CHAPTER I

INTRODUCTION

I.I Background of the Study

Dividend is a form of return over investment distributed by company towards its stockholders. Dividend can be seen as return generated by investor from investment made on stock of particular companies. Brealy, Myers and Allen (2011) argue that some investors use the information about dividend to differentiate profitable firm from maximizing-wealth firm. The amount distributed to stockholders carry information about the reaction of the manager about future profitability and investment direction. Amount to be distributed in form of dividend is determined by company's dividend policy. This term is used in relation to the profit of a company. As dividend maximizes the wealth of the investor, then forecast information on dividend is considered important for investor in decision making. Eventhough dividend forecasting is essential in investments and financial decisions, but according to Kim, J.and Won, C. (2008) it is difficult to find good theoritical models in forecasting dividend.

In forecasting dividend, accounting data is used. Multiple Linear Regression (MLR) as one of the statistical method, is mostly used to process accounting data. MLR is used to see the effect of the multiple independent variables over dependent variable and through this effect values MLR produces its forecast result. One of the strength of MLR is its ability to quantify the

relationship of dependent and independent variable provided that classical assumptions or Gauss-Markov theorem is fulfilled (Gujarati, 2008).

Other useful method that can be used to forecast dividend is computational intelligence method. One of the powerful computational intellligence method that have the ability to do forecasting is Artificial Neural Network (ANN). This method has been successfully used in business application(Oancea&Ciucu, 2014). ANN itself is a network that consists of interconnected nodes that is inspired by the brain that generates output through training process. In the training process, ANN will learn the pattern of data given to the network by comparing the actual output produced by the network with the target or desired output. The result of this comparison is known as the error. Weights of the network will be iteratively modified until it reaches the minimum average error. When the network reaches the minimum error, training will stop.

Several studies shows that ANN works well when used together with GA (Kanta,G., SangWanb,K.S., 2015; Ping,F., and Fei F.X., 2013; Yang,F. and Yue Z.,2014). These studies show that both of these methods can be combined to solve forecasting problems in many applications and has been proven to improve the forecasting accuracy compares with only using GA or ANN alone. Other study shows that the combination of GA and ANN performs better than Support Vector Machine (SVM) and Vector Autoregression (VAR) (Chiroma,H., Gital,A., Abubakar,A., Usman,M. and Waziri,U., 2014).

GA can be used in different ways. Several recent studies use GA as an optimization algorithm to produce optimal weights for the network. The results show that this method helps increase the accuracy of the forecast. (Torregoza,

M.L.R and Dadios, E.P., 2014; Zhang,S., Wang,H,Lizhen, L., Du C. and Lu, J. ,2014; Zhang,Y., Gao,X., and Katayama,S., 2015) .

Both MLR and Genetics Algorithm-Neural Network (GA-NN) can be used to forecast dividend. Several studies had been conducted in regard to comparing multiple MLR with ANN in financial forecasting such as stock or bankruptcy predictions, but not on dividend payout. This study will compare MLR with ANN in forecasting dividend payout and GA will be used to produce optimal weights as proposed by Torregoza et al (2014), Zhang et al (2014) and Zhang et al (2015). This research is different from those studies in a way that optimal weights generated will be used directly to feed the network to produce output instead of feeding the ANN for second training. The performance of MLR and GA-NN will be compared in terms of their Mean Square Error (MSE).

I.II The Problem Statement

Which method has better performance, GA-NN or MLR method, in predicting dividend payout of manufacturing companies listed on Indonesia Stock Exchange?

I.III The Objective of the Research

The objective of this research is to compare the performance of GA-NN to MLR as a commonly used method in accounting in forecasting dividend payout.

I.IV The Significance of the Research

This research can be used by investors to help them in selecting method to do dividend forecasting. This research may also be used by other researchers whose work is related with dividend forecasting.

I.V The Scope of the Research

The scope of this research are related to the variables used to compare the tested methods and the sample of companies used as the object of comparisons. Variables used as dividend payout determinants are limited to earnings, free cash flows, firm size, growth opportunity, liquidity and leverage. The object of the research is manufacturing company-paying-dividend listed in Indonesia Stock Exchange from 2000-2013.