The impact of inflation on firm value moderated by earnings quality in Indonesia

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Abstract

This study examines the effect of inflation on firm value in Indonesia and uses earnings quality to moderate inflation’s effect on firm value. The aim of this study is to discuss whether earnings quality can weaken the effect of inflation on firm value. The sample of this study is consumer firm listed on the Indonesia Stock Exchange (IDX) from 2016-2021 with a total of 696 firm-years. Using EViews 9 as a statistical software to test the hypothesis, the results show that inflation harms the firm value, and also proved that earnings quality can weaken the effect of inflation’s negative effect on firm value. The findings provide insight that earnings quality can be a solution to reduce the effect of inflation on firm value. Overall, the findings support the previous studies that suggest inflation is an external factor that affects the firm value and can be solved by maintaining the quality of earnings.

JEL Classification:
G32, E31, M41

Introduction

The world bank announced that there was a triple shock in 2020 for East Asia and the Pacific region. The triple shock is the pandemic, the economic impact of economic restrictions, and the reverberations from the global recession due to the crisis. This shock is expected to continue for the next two years. It is possible that in this region, the poverty rate will increase for the first time in 20 years (worldbank.org). The echoes of this recession have increased the rate of inflation over the last few years. This shock caused a massive decline in stocks all around the world in early 2020, especially in Indonesia, and it can affect the value of the company.

The firm is the most important investment asset, and its value depends on how it can return income to the principal. Firm value is the investor’s perception of the market value that can give maximum prosperity for them if the stock prices increase. High prices can be an indicator of good firm value. Firms with high stock prices can increase the market trust in a firm’s performance and make the company more valuable and investors intend to like high prices companies. Therefore, high prices company has more demands than lower ones, and it leads to increase firm value (Brigham & Houston, 2017).

Firm value is the crucial key for stakeholders such as investors, creditors, and regulators. It contains substantial information about the firm’s performance. Firm value can be bad if there were uncertain events, extraordinary events, and macroeconomic shocks like inflation. Inflation can cause a decrease in market capitalization due to lower stock prices and lower demand for shares by investors. Stock prices have a great effect on firm value from an investor’s point of view, a drastic decline in stock prices would change the perception of investors in assessing the company. This decline in stock prices will further reduce the value of the company (Abbas Rizvi et al., 2022).
However, the evidence of the effect of inflation on firm value is mixed. Some studies found that there are no patterns in the reaction of stock prices to exchange rate exposure. Lopez (2018) shows that stock prices are related to inflation, if there is inflation, the firm value will decrease. As well as Zhang (2021), inflation would hurt the firm value, inflation has a strong correlation with the stock market, it raises the marginal wealth value and it is bad news for investors. Empirical evidence shows that inflation would harm investments, and it would increase the risks, which would destroy firm value.

The author found gaps that still occur in this topic based on previous empirical studies that still have inconsistent results. The differences that still occur can be caused that there are different samples, different measurements of variables, or even the presence of other variables that would affect the relationship between inflation and firm valuation. There must be a variable that can give a solution to this problem. Wenzel et al. (2021) mention strategies for handling economic shocks like inflation are persevering. Persevering is re-measuring goals that are in accordance with the company's sustainability by maintaining earnings quality at a stable. Good earnings quality can maintain the sustainability of the company, so if there are shocks, it would not affect the value of the company.

Literature Review

In a go-public company, the principal hands over the management authority to the manager for operational arrangement and decision-making. The manager should make financial statements as a form of accountability and transparency to the principal. Financial statements contain information that describes the condition of the company. The quality of financial statements can be affected by macroeconomic factors like inflation (Hsu & Yang, 2022). Inflation can affect a firm’s accounting policy because there will be high-cost production as inflation increases. In developing countries, an inflation increase can cause financial constraints for many companies. Firms in developing countries would face more financial constraints than developed ones (Bui & Do, 2021). Management copes with the financial constraints problem by doing earnings management to trick the investors into investing their money in the company, which would decrease the firm value (Li et al., 2022).

Firm value can be valued by how the company is finding a way to generate financial assets that are associated with the firm’s stock prices. Firm value is the total present value of total operational earnings, which means the firm value is the current benefits to the company that is measured through certain methods (Dang et al., 2020). The value of the firm is determined by the value of the firm’s income, which means that when the firm’s debt is positive, the firm operational activities run well so that its asset turnover is more efficient and the firm can generate high profits. Firm value can be measured through two perspectives. First is market to book ratio which shows the current and future perceptions of stock value. Second is book to market ratio can be used to analyze the profit return on a firm’s stock (Lakonishok et al., 1994). Both are used by investors to measure firm value based on stock prices. Therefore, anything that affects stock prices, like inflation, would affect firm value as well.

Inflation

Inflation is a common macromacroeconomic problem that is often found in various countries. In general, inflation is defined as a process of rising prices in an economy (Suikirno, 2016). Based on Arbitrage Pricing Theory, there is a k factor that would affect stock market. The k factor is a systematic factor that should be considered in assessing the risk of portfolio returns. There are several systematic factors in assessing stock return expectations which are part of macroeconomic factors, (1) Unpredictable inflation; (2) Unexpected changes in a country's production level; (3) Unpredictable changes in premium risk; and (4) Unexpected changes in interest rates (Roll & Ross, 1984).

Prior studies that examine the exchange rate on firm value shows that an inflation increase can cause higher risk to investor in assessing market prices, therefore the investor would avoid it and it will lead to a decline in stock prices. The decline due to high inflation causes a decrease in firm value (Lopez, 2018). Overall, there is much previous literature that says that high inflation would harm firm value (Farooq & Ahmed, 2018; Hoek et al., 2022; Ramadan, 2012; Zhang, 2021). When considering the inflation increase can cause low firm value, the author proposes a hypothesis:

H1: Inflation has a negative effect on firm value.

Earnings Quality

Inflation can affect accounting numbers in financial statements because inflation charges the real costs on the economy, thereby reducing the firm’s real income. It can be concluded that inflation has a negative effect on firm value as evidenced by management's difficulty predicting future cash flows due to inflation (Konchitchiki, 2011). Inflation is a bad signal for the company, a decrease in firm value when there is an economic shock like inflation is triggered by two reasons. First is an extreme reduction in the firm’s stock investment which leads to the firm’s ability to increase its operating cash flow. Second is the limited access to external information which can reduce a firm’s liquidity and solvency thereby increasing the risks (Enikolopov et al., 2014).

There must be a strategy to avoid this problem, management needs to make a financial strategy to be able to adapt to inflation. When there are economic shocks or recessions, crises, and even pandemics, the quality of the company's financial reports will decrease (Hsu & Yang, 2022). By paying attention to the quality of a company’s profits, managers can overcome macroeconomic problems such as inflation so they could increase firm value. Earnings quality is a good signal for the company and investors. If the company
can improve its earnings quality when there is inflation, then the existing inflation increase will not affect the value of the company (Dang et al., 2020; Kuvshinov & Zimmermann, 2022; Latif et al., 2017; Zamzamin et al., 2021). Considering the earnings quality can reduce the effect of inflation on firm value, the author proposes a hypothesis:

H2: Earnings Quality weakens the negative effect of inflation on firm value

**Research and Methodology**

In this study, the author examines the role of earnings quality to moderate the effect of inflation on firm value, figure 1 shows the model of this research.

![Figure 1: Research Model](Source: Authors)

To test the hypothesis, the author examines the influence of inflation on firm valuation, then testifies the effect of earnings quality on moderating the influence of inflation on firm value. Specifically, the author uses TOBIN’S Q as the firm’s value proxy. The firm value is obtained by comparing the market value with total assets. The author believes that TOBIN’S Q is the best way to provide fundamental information about how external parties evaluate the company. TOBIN’S Q is defined as $\text{TOBINQ}_{i,t} = \frac{(\text{MV}_{i,t} + \text{D}_{i,t})}{\text{BV}_{i,t}}$, where $\text{MV}$ is the market capitalization of equity, $\text{D}$ is total debts, and $\text{BV}$ is the book value of total assets. Market capitalization is the total value of a company’s share of stock, it is measured with the price of the stock at the end of the year multiplied by the total outstanding shares.

For earnings quality, the author uses a decision usefulness approach by measuring a firm’s persistence. The calculation is done by comparing the difference in earnings before tax with total assets in a year with the previous year. After estimating TOBIN’S Q and persistence for each company per year, then we estimate the following regression:

$$\text{FV}_{i,t} = \alpha + \beta_1 \text{INF}_t + \beta_2 \text{EQ}_t + \beta_3 \text{EQ}_t \text{INF}_t + \varepsilon_t$$

FV is the firm value proxied by TOBIN’S Q, INF is inflation and EQ is earnings quality measured by the firm’s persistence. The subscripts i and t denote the company and time indicator.

**Findings and Discussions**

**Descriptive Analysis**

Data in Table 1 presents the descriptive statistics of the variables included in this study. It shows that the dependent variable firm value (FV) measured by TOBIN’S Q has an average value of 3.424, while the independent variable inflation (INF) has an average value of 2.671. Earnings persistence as earnings quality (EQ) measurement has an average value of 1.127.7. The descriptive data indicate that the data deviation in this study is relatively small because the mean value is higher than the standard deviation value.
Table 1: Descriptive Statistic

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>FV</td>
<td>696</td>
<td>0.001738</td>
<td>51.14467</td>
<td>3.423837</td>
<td>3.408211</td>
</tr>
<tr>
<td>INF</td>
<td>696</td>
<td>1.68</td>
<td>3.61</td>
<td>2.671667</td>
<td>0.688517</td>
</tr>
<tr>
<td>EQ</td>
<td>696</td>
<td>-757.34</td>
<td>48,383.26</td>
<td>1,127.65</td>
<td>3,200.18</td>
</tr>
</tbody>
</table>

Hypothesis Testing

This study passed multicollinearity, autocorrelation, and heteroskedasticity tests. The correlation matrix in this study shows a value under 0.7 indicating that multicollinearity assumptions are fulfilled. Also, there is no autocorrelation in this study because Durbin Watson’s (dw) value is under the upper limit (du). The data of this study proved homoskedasticity, so it passed the heteroskedasticity test.

The regression model used in this study is the fixed effect model. Table 2 shows the results of the test based on the proposed model explained in the research method. All the probability is statistically significant below 5%. The significant value show score under 5% which means the hypothesis is accepted. Given that the coefficient is negative, inflation has a negative influence on firm value, and earnings quality can weaken the effect.

Table 2: Hypothesis Testing Results

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>4.493258</td>
<td>0.168365</td>
<td>26.68757</td>
<td>0.0000</td>
</tr>
<tr>
<td>INF</td>
<td>-6.063342</td>
<td>0.915791</td>
<td>-6.665827</td>
<td>0.0074</td>
</tr>
<tr>
<td>EQ</td>
<td>0.000174</td>
<td>7.58E-05</td>
<td>2.296236</td>
<td>0.0220</td>
</tr>
<tr>
<td>EQINF</td>
<td>-0.005694</td>
<td>0.000937</td>
<td>-6.078291</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Discussion

The results of the first hypothesis testing show that inflation has a negative effect on the firm value measured by TOBIN’S Q. Inflation can describe stock market conditions. Stock prices and inflation are inversely proportional, when inflation rises, stock prices fall, and vice versa. What's more, inflation has a negative effect on TOBIN’S Q, this illustrates that inflation has a negative effect on firm value (Lopez, 2018). The results of statistical testing with the t-test show that the inflation variable has a negative effect on firm value, this means that a high inflation rate will reduce firm value in that region.

The results of the hypothesis testing are in line with Zhang (2021) which states that macroeconomic conditions in the form of inflation can have a negative effect on firm value. An inflation increase can be bad news for investors so they can reduce the firm value. Similar studies also show the same results, such as Farooq & Ahmed (2018), Hoek et al. (2022) and Lopez (2018) show that inflation has a negative effect on firm value. An increase in the inflation rate reduces economic activity, thereby impacting the company's earnings and equity price. This can reduce the value of the company.

The results of the second hypothesis testing show that earnings quality can weaken inflation’s negative effect on firm value. Inflation can cause an increase in the economic cost in companies so that can reduce the company's real income. Inflation can make the company’s management difficult to predict future cash flows so inflation has a negative effect on firm value (Konchitchki, 2011). The results of this study proved to be able to show that inflation has a negative effect on firm value, so then a moderation test was carried out on the earnings quality variable in order to weaken this negative relationship. The results of statistical tests show that earnings quality can weaken the negative effect of inflation on firm value.

Economic shocks such as inflation can cause information asymmetry, to deal with unexpected events such as inflation, companies must improve business flow in order to maintain the company's sustainability. Companies can maintain profit stability in order to adapt to an uncertain business environment (Phillips et al., 2021). This is consistent with the results of this study which show that a high level of earnings quality can reduce the adverse effects of unexpected events such as inflation on firm value.

This study supports previous research which states that companies that maintain stable earnings quality can reduce the effects of macroeconomic shocks on firm value (Dang et al., 2020; Kuvshinov & Zimmermann, 2022; Latif et al., 2017; Zamzamir@Zamzamin et al., 2021). The higher the level of earnings quality of a company, it can weaken the negative effect of inflation on firm value.
Conclusions

This paper examines inflation’s effect on firm value and tests whether earnings quality can weaken the effect of inflation on firm value using a data panel in Indonesia for the sample period from 2016 until 2021. The results show that inflation negatively affects the firm value. The higher the inflation, the lower the firm value. These findings support the arguments that macroeconomic factor as inflation is an external financial risk that has a negative impact on firm valuation. The results also show that earnings quality can weaken the negative effect of inflation on firm value. The findings of this study indicate that high earnings quality can reduce or even eliminate the impact of macroeconomic factor as inflation. Hence, the government should build sustainable markets that are accessible to international markets in order to create a healthy investment environment for both investors and companies. On the other hand, companies must pay more attention to the importance of preparing and issuing financial reports. The company can increase the earnings quality to reduce the impact of inflation. This can help the investors to assess important aspects of the company as the basis of investment decisions.

The results of this study need to be interpreted with caution due to several limitations such as the unavailability of financial reports of several consumer companies, which requires the author to exclude these companies from the sample. Besides that, due to no integrated data about information of key points of financial statements in consumer companies, the author did a search manually, but there are some websites of companies that cannot be accessed so the author cannot access their financial reports.

Finally, for future research would be interesting to consider broader sample research. Financial firms may be an option for future research. The author suggests the issue be more explored, future research also adds some variable controls such as firm size to minimize inequality data.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

References


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