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## Portfolio Optimization

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#### Abstract

Selects a method of optimal portfolio is a reflection of the fact that investors are not only operating in different stages of the investment process, but also know the nature of this business. Set of basic knowledge to understand the problems of portfolio selection consists of a portfolio assessment parameters, based on the fundamental aspects of each investment, especially from the proceeds and investment risk, also for reasons of construction and portfolio selection, where the construction of the portfolio is an investment strategy that allows you to optimize the overall rate of return investment for the risk. Another fundamental aspect is the size parameter reinsurance portfolio to ensure the use of statistical relationships and probability. Aspect of the existence of logical and psychological aspects of portfolio selection is a psychological aspects related to investor risk. The most important part is the portfolio optimization, effective and efficient portfolio frontier models and pricing of capital assets - CAPM, CML, SML.

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#### 1. Introduction

We focused on the investment fund Invest (L) Banking & Insurance, managed by an investment company ING Investment Management headquartered in Luxembourg. Fund Invest (L) Banking & Insurance invests primarily in a diversified portfolio of equities or other transferable securities up to 10% of the net assets of the fund. The portfolio includes companies that operate in the following sectors: banks, consumers finance, investment banking and brokerage, asset management and insurance. The Fund is specifically targeted for dynamic investors. With a view to achieving the investment objectives, the fund may also utilize certain financial derivative instruments such as:

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futures and index options, swaps Interest rate instruments, forward transactions in foreign currencies, currency options and futures on transferable securities or money market instruments. The aim is to increase the value of the fund by stock selection based on a thorough analysis of companies. Whenever inclusion of shares in the fund is considering the growth potential of the current rates and the associated risk. It is not intended as dividends, but also invests the profits. Key investor information are listed in Table 1.

Table 1. Basic information about the Fund

ISIN	LU0121172307
Date of Establishment	27. 04. 2011
Index	-
Overall Morningstar Rating	***
The value of the share (04. 02. 2015)	543,71 USD
Net Asset Value (04. 02. 2015)	124 846 673,73 USD
Management Fee	2 % p.a.
Minimum investment	50 USD
Form of premium bond	capitalization
Subscription Fee	max. 3,00 %
Leap charge	in Tariff
Subscription Fee	0
The calculation of the net asset value	daily
Account number	6220375071/3500
IBAN:	CZ35 3500 0000 0062 2037 5071

Source: Own processing by http://www.ingbank.cz, 13. 01. 2015

#### 2. Yield, variance and standard deviation of selected stocks portfolio

The following is part of the article, which is dedicated to progressive calculation to establish the optimal investment portfolio of the fund with the help of Excel and statistical functions. First, we aimed to determine the income of each share portfolio. We chose a monthly section to quantify their recovery, resp. impairment. For the calculation of the best we have chosen logarithmic quantification because a more accurate determination of its height. On the basis of the corresponding formula we proceed as follows:

$$R_i = \frac{\ln_t}{\ln_{t-1}} \tag{1}$$

For example, after substituting data Deutsche Bank shares:

$$R_{DB} = \frac{\ln(32,85)}{\ln(31,10)} = 0,0547$$
(2)

$$\overline{r}_{I} = \frac{1}{T} \cdot \sum_{i=1}^{N} r_{i}$$

$$\overline{r}_{I} = \frac{1}{47} \square \qquad ) = -0,0108 = -1,08\%$$
(3)

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