Original Research Article

Risk Assessment of Economic, Defense, and Macroprudential Conflicts Against Fragile States Index: Evidence from Indonesia

ABSTRACT

Indonesia's vast territory is a challenge to maintaining its territorial sovereignty. Conflict is difficult to predict so it is necessary to anticipate risks. According to the results of research conducted by the *Fragile States Index* in 2019, Indonesia is ranked in the third country in the worrying category. A need for a strategy in the event of *risk of* conflict or probability of war occurring so that the Indonesian economy can be properly recovered considering a conflict is an uncertainty that is difficult to predict in the future. The purpose of this study is to determine in terms of the *risk of conflict* in ASEAN (Indonesia, Malaysia, Brunei Darussalam, Singapore, Papua New Guinea, Philippines, Timor Leste, Myanmar, Cambodia, Laos, Thailand, Vietnam), ANZUS (Australia and New Zealand), United States of America and China which has an impact on Indonesia's economic stability. A need to make a conflict risk assessment in mitigating the occurrence of conflict in Indonesia. The analysis tool used is quantitative descriptive using *Cross Tab* analysis and *Heat Map Risk*. This study used secondary data for comparison of military and economic strength. The interesting findings in this study of Indonesia's population turned out to have a high influence on the country's vulnerability considering that Indonesia has ethnic, cultural, and religious diversity. Therefore, Indonesia needs to mitigate risks in the event of conflict so that in realizing the projection of Indonesia becoming *the 5th largest Gross Domestic Product (GDP)* country in the world in 2045 can be realized properly. The conclusion of this study Population*, GDP, Official Exchange Rate, and Real Interest Rate* against the *Fragile States Index* in Indonesia are included in High condition which means that serious conditions must be given immediate attention to minimize conflict.

Keywords: Fragile States; State Defense; Economy; Risk.

1. INTRODUCTION

War is an act both physical and non-physical which has conditions for hostility between two groups to determine dominance over a disputed territory. War is interpreted as armed conflict while in the modern era war is more towards technological and industrial superiority. The causes of war include differences in ideology, differences in interests, the desire to expand territory, and the desire to control natural resources. In his book Vom Kriege, Clausewitz defines war as an act of violence committed by one country to impose its will on another. In other words, war is a clash of violence between two countries as well as a clash of will. In general, this clash of ability is more important than the clash of hardness(Carl von Clausewitz, 2003). As long as one nation cannot be subdued by its will to resist, that

nationcan't be defeated (von Clausewitz, 1989). In carrying out national defense, strategies, operations, and tactics are needed. Clausewitz formulated strategy as the use of combat to achieve war objectives, while tactics are the use of armed force to run battles.

Looking at current conditions, global conditions are uncertain, aneed to anticipate the mitigation of a country's conflict risk, more specifically in Indonesia because it is rich in natural resources and large demographic bonuses. In addition, the presence of the Fragile States Index in 2006 made a warning for countries that are mainly in a state of concern in the vulnerability of countries so that future action is needed, both risk mitigation and strategy. This study took samples not only from Indonesia but also from surrounding countries. So that in addition to being able to see the potential risk of conflict in Indonesia in-depth and be able to know the vulnerability of each sample country. Samples taken from this study were from representatives of countries in the Asian continent, especially ASEAN and the Australian continent, China, and the United States of America. This study cannot only examine the existing conditions of Indonesia and surrounding countries according to the samples described above but it is hoped that future research can reach more broadly related to variables that affect conflict. So, the question of this study is how the relationship between the Fragile States Index, Defense Economics, and Macroprudential in Indonesia to countries (ASEAN, ANSUZ, China, and the United States of America), and how to assess the risk of conflict in Indonesia with macroprudential indicators and defense economics to the Fragile States Index Indonesia.

2. THEORETICAL FRAMEWORK

2.1 Uncertainty Theory

Risk has several definitions of which event is adverse. A statistical tool that is often used to measure deviation is standard deviation so that it can be used to measure risk. Risk arises due to uncertain conditions, the uncertainty can be seen from high fluctuations, the higher the fluctuations, the greater the level of uncertainty. In financial management, Jorion (2000) explained the existence of 5 risks faced by a company.

2.2 Conflict resolution theory

Conflict resolution is essentially defined as a comprehensive term that implies that the source of the conflict has taken root and will be noticed and resolved. Dahrendrof in surbakti, explained that there are three forms of conflict management used as conflict resolution, including:

1. Conciliation in which all parties discuss and debate openly to obtain an agreement without the parties monopolizing
2. Mediation is carried out when the disputing parties agree to seek advice from third parties, figures, experts or institutions that are considered to have in-depth knowledge and expertise about what is in dispute
3. Arbitration where both parties to the dispute agree to take to legal channels to obtain a decision as a way out of the conflict

Dahrendrof conflict resolution on consolation is used in the conflict resolution process between Indonesia and China. The form of consolation is carried out through negotiations and the utilization of economic, political, and socio-cultural cooperation established with the concept of strategic partnership between the two countries (Autumn, 2019).

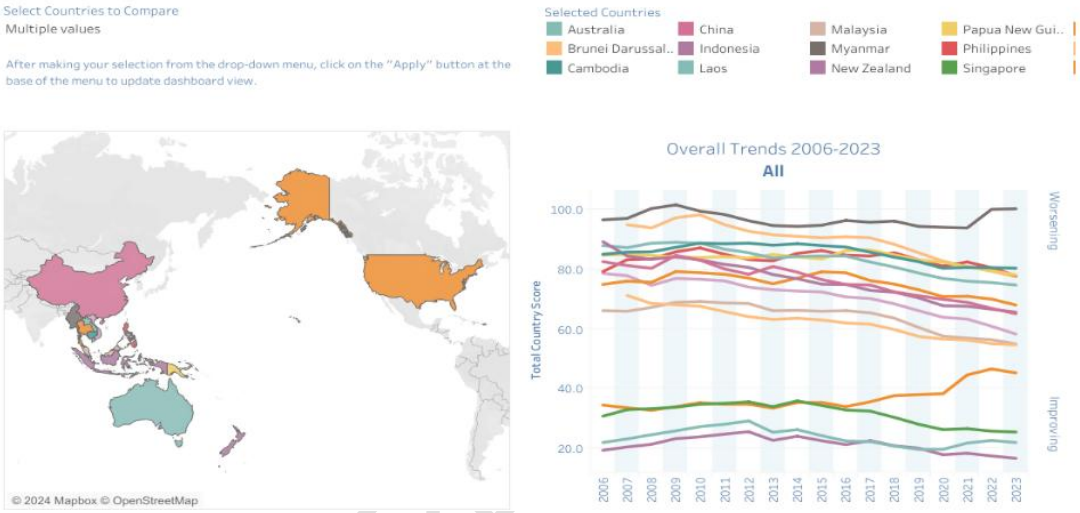
2.3. Fragile States Index

Fragile States Index (FSI) generated by *The Fund for Peace* (FFP), is an important tool in highlighting not only the normal pressures a country is experiencing, but also in identifying when those pressures exceed a country's capacity to manage those pressures. The strength of FSI is its ability to distill millions of pieces of information into a form that is relevant as well as easy to digest and informative. Every day FFP collects thousands of reports and information from around the world, detailing the social, economic, and political pressures faced by each of the 178 countries analyzed in the Fragile States Index (Peace, 2022).

3. METHODS

3.1 Data and Sources

This research used secondary data obtained from websites World Bank. Secondary data obtained include Military Expenditure and Armed Personnel. Meanwhile, variable data on macroprudential indicators taken from the World Bank include Gross Domestic Product and Official Exchange Rate. The independent variable is used Fragile States Index. The data Fragile States Index can be taken from website fragilestatesindex.org. The analytical tools used are descriptive quantitative. The sample countries include ASEAN (Indonesia, Myanmar, Timor Leste, Cambodia, Papua New Guinea, Philippines, Laos, Thailand, Vietnam, Malaysia, Brunei Darussalam, Singapore), ANSUZ (Australia, New Zealand), China and the United States of America. The identification carried out results in several risks that may occur to each country's resources(Mochammad Husein & Imbar, 2015).



Source: (FSI, 2023).

Figure 1. Status of 16 Sample Countries Based on Fragile States Index 2006-2023

3.2 Descriptive and Economic Model

3.2.1 Basic Model of Resource Conflict

Conflicts can also result from inequities in the inadequate distribution of resources. This is partly due to real-life conflicts, where different decision-makers have different levels of professional knowledge, social status, and even power in contexts where decision-makers make use of information vary greatly (Wang et al., 2024). Players divert Ma and Mb units from their respective safe resources to produce military items. In turn it can be used to fight over disputed resources. Technology related to the military inputs of Ma and Mb and the proportion of Pa and Pb conflict success is summarized by a ratio of forms of conflict success functions (Carter, 2009) page 277.

$$\boldsymbol{Pa} = \frac{\boldsymbol{Ma}}{\boldsymbol{Ma} + \boldsymbol{ZMb}} \; \boldsymbol{dan} \; \boldsymbol{Pb} = \frac{\boldsymbol{ZMb}}{\boldsymbol{Ma} + \boldsymbol{ZMb}} \ldots\ldots\ldots (\mathbf{1})$$

The basic model of resource conflict is used in analyzing conflict. This model helps in understanding the role of resources in conflicts, including competition, inequality. Analysis using this model can help in identifying patterns and correlations related to resource conflicts (Schellens, 2023).

One of the correlations used in this study uses Spearman's rank correlation where from data sources that are used as a reference for conflicts based on literature studies of the Ministry of Defense such as defense economics, military expenditure, then a correlation is made whether the situation in countries around Indonesia can affect resources in Indonesia and how strong the relationship is. The spearman level correlation method is applied in

determining the level of closeness of relationships between variables that contain rankingelements or are bound to the order of data (Susdarwono & Wiranta, 2023). Here is the calculation formula:

$$Rs = 1 - \frac{6\ x \sum_{i=1}^{n} D^2}{n\ x\ (n^2 - 1)} \dots\dots\dots (2)$$

In the model above Rs is the value of the spearman level coefficient, D is the difference or difference in rank between variables, n is the number of samples, and 1 and 6 are constants.

3.2.2 Uncertainty Model

Model uncertainty is uncertainty that occurs due to imperfections and idealism in the formulation of physical models for loads and resistances, as well as in the choices made in those models. The uncertainty model can be broken down into two types of uncertainty, namely aleatoric uncertainty and epistemic uncertainty. Two sources of uncertainty prevent a perfect match in experimental measurements. The uncertainty parameter has two computational models, including variations of the values entered in the computational model. For example, young's modulus, poisson ratio, density, dimensions, etc. Test articles and computational models where different parts of the same stock (Marinacci, 2015).

3.2.3 Bayesian Probability Model

The Bayesian probability model is an approach in statistics that allows measurement of uncertainty in models and predictions. In the Bayesian probability model, probabilities can be assigned to the parameters of the model and represented as random variables. Here is the formula:

$$P(A \mid B) = P(A)x\ \frac{P(B \mid A)}{P(B)} \dots\dots\dots (i)$$

Information:
P(A | B) = Probabilitas posterior
P(A) = Previous probability
P(B | A) = Likelihood
P(B) = Marginal probability

Bayesian methodology allows comparison of formal models in a large set of specifications that may differ in several features at the same time. The relevance of alternative models given that what the data provide is assessed probabilistically, usually in pairs, and not through a series of tests (Wróblewska, 2023).

3.2.4 Model Development Through Heat Map Risk

There is a conflict that can arise at any time and no one can predict correctly because the emergence of conflict there is nothing certain when it will occur. In this study, the conflict and uncertainty model gave rise to new innovations from the Baysian Probability Model which refers to previous probabilities and Likelihood in making measurements if conflicts occur so that in this study further development was carried out with the Heat Map Risk model.

At this stage, accumulating data includes calculating the highest to lowest risk data ranking which includes sources *of risk of conflict.* Then based on the results of rank's spearman correlation in this study where the R-Spearman value is produced.

Table 1. The relationship between R-Spearman values and the Ranking Model

R-Spearman	Relationship	Rank
0	Imperfect Relationships	1
0,01-0,20	Very Low Relationship	2
0,21-0,40	Low Relationship	3
0,41-0,60	Relationship is enough	4
0,61-0,80	Strong relationships	5
0,81-0,99	Very strong relationships	6
1	Perfect relationship	7

Source: Data Processed by Researchers, 2024.

Then proceed to conduct heat map risk correlation with the impact variable / i (Fragile States Index Indonesia) and probability variable / p (GDP, Military Expenditure, Armed Forces, and Official Exchange Rate Indonesia) determined score so that the biggest risk on which probability variable will be known. The determination of the score is based on the relationship of Spearman's Rank Correlation results including:

$$\boldsymbol{Scor\ Risk = i\ x\ p} \ldots\ldots\ldots (\boldsymbol{i})$$

Heat map risk with *Color Scales* uses a three-color gradient. In green-yellow-red color scales. Where the highest value is green, the average value is yellow, and the lowest value is red. In this study, Color Scales in green means Low with a score of 1-8, Color Scales in yellow means Medium with a score of 9-24, and Color Scales in red means high with a score of >24. The ability to determine the risk information is calculated based on the middle value that is in the medium, for the following indicators is the accumulation of calculations:

Table 2. Determination of Risk Calculation Level

Very Weak/Very Low	Stdev-(3 x Mean)
Weak/Low	Stdev-(2 x Mean)
A Bit Weak/A Bit Low	Stdev-Mean
Medium	Stdev
Rather Strong/Rather High	Stdev+Mean
Strong/High	Stdev+(2 x Mean)
Very Strong/Very High	Stdev+(3 x Mean)

Source: Data Processed by Researchers, 2024.

Then from the results above, the ranking used in the reference produces values in the heat map risk table. Then in the calculation of the value on the color scales the value on "very low and very weak" is (1x1=1), then "low and very weak" is valued (2x1=2), and so on so that it is obtained in the heat map risk below:

Table 3. Risk Heat Map Matrix

		Impact (Y)						
		Very Low	*Low*	*A Bit Low*	*Medium*	*Rather High*	*High*	*Very High*
		1	*2*	*3*	*4*	*5*	*6*	*7*
Likelihood (X)								
Very Weak	1	1	2	3	4	5	6	7
Weak	2	2	4	6	8	10	12	14
A Bit Weak	3	3	6	9	12	15	18	21
Medium	4	4	8	12	16	20	24	28
Rather Strong	5	5	10	15	20	25	30	35
Strong	6	6	12	18	24	30	36	42
Very Strong	7	7	14	21	28	35	42	49

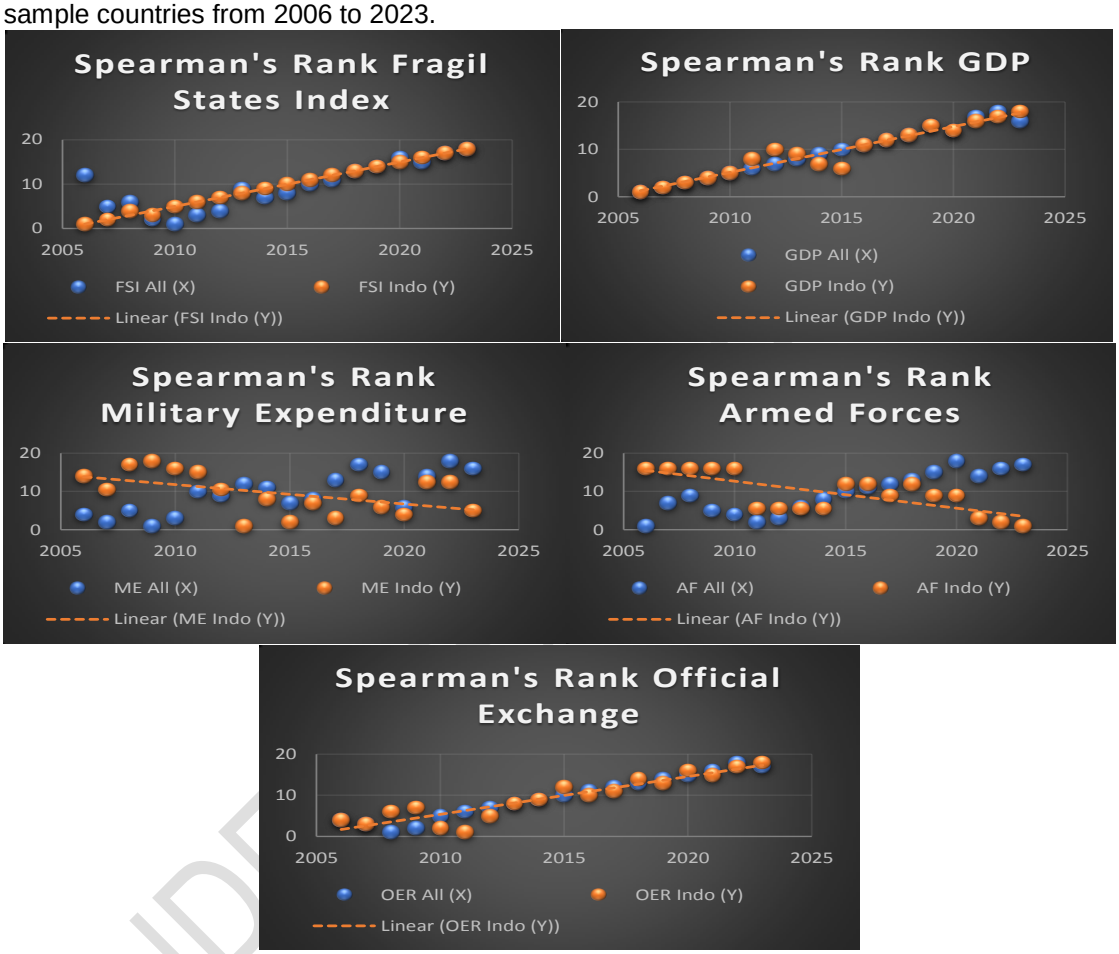
Source: Data Processed by Researchers, 2024.

Heat Map Risk is a table that shows the combination of likelihood (probability of occurrence of risk) with impact (magnitude of risk impact) in risk management. The heat map table is characterized by certain colors that symbolize the relationship between likelihood and impact. Color or position in the heat map table has its own definition so that it can evaluate all results with this technique which can help policy makers in knowing the biggest risks and even selecting specific areas where the results can be more accurate than the best results shown in conventional designs (Schellens, 2023). In risk management, the combination of likelihood and impact for the same risk will be grouped into seven groups that reflect losses from very weak to very strong. Risk management is useful for minimizing and managing potential losses experienced by countries arising from failures and errors of internal processes, human error, system failure, and external events (Agustinus Ekensianus Parung, 2023). The calculation score of risk then it can also be determined as the position of the level of risk. Then the results of the research are verified through literature studies or previous research and secondary data.Then from the heat map, it is obtained what variables are most at risk of causing conflict in Indonesia through economic, defense and macroprudential variables and how big the level of relationship is.

4. RESULTS AND DISCUSSION

4.1 Sperman's Rank Correlation

Spearman's Rank Correlation on the variable (*Fragile States Index/FSI, Military Expenditure/ME, Gross Domestic Product/GDP, Armed Forces/AF, Official Exchange Rate/OER)* Indonesia (Y) with variable (*Fragile States Index, Military Expenditure, Gross Domestic Product, Armed Forces, Official Exchange Rate)* The average of 15 research sample countries (X) where this study was ranked in looking at the distribution pattern of points on *Scatter Plot*. This research with variables *Fragile States Index* Indonesia with 15 sample countries from 2006 to 2023.



Source: Data Processed by Researchers, 2024.

Figure 2.Independent Indonesia(Y) and Dependent Average 15 Countries(X)

Scatter Plot on the Fragile States Index ranking points pattern which shows the tendency to form a straight line then shows a linear relationship between two variables Fragile States Indonesia (FSI Indo) with Fragile States average country sample study (FSI All). This result shows that there is a close relationship between the Indonesian FSI variable and the FSI All variable. It also shows a positive relationship. In the picture above there is an outlier which in 2006 showed FSI All there is extensive data that may result from abnormal situations.

Scatter Plot on the Gross Domestic Product ranking points pattern which shows the tendency to form a straight line then shows a linear relationship between two variables of Indonesia's Gross Domestic Product (GDP Indo) with the average Gross Domestic Product of the study sample country (GDP All). This result shows that there is a close relationship

between Indonesia's GDP variable and the All-GDP variable. It also shows a positive relationship.

Scatter Plot on Military Expenditure ranking point pattern which shows the tendency to form a curva then shows a non-linear relationship between two variables of Indonesian Military Expenditure (ME Indo) with the average Military Expenditure of the study sample country (ME All). This result shows that there is a close relationship between the Indonesian ME variable and the ME All variable where changes in one variable do not always result in comparable changes in other variables. However, this also shows a negative relationship.

Scatter Plot on Armed Forces ranking points pattern which shows the tendency to form a curva then shows a non-linear relationship between the two variables of Indonesian Armed Forces (AF Indo) with the average Armed Forces of the study sample country (AF All). This result shows that there is a close relationship between the Indonesian AF variable and the All-AF variable where changes in one variable do not always result in comparable changes in other variables. However, this also shows a negative relationship.

Scatter Plot on the Official Exchange Rate ranking points pattern which shows the tendency to form a straight line, then shows a linear relationship between the two variables of the Indonesian Official Exchange Rate (OER Indo) with the average Official Exchange Rate of the study sample country (OER All). This result shows that there is a close relationship between the Indonesian OER variable and the OER All variable. It also shows a positive relationship.

The results *of Spearman's Rank Correlation* include:

Table4.Spearman Fragile States Index Ranking Results

No	Variable	R-Spearman	Information
1.	Fragile States Index	0,8127250	Very Strong, Positive Relationships
2.	Gross Domestic Product	0,9588406	Very Strong, Positive Relationships
3.	Military Expenditure	-0,399416	Low, Negative Relationship
4.	Armed Forces	-0,389127	Low, Negative Relationship
5.	Official Exchange Rate	0,8971016	Very Strong, Positive Relationships

Source: Data Processed by Researchers, 2024.

Based on the results analysis data Fragile States Index from 2006 until 2023. Obtained the value of Spearman's Rank Correlation of 15 sample countries against Indonesia of 0.812. So, it can be interpreted that the relationship between Indonesia's Fragile States Index and research sample countries (15 countries) from 2006 to 2023 has a very strong and positive relationship. When the FSI of Indonesia increases, the FSI of the sample country will also increase, and vice versa.

The result ofthe Gross Domestic Product analysis is 0.958. So, it can be interpreted that the relationship between Indonesia's Gross Domestic Product and the research sample countries (15 countries) from 2006 to 2023 has a very strong and positive relationship. When Indonesia's GDP increases, the GDP of sample countries will also increase, and vice versa. Meanwhile, Military Expenditure amounted to -0.399. So, it can be interpreted that the relationship between Indonesian Military Expenditure and the research sample countries (15 countries) has a low and negative relationship. When Indonesia'sMilitary Expenditure increases, the ME of the sample country will decrease, and vice versa. Then the Armed Forces amounted to -0.389. So, it can be interpreted that the relationship between Indonesian Armed Forces and the research sample countries (15 countries) has a low and negative relationship. When Indonesia's AF increases, the AF of sample countries will decrease, and vice versa.

The results of the Official Exchange Rate analysis obtained a Spearman's Rank Correlation value of 0.897. So, it can be interpreted that the relationship between Indonesia's Official Exchange Rate and the research sample countries (15 countries) has a very strong and positive relationship. When Indonesia's Official Exchange Rate increases, the sample country's Official Exchange Rate will also increase, and vice versa.

4.2 Heat Map Risk Analysis

4.2.1. Ranking Based on Probability Variables and Impact Variables

The following is a table of calculation of the risk level of Military Expenditure, Armed Forces, GDP, Official Exchange Rate Indonesia as a probability variable against Fragile States Index Indonesia as an impact variable:

Table 5.GDP Risk Level Against Indonesia's Fragile States Index

Indicator	Fragile States Index Indonesia (Y)/Gross Domestic Product Indonesia (X)						
	Very Low/Weak	Low/Weak	A Bit Low/Weak	Medium	Rather High/Strong	High/Strong	Very High/Strong
FSI Ind	55,61	62,52	69,44	76,36	83,27	90,19	97,10
Rank FSI	1	2	3	4	5	6	7
Bing is Ind.	61.967,01	339.665,52	617.364,03	895.062,54	1.172.761,05	1.450.459,56	1.728.158,07
Rank GDP	1	2	3	4	5	6	7

Source: Data Processed by Researchers, 2024.

Table 6. Risk Level of Military Expenditure Against Fragile States Index Indonesia

Indicator	Fragile States Index Indonesia (Y)/Military Expenditure Indonesia (X)						
	Very Low/Weak	Low/Weak	A Bit Low/Weak	Medium	Rather High/Strong	High/Strong	Very High/Strong
FSI Ind	55,61	62,52	69,44	76,36	83,27	90,19	97,10
Rank FSI	1	2	3	4	5	6	7
ME Ind	0,44	0,54	0,64	0,74	0,85	0,95	1,05
Rank ME	1	2	3	4	5	6	7

Source: Data Processed by Researchers, 2024.

Table 7. Risk Level of Armed Forces Against Fragile States Index Indonesia

Indicator	Fragile States Index Indonesia (Y)/Armed Forces Indonesia (X)						
	Very Low/Weak	Low/Weak	A Bit Low/Weak	Medium	Rather High/Strong	High/Strong	Very High/Strong
FSI Ind	55,61	62,52	69,44	76,36	83,27	90,19	97,10
Rank FSI	1	2	3	4	5	6	7
AF In	510.810	559.436	608.061	656.687	705.312	753.938	802.563
Rank AF	1	2	3	4	5	6	7

Source: Data Processed by Researchers, 2024.

Table 8. Official Exchange Risk Level Against Fragile States Index Indonesia

Indicator	Fragile States Index Indonesia (Y)/Official Exchange Rate Indonesia (X)						
	Very Low/Weak	Low/Weak	A Bit Low/Weak	Medium	Rather High/Strong	High/Strong	Very High/Strong
FSI Ind	55,61	62,52	69,44	76,36	83,27	90,19	97,10
Rank FSI	1	2	3	4	5	6	7
OER IN	4.960,01	7.296,40	9.632,79	11.969,18	14.305,57	16.641,96	18.978,35
Rank OER	1	2	3	4	5	6	7

Source: Data Processed by Researchers, 2024.

Indonesia's Fragile States Index (FSI) decreased from 97.10 in the "Very High" category to 55.61 in the "Very Low" category calculated from the 2006 to 2023 average. Meanwhile, so too do dependent variables have the same concept. FSI Indonesia measures a country's vulnerability level. The following is a risk analysis table:

Table 9. Risk Analysis Fragile States Index with Indonesia's GDP

Risk No	Risk ID	Indicator	Status	Risk Description	Impact Description	R-Spearman (I)	Impact (I)	R-Spearman (P)	Probability (P)	Score (I x P)
1	ID1	FSI (I)	Down	The vulnerability of the country will be high if the value is high	Conflict and Deaths in a Country Are Increasing	0,81272	6	0,95884	6	36
		GDP (P)	Up	Many people are poor/indigent/the economy is slowing down	Rebellion and riots everywhere					

Source: Data Processed by Researchers, 2024.

Table 10. Risk Analysis Fragile States Index with Military Expenditure Indonesia

Risk No	Risk ID	Indicator	Status	Risk Description	Impact Description	R-Spearman (I)	Impact (I)	R-Spearman (P)	Probability (P)	Score (I x P)
2	ID2	ISP	Down	The vulnerability of the country will be high if the value is high	Conflict and Deaths in a Country Are Increasing	0,81272	6	-0,39941	3	18
		ME	Up	The smaller the budget of war equipment is also a little	Prone to being colonized by other countries both from external and internal					

Source: Data Processed by Researchers, 2024.

Table 11. Risk Analysis Fragile States Index with Armed Forces Indonesia

Risk No	Risk ID	Indicator	Status	Risk Description	Impact Description	R-Spearman (I)	Impact (I)	R-Spearman (P)	Probability (P)	Score (I x P)
3	ID3	FSI (I)	Down	The vulnerability of the country will be high if the value is high	Conflict and Deaths in a Country Are Increasing	0,81272	6	-0,38912	3	18
		AF (P)	Up	The small number of soldiers resulted in reduced security	Prone to being colonized by other countries both from external and internal					

Source: Data Processed by Researchers, 2024.

Table 12. Risk Analysis Fragile States Index with Official Exchange Indonesia

Risk No	Risk ID	Indicator	Status	Risk Description	Impact Description	R-Spearman (I)	Impact (I)	R-Spearman (P)	Probability (P)	Score (I x P)
4	ID4	ISP	Down	The vulnerability of the country will be high if the value is high	Conflict and Deaths in a Country Are Increasing	0,81272	6	0,89710	6	36
		COLD	Up	Rising Import Costs	Reducing Public Spending and Corporate Investment					

Source: Data Processed by Researchers, 2024.

From the data above, there is a risk analysis related to Indonesia's Fragile States Index (FSI) and Indonesia's Military Expenditure (ME). Risk number 2 indicates that increasing Indonesia's FSI will increase the country's vulnerability, which can have an impact on conflict and death. On the other hand, increasing Indonesia's Military Expenditure will have an impact on improving the country's defense and security.

4.2.2. Heat Map Risk Variable Probability Against Impact Variable

This risk analysis is based on the value of the Spearman correlation coefficient and probability (Probability). The R-Spearman score for FSI showed a strong association with a significant impact, while the R-Spearman score for the number of army members showed a negative association with a significant impact. In addition, the probability value is also at a score of 3, indicating the possibility of a medium impact.

Table 13. GDP Risk Heat Map to FSI Indonesia

	Heatmap Risk		Fragile States Index (I)						
			Very Low	Low	A Bit Low	Medium	Rather High	High	Very High
			1	2	3	4	5	6	7
GDP (P)	Very Weak	1	1	2	3	4	5	6	7
	Weak	2	2	4	6	8	10	12	14
	A Bit Weak	3	3	6	9	12	15	18	21
	Medium	4	4	8	12	16	20	24	28
	Rather Strong	5	5	10	15	20	25	30	35
	Strong	6	6	12	18	24	30	36	42
	Very Strong	7	7	14	21	28	35	42	49

Source: Data Processed by Researchers, 2024.

Table 14. Heat Map Risk Military Expenditure to FSI Indonesia

	Heatmap Risk		Fragile States Index (I)						
			Very Low	Low	A Bit Low	Medium	Rather High	High	Very High
			1	2	3	4	5	6	7
Military Expenditure (P)	Very Weak	1	1	2	3	4	5	6	7
	Weak	2	2	4	6	8	10	12	14
	A Bit Weak	3	3	6	9	12	15	18	21
	Medium	4	4	8	12	16	20	24	28
	Rather Strong	5	5	10	15	20	25	30	35
	Strong	6	6	12	18	24	30	36	42
	Very Strong	7	7	14	21	28	35	42	49

Source: Data Processed by Researchers, 2024.

Table 15. Heatmap Risk Correlation Armed Forces to FSI Indonesia

	Heatmap Risk		Fragile States Index (I)						
			Very Low	Low	A Bit Low	Medium	Rather High	High	Very High
			1	2	3	4	5	6	7
Armed Forces (P)	Very Weak	1	1	2	3	4	5	6	7
	Weak	2	2	4	6	8	10	12	14
	A Bit Weak	3	3	6	9	12	15	18	21
	Medium	4	4	8	12	16	20	24	28
	Rather Strong	5	5	10	15	20	25	30	35
	Strong	6	6	12	18	24	30	36	42
	Very Strong	7	7	14	21	28	35	42	49

Source: Data Processed by Researchers, 2024.

Table 16. Heatmap Risk Official Exchange to FSI Indonesia

	Heatmap Risk		Fragile States Index (I)						
			Very Low	Low	A Bit Low	Medium	Rather High	High	Very High
			1	2	3	4	5	6	7
Official Exchange Rate (P)	Very Weak	1	1	2	3	4	5	6	7
	Weak	2	2	4	6	8	10	12	14
	A Bit Weak	3	3	6	9	12	15	18	21
	Medium	4	4	8	12	16	20	24	28
	Rather Strong	5	5	10	15	20	25	30	35
	Strong	6	6	12	18	24	30	36	42
	Very Strong	7	7	14	21	28	35	42	49

Source: Data Processed by Researchers, 2024.

This table can be used to visualize the level of risk associated with a combination of Fragile States Index (FSI) values and influencing variables.

At the level of risk associated with the combination of FSI and GDP values.The heat map risk table above obtained a score of 36. It means the condition is classified as high which is shown in the color code "Red". So related to the relationship between Fragile States Index and GDP Indonesia with a score of 36, Indonesia's Fragile States Index position is in the "High" category, and the GDP position is in the "Strong" category. This is also evidenced by previous research where the microeconomic aspect of chaos can be in the form of poverty, while the macroeconomic aspect of chaos can be interpreted as the fall of economic growth. The threat is due to risks originating from external factors such as the natural environment, social and demographic and internal compositions such as economic conditions. Both external and internal factors are closely related to conflict, so

comprehensive efforts are needed to overcome or minimize conflict vulnerability (Fatkhullah et al., 2022).

Similarly, expenditure/consumption for the Indonesian military, the higher the value, the lower the level of conflict risk. The heat map table can help in strategic decision making and risk management in Indonesia. In addition, keep in mind that FSI Indonesia and Millitary Expenditure (ME) Indonesia can be influenced by many other factors, such as political, social, and environmental. The relationship between FSI and ME Indonesia in the risk heatmap table above obtained a score of 18 which means that the condition is classified as medium shown in the color code "Yellow". So related to the relationship between FSI and ME Indonesia with a score of 18 positions Fragile States Index Indonesia if the FSI position is "High" then the ME condition experiences a position "A Bit Weak", while if the Fragile States Index Indonesia if the position is "A Bit Low" then the ME condition is in the position "Strong". Previous research where amid the issue of China's trade war with the United States in 2018-2019, China actually increased its military spending. In fact, the actual budget increased by 1.5 times from the official military budget issued in 2018 and 2019. This is in line with China's goal of encouraging increased military spending with a mission to advance all aspects of the military, prepare for war and be firmly used in safeguarding China's sovereignty, national security and development. As a result, the reality of China's rise creates a dilemma for the United States with its great powers both economically and militarily (Operation, 2021). This is in line with the results of this research that with the high military expenditure make the enemy think if he wants to create a conflict.

The relationship between FSI and Indonesian Armed Forces (AF) obtained a score of 18, meaning that it is classified as a medium that is shown to also be included in the color code "Yellow". So related to the relationship between FSI and AF Indonesia where with a score of 18 positions Fragile States Index Indonesia if the position is "High" then the AF condition is at the position "A Bit Weak", while if the Fragile States Index Indonesia if the FSI position is "A Bit Low" then the AF condition is in the "Strong" position. Previous research where World War III did not occur despite the marked cold war involving the United States and the Soviet Union. As a super power country because of the balance of power in terms of military and balance of terror from both countries so they are both afraid to precede (Murtammadji, 2018). This means that when the number of military personnel is high, it also minimizes the occurrence of conflict.

The relationship between FSI and Indonesia's Official Exchange Rate (OER) obtained a score of 36 which means that conditions classified as high are also included in the *color code* "Red". The relationship between FSI and OER Indonesia where with a score of 36 positions Fragile States Index Indonesia is in the "High" category and OER position is in the "Strong" category. Previous research where the crisis occurred due to prices soaring higher than before and the absence of public confidence so that it was necessary to stabilize the rupiah exchange rate. Such was the case in 1997 and 1998 during the monetary crisis where the rupiah exchange rate against the US dollar experienced a severe decline or the rupiah weakened so that it could cause conflicts that almost split in Indonesia (Ratna et al, 2023).

5. CONCLUSION

The results of this research were variables that have a very strong positive relationship, namely the Fragile States Index, Gross Domestic Product, and Official Exchange Rate. The following are variables that have a low negative relationship, namely Armed Forces Personnel and Military Expenditure.

This research, it was found that the biggest risk for Indonesia is included in high conditions (Red), namely Gross Domestic Product (GDP) against Fragile States Index with a score of I x P of 36 with R-Spearman (P) of 0.958 and the Official Exchange Rate againstFragile States Index with a score of I x P of 36 with R-Spearman (P) of 0.897. Meanwhile, those included in the medium condition (Yellow) are Military Expenditure against

the Fragile States Index with a score of I x P of 18 with R-Spearman (P) which is -0.399 and the Armed Forces personnel against the Fragile States Index with a score of I x P of 18 with R-Spearman (P) which is -0.389. Suggestions from this study are mainly for the government as stakeholders in Indonesia, namely:

Policy measures can be focused on increasing the stability of Economic Growth,Official Exchange Rate,Expenditure ofMilitary, and Armed Personnel. This can be encouraged by infrastructure development to accelerate the economy so that Indonesia's gold 2045 can be achieved according to the target. In addition, it is important to continuously monitor and analyze the development of variables on an ongoing basis to take appropriate steps in managing risks related to uncertain conditions.Increase concern insocietyfor local Indonesian products so that it can improve the local economy and love for the Indonesian homeland through encouragement from the government.

DEFINITIONS, ACRONYMS, ABBREVIATIONS

HERE IS THE DEFINITIONS SECTION.

TERM: DEFINITION FOR THE TERM

FRAGILE STATES INDEX	**= FSI**
MILITARY EXPENDITURE	**= ME**
ARMED FORCES	**= AF**
GROSS DOMESTIC PRODUCT	**= GDP**
OFFICIAL EXCHANGE RATE	**= OER**

REFERENCES

Agustinus Ekensianus Parung. (2023). The Role of Risk Management in Competitiveness at PT Bank Central Asia TBK with an ERM (Enterprise Risk Management) Approach using Likelihood Table. *Journal of Economics, Finance and Management Studies*, *06*(12), 5753–5764. https://doi.org/10.47191/jefms/v6-i12-01

Amalia, Z. (2021). A Strategic Approach to Competition: Financial Interdependence of the United States and China. *Centrist Journal*, *2*(1), 105–120. https://doi.org/10.26593/sentris.v2i1.4613.105-120

Carl von Clausewitz. (2003). *On War* (Vol. 21, Issue 1). https://gateway.pinata.cloud/ipfs/bafykbzacebn2l4m4y2kbavmbfzk4h2oakx2rkpuiodcbbell4locoog6a6ans?filename=Carl von Clausewitz - On War -Area %282003%29.pdf

Carter, C. H. A. and J. R. (2009). Principles of Economic Conflic. In *A Primer for Social Scientists* (Vol. 13, Issue 1).

Fatkhullah, M., Habib, M. A. F., & Nisa, K. K. (2022). Risk Identification and Management to Reduce Vulnerability in the Community. *Economics, Finance, Investment and Sharia (EQUITIES),3*(4), 856–867. https://doi.org/10.47065/ekuitas.v3i4.1529

FSI. (2023). *Comparative Analysis Country Fragile States Index*. Website. https://fragilestatesindex.org/comparative-analysis/

Marinacci, M. (2015). Model uncertainty. *Journal of the European Economic Association*, *13*(6), 1022–1100. https://doi.org/10.1111/jeea.12164

Mochammad Husein, G., &; Imbar, R. V. (2015). Information Technology Risk Management

Analysis Application to Document Management System. *Journal of Informatics Engineering and Information Systems*, *1*(2), 75–87. https://doi.org/10.28932/jutisi.v1i2.368

Murtamadji, M. (2018). The failure of the war between America and the Soviet Union (P D. iii) in the Cold War era even though the two superpowers competed with each other and engaged in various regional conflicts in the hemisphere. *Humanika*, *8*(1), 1–11. https://doi.org/10.21831/hum.v8i1.21009

Peace, T. F. for. (2022). *Fragile States Index*. Website. https://fragilestatesindex.org/

Ratna et al. (2023). Analysis of the Causes and Efforts of the Monetary Crisis Carried Out by Governments During the Global Crisis in 2008. *Journal of Economic Education*, *2*(1), 38–46.

Schellens, M. (2023). *Violent Natural Resource Conflicts :*

Susdarwono, E. T., &; Wiranta, A. (2023). The Linkage of Human Rights and the Rule of Law to the Defense Budget. *Journal of Legal Sciences*, *01*(4), 273–284. https://doi.org/10.32884/jih.v1i4.1603

von Clausewitz, C. (1989). BOOK ONE. On the Nature of War. *On War*, 73–124. https://doi.org/10.1515/9781400837403-007

Wahyuni, S. (2019). The Indonesian government's strategy in resolving conflicts over traditional fishing ground claims in Indonesia's exclusive economic zone in Natuna waters. *Socioreligious*, *2*(IV), 29.

Wang, D., Liu, G., & Xu, Y. (2024). Information asymmetry in the graph model of conflict resolution and its application to the sustainable water resource utilization conflict in Niangziguan Springs Basin. *Expert Systems with Applications*, *237*(PA), 121409. https://doi.org/10.1016/j.eswa.2023.121409

Wróblewska, J. (2023). Bayesian analysis of seasonally cointegrated VAR models. *Econometrics and Statistics*, *xxxx*. https://doi.org/10.1016/j.ecosta.2023.02.002

-