



Impact of geopolitical risk on working capital management in companies listed on the Indonesia Stock Exchange (IDX)

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ABSTRACT

This research aims to test whether geopolitical risk affects the working capital of company management in Indonesia. By using panel data analysis, a total of 585 companies listed on the Indonesia Stock Exchange (BEI) were used as research objects. 4,044 data points were observed during the period 2013–2022 to analyze the influence of GPR (geopolitical risk) on working capital management from three account approaches. Accounts Receivable, Accounts Payable, and Net Working Capital results show that when geopolitical tensions increase, this has a significant effect on the company's net working capital but does not have a significant impact on Accounts Receivable and Accounts Payable. Further studies are still needed to determine the extent to which geopolitical risks have an impact on company performance, especially working capital management. It is hoped that this research will be useful for policymakers to anticipate appropriate regulations in the future to help entrepreneurs and the country's economic growth. For practitioners, namely companies, business owners, and entrepreneurs, this research is expected to provide important information regarding the impact of geopolitical risk on companies, especially working capital management.

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INTRODUCTION

The purpose of writing this article begins with the assumption that the COVID-19 pandemic has caused increased geopolitical risks which have a negative impact on companies' working capital management (WCM). When making economic and corporate decisions, investors, policy officials, the business sector, and society now take geopolitical risk into distinct account. Geopolitical uncertainty is a risk that the World Bank and the International Monetary Fund regularly analyze and highlight (Caldara & Iacoviell, 2022) . According to Caixa Bank research, geopolitical risk currently makes up 30% of the elements that explain global growth (Arenas, 2018) . This makes it a significant factor in explaining global growth. Additionally, Shahbaz et al., (2018) noted that concerns about the direct and indirect economic effects of geopolitical risks are raised by geopolitical events like the US-China conflict. Tensions between nations, such as diplomatic

disputes and international wars, are linked to geopolitical hazards. Particularly when there are geopolitical conflicts that prevent peaceful resolution of market and commercial cycles, which puts financial strain on corporations (Caldara & Iacoviell, 2022).

The technological sector, the export-import sector, and the health sector – which includes everything from medications to medical equipment – are all impacted by the interdependence of nations. Thus, more than other immediate business risks like currency rate volatility and shifts in consumer behavior, Price Water Coopers (2018) ranks geopolitical uncertainty and terrorism as the top five global business concerns (Lee & Wang, 2021). Even when facing a global pandemic, uncertainty in geopolitics remains the 20th largest business threat in the world, even in the face of a worldwide pandemic (Global & Survey, 2013). It has long been known that the economies of areas where political instability, terrorism, and social unrest exist suffer from their presence. Political disputes, such as ongoing threats of terrorism, exacerbate the inherent risks that businesses must take into account when making business decisions and raise economic uncertainty (Colino, 2013).

Theoretically, trade between the participating nations will be impacted by wars and other armed conflicts. As a result, trade is disrupted and losses from international trade rise. Empirically, trade is impacted by this disruption for a considerable amount of time. Years may pass before trade levels revert to what they were prior to hostilities, even after they have ceased (Glick & Taylor, 2010). The effects of fluctuating geopolitical tensions on the economy have been extensively studied, both globally (Omar et al., 2017) and in developing nations (Balcilar et al., 2018). Companies must be able to manage working capital well even in unstable geopolitical conditions. In the PriceWaterhouse Cooper case study, cited in research (Boisjoly et al., 2020), it was found that good *working capital* management has a positive impact on business profitability.

Boisjoly et al. (2020) found that effective working capital management can improve company performance in terms of short-term profitability and increase company value in terms of long-term performance. This research uses a sample of companies from various industries with a time period from 1990 to 2017. This research finds that company value and profitability can increase in large companies with good working capital management.

Balcilar et al., (2018) looked at how geopolitical risk impacts the dynamics of the BRICS stock markets, Brazil, Russia, India, China and South Africa). In their research, they found different results and concluded that volatility in the stock market is usually caused by geopolitical events. Cheng & Chiu, (2018) looked at how geopolitical risk affected 38 developing countries and found that global geopolitical risk shocks were one of the main factors causing economic changes in 38 developing countries, including Indonesia. On the other hand, (Lu et al., 2020) empirically shows how geopolitical risk influences financial growth in 18 developing countries, and one of them is Indonesia.

Indonesia is a developing country or emerging market according to (NguyenHuu & Orsal, 2022). It was found that GPR plays an important role in shaping the financial conditions of developing countries, however, this large impact is not visible in the stock market, which tends to be relatively strong against external disturbances due to geopolitical events. This is very different from developed countries, where GPR has a large impact, most of which is concentrated on the stock market.

This research used 585 samples of non-banking companies and non-financial companies listed on the Indonesian Stock Exchange (BEI) during the period 2013 to 2022.

RESEARCH METHOD

Geopolitical risk barometers were developed by scholars and industry experts to assist investors in quantifying and managing the volatility resulting from geopolitical occurrences (Petrov et al., 2018), Institutions like the Global Risk Institute aim to cooperate with scholars and industry professionals to tackle the growing global political instability and develop risk management

techniques in light of geopolitical shifts. Quantifying prospective geopolitical hazards objectively and quantitatively is a highly challenging task. Nevertheless, (Caldara & Iacoviello, 2018) employ words such as "geopolitical tensions," "war risk," and "terrorist threat" to gauge geopolitical risk using the GPR index (Lu et al., 2020). The index developed by Caldara & Iacoviello, (2018) is derived from an analysis of newspaper reports that extensively feature phrases associated with global tensions. The GPR index was derived by quantifying the frequency of occurrences of terms associated with geopolitical tensions in prominent global newspapers (Cheng & Chiu, 2018). This study measures the risks connected with occurrences such as warfare, political tensions, and acts of terrorism that affect internal politics and international relations. In addition, this index does automated text searches for items that include certain keywords such as "risk of war," "terrorist threat," and "geopolitical tensions" in the electronic archives of eleven national and international newspapers (Datta et al., 2017).

The significance of indexes lies in their ability to gauge real-time geopolitical threats as perceived by global investors, politicians, the media, and public opinion (Gupta et al., 2019). Policy makers emphasize the influence of inflation on investment decisions and working capital. They consider it as part of the uncertainty triad, which also includes economic and policy uncertainty. This combination of uncertainties can lead to substantial negative economic consequences (Carney, 2016). Due to its significance, many recent studies have used GPR measurements as a proxy for geopolitical uncertainty (Kotcharin & Maneenop, 2020).

This study takes into account data on non-bank companies listed on the Indonesia Stock Exchange (BEI) from 2012 to 2022 from S&P *Global Market Intelligence* using a *purposive sampling method*. In hypothesis testing, using the *Ordinary least squares* regression method. The model and measurement variables used to test this hypothesis are as follows:

Empirical Model 1

$$AR_{i,t} = \beta_0 + \beta_1 \cdot GPR + \beta_2 \cdot FirmSize + \beta_3 \cdot InvOp + \beta_4 \cdot CapEx + \beta_5 \cdot Leverages + \beta_6 \cdot Cashflow + \epsilon$$

Empirical Model 2

$$AP_{i,t} = \beta_0 + \beta_1 \cdot GPR + \beta_2 \cdot FirmSize + \beta_3 \cdot InvOp + \beta_4 \cdot CapEx + \beta_5 \cdot Leverages + \beta_6 \cdot Cashflow + \epsilon$$

Empirical Model 3

$$NWC_{i,t} = \beta_0 + \beta_1 \cdot GPR + \beta_2 \cdot FirmSize + \beta_3 \cdot InvOp + \beta_4 \cdot CapEx + \beta_5 \cdot Leverages + \beta_6 \cdot Cashflow + \epsilon$$

Table.1 Dependent Variable, Independent Variables and Control Variables

Variables	Description	Operationalization Of The Variables
<i>Dependent Variable</i>		
$AR_{i,t}$	Account Receivable	Account Receivable/Total Revenue
$AP_{i,t}$	Account Payable	Account Payable/Cost Of Good Solds
$NWC_{i,t}$	Net Working Capital	Net Working Capital/Total Asset
<i>Independent Variables</i>		
GPR	GPR Indonesia	Annual Indonesian Geopolitical Risk (GPR)Indeks
<i>Control Variables</i>		
$Size$	Firm Size	In(Total Assets)
$Mte_{i,t}$	Investment Opportunity	MV of Equity/BV of Equity
$Cap_{i,t}$	Capital Expenditures	Capital Expenditures/Total Asset
$Lev_{i,t}$	Leverages Rasio	BV Total Debt/Total Asset
$Cf_{i,t}$	Cash Flow	Net Operating CF/Total Asset

RESULTS AND DISCUSSIONS

The data consists of 585 companies registered on the IDX, there are 4,044 data that were observed during 2013 to 2022 from all sectors except the financial sector. Because companies are not

required to have data for each sample period to be included in this observation, the data set in this study is unbalanced panel data.

To minimize the impact of outliers, winorization was carried out on all variables at the 1% level except for the GPR, Size and NWC variables. The following table contains a summary of the variable descriptive statistics:

Tabel 2. Descriptive Statistic

Variables	Obs	Mean	Std. Dev.	Min	Max
AR	4,044	0.2016	0.2265	0.0032	1.5135
AP	4,044	0.1915	0.2540	0.0021	1.8367
NWC	4,044	0.0680	1.6200	-7.3906	0.9811
GPR	4,044	1.1880	0.4942	0.4574	2.2439
Size	4,044	12.7846	3.7280	2.7002	19.8317
InvOp	4,044	3.3267	10.4950	-1.9620	72.9280
Capx	4,044	0.0484	0.0562	0.0000	0.2979
Lev	4,044	0.2905	0.2789	0.0000	1.8917
Cf	4,044	0.0235	0.1043	-0.4460	0.3598

The mean of AR is 0.20, which shows that the average company in Indonesia has an AR of 20.16% of its total turnover. Table 2 shows that the AR Max value of 1.51 means the company's account receivable is a maximum of 1.51 times when compared to the total revenue, while AP 1.83 means the company's *Account Payable* is a maximum of 1.83 times when compared to the company's *Cost of Good Sold*.

GPR is calculated as a percentage of the annual average Indonesian GPR index which has an average of 1.18 and ranges from 2.70 to 19.83 during the observation period. The size of companies in Indonesia varies quite a lot with a standard deviation of 3.2780 and an average of 12.78.

Table 3. Matrix Correlation

Var	AR	AP	NWC	GPR	Size	InvOp	Capx	Lev	Cf
AR	1								
AP	0.3158	1							
NWC	0.0342	-0.2039	1						
GPR	-0.0065	-0.0067	-0.0138	1					
Size	0.0346	0.0416	0.0675	0.022	1				
InvOp	-0.0555	0.0113	0.0024	0.0036	-0.5728	1			
Capx	-0.1187	-0.0585	0.0206	-0.0466	0.0392	0.0154	1		
Lev	0.0671	0.0917	-0.3499	-0.0277	-0.1097	0.0144	-0.0558	1	
Cf	-0.1202	-0.1725	0.2359	0.0226	0.103	0.0738	0.1632	-0.4145	1

Between AR and NWC shows a very low correlation of 0.0342, which means changes in one variable cannot accurately predict changes in other variables. On the other hand, Size and InvOp have absolute values such as -0.5728, which shows a stronger relationship, both positive and negative. After testing the classical assumptions on empirical model 1, empirical model 2 and empirical model 3, it was found that there was a linear ridge between variables, so this was the basis for carrying out subsequent statistical tests. The following are the results of statistical tests proving the hypothesis of empirical model 1, empirical model 2 and empirical model 2:

Table 4. Impact of Geopolitical Risk on Company Management Working Capital

Variables	AR		AP		NWC	
	Regression Coef	ρ value	Regression Coef	ρ value	Regression Coef	ρ value
GPR	-0.0093	0.1810	-0.0008	0.9070	-0.1487	0.0040
Size	0.0134	0.0000	0.0058	0.1710	0.3079	0.0000
InvOp	0.0000	0.0130	0.0000	0.0090	0.0000	0.7490
Capex	-0.1736	0.0120	-0.1193	0.2290	-0.2311	0.5150

Handry, Impact of geopolitical risk on working capital management in companies listed on the Indonesia Stock Exchange (IDX)

<i>Lev</i>	0.0093	0.5700	0.0141	0.3730	-1.5133	0.0110
<i>Cflow</i>	-0.0517	0.3140	-0.2371	0.0010	1.0032	0.0090
<i>Total Obs</i>	4044		4044		4044	
<i>Adj R Square</i>	0.1250		0.1840		0.6350	
<i>F Static (p-Value)</i>	38.97(0.000)		19.01(0.001)		53.14(0.000)	

If we look Table 4, empirical model 1 can be seen that GPR does not have a significant effect on AR, this is shown by the GPR p value $0.1810 > 0.05$, but for Size, InvOp, and Capx it has a significant effect on AR. This can be seen from table 4 which shows the p value of Size, InvOp and NWC > 0.05 . Empirical model 2 can be seen that GPR has no significant effect on AP, this is shown by the GPR p value of $0.9080 > 0.05$, however for InvOp and Cashflow it has a significant effect on AR. This can be seen in table 4 which shows the p value of InvOp and Cashflow > 0.05 . From empirical model 3, it can be seen that GPR has a significant effect on NWC, this is shown by the GPR p value of $0.004 < 0.05$. A positive GPR regression coefficient means that the influence of GPR on NWC is positive as well as the influence of Size, Leverage and Cashflow which have a significant influence, as shown in table 4 where the p value of Size, Lev and Cf < 0.05 , while for InvOp and Capx there is no significant influence. This is shown in table 4, where the p value of InvOp and Capx is > 0.05 .

The negative coefficient of GPR with AR, AP, and NWC indicates that there is a negative relationship between GPR and these variables, in other words, as GPR increases, these variables (AR, AP, and NWC) tend to decrease, or vice versa.

When NWC is used as the dependent variable, the p-value of the GPR variable is 0.0040, lower than 0.05. This means that there is a negative relationship between GPR and NWC, there is a significant negative relationship between GPR and NWC, meaning that an increase in GPR is associated with a decrease in NWC. The relationship between AR and AP is negative based on the coefficient, but not significant.

The relationship between geopolitical risk and working capital management is critical for companies, especially those that operate globally. Geopolitical risks, including political disputes and regional tensions, can have a significant impact on a company's operations, performance and workforce, requiring careful management of working capital components such as receivables, payables and inventory (Practice, 2021). For emerging market countries such as Indonesia, geopolitical tensions are an important concern (Lu et al., 2020) because this will influence company financial performance and investment decisions. Indonesia's GPR index is relatively lower, with an average of around 1.88 and a maximum of 2.24, compared to China's average of 7.4 and maximum of 12.1 during the period 2013 to 2022. This is also one of the reasons why GPR does not have a significant effect on accounts receivable and accounts. In addition, of the 679 companies that were used as observations, 276 or 40.6% of them were companies that had just IPOed on the IDX. However, other research shows that GPR has a significant influence on CCC (*Cash Conversion Cycle*) in accordance with research (Zimon & Tarighi, 2021) (Zimon & Tarighi, 2021), and *Cash reserve* (Sandra & Kim, 2022) (Lee & Wang, 2021).

A study conducted by (Lee & Wang, 2021) found that GPR affects company cash holdings, especially when geopolitical tensions increase, especially during Covid 19. Geopolitical Risk Index (GPR) on investments of 164 manufacturing companies listed on the Istanbul Stock Exchange from 2011 to 2019, by applying the *Generalized Methods of Moment (GMM)* engineering system. Based on the research results, it was found that geopolitical risk had a negative impact on company investment. (Tan, 2022). Geopolitical risks may not have much impact on account receivables because companies may have diversified markets (D, 2012) with customers spread across various countries or regions, geopolitical risks in one area may not have a major impact on overall AR. Besides that, one of the reasons why Accounts Payable is not rigid has a significant impact, besides the impact not being felt directly, the company can manage its financial fundamentals well during the crisis, especially in managing its cash and debt burden (Chang & Yang, 2022).

CONCLUSION

Based on the findings of this study, it can be inferred that geopolitical risk does not have a substantial influence on accounts receivable (AR) and accounts payable (AP). However, as geopolitical risk increases, it will have a significant effect on the company's Networking Capital (NWC). Networking capital, also known as working capital, serves as an indicator of a company's financial health (*Department of Economics and Management Chair of Advanced Corporate Finance Net Working Capital Fluctuations Due to the Pandemic*, 2022). It reflects the company's ability to fulfill its short-term obligations and demonstrates its short-term economic health. It is calculated by subtracting the short-term liabilities from the company's short-term assets. Therefore, when geopolitical tensions increase, companies need to pay attention to liquidity and asset management how efficiently the company manages its assets, including inventory, receivables, and cash, positive working capital (short-term assets are greater than short-term liabilities) indicates that the company has enough resources to develop its operations and potential long-term investments and finally with capital Effective work indicates good operational management, where the company can efficiently convert its assets into income. This research has limitations due to limited resources and information. In observations during the period 2013 to 2023, the impact of the precautionary motive from geopolitical risks has not yet been felt on companies. However, with the COVID-19 pandemic, the Russia and Ukraine War has the influence of perhaps greater geopolitical risks.

This research does not involve the financial sector as a research object, in future research it is hoped to include the financial sector as a research object. Additional research and investigation is required to determine if the duration of the observation period is enough. Due to the swift globalization of the economy and the growing interdependence among nations, international relations are now influenced not only by countries but also by companies, such as export-import trading companies. Hence, we suggest that forthcoming studies explore the impact of geopolitical risk on several dimensions of business financial performance.

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