

**2<sup>nd</sup> PBSS Colloquium**  
**21-23 May 2007**  
**Helsinki, Finland**

**Topic A. Investment Strategies and Risk Management**

**Optimal hedging of liability risk**

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This paper discusses investment and risk management strategies for pension funds. Using a simple mean-variance framework for understanding the risks and returns of alternative investment strategies, it is argued that the optimal strategy involves a full hedge of liability risks combined with a mix of optimal alpha and beta portfolios. Although the mix is determined by the plan's risk budget and/or return requirements, the alpha and beta portfolios are, in theory, independent of the plan. We show how the increased use of swaps by pension plans around the globe is enabling these strategies to be practically obtained in a cost-effective manner.