



Introducing and Testing the ZZ Growth Model for Stock Valuation¹

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INTRODUCTION

Estimating the intrinsic value of financial assets is one of the most interesting and important topics in finance. The value of an asset is determined according to the risk and future or expected returns of that asset. The value of the asset increases with the increase in its expected returns and, conversely, decreases with the increase in its risk. This issue is one of the basic axioms in the field of asset valuation and is known as the starting point of financial theory and the main standard for designing a financial model and judging it. Many models have been designed and introduced to estimate the intrinsic value of assets, especially financial assets. Currently, two main approaches are used for valuing assets: 1) the absolute approach, which is considered equivalent to the discounted cash flows method or Gordon's growth model and determines the value of the asset based on fundamental factors, i.e., risk and return, and 2) the relative approach, in which the asset is valued using one or more ratios or multiples belonging to similar assets (such as the price-to-earnings ratio (P/E), price-to-book value ratio (P/B), and so on).

Despite the widespread use of these two approaches for asset valuation, the experimental investigations of Zhiqiang Zhang from Renmin University of China show that the discounted cash flows method (Gordon's model) and the relative valuation method have faced important challenges that have raised serious doubts about their effectiveness. By introducing the ZZ growth model, he raised a paradox that completely questioned the applications of the two mentioned methods in the valuation of assets. Accordingly, this paper aims to describe the ZZ growth model and measure its power compared to Gordon's model in estimating the intrinsic value of stocks.

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MATERIALS AND METHODS

In this paper, while outlining the basics of the ZZ growth model and its technical justifications, a large sample of Iranian listed companies in different industries has been used. To test the power of the ZZ growth model in determining the fair values of the stocks of companies in the Iranian stock market, after calculating the average growth rate and the required payback period of the companies in the sample and according to their EPSs in the fiscal years 2020-2022, the values of the selected stocks in the mentioned years have been estimated and determined using this model. In the next stage, Gordon's model has been used to determine the values of companies' stocks. Finally, the values estimated using these two models and the deviation of each from the average adjusted stock market prices, through the Independent Samples T-test, have been compared. In addition, by using the mentioned models, the prices of the symbols that have gone public and traded in the Iranian stock market in recent months have been estimated and compared with their closing prices on the day of IPO, and the deviation between them has been determined.

RESULTS AND DISCUSSION

The research findings indicate that in each of the investigated industries, the ZZ growth model, compared to Gordon's model, has been able to estimate the values of stocks with much higher accuracy. It is worth mentioning that, according to the research findings, the estimated values of some stocks using Gordon's model are zero or negative, which is not acceptable. Additionally, in the case of IPO pricing, the ZZ growth model has performed better compared to Gordon's model.

CONCLUSION

According to the research results, it seems that the ZZ growth model can easily solve the common valuation problems that are difficult for Gordon's model (or the discounted cash flow method) and the relative approach. The ZZ growth model not only has the advantages of Gordon's model but also overcomes its shortcomings. Therefore, the ZZ growth model can be easily applied to value stocks in all industries, both conventional and high-growth industries. Accordingly, it is suggested that the mentioned model, along with other valuation models and methods in the stock exchange, be used by institutions with a securities valuation license from the Securities and Exchange Organization of Iran, including investment banks, investment consultants, brokerage companies, and so on. Additionally, official experts in the fields related to stock valuation can use this model.

Keywords: Stock Valuation, The ZZ Growth Model, Required Payback Period, The Gordon's Model, Iranian Stock Market.

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