The objective of the thesis is to investigate the efficiency of pension funds' investment strategy in the Czech Republic and the adequacy of the current level of real estate investments in their portfolios. We employ Markowitz portfolio theory and construct the optimal market investment portfolio. The optimal portfolio is then compared with the portfolio of Czech pension funds and the loss arising from asset class misallocation is estimated. Besides, the comparison of portfolio structures of all current pension funds in the Czech Republic is done with the intention to detect whether they follow significantly different investment strategies or not. The analysis is done on quarterly data over the period 2000 - 2011. In the last chapter of the thesis, other sources of market inefficiency of the Czech pension funds are discussed.