

## INTISARI

### PENERAPAN FUZZY TIME SERIES MODEL *CHENG* DAN MODEL CHEN DALAM PERAMALAN DATA HARGA PENUTUPAN SAHAM PADA SEKTOR PERBANKAN

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Saham adalah salah satu alat pasar keuangan yang paling menguntungkan dan menarik, sehingga saham sering menjadi pilihan investasi yang populer bagi para investor. Investor harus melakukan analisis saham sebelum memulai berinvestasi. Indeks harga saham merupakan representasi pergerakan harga saham berdasarkan kriteria tertentu yang dijadikan pedoman bagi investor yang ingin melakukan investasi di pasar modal. Pada skripsi ini dibahas mengenai peramalan data penutupan saham dengan metode *fuzzy time series* model Cheng dan model Chen. Data yang digunakan adalah data *closing price* saham harian dari Bank Central Asia dan Bank Rakyat Indonesia. Pertama pembentukan himpunan semesta  $U$ . Kemudian dilakukan pembentukan interval, *range*, dan *midpoint*. Selanjutnya dilakukan pendefinisian fuzzifikasi. Setelah dilakukan proses fuzzifikasi, akan dibentuk *Fuzzy Logic Relationship* (FLR) dan *Fuzzy Logic Relationship Group* (FLRG). Pada model Chen langsung dilakukan defuzzifikasi sedangkan model Cheng dilakukan pembobotan terlebih dahulu. Sebagai hasil akhir akan didapatkan peramalan. Hasil analisis menunjukkan bahwa FTS Cheng menghasilkan hasil peramalan yang sedikit lebih akurat dibandingkan metode FTS Chen, untuk hasil peramalan *close price* harian saham BCA didapatkan FTS Cheng memperoleh nilai peramalan sebesar 9667,489 dengan nilai MAPE sebesar 0,4552934% dan FTS Chen sebesar 9634,111 dengan nilai MAPE sebesar 0,8623525%. Peramalan *close price* harian saham BBRI didapatkan FTS Cheng memperoleh nilai peramalan sebesar 5954,17 dengan nilai MAPE sebesar 0,785704% dan FTS Chen sebesar 5954,166667 dengan nilai MAPE sebesar 2,906768%.

**Kata Kunci:** *fuzzy time series*, Cheng, Chen, *Fuzzy Logic Relationship*, *closing price*

## ABSTRACT

### *IMPLEMENTATION OF CHEN AND CHENG MODELS ON FUZZY TIME SERIES ON FORECASTING STOCK CLOSING PRICE DATA IN THE BANKING SECTOR*

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Stocks are one of the most lucrative and exciting financial market tools, so they are often a popular investment choice for investors. Investors must conduct a stock analysis before starting to invest. The stock price index is a representation of stock price movements based on certain criteria that are used as guidelines for investors who want to invest in the capital market. In this undergraduate thesis, it is discussed about forecasting stock closing data using the fuzzy time series model *Cheng* method. The data used is daily stock closing price data from Bank Central Asia Tbk and Bank Rakyat Indonesia Tbk. The analysis begins with the formation of the universe set  $U$ . Then the interval, range, and midpoint are formed. Next, fuzzification is defined. After the fuzzification process, a Fuzzy Logic Relationship (FLR) and a Fuzzy Logic Relationship Group (FLRG) will be formed. Fuzzy Logic Relationship Group (FLRG). In the Chen model, defuzzification is directly carried out while the *Cheng* model is weighted first. As a final result, forecasting will be obtained. The analysis results show that *Cheng's* FTS produces slightly more accurate forecasting results than Chen's FTS method, for the results of forecasting the daily close price of BBCA shares, *Cheng's* FTS obtained a forecasting value of 9667.489 with a MAPE value of 0,4552934% and Chen's FTS of 9634.111 with a MAPE value of 0,8623525%. Then the results of forecasting the daily close price of BBRI shares obtained by *Cheng's* FTS obtained a forecasting value of 5954,17 with a MAPE value of 0.785704% and Chen's FTS of 5954,166667 with a MAPE value of 2,906768%.

**Keywords:** *fuzzy time series, Cheng, Chen, Fuzzy Logic Relationship, closing price*