund was merged with the Pension Fund and hence since 1 December 2004 this control function ceased to exist.

### **Combined Total Fund benchmark**

Prior to 1 December 2004, BNY MAS calculate the Combined Fund total return benchmark on a monthly basis by weighting the Pension Fund and Environmental Fund total benchmark returns by their respective start market values. Since then the Total Fund benchmark is the same as the overall Pension Fund benchmark.



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2011

### **The Norwegian Government Pension Fund - Global – BNY Mellon Asset Servicing role during 2010**

Our role in 2010

During 2010, BNY Mellon Asset Servicing “BNY MAS” have provided independent performance measurement in respect of the Norwegian Government Pension Fund – Global.

To perform this task BNY MAS collect data on a monthly basis from five data sources namely: JP Morgan Chase, Barclays Capital, FTSE and Norges Bank (“the data suppliers”). In addition, currency rates are sourced from FT Interactive Data Source (“FTS”). JP Morgan Chase is the single fund accountant for both the Fixed Income and Equity segments of the Fund.

BNY MAS undertake a number of reconciliation checks on the data, at asset class level and where available at security level, ensuring that data reconciles from the previous period, and at the total level. Any questions that arise from these checks are raised with the data suppliers and where appropriate the client.

Reconciled data is run through the internal performance system to calculate returns. At the asset class level, BNY MAS employs a Modified Dietz calculation, which is an approximation to a time-weighted rate of return as the base performance statistic. This return takes into account investment income as well as realised and unrealised capital profits or losses. The use of this statistic minimises distortions due to cash flows into and out of a portfolio which are, in general, outside the control of the investment manager.

Exact calculation of the time-weighted rate of return requires a full valuation of the portfolio whenever a cash flow occurs which is not available to BNY MAS. As a practical alternative, BNY MAS employs an approximation to the time-weighted return, using monthly valuations, monthly/daily transaction details and monthly/daily cash flows, which give an accurate approximation of the time-weighted rate of return.

At the total fund level BNY MAS calculates time-weighted returns using market values at the start and end of the month and net injection details.

BNY MAS also carry out a number of independent checks on Norges Bank's benchmark return calculations. BNY MAS independently source a customised FTSE Global All Cap index from 31 December 2008 and Barclays Capital customised indices in order to carry out a check on the Equity and Fixed Income benchmark returns. BNY MAS then apply relative Fixed Income and Equity weights within the Norwegian Government Pension Fund - Global to calculate the overall benchmark. Following provision by Norges Bank of the methodology for calculation of the Fixed Income, Equity and Overall benchmark weights BNY MAS have set up independent checks to verify these weights. BNY MAS also independently calculate the fund and benchmark returns in the currency basket. BNY Mellon adopts the Global Investment Performance Standards (GIPS)<sup>®</sup> guidelines where ever possible. GIPS are a set of standardized, industry-wide ethical principles that provide guidance on how to calculate and report investment results. A summary of the key points of these standards has been provided below.

#### Pricing basis: Bid Pricing

This ensures that the holdings are valued prudently and are in line with our approach with SORP accounting practices - Statement of Recommended Practice

#### Trade Date Accounting

GIPS state that Trade date accounting should be used to ensure that the transactions are captured within the performance on the day they are executed rather than waiting for the settlement date. This ensures that the performance is always a fair representation of the holdings.

#### Accrual Accounting

Also in line with the GIPS requirements for showing "Dirty" Market values. This ensures that the performance also incorporates and accrued but not yet paid income.

#### Large Cash flows: Intra period revaluation.

The intra period revaluation methodology we employ, meets the current GIPS requirements to revalue portfolios whenever large cash flows occur. We can automatically capture an audit report to trap intra-month cash flows (i.e. funds contributions / fund distribution) at the total portfolio level that are greater than a specified proportion, for example 10%, of the total portfolio market value and calculate intra-period returns to produce a more accurate total portfolio return.



Performance discrepancies in 2010

For all months during 2010, there were no return discrepancies between BNY MAS and Norges Bank (measured in both Norwegian Kroner and the currency basket measure) of greater magnitude than 0.015%.

Twelve month Total Fund returns for the Norwegian Government Pension Fund - Global was 9.49% in NOK terms as calculated by both Norges Bank and BNY MAS.

For the twelve months to 31 December 2010, the Total Fund return for the Norwegian Government Pension Fund - Global was 9.62% in currency basket terms as calculated by BNY MAS, in line with that calculated by Norges Bank.

Yours sincerely

Stephen Hayes-Allen

## APPENDIX C

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### Style research portfolio analysis definitions

#### Value criteria

##### Book to price

The ratio of the company's Book Value (the sum of Shareholders' Equity plus accumulated Retained Earnings from the P & L Account) to its Share Price.

This Factor has been one of the most successful measures of the intrinsic Value of company shares.

##### Dividend yield

The annual Dividend Paid per Share divided by the Share Price.

This Factor measures the Value of company shares according to the stream of dividend income resulting from share ownership.

##### Cash flow yield

Annual Cash Flow per Share divided by the Share Price.

This Factor is related to the earnings yield but also includes other items, specifically: depreciation, amortisations, and provisions for deferred liabilities. It is intended to capture the cash availability of the company as a multiple of the share price, and offers a Value criteria based on the stream of accessible cash earnings.

##### Sales to price

Net Sales per Share divided by the Share Price.

This Factor measures the worth of a company's shares according to the annual sales volume supporting the company business. The item is considered by many analysts to be less susceptible to manipulation than other valuation criteria; it is, however, a less comprehensive measure of a company's range of activities.

##### IBES earnings yield

The consensus 1 year forecast annual earnings per share divided by the share price.

## Growth criteria

### Earnings growth

The average annual growth rate of Earnings over a trailing three years.

Earnings Growth is, perhaps, the clearest of the Growth criteria. However, it is subject to the distortions of reporting conventions and manipulation and, particularly in some markets, only known after a considerable lag.

### Sales growth

The average annual growth rate of Net Sales per Share over a trailing three years.

Although growth in sales per share might be only a narrow measure of a company's business growth, and may be subject to a number of distortions, it is less subject to differences in reporting conventions or manipulation than many other Balance Sheet or Profit and Loss items.

### Earnings growth

**IBES 12Mth Growth** – The IBES consensus forecast growth over the next 12 months. This is calculated on a pro-rata basis from the forecasts for each company's next 2 annual reporting periods.

**IBES earnings long term growth** – This factor takes the longest available 2 year earnings growth forecast for a stock. For stocks with a 5 year forward consensus forecast the growth rate will be calculated from fiscal year 3 to fiscal year 5. For stocks with a 4 year forward consensus forecast the growth rate will be calculated from fiscal year 2 to fiscal year 4. For stocks with a 3 year forward consensus forecast the growth rate will be calculated from fiscal year 1 to fiscal year 3. If forecasts are not available for fiscal years 3 to 5, then the factor is set to null.

**Sustainable growth** – This is defined as follows: Sustainable Growth Rate =  $[RoE] * (1 - (DPS/EPS))$  RoE = Return on Equity, DPS = Dividend per share, EPS = Earnings per share This Growth factor aims to provide an insight into the future growth potential of a company. The rationale behind this is that the growth rate one can reasonably expect from a company, assuming it is able to generate a return on equity similar to the recent past, is related to how much of its profits are reinvested back into the company.

## Size & risk criteria

### Market Cap

The market capitalisation of a stock.

The Market Cap statistic of the portfolio is the weighted (by holding value) average size of the securities held. The Market Cap statistic of the benchmark (or total market) is the weighted (by holding value) average size of the securities within the benchmark (or total market).

### Market Beta

The “slope coefficient”, ( $\beta$ ), from the simple regression:  
Security Monthly Return =  $\alpha$  +  $\beta$  \* Market Monthly Return +  
Random Error

The regression is carried out over rolling 36 month periods; where sufficient information is not available,  $\beta=1$  is assumed.

## Performance record criteria

### Momentum ST

Short Term Momentum is calculated using a 6 month "memory" of monthly total returns. The past period returns are weighted using a "decay ratio" of 2/3, per month. This weighted historic return factor measures the degree of performance trend following. It is useful in recognizing trading character of specific markets and in noticing occasional changing patterns through the market cycle.

### Momentum MT

**Medium Term Momentum** is the 12 month total return of the stock.

### Historic relative

The Historic Relative Return is calculated using a 6 month **Return** “memory” of monthly relative returns. The past period returns are weighted using to a “decay ratio” of 2/3, per month.

This weighted historic relative return factor measures the degree of simple price performance trend following. It is useful in recognising the trading character of specific markets and in noticing occasional changing patterns through the market cycle.

The international equity analysis shows short-term and medium term momentum factors.

### IBES 1 Year Earnings revisions

IBES balance of Earnings forecast revisions for the next annual reporting period. It is calculated as the difference between the upwards revisions minus the downwards revisions (as sampled over the past 3month period), expressed as a percentage of the number of estimates.

## Quality criteria

### Return on equity

Net Income before Preferred Dividends divided by the Book Value of Shareholders' Common Equity.

Return on Equity measures the profitability of the operations of the company as a proportion of the total amount of equity in the company. Since Return on Equity multiplied by the reinvestment rate (the proportion of earnings not paid as dividends but reinvested in the company) gives the warranted growth rate of a company, Return on Equity is a very usual measure of a company's growth potential.

### Low gearing

The negative of Debt to Equity. Low geared companies can be regarded as being of higher 'Quality' as they are less burdened by debt repayment costs.

### Earnings growth stability

This 'Quality' factor is calculated as the negative of the standard deviation of Earnings Growth over the most recent 3 years of growth data.

### Risk terms

Currency risk (the extent to which currency exposure differs from the benchmark).

Market risk (the extent to which the portfolio's exposure to different equity markets differs from the benchmark).

Sector risk (the extent to which the portfolio's exposure to different industries differs from the benchmark).

Style risk (the extent to which the portfolio's style biases (see graph on previous page) introduce risk relative to the benchmark).

Equity risk (risk arising from stock-specific factors).

However, the different segments of risk are not independent. For example, sector risk can itself introduce currency risk if the sector has a bias to companies with non-domestic currency exposure.

### Coverage

The term "coverage" is a measure of the portfolio's exposure to the indices it is benchmarked against i.e. if a benchmark index had only 2 stocks, both of equal weighting, each stock would have a market capitalisation of 50%. If a portfolio worth 100 NOK held 50 NOK in each stock its coverage would be 100%. If the portfolio invested all the 100 NOK in just one stock its coverage would be 50% as it is only exposed to the movements of the 50% of the benchmark index. Further, if the portfolio was invested 60 NOK in one stock and 40 NOK in the other the coverage would still be 50% in the first stock, but 40% in the other making a total of 90% coverage.

## Multi-Market risk attribution

The return of stock  $j$  may be written in terms of its currency, market, industry, style and specific returns (dropping subscript  $t$  for convenience)

$$r_j = R_{C(j)}^\phi + R_{M(j)} + R'_{I(j)} + R'_{S(j)} + r'_j$$

Where company  $j$  belongs to market  $M(j)$ , industry  $I(j)$  and style  $S(j)$ . The Portfolio base currency is  $\phi$  and the currency of market  $M(j)$  is  $C(j)$ . Industries are according to the 10 economic sectors as defined by FTSE International. Styles are defined within each economic sector according to Large Value, Large Growth, Small Value, Small Growth. Size is the primary sort, where Large is the top 80% by capitalization and Small the bottom 20%. Value is taken to be the top half, by capitalization, of each size category, sorted by a measure which is 60% normalized Book Value per Share to Share Price and 40% normalized Dividend Yield, and rebalanced every 6 months; Growth is simplified as the other half within each size category.

The month  $t$  currency return is defined as:

$$R_{C(j)}^\phi = \frac{er_{C(j),t}^\phi - er_{C(j),t-1}^\phi}{er_{C(j),t-1}^\phi}$$

Where the exchange rate of currency  $\phi$  to currency  $C(j)$ , at the end of month  $t$ , is  $er_{C(j),t}^\phi$

In matrix notation the Equity returns are:

$$\mathbf{r} = \mathbf{R}_C^{\phi} + \mathbf{R}_M + \mathbf{R}'_I + \mathbf{R}'_S + \mathbf{r}'$$

The covariance matrix is then:

$$\begin{aligned} Cov(\mathbf{r}) &= Cov(\mathbf{R}_C^{\phi} + \mathbf{R}_M + \mathbf{R}'_I + \mathbf{R}'_S + \mathbf{r}') \\ &= Cov(\mathbf{R}_C^{\phi}) + Cov(\mathbf{R}_C^{\phi}, \mathbf{R}_M) + Cov(\mathbf{R}_C^{\phi}, \mathbf{R}'_I) + Cov(\mathbf{R}_C^{\phi}, \mathbf{R}'_S) + Cov(\mathbf{R}_C^{\phi}, \mathbf{r}') \\ &\quad + Cov(\mathbf{R}_M, \mathbf{R}_C^{\phi}) + Cov(\mathbf{R}_M) + Cov(\mathbf{R}_M, \mathbf{R}'_I) + Cov(\mathbf{R}_M, \mathbf{R}'_S) + Cov(\mathbf{R}_M, \mathbf{r}') \\ &\quad + Cov(\mathbf{R}'_I, \mathbf{R}_C^{\phi}) + Cov(\mathbf{R}'_I, \mathbf{R}_M) + Cov(\mathbf{R}'_I) + Cov(\mathbf{R}'_I, \mathbf{R}'_S) + Cov(\mathbf{R}'_I, \mathbf{r}') \\ &\quad + Cov(\mathbf{R}'_S, \mathbf{R}_C^{\phi}) + Cov(\mathbf{R}'_S, \mathbf{R}_M) + Cov(\mathbf{R}'_S, \mathbf{R}'_I) + Cov(\mathbf{R}'_S) + Cov(\mathbf{R}'_S, \mathbf{r}') \\ &\quad + Cov(\mathbf{r}', \mathbf{R}_C^{\phi}) + Cov(\mathbf{r}', \mathbf{R}_M) + Cov(\mathbf{r}', \mathbf{R}'_I) + Cov(\mathbf{r}', \mathbf{R}'_S) + Cov(\mathbf{r}') \end{aligned}$$

The covariance between  $r_i$  and  $r_j$  is:

$$\begin{aligned} Cov(r_i, r_j) &= Cov(R_{C(i)}^{\phi}, R_{C(j)}^{\phi}) + Cov(R_{C(i)}^{\phi}, R_{M(j)}) + Cov(R_{C(i)}^{\phi}, R'_{I(j)}) + Cov(R_{C(i)}^{\phi}, R'_{S(j)}) + Cov(R_{C(i)}^{\phi}, r'_j) \\ &\quad + Cov(R_{M(i)}, R_{C(j)}^{\phi}) + Cov(R_{M(i)}, R_{M(j)}) + Cov(R_{M(i)}, R'_{I(j)}) + Cov(R_{M(i)}, R'_{S(j)}) + Cov(R_{M(i)}, r'_j) \\ &\quad + Cov(R'_{I(i)}, R_{C(j)}^{\phi}) + Cov(R'_{I(i)}, R_{M(j)}) + Cov(R'_{I(i)}, R'_{I(j)}) + Cov(R'_{I(i)}, R'_{S(j)}) + Cov(R'_{I(i)}, r'_j) \\ &\quad + Cov(R'_{S(i)}, R_{C(j)}^{\phi}) + Cov(R'_{S(i)}, R_{M(j)}) + Cov(R'_{S(i)}, R'_{I(j)}) + Cov(R'_{S(i)}, R'_{S(j)}) + Cov(R'_{S(i)}, r'_j) \\ &\quad + Cov(r'_i, R_{C(j)}^{\phi}) + Cov(r'_i, R_{M(j)}) + Cov(r'_i, R'_{I(j)}) + Cov(r'_i, R'_{S(j)}) + Cov(r'_i, r'_j) \end{aligned}$$

The component parts of the covariance matrix are:

Pure Currency term:  $Cov(R_{C(i)}^{\phi}, R_{C(j)}^{\phi})$

Market cross terms:  $Cov(R_{C(i)}^{\phi}, R_{M(j)}) + Cov(R_{M(i)}, R_{C(j)}^{\phi})$

Pure Market term:  $Cov(R_{M(i)}, R_{M(j)})$

Industry cross terms:

$$Cov(R_{C(i)}^{\phi}, R'_{I(j)}) + Cov(R_{M(i)}, R'_{I(j)}) + Cov(R'_{I(i)}, R_{C(j)}^{\phi}) + Cov(R'_{I(i)}, R_{M(j)})$$

Pure Industry term:  $Cov(R'_{I(i)}, R'_{I(j)})$

Style cross terms:

$$\begin{aligned} &Cov(R_{C(i)}^{\phi}, R'_{S(j)}) + Cov(R_{M(i)}, R'_{S(j)}) + Cov(R'_{I(i)}, R'_{S(j)}) + Cov(R'_{S(i)}, R_{C(j)}^{\phi}) \\ &+ Cov(R'_{S(i)}, R_{M(j)}) + Cov(R'_{S(i)}, R'_{I(j)}) \end{aligned}$$

Pure Style term:  $Cov(R'_{S(i)}, R'_{S(j)})$

Equity cross terms:

$$\begin{aligned} &Cov(R_{C(i)}^{\phi}, r'_j) + Cov(R_{M(i)}, r'_j) + Cov(R'_{I(i)}, r'_j) + Cov(R'_{S(i)}, r'_j) + Cov(r'_i, R_{C(j)}^{\phi}) \\ &+ Cov(r'_i, R_{M(j)}) + Cov(r'_i, R'_{I(j)}) + Cov(r'_i, R'_{S(j)}) \end{aligned}$$

Pure Equity term:  $Cov(r'_i, r'_j)$



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