Analysis of Tobin's Q as a Mediating Variable in the Relationship between Financial Ratios and Stock Prices

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ABSTRACT

Other sectors of the economy depend on Indonesia's financial industry for liquidity and loans. Therefore, studying the components that influence the value of banking stocks is interesting and important. This study investigates the mediating effect of Tobins's Q on the correlation of Price Earnings Ratio, Price to Book Value, and Earning per Share to Share Price in the Indonesian banking sector. This quantitative research uses the partial least squares-structural equation modelling (PLS-SEM) method. This study examined 43 banks listed on the Indonesia Stock Exchange (IDX) from 2019 to 2022 with a total of 172 data for 4 years. Purposive sampling was used by the researchers. Tobin's Q is a positive mediator, although it does not statistically significantly influence EPS and PER on Share Price. In addition, Tobin's Q is also a negative mediator of PBV and Share Price, but not statistically significant. This research has major implications for managerial decision-making, investor tactics, regulatory rules, and future research on stock prices and corporate management.

Keywords: Tobin's Q; Price Earnings Ratio; Price to Book Value; Earning per Share; Stock price.

Analisis Tobin's Q Sebagai Variabel Mediasi Hubungan Rasio Keuangan Dengan Harga Saham

ABSTRAK

Sektor-sektor ekonomi lainnya bergantung pada industri keuangan Indonesia untuk likuiditas dan pinjaman. Oleh karena itu, mempelajari komponen-komponen yang mempengaruhi nilai saham perbankan merupakan hal yang menarik dan penting. Penelitian ini menginvestigasi efek mediasi Tobins's Q pada korelasi Price Earnings Ratio, Price to Book Value, dan Earning per Share terhadap Harga Saham di sektor perbankan Indonesia. Penelitian kuantitatif ini menggunakan metode Partial Least Squares-Structural Equation Modelling (PLS-SEM). Penelitian ini meneliti 43 bank yang terdaftar di Bursa Efek Indonesia (BEI) dari tahun 2019 hingga 2022 dengan total 172 data selama 4 tahun. Pengambilan sampel secara purposive sampling digunakan oleh para peneliti. Tobin's Q merupakan mediator positif, meskipun secara statistik tidak signifikan mempengaruhi EPS dan PER terhadap Harga Saham. Selain itu, Tobin's Q juga menjadi mediator negatif terhadap PBV dan Harga Saham, namun tidak signifikan secara statistik. Penelitian ini memiliki implikasi besar terhadap pengambilan keputusan manajerial, taktik investor, aturan regulasi, dan penelitian selanjutnya mengenai harga saham dan manajemen perusahaan.

Kata Kunci: Tobin's Q; Price Earnings Ratio; Price to Book Value; Earning per Share; Harga Saham.

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INTRODUCTION

Indonesian banking is an important sector in the country's economy, with a critical role in providing liquidity and credit to other sectors (Astawa & Rahayu, 2019). Therefore, analyzing the factors influencing banking Stock prices is an interesting and relevant topic. Several previous studies have examined the relationship between Price Earning Ratio (PER), Price to Book Value (PBV), and Earning per Share (EPS) on Stock prices (Eivani et al., 2021; Gunadi et al., 2020; Oktaviyani & Mulyana, 2022). Price Earning Ratio (PER) is a ratio often used by investors to measure the value of a company and determine whether the stock is fairly valued (Marc et al., 2022). Previous studies have found a positive relationship between PER and Stock prices (Eivani et al., 2021; Gunadi et al., 2020; Marc et al., 2022).

Price to Book Value (PBV) is a ratio that measures the market value of a company compared to its book value (Gunadi et al., 2020). PBV is often used to assess whether a company is a cheap or expensive relative to its assets (Apriyani & Aisyah F Pulungan, 2020; Fadhilah et al., 2022; Oktaviyani & Mulyana, 2022). Earning per Share (EPS) is a ratio used to measure net income attributable to each outstanding share in a company (Anita et al., 2023; Gunadi et al., 2020; Oktaviyani & Mulyana, 2022). Previous research has established a positive relationship between Earning per Share and Stock Price (Anita et al., 2023; Gunadi et al., 2020; Oktaviyani & Mulyana, 2022). Tobin's Q is a ratio that compares the market value of a company to its replacement value (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). This indicates investment efficiency and firm valuation.

There are various theories to explain the relationship between financial variables and Stock Price fluctuations, one being Signalling Theory (Connelly et al., 2011). According to this theory, companies send signals to investors through financial variables like PER, PBV & EPS, affecting Stock Prices. Signaling theory serves as one pillar in research on this relationship, while other theories, such as Efficient Market Hypotheses, provide additional theoretical approaches (Fama, 1970; Malkiel, 2003). This hypothesis states that information available in the market, including financial information, has been reflected in Stock prices, so financial variables such as PER, PBV, and EPS are expected to have a relationship with Stock prices.

Previous studies have shown that the banking sector has unique characteristics that differ from other sectors, such as strict regulations and higher risks (Astawa & Rahayu, 2019; Gunawan & Budiarjo, 2014). Therefore, examining the relationship between financial variables and Stock prices is important, particularly in the Indonesian banking sector (Astawa & Rahayu, 2019; Gunawan & Budiarjo, 2014). Previous research in the Indonesian banking sector has found a relationship between financial variables, such as PER, PBV, EPS, and Stock prices (Anita et al., 2023; Gunadi et al., 2020; Oktaviyani & Mulyana, 2022). However, the mediating role of Tobin's Q in this relationship still needs to be researched, especially in the Indonesian banking context. Tobin's Q is used as a mediating variable in examining the relationship between financial ratios and stock prices because it measures the market value of the company against its replacement value, provides an indication of investment trends, integrates various financial ratios to assess their effect on stock prices, helps deepen financial theory and investment practice, and is responsive to economic and market changes that affect company value and decisions (Astawa & Rahayu, 2019). In this study, we will examine the mediating role of Tobin's Q in the relationship between Price Earning Ratio (PER), Price to Book Value (PBV), and Earning per Share (EPS) on Stock Price s in Indonesian banking. This study is expected to contribute to understanding the relationship between financial variables and Stock prices in the Indonesian banking sector and explore the role of Tobin's Q as a mediating variable.

This research has several contributions, both theoretically and practically. Theoretical contributions: First, this research will enrich the literature on the relationship between Price Earning Ratio (PER), Price to Book Value (PBV), and Earning per Share (EPS) with Stock prices, especially in the Indonesian banking sector. This will provide a more comprehensive understanding of how these financial variables affect Stock prices in the capital market. Second, This study will analyze the mediating role of Tobin's Q in the relationship between financial variables and Stock prices, adding insight into Tobin's Q within financial literature while further probing into how Tobin's Q affects it.

Practical contribution: Firstly, the results of this research will aid investors in making more informed and effective investment decisions. By understanding the relationship between financial variables and Stock prices and Tobin's Q mediating effect, investors can more accurately assess the company's value and potential return. Secondly, Regulators and policymakers will gain useful information from this research to develop and implement more effective policies regulating the banking sector and capital markets. Knowledge of the relationship between financial variables and Stock prices and the mediating role of Tobin's Q can assist regulators in supervising banking companies and implementing appropriate policies to maintain financial system stability. Thirdly, banking management will benefit greatly from this study's findings as they use this data to optimize their financial and operational strategies. Understanding the relationship between financial variables and Stock Price, as well as Tobin's Q, can assist them with assessing company performance more objectively, identifying growth opportunities more readily, and managing risks more effectively.

Signalling theory helps explain how corporate information affects investor perceptions and stock prices (Connelly et al., 2011). This theoretical framework suggests that companies will use financial metrics like PER, PBV, and EPS to send positive messages. Signals emphasise transparency in direct information delivery to investors, influencing their investment decisions (Kurlat & Scheuer, 2021). Financial market efficiency is closely related to signalling theory. An efficient market uses all essential information to set stock prices, according to Fama, (1970). However, Malkiel (2003) and Shiller (1989) argue that stock prices may not fully reflect all relevant information. The price-to-earnings ratio (PER), price-to-book value (PBV), and earnings per share (EPS) directly affect investors by sending signals that affect stock prices, according to signalling theory. Tobin's Q, the ratio of a firm's market value to its replacement asset value, is a common valuation indicator, according to Gharaibeh & Qader (2017) and Putri & Suseno (2024). Signalling theory will be used to examine Tobin's Q's mediating effect in Indonesian banks' Per, PBV, EPS, and Stock Prices. This study examines Tobin's Q's mediation role to better understand the relationships.

Market efficiency theory explains how knowledge affects stock prices and is a cornerstone of finance (Fama, 1970; Malkiel, 2003). According to Fama (1970) and Malkiel (2003), stock prices include public and private knowledge, making continuous returns above the market average impossible. Market Efficiency Theory can shed light on how financial variables like Price Earnings Ratio (PER), Price to Book Value (PBV), and Earnings per Share (EPS) affect Indonesian bank stock prices. Many studies criticize Market Efficiency Theory. One criticism is that stock prices often fluctuate more than business earnings (Shiller, 1989). However, Eivani et al., (2021) developed a model to anticipate stock returns and optimize portfolios. Their findings challenge Market Efficiency Theory by suggesting arbitrage opportunities in inefficient marketplaces. This study examines Tobin's Q as a mediator between Indonesian banks' PER, PBV, and EPS and stock prices. The goal is to study how financial variables affect stock price and apply Market Efficiency Theory to Indonesian banking. This research aims to reveal how markets reflect knowledge and offer above-average rewards.

Tobin's Q is a quantitative metric used to value a corporation based on its replacement assets, according to Gharaibeh & Qader (2017) and Putri & Suseno (2024). This indicator can assess an organization's investment resource allocation and expansion potential, according to Connelly et al., (2011). The Price Earnings Ratio (PER) compares market value per share to earnings per share (Marc et al., 2022). The ratio measures investors' willingness to pay per unit of a firm's profit (Sukmawati & Garsela, 2016). Thus, the price-to-earnings ratio (PER) is crucial in evaluating stock exchange-listed companies (Onyebuchi et al., 2022). Price Earnings Ratio and Tobin's Q can affect Indonesian bank stock prices (Gunawan & Budiarjo, 2014). Research has shown that bank profitability and efficiency metrics positively affect stock prices (Astawa & Rahayu, 2019). Tobin's Q mediates the relationship between PER and Stock Price, hence it's important to understand. Tobin's Q reveals market expectations for a company's success (Eivani et al., 2021). Investors generally view a high price-to-earnings ratio (PER) as a sign of future development and profitability, according to Sukmawati & Garsela (2016). Thus, positive impression raises Tobin's Q. This raises the company's stock price (Onyebuchi et al., 2022).

In addition, Indonesian banks have unique characteristics that make Tobin's Q an important mediator in the relationship between PER and Stock Price. One is the ownership structure of banking companies, which is dominated by the government and institutional investors (Najid & Rahman, 2011). This ownership structure affects how information about PER and Tobin's Q is conveyed and received by investors. In the context of Indonesian banking, previous research found that banking performance, such as profitability and efficiency, has a positive relationship with Stock prices (Astawa & Rahayu, 2019). Therefore, as a mediator in the relationship between PER and Stock Price, Tobin's Q is relevant as it reflects market expectations about future banking performance. As a mediator, Tobin's Q helps explain how PER, as an indicator of firm valuation, impacts the Stock Price of banking companies in Indonesia. Previous studies also show that companies with high Tobin's Q tend to attract investors' attention and have better growth potential (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). In this case, Tobin's Q signals investors about the prospects of banking companies in Indonesia.

Therefore, Tobin's Q can strengthen the correlation between PER and Stock Price in Indonesian banking and Stock Price; it should also be remembered that such relationships could be affected by external factors, such as macroeconomic conditions or monetary policy (Hariyani et al., 2021), so researchers and practitioners need to keep this in mind when evaluating them. Overall, Tobin's Q effectively mediates the relationship between Price Earnings Ratio (PER) and Stock Price in Indonesian banking, representing market expectations of future firm performance. More specifically for Indonesian banking firms, Tobin's Q helps explain how PER, as an indicator of firm valuation, affects the Stock Prices of banking firms. However, researchers and practitioners must consider external factors that may influence the relationship between these variables (Hariyani et al., 2021).

H_1: Tobin's Q mediates the relationship between Price Earnings Ratio and Share Price.

Tobin's Q is a ratio that measures the company's market value against the replacement value of its assets and is often used as an indicator of firm value (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). Price to Book Value (PBV) is a valuation ratio that measures the market price of a company's shares against the book value of its equity (Marc et al., 2022). The relationship between PBV and Indonesian banking Stock prices can be understood through the role of Tobin's Q as a mediator. PBV shows the extent to which investors are willing to pay for each unit of the book value of equity owned by banking companies (Marc et al., 2022). When PBV is high, the market has positive expectations of the company's future performance (Onyebuchi et al., 2022). Tobin's Q signals investors about the prospects of banking companies in Indonesia (Connelly et al., 2011). Thus, the relationship between PBV and Stock Price becomes stronger when mediated by Tobin's Q. Several previous studies have found that Tobin's Q is positively correlated with PBV, which suggests that companies with high market value relative to their book value tend to have higher Tobin's Q (Gharaibeh & Qader, 2017; Gunadi et al., 2020; Putri & Suseno, 2024). This reflects market expectations of the company's growth potential and ability to create value in the future (Fadhilah et al., 2022).

Tobin's Q also affects the Stock Price of banks in Indonesia through its role in communicating information about company performance to investors (Sukmawati & Garsela, 2016). For example, an increase in Tobin's Q may indicate that banking companies have successfully improved operational efficiency and created added value for shareholders (Fadhilah et al., 2022). In the context of Indonesian banking, Tobin's Q can influence share prices through its effect on investors' perceptions of the quality of company management. Previous research found that banks with high Tobin's Q tend to have better management and are more capable of dealing with financial risks (Astawa & Rahayu, 2019). In addition, Tobin's Q has lasting implications for banking companies' investments and finances. Companies with high Tobin's Q tend to be more aggressive in making investments and taking riskier financial decisions, which can affect their Stock prices (Eivani et al., 2021). Therefore, Tobin's Q helps explain how PBV can affect banking Stock prices through its impact on corporate policy. Previous research examining the Indonesian banking sector shows that Tobin's Q is important in determining firm value (Gunawan & Budiarjo, 2014). In this case, banking companies with higher Tobin's Q tend to have higher Stock prices, reflecting market expectations of future company performance. In conclusion, Tobin's Q may mediate the PBV and Stock Price relationship in Indonesian banking. Tobin's Q reflects market expectations of future growth and profitability of banking firms and helps communicate information about firm performance to investors (Connelly et al., 2011; Eivani et al., 2021). Through this role, Tobin's Q explains how PBV can influence banking Stock prices through its impact on the company's investment and financial policies, management quality, and investor perceptions of the company's prospects.

H_2: Tobin's Q mediates the relationship between Price to Book Value and Stock Price.

Tobin's Q may mediate the relationship between Earning per Share (EPS) and Stock Price in Indonesian banks because it reflects market expectations of growth and profitability of banking companies. As an indicator of earnings per share, EPS reflects the company's performance and is an important signal for investors in assessing the company's prospects. According to signalling theory, companies with high EPS tend to communicate better information about company performance to investors (Putri & Suseno, 2024). In the context of Indonesian banking, this is relevant because investors need accurate and timely information about the performance of banking companies to make wise investment decisions (Putri & Suseno, 2024). In line with signalling theory, previous research shows that EPS has a positive relationship with Tobin's Q (Anita et al., 2023). This suggests that banking companies with higher EPS tend to have higher Tobin's Q values, reflecting better market expectations about the future growth and profitability of banking companies (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). Tobin's Q is also considered a measure of a firm's investment efficiency (Anita et al., 2023). Bank companies with higher Tobin's Q are considered more efficient at allocating resources for investment purposes and thus may increase their Stock Prices (Hariyani et al., 2021).

Prior research indicates a positive relationship between Tobin's Q and Stock prices (Gharaibeh & Qader, 2017; Putri & Suseno, 2024), particularly relevant to Indonesian banking is that Tobin's Q can serve as an essential indicator for investors when assessing firm value future growth expectations (Gunawan & Budiarjo, 2014). When Tobin's Q serves as a mediator variable, relationships between earnings per share (EPS) and Stock Price become clearer, in cases with banking companies having higher EPS often have higher Tobin's Q values which lead to increases in Stock Prices (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). Previous studies analyzing Indonesia's banking sector reveal Tobin's Q as an essential determinant of firm value (Gunawan & Budiarjo, 2014). In this case, banking companies with higher Tobin's Q tend to have higher Stock prices, reflecting more positive investor expectations about the prospects of banking companies (Gunawan & Budiarjo, 2014). In conclusion, Tobin's Q can mediate the relationship between EPS and Stock Price in Indonesian banking because it reflects market expectations of the growth and profitability of banking companies. Banking companies with higher EPS tend to have higher Tobin's Q, which can increase their Stock prices (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). Thus, in Indonesian banking, Tobin's Q plays an important role as a mediator between EPS and Stock Price, reflecting how investors assess firm value and future growth expectations. Therefore, it is important for banking companies in Indonesia to maintain and increase their EPS in order to increase Tobin's Q value and Stock Price in the market.

H_3: Tobin's Q mediates the relationship between Earning per Share and Stock Price.

RESEARCH METHODS

This research uses a positivist philosophy and a quantitative approach based on causal relationships. This study uses secondary data in the form of a combination of time series and cross-sectional data called panel data. The data used in this study are financial ratios (Price Earnings Ratio, Price To Book Value, Earning Per Share, Tobins'q) obtained from annual reports sourced from www.idx.co.id and data from various journals and the internet. The analytical tool used in this research is Partial Least Squares (PLS) using the Smart PLS computer program version 3.2.9. According to Hair et al., (2017), PLS has the advantage of not requiring normally distributed data and can be used with a small sample size. Ghozali (2018) also noted that research using secondary data does not need to test validity and reliability with a single indicator (outer model), so this study only conducted an inner model test. The statistical significance decision is based on a P-value of less than 0.05 or a T statistic above 1.96 (Ghozali, 2018).

This study's population consists of all banking companies listed and published on the Indonesia Stock Exchange (IDX) in 2019-2022, totaling 47 companies. The number of samples for this study was 43 companies, which were selected using a non-probability purposive sampling method that selects data based on certain criteria that represent the population. The sample criteria are:

Table 1. Research Sample Criteria

No	Sample criteria	Number of samples
1.	Banking companies listed on the IDX for the period 2019-2022	47
2.	Banking Companies that do not have complete data needed for this study	(5)
3.	Number of company samples	43
4.	Total data	172

Source: data processed by researchers in 2023

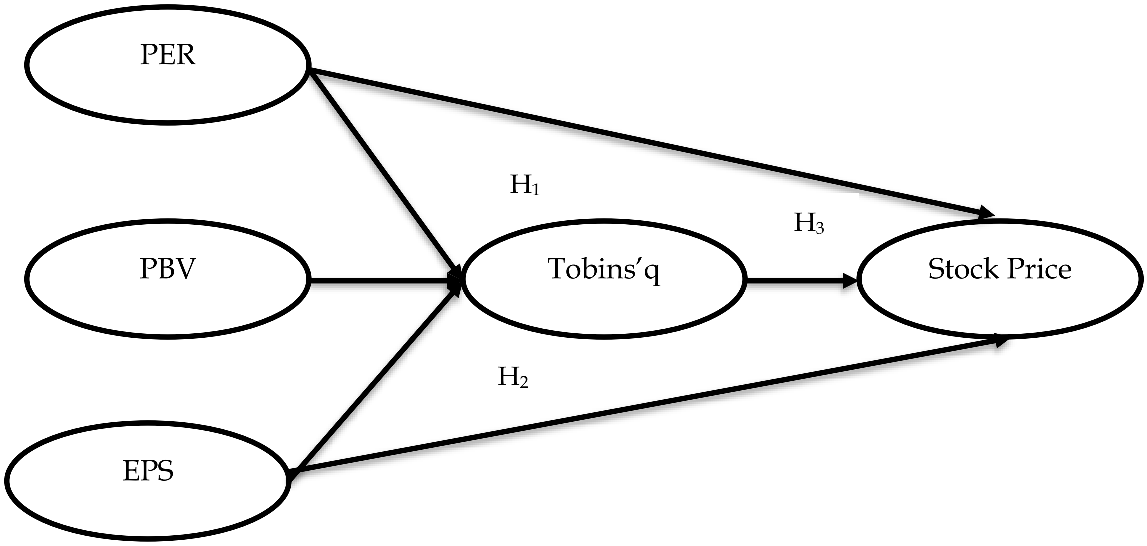

Figure 1. Research framework
Source: Data processed by researchers in 2023

VARIABLE MEASUREMENT

Shares can be defined as certificates that show proof of ownership of a company, and shareholders are entitled to benefit from the income earned by the company (Anita et al., 2023).

Price to Book Value (PBV) is a ratio that measures the market value of a company compared to its book value (Gunadi et al., 2020). The PER measurement formula is:

$$\text{PER} = \frac{\textit{Share Price}}{\text{Earnings Per Share}} \quad (1)$$

PBV is often used to assess whether a company is a cheap or expensive relative to its assets (Apriyani & Aisyah F Pulungan, 2020; Fadhilah et al., 2022; Oktaviyani & Mulyana, 2022). The PBV measurement formula is:

$$\text{PBV} = \frac{\textit{Share Price}}{\text{Book Value Per Share}} \quad (2)$$

Earning per Share (EPS) is a ratio used to measure net income attributable to each outstanding share in a company (Anita et al., 2023; Gunawan & Budiarjo, 2014; Oktaviyani & Mulyana, 2022; Suseno, 2021). The EPS measurement formula is:

$$\text{EPS} = \frac{\textit{Net Profit} - \textit{Preferred Dividend}}{\text{Number Of Shares Outstanding}} \quad (3)$$

Tobin's Q is a ratio that compares the market value of a company to its replacement value (Gharaibeh & Qader, 2017; Putri & Suseno, 2024). The Tobin's Q measurement formula is:

$$\text{Tobin's Q} = \frac{\textit{Total Market Value of Firm}}{\text{Total Asset Replacement Cost}} \quad (4)$$

RESULT AND DISCUSSION

Descriptive statistics are tools used to describe and summarize data clearly and understandably, providing an overview of the research and the relationships between independent variables. Descriptive statistical analysis involves calculating descriptive measures such as the variables' minimum, maximum, average, and standard deviation to understand the data's characteristics.

Table 2. Descriptive Statistics Ratio

Variable	Stock Price	EPS	PER	PBV	TOBINS'Q
Minimum	50	-110	-1.904	0.21	0.186
Maximum	33.850	1.131	1.112	64.2	27.056
Average	2.208	100	46	3.088	1.506
Standard Deviasi	4227.65	193.686	226.47	6.95	2.657

Source: Data processed by researchers in 2023

The minimum Stock Price of 50 indicates that a lower Stock Price may indicate poorer performance and potentially lower future returns for the company. On the other hand, the maximum Stock Price of 33,850 indicates that the company has a higher value and good performance, potentially resulting in higher returns in the future. The average company Stock Price is 2,208 with a standard deviation of 4227.65. This relatively high standard deviation indicates a large range of fluctuations in the Company Stock Price data, with many values well above or below the average. The minimum EPS of -110 indicates that the company incurred losses due to higher costs than revenues. On the other hand, the maximum EPS of 1,131 indicates that the company is profitable and well managed, with revenues exceeding costs. The average EPS of the companies is 100 with a standard deviation of 193.686. This relatively high standard deviation indicates a large range of fluctuations in the company's EPS data, with many values falling significantly above or below the average. The minimum PER is -1.904, a low PER may indicate that the company's Stock Price is undervalued (trading below its intrinsic value), or the company's earnings are relatively high compared to its share price. The maximum PER is 1.112; a high Price to Earnings Ratio (PER) value may indicate that the company's Stock Price is overvalued (traded above its intrinsic value) or its earnings are relatively low compared to its share price. The average PER is 46 with a standard deviation of 226.47. This relatively high standard deviation indicates a large range of fluctuations in the company PBV data, with many values falling significantly above or below the average.

PBV minimum 0.21, a low PBV may indicate that the company's Stock Price is undervalued (trading below its intrinsic value) or that its book value is relatively high compared to its share price. A maximum PBV of 64.2, a high PBV may indicate that the company's Stock Price is overvalued (traded above its intrinsic value) or that its book value is relatively low compared to its share price. The average PBV is 3.088, with a standard deviation of 6.95. This relatively high standard deviation indicates a large range of fluctuations in the company PBV data, with many values falling significantly above or below the average. The minimum Tobins'q value is 0.186: This indicates that the company with the lowest Tobins'q has a very low market value compared to the replacement value of its assets. This means that the market may undervalue the company. The maximum value of Tobins'q 27.056 indicates that the company with the highest Tobins'q has a very high market value compared to the replacement value of its assets. The average value of Tobins'q is 1.506: This indicates that the company has a market value 1.835 times greater than the replacement value of its assets. Tobins'q standard deviation of 2.657 shows the variation or spread of Tobins'q data among the analyzed companies. The higher this number, the greater the variation.

The coefficient of determination, often represented by the R-square value, reflects the extent to which the independent variables in the regression model can explain the strength of the model on the dependent variable. A low R-square value indicates that the dependent variable cannot be explained or predicted by the independent variables in the model.

Table 3. Coefficient Of Determination

Variabel	R Square
Tobins'Q	0.097
Stock Price	0.071

Source: Data processed by researchers in 2023

Based on the table above, the R-square value for Tobins'Q is 0.097, indicating that PER, PBV, and EPS can affect Tobins'Q by 9.7%. The R-square value for Stock Price is 0.071, indicating that PER, PBV, EPS, and Tobins'Q together can affect Stock Price by 7.1%.

Table 4. Direct Effect

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
EPS -> Stock Price	-0.12.	2.611	0.009
EPS -> Tobins'Q	-0.087	2.934	0.003
PBV -> Stock Price	-0.191	2.758	0.006
PBV -> Tobins'Q	0.312	3.605	0.000
PER -> Stock Price	0.008	0.135	0.892
PER -> Tobins'Q	-0.005	0.080	0.937
Tobins'Q -> Stock Price	-0.072	2.357	0.019

Source: Data processed by researchers in 2023

The path coefficient value of EPS on Stock Price at -0.125 indicates a negative influence by EPS on Stock Price, suggesting it has an adverse influence. Furthermore, statistical significance between EPS and Stock Price can be established with the P-value being smaller than 0.05 and the T statistic exceeding 1.96. Thus, EPS exerts both an adverse and significant influence over Stock Price. Path coefficient values of EPS on Tobins'Q of -0.087 in original sample columns indicate negative effects from EPS on Tobins'Q, suggesting its detrimental influence over Tobins'Q. With P values lower than 0.05 and T statistic values greater than 1.96 suggesting statistical significance between EPS and Tobins'Q relationships, one can conclude that EPS exerts both an adverse and significant influence over this measure of human health. The path Coefficient Value of PBV on Stock Price = -0.191 is negative, signifying its detrimental influence. P-value was lower than 0.05 while T Statistician Value = 2.7588 indicated statistical significance between PBV and Stock Price relationships - thus leading us to conclude PBV has both an adverse and significant influence.

The path coefficient value of PBV on Tobins'Q (original sample column) of 0.312 is positive, signifying its beneficial influence. Furthermore, its P-value of

0.000, which falls within the 0.05 threshold, and T statistic value of 3.605 which exceeds 1.96, indicate a statistically significant relationship. Therefore, it can be concluded that PBV exerts both a positive and significant effect on Tobins'Q. The path coefficient value of PER on Stock Price was positive at 0.008, suggesting a positive influence from PER on Stock Price. A P-value greater than 0.05 and a T statistical value below 1.96 indicates no statistically significant relationship between PER and Stock Price and T statistical value less than 1.96; this supports our conclusion that PER had both an indirect positive influence and a significant impact on Stock Price. The path coefficient value of PER on Tobins'Q of -0.005 (original sample column) indicates a negative influence by PER on Tobins'Q, while the P-value of 0.937, greater than 0.05, and T-statistic value of 0.080 are nonsignificantly below 1.96 to indicate no statistically significant relationship. It can thus be concluded that PER has negative and insignificant effects on Tobins'Q. At an original sample column value of -0.072 for Tobins'Q on Stock Price, its path coefficient value indicates it has an adverse influence. Furthermore, P = 0.19, which is less than 0.05, and T Statistic value > 1.96 indicate this relationship is statistically significant, and concluding this point can only lead to one conclusion - Tobins'Q has a detrimental and significant effect on Stock Price.

Table 5. Specific Indirect Effect

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
EPS -> Tobins'Q -> Stock Price	0.006	1.661	0.097
PBV -> Tobins'Q -> Stock Price	-0.023	1.748	0.081
PER -> Tobins'Q -> Stock Price	0.001	0.070	0.944

Source: Data processed by researchers in 2023

Tobins'Q indirectly affects EPS on Stock Price of 0.006, with a P-Value greater than 0.05 and a statistical t-value below 1.96, thus representing positive mediation but without statistical significance between EPS and Stock Price relationships. Tobins'Q indirectly affects PBV on Stock Price of -0.023 with a P-Value greater than 0.05 and T-Statistic lower than 1.96, thus negatively mediating but non-statistically significantly on this relationship between PBV and Stock Price. Tobins'Q is positively mediating but statistically nonsignificant to the relationship between PER and Stock Price; thus, it should not be taken as evidence against its positive mediation role. This result is confirmed with P-Value=0.944 >0.05 and a T-statistic value of 0.070 below 1.96, which indicates its effectiveness at mediating that relationship.

The results showed that Tobins'Q positively mediates but is statistically insignificant in the relationship between Earning per Share (EPS) and Stock Price. In Signalling Theory, companies with higher earnings levels will provide positive signals to investors through increased EPS (Connelly et al., 2011). However, in this case, Tobins'Q does not seem to play a significant role in creating a relationship between earnings per share (EPS) and share price (stock price). One possible cause is the Market Efficiency Theory that prevents Tobins'Q from providing a link between EPS and Share Price. According to this theory, relevant information, including earnings per share (EPS), should be quickly reflected in the stock price. An efficient market is one in which investors have already factored in information about EPS, so the impact of Tobins'Q on this relationship is minimal. For example, previous studies by Anita et al., (2023) and Putri & Suseno, (2024) found that financial performance ratios, including EPS, have a positive impact on stock returns. The same results were also shown by Talamati & Pangemanan (2015) that partially EPS has a significant positive effect on Stock Price. These results indicate that the market can respond to information about the company's financial performance, such as EPS. However, the role of Tobins'Q as a mediator may not be significant in this context.

The results showed that Tobins'Q mediates negatively but is not statistically significant in the relationship between Price to Book Value (PBV) and Stock Price. In Signalling Theory, a high level of PBV indicates an increase in firm value. However, this result shows that Tobins'Q has no significant effect on the relationship between PBV and Share Price. Market Efficiency Theory can also explain the reason behind this result. In an efficient market, investors may already consider information about PBV in assessing stock prices. Therefore, the role of Tobins'Q in mediating the relationship between PBV and Share Price becomes statistically insignificant. The results of this study are in line with Gharaibeh & Qader (2017) and Willim (2015) said that Tobins'Q has a negative effect on firm value. Research by Marc et al., (2022) also delves deeper into the effect of Price Earning Ratio (PER) on firm value that has a negative effect. Although their research focus is different, their findings support that the market can respond to relevant information, such as PBV, in assessing stock prices.

The results found that Tobins'Q mediates positively but not statistically significant on the relationship between Price Earnings Ratio (PER) and Stock Price. According to Signalling Theory, a high PER can be considered a positive signal that reflects investors' expectations of future earnings growth. However, in this case, Tobins'Q does not significantly affect the relationship between PER and Stock Price. Like the results of previous studies, Market Efficiency Theory can also explain why Tobins'Q is not significant in linking PER and Share Price. According to this theory, relevant information, such as PER, will be immediately reflected in the stock price as investors consider it in their valuation. Therefore, the role of Tobins'Q as a mediator in the relationship between PER and Stock Price becomes statistically insignificant. Eivani et al., (2021) conducted a study that developed an innovative stock return prediction model and optimisation model found that Tobins'Q may not play a significant role here in shaping its relationship with Stock Price. In addition, research by Saputra (2022) also said that Price Earnings Ratio (PER) has no effect on Stock Price. In addition, it is also reinforced by (Ichsani et al., 2021). Saying that the Price Earnings Ratio (PER) has no effect on firm value.

Although our results show that Tobins'Q does not play an important role as a mediator between the relationships of EPS, PBV, PER, and Stock Price, some previous studies by Gunadi et al., (2020) determined that profitability and activity ratios have a direct and substantial influence on firm value, with stock price as a mediator variable. Furthermore, research by Fadhilah et al., (2022) for companies listed on the Indonesia Stock Exchange showed similar findings. Fadhilah et al., (2022) reported that various factors, including capital structure, firm size, and growth rate, can significantly affect firm value. Therefore, when analysing the relationship between EPS, PBV, PER, and Share Price, it is crucial to consider additional elements that may alter the relationship. The conclusion of this study shows that Tobins'Q is not significant as a mediator in the relationship between EPS, PBV, PER, and Share Price, however Signalling Theory and Market Efficiency Theory may provide an explanation as to why this result occurs. Researchers can explore additional factors that influence this dynamic to gain more insight into the underlying dynamics of this correlation; future research can even include those elements in the analysis to detect which influences are significant and have an effect on the system of this relationship.

CONCLUSION

The results of this study indicate that Tobin's Q does not significantly mediate the relationship between Earning per Share (EPS), Price to Book Value (PBV), and Price Earnings Ratio (PER) with Stock Price. Although Signalling theory implies that higher EPS, PBV, and PER should signal increased value for investors, in this context, the effect of Tobin's Q does not appear significant. This could be due to the influence of Market Efficiency Theory, where information on EPS, PBV, and PER are already integrated quickly in the stock price, thus reducing the role of Tobin's Q as a mediator. This study indicates that in an efficient market, the market response to financial information can be directly reflected in the stock price, reducing the need for mediating variables such as Tobin's Q. Although these results differ from some previous studies that show a significant effect of financial variables on firm value, this study highlights the importance of considering market conditions when analysing the relationship between financial ratios and stock prices.

Future researchers should broaden their sample sizes by studying more companies, industries, sectors, or periods - this will increase the generalizability of results while offering a more in-depth understanding of relationships among variables tested. In addition, researchers may desire to add or replace some of the variables examined in this study with other variables that are also pertinent for explaining stock price fluctuations. For instance, researchers may consider variables including liquidity, leverage, and volatility. Given that Signalling Theory and Market Efficiency Theory may not always be able to explain the relationship observed in this study, future researchers may attempt to incorporate or develop alternative theories that may be more pertinent in explaining the relationship. In addition, future researchers may employ alternative analytic methods or more sophisticated statistical approaches, such as Stata and Eviews, to surmount limitations in the validity and dependability of the research results. Researchers may also incorporate external factors, such as macroeconomic conditions, changes in government policy, or significant world events, into their analyses. This will help provide a more complete picture of the relationship between the tested variables and stock price changes. Future researchers can undertake comparative studies between countries to identify differences and similarities in the relationship between EPS, PBV, PER, and stock prices in various contexts.

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