

## CORPORATE STRATEGY TO DEVELOP COMPANY'S RISK-BASED BUDGETING CASE STUDY OF RKAP PT ANTAM TBK 2018

Romzi Rio Wibawa and Sudarso Kaderi Wiryono

*School of Business and Management, Institut Teknologi Bandung, Indonesia, E-mail: romzj.wibawa@sbm-itb.ac.id*

**Abstract:** ANTAM's financial performance over the past 10 years was very fluctuating and tends to decline. ANTAM has not been able to maintain the growth in a sustainable manner even though ANTAM has high added value resources. Therefore, the existence of strategic tools to guarantee and assurance of corporate future value of the company is of a mandatory aspect. ANTAM required to mitigate every possible of uncertainty that jeopardize not only the profitability and cashflow adequacy of the company, but the business prospect as well. The purpose of this study is to develop a risk management strategy aiming to assurance the future value of the corporate. Study was applied to 2018 corporate plan (RKAP) through the implementation of risk-based budgeting (RBB) concept under ISO 31000: 2011 framework. The RBB's developed three scenarios: the pessimistic, most likely, and optimistic. Pessimistic scenario is the worst possible outcome scenario in RKAP built if all inherent risk attached to the RKAP occurs. The most likely scenario is a scenario built by incorporating program and mitigation costs to prevent inherent risk so as to leave residual risk acceptable to its risks by the company. While the optimistic scenario is the best result scenario that gives added value to the company that may occur in RKAP. In RKAP 2018 ANTAM targets net income of Rp. 353 billion. Based on the results of this study, RKAP 2018 ANTAM provides a loss value of Rp. -715 billion for the pessimistic scenario, while for scenario most likely to provide a net income of Rp. 205 billion, as well as for optimistic scenario gives net income value of Rp. 1,006 billion. Risk-based corporate budgeting is expected to be one of the strategic solutions for companies to be able to oversee the work targets during the year with a high level of confidence so that the annual targets can also in line along with the company's long-term plan targets, so that these will assure the existence of corporate future value.

**Keywords:** Risk Based Budgeting, Inherent Risk, Residual risk, Risk Mitigation, Enterprise Risk Management.

### I. INTRODUCTION

The characteristics of a mining business whose performance is strongly influenced by commodity prices, world economic conditions, and government regulations are difficult to predict. The company's long-term business strategy and the company's annual work plan and budget (RKAP) need to be evaluated due to the possibility of changing internal and external conditions. Often the strategy of the company that is planned at the beginning of each year shows significantly different results at the end of the year. The existence of a significant gap between the work plan at the beginning of the year on the realization of the company's performance end of the year

becomes a major challenge for the company to keep the company's growth commitment to shareholders.

#### 1.1. ANTAM's Company Profile

ANTAM is a multinational mining company, which has diversified commodities with vertically integrated operations. The operational areas covered all over Indonesia, which is rich in minerals. The activity of the Company includes exploration, mining, processing, refining and marketing of minerals from its reserves and resources. The commodities produced by Company include ferronickel, high and low-grade nickel ore, gold, silver, bauxite, and coal.

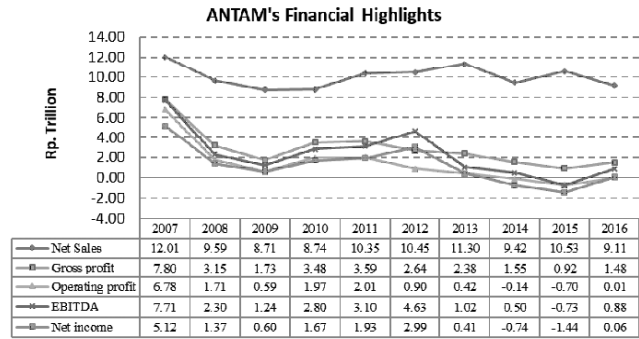
ANTAM has four main business units including the Southeast Sulawesi Nickel Mining Business Unit, North Maluku Nickel Mining Business Unit, Pongkor Gold Mining Business Unit and Logam Mulia Precious Metals Processing and Refinery Business Unit. The Company also has Geomin Unit to support exploration activities.

ANTAM’s 2030 vision statement is to become a leading global corporation through diversification and integrated natural-resource based business. Following the vision, ANTAM mission statements are:

1. To produce quality products by maximizing added values through industry best-practice implementations and exceptional operations.
2. To optimize resources by prioritizing sustainability, workplace safety, and environmental preservation.
3. To maximize corporate values for shareholders and stakeholders.
4. To enhance workforce competencies and welfare as well as the economic independence of the communities in the surrounding operation areas

**1.2. ANTAM’s Business Issues**

ANTAM is a multinational mining company with the business size of Rp. 8-12 trillion over the period 2007-2017, with an average revenue during this period amount Rp. 10 trillion. If we look at the financial performance of ANTAM in the last 10 years (2007-2016) ANTAM experienced financial distress significantly between 2007 – 2009 and very serious financial pressure in the period of 2013 – 2017. During the period between 2007 – 2009, ANTAM experienced gross profit fell drastically almost Rp. 6 trillion in the 3 years period. During the period of 2009 – 2013, ANTAM maintained its performance and reached the peak in 2012 which marked by the net income highest increase during 2007 – 2012. During the period 2013 – 2016, ANTAM was experiencing very serious financial pressure, the operating profits dropped dramatically in such a way and net income was negative and reached the peak with a net loss of Rp. 1.4 trillion in 2015.



**Figure 1: ANTAM’s Financial Highlights**

The overall outlook for the last 10 years (2007 - 2016) ANTAM thus indicated a less favorable / declining financial performance. Opportunity occurrence of financial distress on ANTAM financial performance in the future is considered high enough to see the historical trend of financial data of the last 10 years. ANTAM’s annual financial performance, especially in 2018, which is discussed in this study is highly dependent on the preparation of corporate annual budgeting and planning (RKAP). Lack of proper-an in the preparation of RKAP can cause the realization results at the end of the year slip away so it can have a negative impact on the company and shareholders.

**II. RESEARCH METHODOLOGY**

The conceptual framework developed in preparing the corporate strategy to minimize the risk of RKAP is based on ISO 31000: 2009 on risk management. This framework is used to determine the main problems faced by further analysis and evaluation so as to obtain the expected results can be the best solution for the company.

The first stage in this framework has established the context to know the root of the problem and objectives to be achieved. The second stage is a risk assessment consisting of risk identification, risk analysis, and risk evaluation. Established context is the stages how to know the key factor that will influence the scope and objectives. This stage is very important to be done as the stages to determine the scope and factors that are the main risk factors that will affect the achievement of corporate objectives.

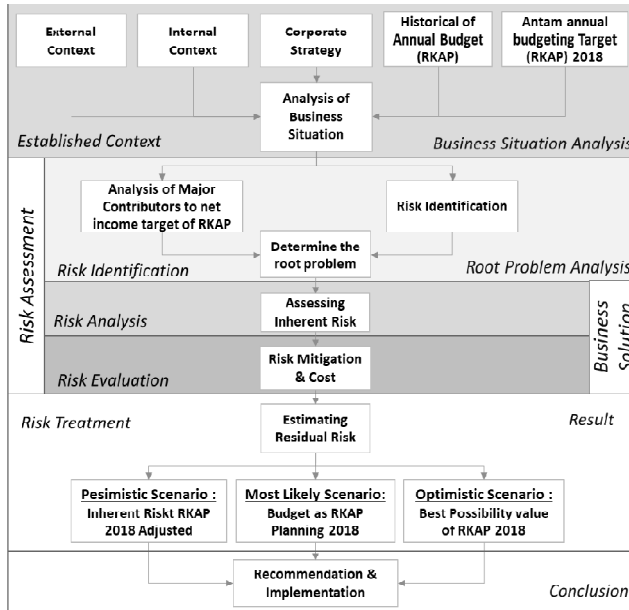


Figure 2: Conceptual Framework

To choose from any risk factors that affect the achievement of the company's main objectives in the business should be driven by an evaluation of external and internal factors. External risk is the risk exposure that resulted from outside environmental conditions of the company in which the firm cannot influence external factors such as government policies and market conditions. The internal risk is the risk exposure that resulted from the company's internal environmental conditions in which the firm can influence such internal factors, such as decision-making for the company's operations and the use of internal resources.

Risk identification is done to determine what factors are the risk key in achieving company objectives. In this research context, the performance's key factors as the objective of the company are net income (earnings after tax). Risk analysis is done to analyze how big impact and probability owned by each risk key factor to company objective (net profit). In the context of risk based on corporate budgeting, some of the risks that need to be analyzed on the key risk factors are inherent risks and residual risks.

Risk evaluation to evaluate what alternative business solutions can be applied in the context of risk-based RKAP, several things that are done in the stage of risk

evaluation. Several things that are done on the stage of risk evaluation are:

- Knowing how big the influence of all risk factors that have been taken into account in risk analysis that impact on company objectives (net income).
- Formulating the risk mitigation program as well as the costs required to mitigate such risks.

The last stage of risk-based corporate budgeting is risk treatment. These stages include:

- The pessimistic, most likely, and optimistic scenarios that would be possible in the RKAP
- The last stage is risk treatment i.e. deciding which solution will be the choice in implementation.

### III. RESULTS AND DISCUSSION

#### 3.1. Risk Criteria

To determine the risk criteria there are two key things that must be defined, namely the level of probability and level of impact. Determination of the probability level of occurrence on an annual basis. For example, if in the last 5 years an event always happens every year the probability level is almost certain (> 90%). Whereas if in the last 5 years there are only onetime incident happened then the level of possibility is possible (20%). Table 1 shows the possible risk level of risk occurrence.

Table 1  
Risk Likelihood Rating (Source: Author, 2018)

Likelihood	Rarely	Possible	Likely	Almost Certain
Probability	<10%	10%-50%	50% -90%	>90%

The determination of the level of impact that occurred, the authors adopted from the reference of Paul Hopkin on the book Fundamentals of Risk Management - 4th edition 2017, then the highest value of catastrophic (set writer) is 5% of the value of EBITDA targeted annual RKAP. In the RKAP 2018, the target value of EBITDA amounted to Rp 2 Trillion so that the catastrophic rate value that occurred in RKAP 2018 is Rp 100 billion. For major, moderate, and minor values adjusted from the

catastrophic values obtained. Table 2 shows the criteria for impact level of risk occurrence.

**Table 2**  
**Risk Impact Rating (Source: Author, 2018)**

<i>Risks Impact</i>	<i>Minor</i>	<i>Moderate</i>	<i>Major</i>	<i>Catastrophic</i>
Financial Impact (Billion IDR)	<10	10-50	50-100	>100

### 3.2. Inherent Risk (Pessimistic Scenario)

There are three types of risks that have been established in this paper that become a risk as a driven business risk in RKAP 2018. The three types of risk are a market

risk, operational risk, and financial risk. Inherent risk is in RKAP which in his study called as a pessimistic scenario because it already counted all of the worst possibility that might be happening in RKAP. The following will be discussed inherent risk on each type of risk that may occur if there is no control over these risks:

#### 3.2.1. Inherent Market Risk

The commodity price assumption applied in the ANTAM 2018 RKAP and the forecast of energy and metals consensus forecasts - commodity prices can be seen in the following table 3.

**Table 3**  
**Nickel and Gold Price in RKAP 2018**

<i>Commodity</i>	<i>Units</i>	<i>Average Real Prices</i>			<i>ANTAM's RKAP 2018</i>	<i>Energy &amp; Metals Consensus Forecast (June'18)</i>			
		<i>2015</i>	<i>2016</i>	<i>2017*</i>		<i>Mean</i>	<i>High</i>	<i>Low</i>	<i>St. Deviation</i>
Nickel	US\$/Lb	5.37	4.35	4.80	5.00	5.32	6.49	3.86	0.68
Gold	US\$/Toz	1,160	1,248	1,288	1,277	1,253	1,450	1,086	85

\* Projected by ANTAM

ANTAM uses ferronickel price assumption in RKAP 2018 is US \$ 5.0 / lb and gold price value is the US \$ 1,277 / Toz. By using Montecarlo simulation, the probability of occurrence of ferronickel commodity price at the lowest rate as inherent risk is 16% and the probability of gold price is 17%.

As for the calculation of the magnitude of the inherent risk impacts on ferronickel commodities is to subtract the value of revenue received if the price set forth RKAP assumption of US \$ 5.0 /lb with revenue received if the price matches the lowest value of energy & metals consensus forecasts. With a sales volume target of 57.3 million lb, the revenue value at RKAP assumption is Rp 3.86 trillion, while revenue received based on the lowest consensus price of US \$ 3.86 /lb is Rp 2.98 trillion. Therefore, the potential impact of reduced ferronickel sales value in RKAP 2018 is Rp 881.84 billion.

To calculate the magnitude of the inherent risk impact on gold commodities is to subtract the value of revenue received if the price matches the RKAP assumption of

US \$ 1,277 / Toz with the revenue received if the price matches the lowest value of energy & metals consensus forecasts. With a sales volume target of 771,616 Toz, the revenue value at RKAP assumes Rp 13.30 trillion, while revenue received based on the lowest consensus price of US \$ 1.086 / Toz is Rp 11.31 trillion. So that the impact of the potential reduction in the value of gold sales in RKAP 2018 is Rp 1.99 trillion.

Based on probability and impact analysis that has been done in inherent market risk above, both in ferronickel and gold. So we can know the value of risk value is a multiplication between probability and impact. Furthermore, the value of risk value is matched with risk criteria with reference to risk criteria in Table 1 and Table 2. Summary of probability, impact, risk value, and risk level results in inherent market risk attached to RKAP 2018 as shown in Table 4.

Based on Table 4 above, it can be seen that there is an inherent risk due to the potential decline in the price of ferronickel and gold commodities simultaneously with

**Table 4**  
**Summary of Inherent Market Risk Probability and Impact**

<i>Risk Description</i>	<i>Description</i>	<i>Risk Sources</i>	<i>Inherent Risk</i>			
			<i>Probability</i>	<i>Impact (Billion IDR)</i>	<i>Risk Value (Billion IDR)</i>	<i>Risk Level</i>
The potential for not reaching net sales due to ferronickel and gold commodity price decline compared with the assumption of price in RKAP 2018, so the target net profit in accordance with RKAP 2018 cannot be achieved	Ferronickel	Decreasing of nickel prices below the nickel price assumption in the RKAP 2018 due to world supply and demand	16%	882	141	Catastrophic
	Gold	Decreasing of gold prices below the gold price assumption in the RKAP 2018 due to world supply and demand	17%	1,989	338	Catastrophic

the possibility of occurring 16-17% affecting Rp 141 billion in ferronickel price decrease, and Rp 338 billion in gold price decrease, or amounting to Rp 479 billion in total inherent market risk. This will result in a decrease in net income which initially profit of Rp 353 billion to a loss of approximately Rp - 126 billion.

### 3.2.2. Inherent Operational Risk

The inherent operational risk is an inherent risk to RKAP due to operational activities. Determination of any inherent risk contained in operational activities is done by deep interview method to the General Manager, Manager, and Staff related. This method of deep interview is considered the most appropriate method to find out how big the opportunities and impact in the 2018 RKAP which can threaten not reaching the target set.

Determination of probability of occurrence is based on the last 5 years events data as a reference. For example, if in the last 5 years there is only one occurrence risk, the probability is 20%, whereas if in the last 5 years there is a risk of occurrence every year, then the probability is > 90% to 100%.

Determination of impact is done by calculating how much opportunity loss, cost of recovery, and loss of assets that may occur. So the amount of impact is the sum of

all possible impact opportunities, both opportunity loss, cost of recovery, and loss of assets.

The determination of risk value is by multiplication of probability and impact, where the result is then matched with Table 1 and Table 2 to determine the risk level. Summary results from the deep interview to all risk owners who successfully summarized can be seen in Table 5.

Based on Table 5 above, it can be seen that there is an inherent risk due to potential risks of operational activities in ferronickel and gold commodities simultaneously with the possibility of 20% -90% affecting Rp 692 billion in total inherent operational risk. This will result in a decrease in net income which initially profit of Rp 353 billion to a loss of approximately Rp - 339 billion.

### 3.2.3. Inherent Financial Risk

ANTAM experiences operational transactions and financial transactions using the international currency in this case US \$. While the financial reporting presented ANTAM in Indonesian currency units (IDR). Changes in the US \$ currency exchange rate against the rupiah can be a risk in the increase and decrease in net income recorded by ANTAM.

The risk of changes in the exchange rate of the US \$ currency against the Rupiah may encourage risks when

**Table 5**  
**Summary of Inherent Operational Risk Probability and Impact**

<i>Risk Description</i>	<i>Description</i>	<i>Risk Sources</i>	<i>Inherent Risk</i>			
			<i>Probability</i>	<i>Impact (Billion IDR)</i>	<i>Risk Value (Billion IDR)</i>	<i>Risk Level</i>
The Potential for not reaching the target of ferronickel and gold sales volume in accordance with RKAP 2018 due to the unavailability of production plant, so the target of net profit in accordance with RKAP 2018 cannot be achieved	Ferronickel	The unstable supply of nickel ore as factory feed is in accordance with the plant's specifications because the mining contractor is not perform	20%	268	54	Major
		The occurrence of unscheduled shutdown the ferronickel plant because the specifications of the ore are not appropriate	90%	116	104	Catastrophic
	Gold	The occurrence of an unscheduled shutdown of gold refinery due to the replacement of new machines	80%	640	512	Catastrophic
		The presence of reject products because of not passing QAQC which can reduce production capacity and increase production costs	90%	24	22	Moderate

purchasing the material and sales transactions of ferronickel and gold as well as the cost of production. However, in this discussion only limited the risks to money outstanding held by ANTAM in US \$ currency to perform financial transactions for purchase and production only.

The volatility rate used to quantify currency exchange risk against the amount of US\$ held by ANTAM is taken from historical data of exchange rate changes in the last 544 days or about the last two years. The exchange rate of Rupiah against US\$ in the last 544 days is simplified to the level of volatility in the last 17 (seventeen) months.

Based on data at the Directorate of Finance ANTM, the money in US \$ held is US\$ 547,322,569 all in cash and cash equivalents. Calculation using Variance at Risk (VAR) give the maximum losses that may be experienced (inherent risk) by the company is Rp -197 billion. While

the maximum profit possibilities experienced by the company amounted to Rp 347 billion.

Financial Inherent risk as above caused by the change of IDR currency exchange rate to US \$ amounted to Rp -197 billion has an impact on the reduction of net income of the company. This will result in a decrease in net income which originally profit of Rp 353 billion to approximately Rp 254.5 billion. (Table 6).

#### **3.2.4. Aggregate Inherent Risk**

Based on the results of inherent risk analysis on market risk, operational risk, and financial risk, then we can calculate the inherent risk aggregate inherent in RKAP. The inherent risk of aggregate in RKAP is to add all potential risk values and then see the effect on the 2018 RKAP. Table 7 shows the amount of aggregate inherent risk for all market, operational, and financial risks previously discussed.

**Table 6**  
**Summary of Inherent Financial Risk Probability and Impact**

<i>Risk Description</i>	<i>Risk Sources</i>	<i>Inherent Risk</i>			
		<i>Probability</i>	<i>Impact (Billion IDR)</i>	<i>Risk Value (Billion IDR)</i>	<i>Risk Level</i>
The potential loss due to an increase or decrease in the exchange rate of US \$ against the Rupiah so the target net profit in accordance with RKAP 2018 cannot be achieved	The occurrence of a decrease or increase in the value of US\$ currency against the Rupiah so that it can cause losses due to fluctuations in the value of foreign currency US\$	50%	197	98.5	Major

**Table 7**  
**Total Agregat Inherent Risk in RKAP 2018**

<i>Risk Type</i>	<i>Risk Value (Billion IDR)</i>
Market Risk	479
Operational Risk	692
Financial Risk	99
Total Risk	1,269

### 3.3. Risk Treatment

The amount of inherent risk of total aggregate attached to RKAP 2018 needs to be done risk treatment. Risk treatment in this study uses the term risk mitigation. There are two elements in risk mitigation that must exist in making risk-based RKAP, that is mitigation program and mitigation cost.

In making risk mitigation there are at least three things to note, including:

1. Programs planned as risk mitigation programs must be believed to be effective and have a direct impact on reducing likelihood and impact of potential risks that will occur.

2. The outcome of the mitigation program undertaken should leave residual risk acceptable to management (within acceptable risk tolerance limits)
3. The cost of risk mitigation programs is certainly much smaller than the value of the derived risk, as the reference fee is the maximum of 5-10% of the value of the risk to be lower.

Table 8, Table 9, and Table 10 below shows the planned programs and costs for managing inherent market, operational, and financial risk.

### 3.4. Residual Risk (Most Likely Scenario)

After formulating the program and cost needed to mitigate inherent risks inherent in RKAP, it is necessary to know what residual risk value is still left even though the risk mitigation program and the cost have been implemented.

The residual risk value is important to know by management in order to make a decision whether the value is still acceptable according to risk appetite top level management. If the resulting residual risk is still too high

**Table 8**  
**Market Risk Mitigation**

<i>Risk Sources</i>	<i>Mitigation</i>	
	<i>Program</i>	<i>Cost (Billion IDR)</i>
Decreasing of nickel prices below the nickel price assumption in the RKAP 2018 due to world supply and demand	Hedging nickel commodity prices	19
Decreasing of gold prices below the gold price assumption in the RKAP 2018 due to world supply and demand	Hedging gold commodity prices	67

**Table 9**  
**Operational Risk Mitigation**

Commodity	Risk Sources	Mitigation	
		Program	Cost (Billion IDR)
Ferronickel	The unstable supply of nickel ore as factory feed is in accordance with the plant's specifications because the mining contractor is not perform	– Routine inspection or as needed to the field	3
		– Competency Certification of Human Resources	
Gold	The occurrence of unscheduled shutdown the ferronickel plant because the specifications of the ore are not appropriate	– Routine service	5
		– Competency Certification of Human Resources	
Gold	The occurrence of an unscheduled shutdown of gold refinery due to the replacement of new machines	– Improve QAQC in mining activity	5
		– Supervision for 24 hours in gold refinery	
	The presence of reject products because of not passing QAQC which can reduce production capacity and increase production costs	– Added fire mitigation and mitigation for damage machine	1
		– Purchase of technology to improve product quality and reduce reject	
		– Competency certification for Human Resources	

**Table 10**  
**Financial Risk Mitigation**

Risk Sources	Mitigation	
	Program	Cost (Billion IDR)
The occurrence of a decrease or increase in the value of US\$ currency against the Rupiah so that it can cause losses due to fluctuations in the value of foreign currency US\$	Hedging currency exchange rate US\$ to Rupiah	5

and can not be accepted by management, reformulation of the program and cost of risk mitigation should be obtained to the value of residual risk acceptable to the Board of Directors.

Table 11, Table 12, dan Table 13 following shows the residual risk value remaining after the inherent risk mitigation program on the market, operational, and financial.

### 3.5. RKAP 2018 Optimistic Scenario

Besides the 2018 RKAP has a pessimistic scenario (inherent risk) and most likely (residual risk), RKAP also has an optimistic scenario. This optimistic scenario is also built from three types of risk that have been set before, namely market risk, operational risk, and financial risk. But this optimistic scenario differs from the perspective

of a pessimistic scenario, wherein an optimistic scenario it is assumed that the probable opportunity will be the best possible outcome that adds value to the company. While the pessimistic scenario is the worst chance that may occur in RKAP 2018.

This optimistic scenario is built on the following scheme:

1. There is no risk that can harm or reduce the company's net income.
2. The assumptions used in constructing this optimistic scenario are assumptions that give the best value to the company's net income.
3. No expenditure is required in the form of risk mitigation costs because it is assumed that risks that threaten the company's net income will not



**Table 11**  
**Market Residual Risk**

Commodity	Inherent Risk			Mitigation			Residual Risk			
	Probability	Impact (Billion IDR)	Risk Value (Billion IDR)	Risk Level	Program	Cost (Billion IDR)	Probability	Impact (Billion IDR)	Risk Value (Billion IDR)	Risk Level
Ferro-nickel	16%	882	141	Catastrophic	Hedging nickel commodity prices	19	0	0	0	Minor
Gold	17%	1,989	338	Catastrophic	Hedging gold commodity prices	67	0	0	0	Minor

**Table 12**  
**Operational Residual Risk**

Commodity	Inherent Risk			Mitigation			Residual Risk			
	Probability	Impact (Billion IDR)	Risk Value (Billion IDR)	Risk Level	Program (Billion IDR)	Cost (Billion IDR)	Probability (Billion IDR)	Impact (Billion IDR)	Risk Value (Billion IDR)	Risk Level
Ferro-nickel	20%	268	54	Major	- Routine inspection or as needed to the field - Competency Certification of Human Resources	3	10%	50	5	Minor
	90%	116	104	Catastrophic	- Routine service - Competency Certification of Human Resources - Improve QAQC in mining activity	5	50%	35	18	Moderate
Gold	80%	640	512	Catastrophic	- Supervision for 24 hour in gold refinery - Added fire mitigation and mitigation for damage machine	5	20%	100	20	Moderate
	90%	24	22	Moderate	- Purchase of technology to improve product quality and reduce reject - Competency certification for Human Resources	1	20%	5	1	Minor

**Table 13**  
**Financial Residual Risk**

Description	Inherent Risk			Mitigation		Residual Risk				
	Probability	Impact (Billion IDR)	Risk Value (Billion IDR)	Risk Level	Program	Cost (Billion IDR)	Probability	Impact (Billion IDR)	Risk Value (Billion IDR)	Risk Level
US\$ Foreign Exchange	50%	197	98.5	Major	Hedging currency exchange rate US\$ to Rupiah	5	0	0	0	Minor

occur, but the emerging opportunities are those that provide the highest value for net income of the company

Based on the optimistic scenario scheme above, then from 3 types of market risk, operational, and financial that can provide the best value for RKAP 2018 is the influence of the highest commodity prices and surplus value resulting from currency rate US \$ held by the company. While the possible negative effects are not considered to occur in an optimistic scenario.

The value of the nickel and gold price used is the highest price possible under the Energy and Metals Consensus Forecasts (Table 13). By using Montecarlo simulation, the probability of occurrence of ferronickel commodity price at the highest rate as the optimistic scenario is 18% and the probability of gold price is 15%.

Based on the probability and impact analysis on the value of revenue that will contribute if the best price as optimistic scenario occurs, both in ferronickel and gold. Then we can know the value that may occur which is a multiplication between probability and impact. Summary of probability, impact, and value results in the optimistic scenario attached to RKAP 2018 as shown in Table 14.

**Table 14**  
**Summary of Optimistic Scenario for Commodity Price**

Commodity	Optimistic Scenario		
	Probability	Impact (Billion IDR)	Value (Billion IDR)
Ferronickel	18%	1160	208.8
Gold	15%	1800	270

The influence of foreign exchange US \$ can provide opportunities for profit or loss for ANTAM. Changes in US \$ exchange rate according to Montecarlo simulation as same as in financial inherent risk then we can know that the surplus value of the company due to hold the value of US \$ 547,322,569 is Rp 347 Billion with a chance of 50% (exchange rate opportunities provide surplus or loss value for the company is assumed same). So the value of the additional surplus income impact to be received by the company is Rp 173.5 Billion.

### 3.6. Summary of Risk-Based RKAP 2018 Scenario

After analyzing the risk by knowing the value of total inherent risk aggregate, then the program and cost of risk mitigation, so that the total residual risk aggregate is generated. In making risk-based RKAP, then these three components need to be assessed first so that next can be adjusted to RKAP 2018.

The risk-based RKAP is prepared by including all remaining residual risks and risk mitigation costs as a component of net income deductions in the income statement. This resulted in an adjusted RKAP 2018 based on inherent risk, mitigation of program and cost, and residual risk still attached to the RKAP.

Based on RKAP risk assessment, three (3) RKAP 2018 scenarios are based on the results of this study:

1. RKAP 2018 which has been adjusted based on total inherent risk value as pessimistic scenario
2. RKAP 2018 which has been adjusted based on residual risk and mitigation cost as most likely scenario

3. RKAP 2018 which has been adjusted based on optimistic total value as optimistic scenario

**Table 15**  
**Scenario of RKAP 2018**

Descriptions	RKAP 2018 (Billion IDR)	Risk-Based RKAP 2018 Scenario		
		Pessimistic (Inherent Risk)	Most Likely (Residual Risk)	Optimistic (Best Value)
<b>SALES</b>				
Ferronickel	3,869	3,570	3,847	4,078
Gold	14,261	13,389	14,240	14,531
Others	4,405	4,405	4,405	4,405
Total Sales	22,536	21,365	22,492	23,014
COGS	19,341	19,341	19,341	19,341
Gross Profit	3,194	2,023	3,151	3,673
Operating Expenses	1,807	1,807	1,807	1,807
Cost of Mitigation			(105)	
Operating Profit	1,387	216	1,239	1,866
Other Income (Expenses)	(302)	(400)	(302)	(128)
EBIT	1,085	(184)	937	1,738
Interest	(531)	(531)	(531)	(531)
Earnings (Loss) Before taxes	554	(715)	406	1,207
Taxes	(201)		(201)	(201)
<b>Net Income</b>	<b>353</b>	<b>(715)</b>	<b>205</b>	<b>1,006</b>

The pessimistic scenario influences RKAP 2018 on ferronickel's sales component, gold, and other income (expenses). The decrease in ferronickel sales from RKAP plan Rp. 3.869 billion to Rp. 3,570 billion and decreased gold sales from Rp. 14.261 billion to 13.389 billion due to the prevailing nickel and gold price scenario is the lowest price of the world economic consensus and the occurrence of operational risks. While the increase in expenditures on other income (expenses) from Rp. 302 billion to Rp. 400 billion is the result of loss scenario caused by foreign exchange risk. The value of net income in pessimistic scenario decreased Rp. 1.068 billion of target Rp. 353 billion in RKAP 2018 plan so that net income becomes loss Rp. -715 billion.

Most likely scenario affects RKAP 2018 on ferronickel sales component, gold, and other income

(expenses). The decrease in ferronickel sales from RKAP plan Rp. 3.869 billion to Rp. 3.847 billion and decreased gold sales from Rp. 14.261 billion to 1.4240 billion was attributable to the continued presence of residual risk potential after risk mitigation. In addition, there is also a risk mitigation risk component that must be allocated so that inherent risk can be transformed into a residual risk whose risk is acceptable to the BOD. The value of net income in scenario most likely decreases Rp. 148 billion of target Rp. 353 billion in the 2018 RKAP plan so that the net income becomes Rp. 205 billion.

Optimistic scenario affects RKAP 2018 on ferronickel sales component, gold, and other income (expenses). Increased sales ferronickel from RKAP plan Rp. 3.869 billion to Rp. 4,078 billion and increased gold sales from Rp. 14.261 billion to 1.4531 billion due to the prevailing nickel and gold price scenario is the highest price of the world economic consensus. While the decrease in expenditure on other income (expenses) from Rp. 302 billion to Rp. 128 billion is the result of the scenario of foreign exchange gains. The value of net income in optimistic scenario increases Rp. 652 billion of target Rp. 353 billion in the 2018 RKAP plan so as to achieve a value of Rp. 1.006 billion.

#### IV. CONCLUSIONS

Based on the results of the risk-based RKAP study in the previous chapter, we can conclude as follows:

1. There is a total aggregate inherent risk of Rp 1.464 trillion, which is ANTAM still needs to apply ERM on RKAP properly.
2. In this thesis, the authors found at least seven (7) risks attached to RKAP 2018
3. Risk management is needed to decrease inherent risk in RKAP 2018 so that it will reach the risk tolerance level desired by management with a series of risk response process.
4. By disciplining the risk response program that has been prepared, it is expected that the RKAP 2018 will be able to ensure the achievement of net profit targets, as all potential risks that threaten the non-achievement of revenue and cost efficiency can be well managed.

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