Appendix 2

Expansion of the benchmark portfolio of the Government Pension Fund – Global to include small-cap equities

Letter of 20 February 2007 from the Ministry of Finance's Advisory Council on Investment Strategy

1 Background

Reference is made to the question from the Ministry of Finance as to whether the benchmark portfolio of the Government Pension Fund – Global (GPFG) should be expanded to include the small-cap equity segment of the FTSE index. By small-cap equities are meant shares of listed companies with low capitalisation. In practise, small-cap equities would be included in the benchmark portfolio of GPFG by changing the benchmark index for equities from the current benchmark index, FTSE All-World, which encompasses about 2,400 large and medium-sized companies, to FTSE All-Cap, which in addition also encompasses the 10 percent or so smallest companies within each region. This implies that the number of companies in the benchmark portfolio increases to about 7,000 companies. The average size of the new companies is NOK 7 billion in the Americas and Europe, and just under NOK 2.5 billion in Asia.

The question of whether to include small-cap equities in the benchmark portfolio has also been examined by Norges Bank. In the Bank's letter of 20 October 2006[1] to the Ministry of Finance it is recommended that the small-cap equity segment be included in the Fund's benchmark portfolio. The Bank writes:

> "Small-cap equities make up a substantial segment of the market. It is difficult to see why the Fund, as a large and long-term investor, should have an exposure to this segment which is substantially lower than that of the market in general. There are also moderate diversification gains to be had from including these equities. If small-cap equities are added to the benchmark portfolio, higher returns can be expected without a significant increase in volatility in the portfolio."

[1] This issue is discussed in more detail in Norges Bank's Strategy Report for the Government Pension Fund – Global and in Staff Memo No. 2006/7.

2 The role of the Strategy Council

The Ministry of Finance's Advisory Council on Investment Strategy (the Strategy Council) was established on 29 September 2005 to assist the Ministry in its work on the long-term investment strategy of the GPFG. The terms of reference of the Strategy Council refer to four general principles governing the Fund's investments:

- The objective of the management of the Fund is to achieve the maximum possible return, subject to moderate risk.
- The Fund shall be a financial investor, and not a tool for strategic ownership in individual companies.
- The Fund shall be well diversified.
- A long-term investment horizon shall be adopted.

Against this background, the role of the Strategy Council is to examine the inclusion of small-cap equities in terms of its effect on the expected return on, and risk of, the Fund. We have not examined the effect on the work relating to the implementation of the Ethical Guidelines or issues relating to the upper limit on ownership interests, since these are deemed to fall outside to scope of the terms of reference of the Strategy Council.

3 Assessment

Following an expansion to include small companies, the benchmark portfolio for equities will represent 96 percent of the stock markets included in the FTSE index, as compared to the current 85 percent. The Strategy Council has attached weight to such a change being a natural consequence of the purpose of the investments and of the Fund's overall investment strategy:

- The Fund is a financial investor, and not a tool for strategic ownership in individual companies. Consequently, the average ownership stakes held by the Fund are small.
- The change implies that the capital will be spread across close to 7,000 equities and 8,000 bonds in about 40 countries, with the benchmark portfolio mainly being composed in such manner that the return on such portfolio traces developments in global stock and bond markets.
- The active management limits do not change the profile of the portfolio as being broad in scope. Neither the risk limit of 1.5 percent tracking error, nor Norges Bank's implementation of the active management effort, are geared towards the return on the Fund being created through large individual positions based on short-term market perceptions.
- The Fund adopts a very long investment horizon. The equities purchased now are, generally speaking, not intended for sale at a later date.

The current benchmark portfolio of the GPFG deviates somewhat from the aggregate portfolio of the world's stock and bond markets. The equity portion of 40 percent is considerably lower than that of the market portfolio and that of large, comparable funds internationally. Furthermore, the regional weight of Europe is relatively high because imports from European countries form a large share of Norwegian imports. Nevertheless, the fundamental idea underpinning the investment strategy is to spread risk by purchasing a representative selection of the world's stock and bond market, in order to thereby achieve the maximum possible return at a moderate risk. The Strategy Council believes, against this background, that it is appropriate for the Ministry to also select the most representative available benchmark portfolio for equities.

The current limitation to large and medium-sized companies implies a systematic selection of the 85 percent largest companies, instead of purchasing the entire stock market. Such a strategy could be justified during an early phase of the Fund's history by invoking considerations relating to prudence and a desire to accumulate experience as far as new investment classes are concerned. The Fund has now been invested in global equities for nine years. The Strategy Council is of the view that it is not appropriate, at this stage of the Fund's development, to exclude small companies from the benchmark portfolio of the GPFG.

The Strategy Council believes that considerations to do with the evaluation of active management performance also favour the inclusion of small companies in the benchmark portfolio. Since small companies form a large segment in the stock market, and since GPFG already has access to such investments, a benchmark portfolio that includes small companies will constitute a more appropriate comparative basis than does the current benchmark portfolio.

Studies of historical returns (see the appended references) have documented interesting differences in market developments for small and large companies:

- The first studies to measure the difference in returns between small and large companies in the 1980s and early 1990s found a higher risk-adjusted return on small-cap equities than on large-cap equities.
- The excess return on small companies was documented for many countries, and it was generally the case that the companies performed better the smaller they were.
- After this effect had been well documented, there followed a period of 10-15 years when observed equity returns in many countries were lower for small-cap equities than for large-cap equities. After 2000 it would appear that it has again become most profitable to be invested in the smallest companies.
- For those markets in respect of which long time series are available (the United States and the United Kingdom), risk-adjusted returns on small companies have on average been somewhat higher than on large ones.
- The correlation between annual returns on large and small companies has been about 0.8. Although this covariation is high, it nevertheless allows for a certain diversification of risk. At the same time, the Council's own analyses of historical equity returns in the US show that the correlation between overlapping five- and ten-year average returns has been lower than the correlation between annual returns (about 0.5-0.6). The data set is very limited, but may indicate that the risk diversification effect from including small-cap equities increases with the investment horizon.

These studies document that returns on investments in small-cap equities have generally developed more favourably than those in large-cap equities. This is commonly labelled a "small-cap effect". The historical findings support theories

that explain this effect by classifying company size as a separate risk factor, relating to, inter alia, the expectation that small companies may experience particularly low returns and low liquidity during recessions, as compared to large and medium-sized limited companies. Such a risk will be relevant to investors with a short time horizon, but of little relevance to the GPFG, which will, given its long investment horizon, be well placed to carry such a risk. However, the theoretical explanation for the positive historical excess return on small company equities remains an unresolved issue in financial literature. It is possible that this observed excess return only reflects an historical coincidence. In any case, the underlying reason for the "small cap effect" is of limited importance to the assessment of the Strategy Council. The Council attaches most weight to the fact that the proposed expansion of the benchmark portfolio will result in the Fund no longer excluding a significant segment of global stock markets.

As far as the additional costs associated with the inclusion of small companies in the benchmark portfolio are concerned, the Strategy Council has based its assessment on Norges Bank's estimate as to the cost of establishing and maintaining the new portfolio. Norges Bank has estimated the cost of the actual changeover of the benchmark portfolio at just under NOK 400 million if the change is effected over a period of ten months. Moreover, updated estimates from Norges Bank indicate that the maintenance costs associated with a portfolio equal to the benchmark portfolio will increase to 8-9 basis points when including the small company segment (from about 5 basis points under the current benchmark portfolio). The considerably higher management costs associated with small–cap equities may possibly explain why several large international pension funds have chosen to keep such equities outside their benchmark portfolios, and only include them in the opportunity set for active management.

The Strategy Council is of the belief that the increased costs estimated by Norges Bank do not represent a sufficiently weighty argument to refrain from including small-cap equities in the benchmark portfolio. There are several reasons for this:

– In an efficiently functioning market, investors will not purchase equities in the smallest companies unless they are compensated for increased costs in the form of a higher gross return. The extent to which this will apply to the market for small companies depends on how efficiently this market functions.
– Cost comparisons prepared by CEM Benchmarking have shown that the costs incurred in the management of the GPFG have been lower than those of other large pension funds. Given the experience that Norges Bank has accumulated in the management of large portfolios of equities and corporate bonds, there is reason to believe that the Fund will, at the very least, face no cost disadvantage relative to other large funds that have chosen to invest in small companies.
– Small companies are more risky than large companies, but their equity returns are less than perfectly correlated. A simple analysis of the risk associated with an expanded benchmark portfolio shows that it is actually marginally lower than the risk associated with the current benchmark portfolio. Even if we assume that the expected excess return on small equities is nil, the expected risk-adjusted return will still be higher in the expanded benchmark portfolio. The Strategy Council is of the view that this may justify the higher management costs.
– The observed excess return on small-cap equities may reflect investors assuming an additional risk when purchasing these, a risk that they are otherwise unable to assume, cf. the discussion above. As pointed out earlier, this risk is of less relevance to the GPFG. In such case, the risk- and cost-adjusted return will increase by including small-cap equities in the benchmark portfolio.

4 Conclusion

Based on considerations relating to the overall return and risk of the Government Pension Fund – Global, the Strategy Council recommends that the Fund's benchmark portfolio for equities be expanded by inclusion of the small-cap equity segment. Although costs, when taken in isolation, will increase somewhat after such a broadening, it is likely that this will be covered by way of a better risk-adjusted expected return for the portfolio. Such a broadening will make the Fund's benchmark portfolio more representative of developments in the international stock markets. Furthermore, an expanded benchmark portfolio will offer a more appropriate basis for assessing the active

management of the Fund. The Council deems the proposed broadening to be a reasonable consequence of the Fund's general investment strategy, which is to purchase a representative portfolio of the world's stock market.

In its letter of 2 June 2006 to the Ministry of Finance, the Strategy Council recommended that the equity portion of the Fund be increased from 40 to 60 percent. The Council is of the view that an expansion of the benchmark portfolio to include small companies does not affect the assessment of the overall risk associated with the Fund or the recommendation to increase the equity portion.

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