

# MINISTRY OF FINANCE'S ADVISORY COUNCIL ON INVESTMENT STRATEGY

Ministry of Finance  
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## **Long-horizon expected return and risk in financial markets**

The Ministry of Finance's Council for Investment Strategy has been asked by the Ministry of Finance to consider the estimates for expected return and risk used by the Ministry in the planned Report to Storting on the Management of the Government Pension Fund in 2007. The estimates suggested by the Ministry of Finance are enclosed in the appendix to this letter.

By nature, estimates of future risk and returns in financial markets are uncertain and should be used with caution. It should also be noted that estimates of risk and return for shorter horizons may deviate considerably from estimates of long-horizon returns.

The Council has discussed long-term estimates of risk, real return and correlations in its meetings on 14 November, 2007 and 18 January, 2008. Estimates have been compared to past returns and to similar estimates used by other funds and advisors in their work on long-term investment strategies.

The Council has also checked that the estimates have normative implications that are broadly consistent with the present asset class allocation in the Fund's benchmark. The Council views the estimates in the appendix as suitable for an evaluation of the long-horizon risk and return for the Government Pension Fund – Global.

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## Appendix

### Estimates of long-horizon real returns, volatilities and correlations of real returns.

#### 1. Real returns and volatilities

	Risk free return	Global Bonds	Global Real Estate	Global Equity
Expected real return (annualized, geometric)	2.0 %	2.7 %	3.5 %	5.0 %
Expected volatility	0 %	6.0 %	12.0 %	15.0 %

#### 2. Correlations of real returns

	Global Bonds	Global Real Estate	Global Equity
Global Bonds	1	0.2 – 0.4	0.3 – 0.5
Global Real Estate		1	0.5 – 0.7
Global Equity			1

Source: Ministry of Finance

**Note:** The table shows estimates of correlations of long-horizon real returns in market equilibrium, long horizon being of the order of 10 years. They are not correlations of yearly real returns. Hence they incorporate assumed long-horizon effects on the correlations. Intervals indicate most likely range; they are not confidence intervals.