The Impacts of Economic Uncertainty on Indonesian Firms’ Trade Credits

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Abstract

This research was conducted with the aim of looking at the impact of economic uncertainty on short-term borrowing activities of Indonesian firms, especially on trade credit. The researcher uses quantitative research that includes a total of 7218 firm–year observations collected from 607 companies listed on IDX from 1998 to 2021. Using fixed effect panel data regression, the results show that there is a significant relationship between economic uncertainty and trade payables, trade receivables, and net credits. There was a decrease in trade payable during a crisis, on the other hand, an increase in trade receivables and net credit during years with a higher level of uncertainty.

Keywords: Economic policy uncertainty; Trade credits

1. Introduction

In today's interconnected world, the impact of uncertainty on policies relating to economic decisions is greater than ever (Al-Thaqeb & Algharabali, 2019). Over the past few years, a number of significant issues have arisen, leading to uncertainty in the world’s politics and economy. Starting from the pandemic at the end of 2019, due to the covid-19 virus that started in Wuhan and spread throughout the world, causing all industries around the world to experience a decline and crisis. This has caused world trade conditions to experience a drastic decline, including in Indonesia. These developments cause a sense of political and economic instability as the world continues to develop rapidly, increasing uncertainty on a worldwide scale (Al-Thaqeb & Algharabali, 2019). These conditions are related to studies by Jasova et al. (2021) which states that one of the primary reasons for weakening global economic growth is thought to be an increase in economic policy uncertainty.

A country’s economy has been shown to be greatly impacted by uncertainty (Lensink et al., 1999). The company’s decisions are undoubtedly impacted by this state of uncertainty in every way, but particularly in economic considerations like trade credit. Trade credit is an important source of liquidity for inter-firm transactions. Short-term borrowing “is the single most important source of short-term external finance for enterprises,” according to Petersen & Rajan (1997). Economic policy uncertainty affects a firm's trade credit policy for a variety of reasons. For instance, uncertainty might increase the volatility of firm’s cash flows, then increasing the risk of default (D’Mello & Toscano, 2020). Moreover, due to inefficient capital market conditions and a lack of credit bank availability for the firm, uncertainty might lead to significant financial constraints for businesses (Flannery et al., 2013).
High uncertainty could have an impact on both the financial markets and corporate behavior (Zhang et al., 2015). Supported by the studies of Kang et al. (2014) and Wang et al. (2014), which document that firms will reduce their investment expenditure due to the postponement of investment decisions when policy uncertainty is high, this situation will benefit firms with higher returns on investment and more internal financing. Then, according to Jory et al. (2020), there are at least two reasons why economic uncertainty affects trade credit. First, economic uncertainty causes companies to reduce their production, thereby reducing the company's bargaining power, which in the end means the company is less able to provide credit to its customers. Then, secondly companies are most likely to take bank loans when there is uncertainty, it is intended to pay off their outstanding loans. This reinforces the notion that uncertainty plays a major role in the decisions of Indonesian companies to trade credit.

2. Related Researches and Hypothesis Development

There are several opinions or findings in previous research journals regarding the relationship between economic uncertainty and trade credit decisions in companies. According to Antrás & Fritz Foley (2020), the company will decide to reduce the provision of trade credit when uncertainty events are high. The decision is based on the fact that the company is experiencing difficulties in formal and informal financing, which causes the company to be cautious in making financial decisions. This opinion is also supported by research by Avsar & Hudgins (2020), which states that importers will experience difficulties in utilizing trade credit when economic uncertainty increases, which in turn will reduce trade credit transactions for importers. Both opinions indicate the possibility of a decrease in trade credit when economic uncertainty increases. Based on this, the first hypothesis can be put forward, namely:

H1: Economic uncertainty negatively affects Indonesian firms’ trade credit.

In contrast to the previous opinion, Petersen & Rajan (1997) suggested that the sources of financing are limited when economic uncertainty increases. This has led companies to inevitably use trade credit for financing in the process of a transaction. In addition, Daripa & Nilsen (2011) argue that companies tend to use trade credit more in times of high uncertainty because it is aimed at maintaining the stability of the company's financial health. If a company loses a customer when uncertainty is high, it can shake up the company's finances. Based on these opinions, a second hypothesis can be formed, namely:

H2: Economic uncertainty positively affects Indonesian firms’ trade credit.

3. Research Method

For the Indonesia’s economic and political uncertainty measurement, this research uses data from the World Uncertainty Index which was developed by Ahir et al. (2018) and published in their literature titled The World Uncertainty Index. The Indonesia Uncertainty Index (IUI) is reported on a quarterly basis, following D’Mello & Toscano (2020) this research creates an annual index by averaging the values of IUI over the four quarter. This research utilizes panel data regression to investigate the relationship between economic uncertainty and trade credit. In order to conduct this quantitative research, researcher gathered secondary data which is firm’s financial report data from the S&P CAPITAL IQ during period FY1998 to FY2021.

The sample contains of all public company that have listed on the Indonesia Stock Exchange (IDX), are unregulated, do not operate in the financial industry, and have accurate industry classification codes. In order to obtain accurate information, this research excludes
firm-year observations where either has a negative account payable (AP) or receivables (AR) value. All of the financial variables are winsorized by 1% to prevent the outlier effects. In this study, there are 10 control variables that will be used in the empirical model. All variables’ definitions are presented in Table 1. In investigating the relation between economic uncertainty and trade credit decision, the empirical model is as follows.

\[ tp_{i,t} = \beta_0 + \beta_1ui_{i,t} + \beta_2asset_{i,t} + \beta_3asset2_{i,t} + \beta_4capex_{i,t} + \beta_5tang_{i,t} + \beta_6mtb_{i,t} + \beta_7roa_{i,t} + \beta_8lev_{i,t} + \beta_9cr_{i,t} + \beta_{10}gr_{i,t} + \beta_{11}loc_{i,t} + \epsilon_{i,t} \]  

(1a)

\[ tr_{i,t} = \beta_0 + \beta_1ui_{i,t} + \beta_2asset_{i,t} + \beta_3asset2_{i,t} + \beta_4capex_{i,t} + \beta_5tang_{i,t} + \beta_6mtb_{i,t} + \beta_7roa_{i,t} + \beta_8lev_{i,t} + \beta_9cr_{i,t} + \beta_{10}gr_{i,t} + \beta_{11}loc_{i,t} + \epsilon_{i,t} \]  

(1b)

\[ nc_{i,t} = \beta_0 + \beta_1ui_{i,t} + \beta_2asset_{i,t} + \beta_3asset2_{i,t} + \beta_4capex_{i,t} + \beta_5tang_{i,t} + \beta_6mtb_{i,t} + \beta_7roa_{i,t} + \beta_8lev_{i,t} + \beta_9cr_{i,t} + \beta_{10}gr_{i,t} + \beta_{11}loc_{i,t} + \epsilon_{i,t} \]  

(1c)

The three dependent variables used to represent trade credit are the trade payables ratio, trade receivables ratio, and net credit ratio. The three models have the exact same independent variables, it can be seen in models 1a, 1b, and 1c.

In the regression models, measurement of trade credit uses an annual period of observation, yet in general trade credits has a maturities shorter than a year. Therefore, it is conceivable to claim that the trade credit at the end of the fiscal year will reflect the loans better. Therefore, the weighted average of the Indonesia uncertainty index (WIUI) will be used to repeat the regression in model as follows:

\[ tp_{i,t} = \beta_0 + \beta_1ui_{i,t} + \beta_2asset_{i,t} + \beta_3asset2_{i,t} + \beta_4capex_{i,t} + \beta_5tang_{i,t} + \beta_6mtb_{i,t} + \beta_7roa_{i,t} + \beta_8lev_{i,t} + \beta_9cr_{i,t} + \beta_{10}gr_{i,t} + \beta_{11}loc_{i,t} + \epsilon_{i,t} \]  

(2a)

\[ tr_{i,t} = \beta_0 + \beta_1ui_{i,t} + \beta_2asset_{i,t} + \beta_3asset2_{i,t} + \beta_4capex_{i,t} + \beta_5tang_{i,t} + \beta_6mtb_{i,t} + \beta_7roa_{i,t} + \beta_8lev_{i,t} + \beta_9cr_{i,t} + \beta_{10}gr_{i,t} + \beta_{11}loc_{i,t} + \epsilon_{i,t} \]  

(2b)

\[ nc_{i,t} = \beta_0 + \beta_1ui_{i,t} + \beta_2asset_{i,t} + \beta_3asset2_{i,t} + \beta_4capex_{i,t} + \beta_5tang_{i,t} + \beta_6mtb_{i,t} + \beta_7roa_{i,t} + \beta_8lev_{i,t} + \beta_9cr_{i,t} + \beta_{10}gr_{i,t} + \beta_{11}loc_{i,t} + \epsilon_{i,t} \]  

(2b)

Table 1 Definitions of Research Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Operationalization of the Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>tp</td>
<td>Trade payables ratio</td>
<td>Acc.payable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost of goods sold</td>
</tr>
<tr>
<td>tr</td>
<td>Trade receivables ratio</td>
<td>Acc.receivable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T.revenue</td>
</tr>
<tr>
<td>nc</td>
<td>Net credit ratio</td>
<td>Acc. receivable - Acc.payable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T.revenue</td>
</tr>
<tr>
<td>asset</td>
<td>Book value of asset</td>
<td>T.assets</td>
</tr>
<tr>
<td>asset2</td>
<td>Firm’s Size</td>
<td>Natural logarithm of the total assets</td>
</tr>
<tr>
<td>capex</td>
<td>Capital expenditure</td>
<td>Capital Expenditure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T.assets</td>
</tr>
<tr>
<td>tang</td>
<td>Firm’s tangible assets</td>
<td>Net property plant and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T. assets</td>
</tr>
<tr>
<td>mth</td>
<td>Market to book value</td>
<td>Market cap - (T.assets - T.liabilities + T.defferedtax) +</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T.assets</td>
</tr>
<tr>
<td>roa</td>
<td>Return on asset</td>
<td>EBITDA</td>
</tr>
</tbody>
</table>
4. Results and discussion

The descriptive statistical analysis describes data using metrics such as the minimum and maximum value, mean, and standard deviation. The need for conducting descriptive statistical analysis is to check whether there are oddities or oddities in the data. A descriptive statistical summary of the variables utilized in this study is provided in the following table.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP ratio</td>
<td>7218</td>
<td>0.0988277</td>
<td>0.1051305</td>
<td>0</td>
<td>0.5196811</td>
</tr>
<tr>
<td>TR ratio</td>
<td>7218</td>
<td>0.1771314</td>
<td>0.1715711</td>
<td>0</td>
<td>1.062042</td>
</tr>
<tr>
<td>NC ratio</td>
<td>7218</td>
<td>0.054861</td>
<td>0.1784425</td>
<td>-0.598423</td>
<td>0.8028501</td>
</tr>
<tr>
<td>Assets</td>
<td>7218</td>
<td>14.19233</td>
<td>1.74334</td>
<td>10.09451</td>
<td>18.30345</td>
</tr>
<tr>
<td>Capex</td>
<td>7218</td>
<td>0.0574082</td>
<td>0.0661688</td>
<td>0.0001026</td>
<td>0.3502398</td>
</tr>
<tr>
<td>Tangibles</td>
<td>7218</td>
<td>0.4044623</td>
<td>0.2393048</td>
<td>0.0069612</td>
<td>0.9104083</td>
</tr>
<tr>
<td>M/B</td>
<td>7218</td>
<td>1.468082</td>
<td>1.445271</td>
<td>0.2007359</td>
<td>10.25413</td>
</tr>
<tr>
<td>ROA</td>
<td>7218</td>
<td>0.1084081</td>
<td>0.1058076</td>
<td>-0.2076004</td>
<td>0.50161</td>
</tr>
<tr>
<td>Lev</td>
<td>7218</td>
<td>0.5025505</td>
<td>0.3310599</td>
<td>0.0274315</td>
<td>2.209676</td>
</tr>
<tr>
<td>Cash ratio</td>
<td>7218</td>
<td>0.0966701</td>
<td>0.1058026</td>
<td>0.0009085</td>
<td>0.5321251</td>
</tr>
<tr>
<td>LOC ratio</td>
<td>7218</td>
<td>0.1972363</td>
<td>0.4814058</td>
<td>0</td>
<td>3.453514</td>
</tr>
<tr>
<td>Sales growth (%)</td>
<td>7218</td>
<td>0.1996437</td>
<td>0.5802361</td>
<td>-0.6951417</td>
<td>4.014222</td>
</tr>
<tr>
<td>Indonesia Uncertainty Index</td>
<td>7218</td>
<td>0.1678148</td>
<td>0.114757</td>
<td>0.0174083</td>
<td>0.548959</td>
</tr>
</tbody>
</table>

Source: data processed by the author

Through the results of descriptive statistics, it can be seen that the average trade payables of Indonesian companies is 9.88% of total assets, trade receivables is 17.7% of total sales, and net credit is 5.48% based on total sales. Assets as a measure of firm size are obtained through the natural logarithm of the company's total assets, which range from 10 to 18.3, and the mean is 14.2. The average capital expenditure of 0.057 indicates that Indonesian companies spend 5.7% of their total assets to obtain or maintain the sustainability of their assets. Tangibles have a relatively high average of 40.4%, which means that the total assets of Indonesian companies are still controlled by assets in the form of tangibles. The average market-to-book ratio is 1.47, which indicates that the average Indonesian company has a higher market value than the book value of the company. This is natural because Indonesia is a developing country,
so the prospect of Indonesian companies growing is still very high, which causes the market value to be higher than the book value.

ROA, as an indicator of company profitability, has an average of 10.8% based on the company's total assets. Leverage (Lev) has a mean of 50% of total assets, meaning Indonesian companies use debt intensively. On average, 9.6% of Indonesian companies hold assets in cash. Then, based on sample observations, it was found that Indonesian companies have an average line of credit of 0.197, which indicates that the company has a loan of 20%, which is quite large compared to the total revenue they receive. Then, the average sales growth is at 20%.

The growth of company sales during the year of observation is classified as having a large range, starting from -69.5% to 401.4%. The Indonesia Uncertainty Index (IUI) has a mean of 0.1678, which has a range from the lowest of 0.0174 in 2018 to the highest of 0.548 in 2001.

The following table 3 is the result of the regression equations 1a, 1b, and 1c, namely the regression between the Indonesia uncertainty index as the main independent variable and trade credit as the dependent variable.

<table>
<thead>
<tr>
<th>Table 3 Indonesia Uncertainty Index and Trade Credit</th>
<th>TP ratio (p-value)</th>
<th>TR ratio (p-value)</th>
<th>NC ratio (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IUI</td>
<td>-0.0512832 (0.000)***</td>
<td>0.036796 (0.012)**</td>
<td>0.0600644 (0.000)***</td>
</tr>
<tr>
<td>Asset</td>
<td>0.0015369 (0.907)</td>
<td>-0.0021889 (0.931)</td>
<td>-0.0246634 (0.316)</td>
</tr>
<tr>
<td>Asset2</td>
<td>-0.0001793 (0.704)</td>
<td>0.0005352 (0.520)</td>
<td>0.0009575 (0.256)</td>
</tr>
<tr>
<td>Capex</td>
<td>0.0197535 (0.134)</td>
<td>-0.0754512 (0.017)**</td>
<td>-0.0825705 (0.029)**</td>
</tr>
<tr>
<td>Tang</td>
<td>-0.0845107 (0.000)***</td>
<td>-0.1739073 (0.000)***</td>
<td>-0.1265688 (0.000)***</td>
</tr>
<tr>
<td>Mtg</td>
<td>0.0003572 (0.756)</td>
<td>0.0015571 (0.362)</td>
<td>0.0016276 (0.491)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.0027529 (0.873)</td>
<td>-0.1293099 (0.001)***</td>
<td>0.1257714 (0.000)***</td>
</tr>
<tr>
<td>Leverage (Lev)</td>
<td>0.0777406 (0.000)***</td>
<td>-0.0245146 (0.004)***</td>
<td>-0.0801541 (0.000)***</td>
</tr>
<tr>
<td>Current Ratio (CR)</td>
<td>-0.0512351 (0.001)***</td>
<td>-0.2110432 (0.000)***</td>
<td>-0.1731809 (0.000)***</td>
</tr>
<tr>
<td>SGR</td>
<td>0.0044663 (0.011)**</td>
<td>-0.0090443 (0.086)*</td>
<td>-0.0044544 (0.254)</td>
</tr>
<tr>
<td>LOC</td>
<td>-0.0340882 (0.000)***</td>
<td>0.0532585 (0.000)***</td>
<td>0.0140564 (0.266)</td>
</tr>
<tr>
<td>_cons</td>
<td>0.1262262 (0.173)</td>
<td>0.2030268 (0.303)</td>
<td>0.2940816 (0.115)</td>
</tr>
<tr>
<td>N</td>
<td>7218</td>
<td>7218</td>
<td>7218</td>
</tr>
<tr>
<td>R2</td>
<td>0.136</td>
<td>0.0996</td>
<td>0.0445</td>
</tr>
</tbody>
</table>

***, **, * represent the significance levels which equate to 1%, 5%, and 10% levels, respectively

Source: data processed by the author

Based on the regression results, it is known that economic uncertainty has a significant negative impact on trade payables and a positive impact on trade receivables and net credit ratio. This means that when there is an increase in uncertainty in Indonesia, companies will do their best to reduce debt with suppliers, but on the other hand, companies will try to increase lending to consumers. This event is most likely based on the company's efforts to maintain its financial stability. Companies tend to reduce their debt and provide more credit to consumers in the hope of obtaining more profitability by increasing receivables. Based on research by Kontuš (2012), there is a positive relationship between accounts receivables and return on assets, which indicates an increase in profitability in the company. However, the results of this study are not entirely the same as the results of previous research by D’Mello & Toscano (2020), which found that economic uncertainty has a significant negative effect on all trade credit variables, namely trade payables, receivables, and net credit. For the control variable, the results showed heterogeneous results.
The results from table 3 show the regression between the Indonesia uncertainty index whose values are averaged with the same magnitude. However, table 4 contains the results of the weighted Indonesia uncertainty index (WIUI) regression, where the uncertainty index has been emphasized at the end of the year from the fiscal year end. The following are the results of the regression according to equations 2a, 2b, and 2c.

### Table 4 Weighted Indonesia Uncertainty Index and Trade Credit

<table>
<thead>
<tr>
<th></th>
<th>TP ratio (p-value)</th>
<th>TR ratio (p-value)</th>
<th>NC ratio (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIUI</td>
<td>-0.0504515 (0.001)***</td>
<td>0.0384246 (0.014)**</td>
<td>0.0564557 (0.000)***</td>
</tr>
<tr>
<td>Asset</td>
<td>0.0008848 (0.947)</td>
<td>-0.0018295 (0.943)</td>
<td>-0.0237713 (0.339)</td>
</tr>
<tr>
<td>Asset2</td>
<td>-0.0001426 (0.768)</td>
<td>0.0005157 (0.542)</td>
<td>0.0009065 (0.291)</td>
</tr>
<tr>
<td>Capex</td>
<td>0.0180047 (0.173)</td>
<td>-0.0741901 (0.020)**</td>
<td>-0.0805297 (0.035)**</td>
</tr>
<tr>
<td>Tang</td>
<td>-0.0844624 (0.000)***</td>
<td>-0.1740204 (0.000)***</td>
<td>-0.1265324 (0.000)***</td>
</tr>
<tr>
<td>Mtbr</td>
<td>0.0004322 (0.702)</td>
<td>0.0015143 (0.375)</td>
<td>0.0015268 (0.517)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.0021032 (0.905)</td>
<td>-0.1288932 (0.001)***</td>
<td>0.1265909 (0.000)***</td>
</tr>
<tr>
<td>Lev</td>
<td>0.0774868 (0.000)***</td>
<td>-0.0244191 (0.005)***</td>
<td>-0.0797543 (0.000)***</td>
</tr>
<tr>
<td>CR</td>
<td>-0.0509568 (0.001)***</td>
<td>-0.2112924 (0.000)***</td>
<td>-0.1734481 (0.000)***</td>
</tr>
<tr>
<td>SGR</td>
<td>0.0044003 (0.012)**</td>
<td>-0.0090064 (0.088)*</td>
<td>-0.0043658 (0.268)</td>
</tr>
<tr>
<td>LOC</td>
<td>-0.0342086 (0.000)***</td>
<td>0.053335 (0.000)***</td>
<td>0.0142092 (0.262)</td>
</tr>
<tr>
<td>cons</td>
<td>0.1279673 (0.171)</td>
<td>0.2016205 (0.307)</td>
<td>0.2922283 (0.117)</td>
</tr>
<tr>
<td>N</td>
<td>7218</td>
<td>7218</td>
<td>7218</td>
</tr>
<tr>
<td>R²</td>
<td>0.1353</td>
<td>0.0996</td>
<td>0.044</td>
</tr>
</tbody>
</table>

***, **, * represent the significance levels which equate to 1%, 5%, and 10% levels, respectively

Source: data processed by the author

Consistent with the regression results between the Indonesia uncertainty index and trade credit, the weighted Indonesia uncertainty index has a significant effect on trade credit, which negatively affect trade payables, and positively affect trade receivable and net credit. This shows that Indonesian public companies will reduce activities from lending and receiving credit to consumers and suppliers during an increase in economic uncertainty. Then, on the results of the control variable regression, it can be seen that the results have similarities with the regression results in table 3. It can be said that there is no significant change in the results of the control variables, so the conclusions are the same as before.

### 5. Conclusion

In this study, the researcher analyzes whether there is a significant relationship between economic and political uncertainty and the decisions of Indonesian companies in their trade credit activities. This study uses a sample of 607 Indonesian public companies from 1998 to 2021. The empirical results show that (1) there is a very significant negative relationship between economic uncertainty and the decision of Indonesian companies to take on debt; (2) there is a significant positive effect of economic uncertainty on the provision of credit to consumers; In addition, (3) the results also show a significant increase in net credit at a time of high uncertainty.

However, certainly in this research, there are some limitations that allow differences in the regression results. The first is the limitation of data sources for Indonesian companies, where there are several years where there are data gaps on several variables, so it is necessary to delete these years. Second, the researcher only analyzes a sample of large public companies.
listed on IDX. There is a possibility that the regression results may change if a thorough research study is conducted on large and small companies. Third, there is a social trust factor in the company's trade credit relationship and economic uncertainty (Liu & Dong, 2020). In this study, these factors are not taken into account in the relationship between uncertainty and trade credit. For these reasons, additional study is required to determine how economic uncertainty affects Indonesian company decision-making on trade credit.

References


