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VALUE-AT-RISK FOR SHARES OF COMPANIES LISTED UNDER THE FINANCIAL SECTOR OF MALAYSIAN STOCK EXCHANGE

(Nilai Berisiko untuk Saham Syarikat dalam Sektor Kewangan di Bursa Saham Malaysia)

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ABSTRACT

Risk management is essential since stock prices of a company are often exposed to high level of market risk. One way to evaluate market risk is by determining the value-at-risk, which is the maximum probable loss that a financial instrument is exposed to at a given time. In this research, the value-at-risk was evaluated for all shares of companies listed under the financial sector of Malaysian Stock Exchange using non-parametric approach and Monte Carlo simulation method. The comparisons of risk faced by the shares of companies were also done. These methods were chosen to avoid wrong estimation of the value-at-risk if the data is fitted to an inaccurate distribution. The value-at-risk was determined using the non-parametric approaches, which are basic historical simulation, bootstrap historical simulation, age-weighted historical simulation and volatility-weighted historical simulation methods. Monte Carlo simulation was applied using the Geometric Brownian Motion. Findings of this study found that the shares of all companies produced slightly different results for each of the method with different level of sensitivity. The shares of Pan Malaysia Capital Berhad are the most risky because it produced the highest value-at-risk. The shares of LPI Capital Berhad and Public Bank Berhad are the least risky as they produced the lowest value-at-risk in comparison with the shares of all the other companies.

Keywords: market risk; non-parametric method; Monte Carlo simulation method

ABSTRAK

Pengurusan risiko amat penting kerana harga saham sesebuah syarikat sering terdedah kepada risiko pasaran yang tinggi. Satu cara untuk menilai risiko pasaran adalah dengan menentukan nilai berisiko, iaitu kerugian mungkin maksimum yang dihadapi oleh instrumen kewangan pada masa tertentu. Dalam kajian ini, nilai berisiko itu ditentukan untuk semua saham syarikat dalam sektor kewangan yang tersenarai di Bursa Saham Malaysia dengan menggunakan pendekatan tak berparameter dan kaedah simulasi Monte Carlo. Perbandingan risiko yang dihadapi oleh syarikat turut dikaji. Kaedah ini dipilih untuk mengelakkan salah anggaran nilai berisiko sekiranya data disuaikan dengan taburan yang kurang tepat. Nilai berisiko telah ditentukan dengan menggunakan pendekatan tak berparameter, iaitu simulasi bersejarah asas, simulasi bersejarah butstrap, simulasi bersejarah berpemberat usia dan simulasi bersejarah berpemberat kemeruapan. Kaedah simulasi Monte Carlo pula diguna pakai dengan menggunakan Gerakan Brownan Geometri. Berdasarkan dapatan kajian, saham kesemua syarikat memberikan keputusan yang sedikit berlainan bagi setiap kaedah dengan tahap kepekaan yang berbeza. Saham Pan Malaysia Capital Berhad adalah yang paling berisiko tinggi kerana ia memberikan nilai berisiko yang paling tinggi. Saham LPI Capital Berhad dan Public Bank Berhad pula paling kurang berisiko kerana memberikan nilai berisiko yang rendah berbanding dengan saham kesemua syarikat lain.

Kata kunci: risiko pasaran; kaedah tak berparameter; kaedah simulasi Monte Carlo

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