# Fair Value Analysis of Shares amidst Fintech Competition Pressure: A Case Study at PT Bank BNI

## Muhammad Faisal AR Pelu[1], Syamsuri Rahim[2], Mildazani Mildazani[3], Muslim Muslim[4]

## Abstract

This study aims to determine the fair value of PT. Bank Negara Indonesia Tbk amid pressure from fintech competition. This research uses secondary data. Secondary data needed in this study are financial statements and stock price data of PT. Bank Negara Indonesia (BNI) Tbk, which was listed on the Indonesia Stock Exchange from 2014-2018. The data collection method used in this study is the documentation method. The data analysis method used in this research is quantitative descriptive. This study uses a Discount Cash Flow approach to calculate and determine the fair value of company shares. The results showed that: the cost of equity produces the desired rate of return of investors. Growth obtains a number that will be used to determine the FCFE projection. FCFE shows how efficient a company is in using cash. Terminal Value obtains the value used as the basis for calculating the current value. Discount factor decreases in value every year. Discounted FCFE generates an assumption of value growth every year. Price Value illustrates the assumption that the value obtained in the future is below the value spent. Equity value offers indicative value in terms of potential. Fair value produces value below market value. Bank BNI shares, in the overvalent category. Fintech, with its various innovations and sophistication, has made the role of banks slowly taken over.
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Keywords : Fair Value of Shares, Fintech, Discount Cash Flow, Cost of Equity

## 1. Introduction

The rise of corporate competition in the stock market has paved the way for financial technology (fintech). Fintech, with its technological advantages, is starting to make several of the companies in the banking industry less profitable, especially in the era of 4.0, which requires companies to innovate. The anxiety of these banking actors arises because most of the partnerships at the beginning of the emergence of fintech were not closely familiar with the working methods of fintech in providing payment and borrowing services (Dapp et al., 2014). A new innovation is the proliferation of several previously implemented banking systems including non-cash payments, borrowing money, and the involvement of new institutions (Rahadiyan & Sari, 2019). Banks act in accordance with their role in society by providing adequate bank services to all levels of society (Dorfleitner et al., 2017a). The conventional banking sector has not immediately reached the various levels of the Indonesian economy due to Indonesia's vast geography. This is due to people's difficulty in access to banking services and the consequent impact on the size of the unbanked population. The National Digital Research Center (NDRC) defines fintech as a type of innovation in the financial sector, which combines modern technology with new financial services. Fintech is the implementation and utilization of technology to improve banking and financial services by using the latest software, internet, communication, and computing technology (Blakstad & Allen, 2018).

The results of the Morgan Stanley report provides an overview of why banks should seek additional commission income. Because the services provided by fintechs are similar to banking services and utilize more modern technology. Banks need to determine if charging transaction fees to customers was a good idea (Romānova & Kudinska, 2016). The National Digital Research Center (NDRC) defines fintech as a type of innovation in the financial sector, which combines modern technology with new financial services. Fintech is developing and utilizing technology to improve banking and financial services that

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1 First Author and Corresponding Author. Faculty of Economics and Business, Department of Accounting, Universitas Muslim Indonesia, Makassar, South Sulawesi, Indonesia 90231. Email: mfaisal.pelu@umi.ac.id

2,3,4 Faculty of Economics and Business, Department of Accounting, Universitas Muslim Indonesia, Makassar, South Sulawesi, Indonesia, 90231

startups utilize through various software, internet, communication, and computing technologies (Navaretti et al., 2018). The growth of fintech is one of the biggest challenges for financial institutions to meet the needs of the evolving digital marketplace. If not, the bank's customers may leave the bank. As a regulator, OJK wants to keep up with the times in order to make better regulations. For this reason, the Office of Justice (OJK) has compiled the Office of Justice Regulation (POJK) No. 12/2018, which supports operational efficiency, improves services, and adopts technology. Banks must utilize the digital banking era for their overall business performance (Gai et al., 2018). The future of digital banking also presents various challenges, most notably with regards to keeping customers safe, and the overall impact on the economy (Deny, 2019). Pre-Trial Bank Negara Indonesia (BNI) Tbk, one of the banking companies that is starting to feel the threat of fintech and reporting from Tempo.co, PT Bank Negara Indonesia (Persero) Tbk's share price has been observed to experience a weakening trend since the beginning of the year. At the end of the index, the stock price was BBNI: IDR 6,925 per share or IDR 1,750 since the end of early 2018. The company must aim to maintain or increase its share value to maintain and increase its overall performance.

In accounting, fair value estimates how important financial assets and liabilities are to account for each particular situation (Puschmann, 2017). Fair Value is the fair market value of a good or service that takes into account supply and demand. The market is not the same as historical cost, which refers to market value and not the actual cost (Dorfleitner et al., 2017b). According to Chen et al., (2019), fair value is increasingly important in valuing the company because of its role in weighing assets and liabilities. Several factors need to be considered when valuing an industry, including domestic and global markets, new technology, and the company's life expectancy (Arner et al., 2015). Fundamental analysis involves estimating an intrinsic value for a stock based on projected cash flows and the profitability of the company (Cumming & Schwienbacher, 2018). The need for the research is due to how investor demand changes supply and demand. This requires developing the appropriate financial measure for determining the fair value of shares. The fair value of a stock must be estimated, verified, and accessed on a real-time basis because investing in equities is extremely risky. This is because stocks have high risk as well as high return, and this is the only reason that the higher the risk, the higher the return. The result is that investors must be wary about taking on excessive risk when they invest in stocks (Treleaven, 2015). This condition makes the problem of stock valuation something that is pressing because companies must determine the market value of stocks (Sharafoddin & Emsia, 2016).

This research refers to Kennedy & Harefa, (2018) study, which examines Financial Technology, its regulations, and its adaptation in Indonesian banking. However, Kennedy & Harefa, (2018) only show that several banks in Indonesia have been making improvements as the result of fintech, for example, Bank Mandiri and Bank BTPN. The difference between this study from Kennedy & Harefa, (2018) aims to determine the fair value of Bank BNI shares using the Discounted Cash Flow method. This method uses the theory that the more people who buy a stock, the higher the price for it, but the more people who sell a stock, the lower the price for it. This type of valuation often encourages short-term stock market speculation and is characterized by day traders instead of long-term investors. If the market does not provide the stock value, then the market is inefficient. This method is a vital part to evaluate an investment's ability to earn a return. Bank BNI's choice is because this bank focuses its business unit development on middle-class consumers in urban areas, and it recently experienced direct challenges from a new financial technology. Previous research focused on various aspects of the fair value of shares, and was limited to comparisons between banking entities. There is a need to research the aspects of banking operations to analyze how the emergence of new business models is changing the banking world, especially in the middle-class retail sector. The objective is to create a business disruption in the banking industry to affect its fair value in the capital market.

With the new technological advancement in financial services, fintech is an emerging trend in the field of finance. The era of technology that puts high-tech gadgets in everyday life allows people to do more efficiently and effectively. The rise of fintech is contributing to more accessible financial products. It is an emerging form of technology-based financial services currently on the rise in the world both in terms of its equipment and personnel. Financial technology, or financial technology is defined as technological innovation in the financial sector that can produce business models, applications, processes, or products with material effects related to the provision of financial services. Fintech helps people access financial products and create financial literacy (Buchak et al., 2018). The financial technology industry or fintech industry has become one of the financial service's methods. The nature of fintech is dependent on technological advancements and affects consumer knowledge and acceptance. To reach new customers, fintech can exploit existing social media platforms for promotion. Fintech has many ways of reaching its target audience. This can be achieved through the creation of seminars, meetings between users fintech , such as using mobile-based applications, transparency, and long-term relationships that can influence potential users. This affects how society is being governed, in addition to how well these products and services are doing.

This study evaluates the signal value of the information issued by companies, emphasizing the importance of it outside the company. Therefore management always discloses any potentially good news to investors, especially if it is not already revealed to them. Tama & Effendi (2019) state that the signaling theory focuses on what factors cause stock prices to go up and down so that investors will make better decisions. Investors' response to good news and bad news is significant in establishing market conditions. They will react in various ways in response to these signals, such as hunting for stocks that are sold or taking actions to not respond, such as the developments made there only then take action. In the research of Viola & Diana (2016), a signal is a management action that provides clues to investors about how the government views the

company's prospects (Arner et al., 2016). Signal theory explains how management offices can use signals to reduce asymmetry in information. Signaling Theory explains why accountants disclose information about economic events and transactions to investors (Goldstein et al., 2019). Recent changes in accounting methods indicates that existing information has been changed, and investors should re-evaluate their investment decisions. The variables of price earning, ratio, book value per share, debt to asset ratio, return on asset ratio and return on equity ratio provide investors with meaningful information about the company's financial condition to make investment decisions. Share price performance, which is affected by the company's financial performance, is a fundamental consideration for investors in forming a policy about a share's fair value (Gomber et al., 2018).

There are three approaches used in valuing a company. The first workout determines the present value (discount) of a stream of future cash flows. The second method is relative valuation, which measures the value of an investment to factors like earnings, cash flow, book value, or sales. The third method used in contingent claim valuation uses a Black-Scholes option pricing model to value a company's stock (Gai et al., 2018). An exchange valuation will provide an accurate picture of the exchange's stable price condition, provided the business is operating efficiently.

DCF is the foundation upon which all valuation analyses are based. This method is used to evaluate assets based on intrinsic value. DCF is used to value the company as a whole and assess the value of a small part of the company (Damodaran, 2002). DCF is the most commonly used model because it forms the valuation of other valuation models. This model indicates that the value of an asset is how much cash it'll bring you in the future with a specific interest rate. DCF itself has a variety of models depending on the user's needs, such as Dividend Discount, Free Cash Flow to Equity (FCFE) and Free Cash Flow to Firm (FCFF). All valuation approaches with the discounted cash flow model can be divided into three growth models: stable growth model, two-stage model, and three-stage model (Vives, 2017).

In valuing shares using a discounted cash flow model , the cost of equity must first be calculated, which is a vital element of any discounted cash flow residual income model (Glova, 2015). The level of investment that is known without risk, or what the expected rate of return on investment is (Damodaran, 2002). Xu et al., (2012) explains that growth is a ratio growth that measures how much a firm's ability to maintain its position in the industry and general economic development. This relative growth of income has been demonstrated by various factors including sales, earnings, earnings per share, dividends, and market price (Laili, 2013). Growth indicates whether a company is growing or declining (Harahap, 2013). A company with good growth is regarded as an indicator of its success (Harahap, 2013). Companies that have large amounts of growth use large amounts of debt because issuing ordinary shares becomes more expensive than issuing bonds. The calculation of a stock's value after applying the cost of equity is then carried out, which is the stock's sensitivity value representing risk in an investment. The beta value can be calculated by using either historical financial data or by applying accounting procedures (Damodaran, 2002).

After estimating the stock beta, a Free Cash Flow value must is calculated. FCF is one of the key factors of success, growth, and company health. FCF represents the portion of a business that can be recovered through dividends, loan payments, and investment (Hidayat, 2019). Free cash flow to equity is the cash available for dividends that is left after all expenditures have been made. The issue at hand is the financial responsibility for meeting money needed to fund CAPEX (capital expenditures) and working capital (Damodaran, 2002; Megaster & Puspitasari, 2015).

Terminal Value also requires the calculation of the fair value of shares (TV). TV is the value of a company or project outside the estimates of the period when it is possible to estimate future cash flows. After the forecast period, TV assumes the business will grow at a fixed growth rate. TV often accounts for a large percentage of the overall score. The discount factor is the present value of the deduction from the benefits and costs incurred in the period to come. The company value can be calculated by calculating the present value of the cash flow that can be obtained by shareholders, after the FCFE and Terminal Value projections are known (Megaster & Puspitasari, 2015). The price is the price you need to pay to get an item you want. Value is the value that you get from an item you purchase. Not always is an increase in the price accompanied by an increase in the value of the goods. A rise in value, however, is always accompanied by a rise in prices. This is the reality that has occurred in the capital market so far. The phenomenon of several stocks which have good value, but the price is still relatively low, also demonstrates an interesting fact. This is certainly attracting investors' attention. Uncertain stock conditions are an excellent opportunity to look for fairly valued stocks at prices that tend to be cheap as well (Admin, 2018).

Equity Value is usually referred to as the capitalization market. Equity value refers to what is available to shareholders of equity. As these items represent the share of the other shareholders, payable and debt equivalents, non-controlling interest, and preferred stock are decreased. Fair value is an amount that can be used to exchange assets or settle liabilities between parties who understand and wish to carry out suitable transactions. Fair value assumes that an entity or a company is a unit that will operate forever without liquidation in order to substantially limit the scale of its operations or transactions under adverse conditions (Sonbay, 2010). Fair value is therefore not the value that an entity would receive or pay due to financial difficulties in a transaction, forced liquidation, or sale. By stating all assets and liabilities on the balance sheet as value to shareholders, fair value conveys information about the significance of wealth and management stewardship. Fintech's presence is projected to affect the financial performance of the company. We refer to the signaling theory in this research. Fintech, which is projected to have a negative performance on the financial performance of the company, is also expected to have an impact on the fair value of shares. Investors tend to invest by reading financial performance signals.

## 3. Research Design and Method

This research was conducted at PT Bank Negara Indonesia Tbk. The data used are secondary in the form of closing stock prices and financial report data of PT BNI Tbk for the period 2015-2019. The analysis phase begins by calculating the fair value of the stock in several steps. The first step in determining the fair value of shares is to calculate the beta value of shares; in this study, this research was conducted by regressing the stock with the returns JCI returns during the 2015-2019 period using Microsoft Excel software. Calculating the stock beta value is done using the following equation:

$$Beta = \frac{[n\sum Rm \, x \, Ri - (\sum Rm \, x \, \sum Ri)}{[n\sum RM^2 - (\sum RM)^2]}$$

Rm = Return of the JCI calculated by the following formula:

$$Rm = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

Ri = Stock returns i

$$Rm = \frac{PI_t - PI_{t-1} + Di}{Pi_{t-1}}$$

Description:
    Pit      :   Weekly share price t
    Pit-1   :   Weekly share price t
    Di      :   Share dividend i

After the stock beta value is obtained, we calculate the market risk premium value by calculating the Expected Market Return value with the formula:

$$E(R_m) = \frac{\sum Rm}{n}$$

Market Risk Premium is calculated using the formula:

$$MRP = E(R_m) - R_f$$

Description:
E(Rm)     : Expected return IHSG (annual)
Rf            : Risk free rate
n             : Total Data

Furthermore, the cost of equity value is calculated using the following formula after the market risk premium value is obtained:

Ke = Rf +   [E(Rm) – Rf)
Ke = Rf +   x Market Risk Premium

Furthermore, after the cost of equity value is obtained, the growth calculation is then carried out by first calculating the ROC using the following formula:

ROC = Operating profit [1- (Tax expense / Profit before tax)] /[(Liability + Equity) – Short-term liabilities]

Then, calculate the formula for the rate of return on investment:

$$Reinvestment \; Ratio = \frac{(Net \; Capex + \Delta Working \; Capital)}{EBIT \; (1-t)}$$

After the reinvestment ratio is obtained, the growth value is calculated using the formula:

g = ROC X Reinvestment Rate

Furthermore, after the growth value is obtained, the next FCFE calculation is carried out; the FCFE value used in this study is the 2019 FCFE value, the formula used to calculate the FCFE value is:
FCFE = Net Income + Depreciation – Capital Expenditure – Working Capital + Net Borrowing

After value FCFE is obtained, then the calculated fair value of shares is, to get the fair value of shares the FCFE Constant Growth equation is used with the following model:

$$Po = \frac{FCFE_1}{Ke - g}$$

Description:
Po      = The current fair value of the shares (end of 2019)
FCFE    = FCFE0 (1+g), FCFE0 – FCFE 2010
K0      = Cost of Equity from the company
G       = The company's FCFE growth rate

Furthermore, after the fair value per share is obtained, the fair value per share is calculated using the following formula:

P0/ Number of Shares

The researchers then compared the results of the fair value calculation with the actual stock market value after obtaining fair value stock per share, if the value of the stock is overvalued or undervalued for fintech to begin reaching Indonesia's financial industry. In the period when fintech appears, the description focuses on exploring why stock prices are overvalued or undervalued.

## 4. Results and Discussion

### *Statistical Analysis*

The cost of equity (Ke) is calculated when calculating the fair value of shares. The calculation of the value of the cost of equity (Ke) in this study uses the CAPM method. The equity cost calculation is based on the following data:
1. The E value (Rm) is 7.39%, which is calculated based on the JCI return for the 2015-2019 period.
2. The risk-free rate value rate uses Bank Indonesia reference interest data as of January 2020, which is 5%; this is because the intrinsic value of shares is based on FCFE1 where FCFE1 is the projection of FCFE 2019
3. The Stock Beta value is 1.616, which is obtained from the regression of stock returns with JCI returns during the 2015-2019 period.
4. The Market Risk Premium value of 2.39% is obtained by subtracting the E (Rm) value of 7.39% with the risk-free rate value.

Based on the results of these parameters, the Cost of Equity value is obtained as follows:
Ke = Rf +   x Market Risk Premium
Ke = 5% + 1,616 x 2,39%
Ke = 5% +3,86%
Ke =8,86%

From the calculation results, the Cost of Equity value from PT. Bank Negara Indonesia, Tbk amounted to 8.86%. After the equity cost is obtained, the growth calculation is then carried out by calculating the value of the return on capital and the value of the reinvestment rate; the data and results of the calculation of the return on capital and the rate of reinvestment are shown in Table 1:
Tabel 1.

Return on Capital Calculation Data

| Formula Components | Value (in million rupiah) |
|---|---|
| Operating profit | 19.486.623 |
| Tax expense | 3.860.523 |
| Profit before tax | 19.369.106 |
| Liability | 720.601.260 |
| Equity | 125.003.948 |
| Liabilitas Jangka Pendek | 628.181.798 |

ROC = Operating profit [1- (Tax expense / Profit before tax)] /[(Liability + Equity) – Short-term liabilities]
ROC = 19.486.623.000.000 [1-(3.860.523.000.000/19.369.106.000.000)] /[(720.601.260.000.000 + 125.003.948.000.000)
  - 628.181.798.000.000]
ROC = 7,18%

Tabel 2.

### Reinvestment Rate Calculation Data

| Formula Components | Value (in million rupiah) |
|---|---:|
| Net Capex | 1.653.194 |
| Δ Working Capital | 3.456.650 |
| EBIT | 19.369.106 |
| Tax Rate | 25% |

$$Reinvestment\ Rate = \frac{(Net\ Capex + \Delta Working\ Capital)}{EBIT\ (1-t)}$$

$$Reinvestment\ Rate = \frac{(1.653.194.000.000 + 3.456.650.000.000)}{19.369.106.000.000\ (1-25\%)}$$

$$Reinvestment\ Rate = 35,17\%$$

After obtaining the ROC value and the Reinvestment Rate value, the next step is to calculate the growth, the results of the growth calculation are as follows:

g = 7,18% X 35,17%
g = 2,52%

After calculating the growth value, the next step is to calculate FCFE, the calculated FCFE value is the 2019 FCFE value as a calculation basis for 2020 FCFE so the FCFE calculation formula is used as follows:

Table 3.

### FCFE Calculation Data

| Formula Components | Value (in million rupiah) |
|---|---:|
| Capital Expenditure | 1.653.194 |
| Δ Working Capital | 3.456.650 |
| Net Borrowing | (5.273.245) |
| Depreciation and Ammortization | 1.386.498 |
| Net Income | 15.508.503 |

FCFE = Net Income + Depreciation and Ammortization – Capital Expenditure – Change in Working Capital + Net Borrowing
FCFE = 15.508.503.000.000 + 1.386.498.000.000 – 1.653.194.000.000 – 3.456.650.000.000 + (5.273.245.000.000)
FCFE = 6.511.912.000

After the value calculation, the next step for FCFE is to perform a fair value analysis. Value of the fair value of the 2019 fair value of the calculated share value with the calculation formula below:

$$Po = \frac{FCFE_1}{Ke - g}$$

$$Po = \frac{40.213.064.000.000}{8,86\% - 2,52\%}$$

$$Po = 102.711.545.741.325$$

After the calculation of fair value per share, then the next measure of fair value per share, the number of outstanding shares of PT. Bank Negara Indonesia Tbk., As of December 31, 2019, amounted to 18,648,656,458 shares so that the fair value per share is as follows:

$$\text{Nilai wajar per lembar saham} = \frac{102.711.545.741.325}{18.648.656.458}$$

Nilai wajar per lembar saham = 5.508

## *Discussion*

The results of the equity value calculation of PT Bank Negara Indonesia (BNI) Tbk have shown a sufficiently high value for the past five years. The stock has several possibilities of having a higher market value than its fair value, namely the need for funds, because very high funds are sometimes needed by businesses. But there is another possibility, namely a situation where the stock price of a company exceeds its basic value, such an advantage is due to excessive market enthusiasm, but in the long term it is not sustainable (Shiller, 2000; Pramudyatama, 2014). This causes the stock price to be overvalued, of course. Company pressure is growing to meet revenue expectations, forcing management to manipulate profits to meet market expectations (Jensen, 2005; Pramudyatama & Pamuji, 2014). The existence of empirical evidence that can be justified, that overvalued occurs when companies issue their shares, reinforces this statement, but the value is the intrinsic value of the shares of the company.

The theory of signaling clarifies the ups and downs of stocks, bonds, and market prices, influencing the decisions of investors. The market conditions are significantly affected by investor responses to the state of the company. Before deciding to avoid significant risks, investors will wait and see the company's development. Stakeholders in theory explained that all stakeholders have the right to be provided with information about the activities of the company so that the position of stakeholders is considered powerful. Thus, investors do not necessarily invest just by looking at the share price; their financial statements are also checked first. Investors also have the right to assess the performance of the company and to know it. On the other hand, one of the threats to Indonesia's banking sector, financial technology (Fintech), continues to experience growth. This can be seen from the rise throughout 2018 in the number of start-ups, the total investment entering the sector, and the level of fintech use in society.

The development of fintech in Indonesia is considered capable of increasing gross domestic product (GDP) up to IDR 25.97 trillion per year, either directly or indirectly. The existence of fintech has also boosted household consumption to Rp 8.94 trillion per year. If fintech can increase gross domestic product, public spending on fintech will also increase. Specifically, in 2018, fintech financing or online loans had a total loan disbursement of Rp. 22.6 trillion with 207,507 lenders or lenders. Meanwhile, the number of borrowers reached 4.35 million customers from February to December 2018. For fintech payments (digital payment) in 2018 (February-December), total transactions reached Rp. 47 trillion. Meanwhile, in terms of transaction volume, it has reached 2.9 billion transactions. E-money also increased in volume by 48% and transactions by 78%, with a total e-money installment of 167 million (Roy, 2019).

It is explained in Porter's five-force analysis that the threat of new entrants (barriers to new entrants) explains that the more competing firms (competitors) compete in the same market, the lower the profit will be. In contrast, the greater the barriers to entry for new entrants, the more profitable the role of companies in the industry will be (Kho, 2017). Supplier bargaining power (supplier bargaining power), in supporting customer service tools such as ATM machines, information system applications, company ERP, etc., BNI needs suppliers. Bank Negara Indonesia (BNI), which has a fairly large presence at present, has the power to identify its suppliers. Buyer's bargaining power (buyer's bargaining power) The buyer's bargaining power explains that if the bargaining power of buyers is high, the company's profit will be low (Kho, 2017). Threat of replacement (barrier for replacement products) This barrier or threat occurs when consumers obtain a better quality, cheaper replacement product or replacement product at low switching costs. Bank Negara Indonesia (BNI) is facing intense competition with emerging fintech rivals among existing competitors (competition level with competitors).

The difficulty of accessing services is a significant factor for the population of highly unbanked individuals. Fintech's presence in the implementation and use of technology to enhance banking and financial services is generally carried out by start-ups through the use of technology, internet software, communications and computing (Rahadiyan & Sari, 2019). Banks need to reconsider their business model in search of commission income, according to the AlphaWise survey published by Morgan Stanley (2019). In the face of rampant competition with similar services offered by Fintech, banks need to recalculate the decision to charge customers with transaction fees (Muqoddam, 2019).

## 5. Conclusions

The calculations using the Discount Cash Flow (DCF) method demonstrate the fair value of the shares in Bank Negara Indonesia (BNI). After Fintech began to develop in Indonesia, it was below its market value. This is because the innovations presented by Fintech have high technology that the public is in demand for. In a state of overvalued stocks, investors will think about purchasing shares again because the market value will return to close to its fair value at any time. Fintech's emergence in the world is slowly taking the position of conventional banking economically. This is because community activities can be facilitated by technology-based innovations owned by Fintech companies. It will hurt its financial health if Bank Negara Indonesia (BNI) does not present inventions because people choose to use something that makes their actions more comfortable. The results of our research suggest that Bank Negara Indonesia (BNI) Tbk is able to generate high-tech innovations as a form of increasingly competitive fintech competition. We see that the terms and regulations must be made more flexible in order to improve service to customers because the complicated requirements and rules for customers who want to lend to the bank can stop. In order to avoid stock prices, which are only determined by speculation and excessive company prospects, investors should first conduct a stock price valuation before deciding to buy shares.

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