

# Sintaro Gold Ground Coffee Business in Rejang Lebong Based on Financial Aspects and Sensitivity Analysis

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**ABSTRACT:** Sintaro Gold is one of the small and medium industries in the Rejang Lebong district, processing coffee into ground coffee. The development of this industry requires a financial feasibility analysis to see whether the business can provide profits and maximize the existing production process. The research aims to determine the financial aspects and sensitivity of the Sintaro Gold industry in producing ground coffee in Rejang Lebong. The research uses primary and secondary data with a quantitative descriptive approach. The financial aspect study uses calculations of the R-C Ratio (R/C), Net Present Value (NPV), Internal Rate of Return (IRR), and Net Benefit Cost Ratio (Net B/C). The sensitivity analysis is based on increases in raw material prices and decreases in selling prices. The results of the research found that at a discount factor level of 7.05%, the R/C was 1.56-2.40, the NPV was IDR 6,844,209, the Net B/C was 1.071 and the IRR was 9.07% so that this business is worth developing. An increase in raw material prices of 3.61% is not sensitive to business, but a decrease in selling prices of 3.61% is sensitive to business feasibility.

**Keywords:** Financial Aspects, Sensitivity, Sintaro Gold

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## INTRODUCTION

Coffee is one of the food agro-industry products that is popular with the public. It is because coffee has a distinctive aroma that other beverage ingredients do not have. Bengkulu province coffee is one of the plantation crops that plays the most significant role in the formation of gross domestic product, and every year, production continues to increase. One of the districts that makes coffee a superior commodity that contributes quite a significant income is the Rejang Lebong district. The development of the area and production of Rejang Lebong plantation crops in 2005 - 2011 shows a tendency to increase both types and production, and it is still produced both on an industrial scale and on a household scale. Among the many processed coffee products, ground coffee is one of the coffee preparations often developed by the community or small industries. Ground coffee is more

practical and relatively easy to make (BPS Bengkulu, 2011).

In 2016, Bengkulu Province recorded a total of 5,605 small industrial units. Sintaro Gold Coffee Business is one of the small and medium industries in Rejang Lebong district, processing coffee into ground coffee. This industry began operating in 2012 and already has P-IRT No. 510170235126022 and has passed halal certification from MUI. Marketing of Sintaro Gold ground coffee has reached out-of-town markets, such as the cities of Curup, Lubuk Linggau and the city of Bengkulu. Orders for Sintaro Gold ground coffee continue to increase every month, so production must be increased and developed (BPS Bengkulu, 2017)

An industry's development plans are often hampered by production and capital aspects. A small industry development plan requires the fulfillment of the additional working



capital allocated to provide the required technology, equipment, facilities, and infrastructure. The development of this industry requires a financial feasibility analysis to see whether the business being run can provide profits or not so that economic development can be carried out and maximize the existing production process. Aspects of production that have an influence on production operations and have an impact on industrial continuity must be considered. The thing that influences the Sintaro Gold ground coffee industry is the variable price of raw materials, which can affect the selling price of the product, which can also change depending on the price of the raw materials purchased. So, the price of raw coffee materials and price reductions are estimated to cause fundamental changes to the sustainability of the Sintaro Gold industry.

The method for finding out whether a business is able to provide profits financially and is worthy of being developed in the future is through financial feasibility analysis, such as a comparative analysis between revenues and costs incurred. The revenue-cost ratio (R-C Ratio) calculates the income amount and provides the best comparative picture between a business and the results achieved (Ishak, 2012).

Industrial development is estimated for the next few years, and whether an industry can still develop and provide profits under various existing conditions is estimated. In small and medium industries, people like Sintaro Gold have never predicted whether or not they will be able to survive in the next five years, given the current conditions. To see this, an analysis can be carried out, namely, Net Present Value. NPV is the difference between the total present value of benefits and the total present value of costs or additional net benefits over the project's life (Surya, 2016). Apart from that, the Internal rate of return (IRR) is the interest return used in the principal cost to measure and compare profits from investment investments or can be defined as profit on investments made in a period, which is displayed in the form of actual investment (Ruslan, 2016). Sari et al. (2023) found that the sensitivity of financial analysis of business feasibility contributed to the development of the banana chips business.

The profits obtained from business results in the Sintaro Gold small and medium industry compared with the total costs are not yet known, nor will they be feasible in the current situation and the coming year. Therefore, it is necessary to analyze it by knowing the Net benefit-cost ratio, namely the comparison between positive net benefits and negative benefits (Rosepa, 2014).

Based on the background above, it is necessary to study the feasibility of financial aspects and industry sensitivity due to the influence of increases in raw materials. It decreases selling prices in the Sintaro Gold small and medium industry.

## RESEARCH METHODS

The research was conducted at the Sintaro Gold Small and Medium Industry, Empat Suku Menanti village, Sindang Daratan sub-district, Rejang Lebong Regency. The tools used in this research were pens, notebooks, calculators, cameras and computers.

The data collection method in this research was observation and documentation surveys. Observation is a data collection technique using direct observation of the research object, namely the Sintaro Gold coffee production site. Documentation is collecting data by recapping previously archived data.

The data analysis method used is a quantitative analysis method. The results are displayed in tabulated form, which groups the data to make it easier for data analysis. Data processing was carried out with the help of calculators and computers using the Microsoft Excel program, and the process was explained with descriptive analysis. The data analysis used is as follows:

### Revenue cost ratio (R-C Ratio)

$$R-C \text{ Ratio} = \frac{\text{Revenue}}{\text{Total Cost}} \dots(1) \text{ (Hidayat, et al., 2018)}$$

R = Revenue (Rp)

C = Total Cost (Rp)

Provided that the results of the R-C ratio analysis are as follows:

- R-C ratio > 1, then Sintaro Gold's small and medium industry has a profit
- R-C ratio = 1, then the Sintaro Gold small and medium industry has no profit
- R-C ratio < 1, then Sintaro Gold's small and medium industry is not feasible

### Net Present Value (NPV)

$$NPV = Nb_{t0} + \sum_{t=1}^n \left( \frac{Nbt}{1} / (1 + r)^t \right) \dots\dots(2)$$

(Ruslan, 2016)

NPV = net present value (Rp)

Nbt = benefit per year

n = economic life of the project, namely five years

t = project activity time (t year = 1, 2, 3, ... n)

i = interest rate 7.05%

Financial feasibility assessment based on NPV is:

- (a) NPV > 0, meaning the business is feasible to carry out,
- (b) NPV = 0, meaning the business does not experience profits or losses and
- (c) NPV < 0, meaning the business is not feasible.

### Net Benefit Cost Ratio

Net Benefit calculation uses the formula:

$$\text{Net } \frac{B}{C} = \frac{NPV+}{NPV-} \dots\dots\dots(3) \text{ (Faqih, 2014)}$$

Where:

NPV + = Is an NPV that gives a positive value

NPV - = Is an NPV that has a negative value

By decision criteria:

- a) Net B/C > 1 The project is feasible
- b) Net B/C < 1 The project is not feasible

### Internal rate return (IRR)

The IRR formula mathematically is as follows.

$$IRR = i_1 + \frac{NPV1}{NPV1 - NPV2} (i_2 - i_1) \dots\dots(4) \text{ (Rosepa, 2014)}$$

IRR = Internal rate return

i1 = discount rate, which produces a positive NPV

i2 = discount rate, which produces a negative NPV

NPV1 = positive NPV

NPV2 = negative NPV

Financial feasibility assessment based on IRR is:

- (a) if IRR > discount rate, then the business is feasible
- (b) if IRR = discount rate, then the business is not profitable but also not detrimental
- (c) if IRR < discount rate, then the business is not feasible

### Sensitivity Analysis

A sensitivity analysis was carried out to re-examine the project feasibility analysis. Sensitivity analysis aims to examine the extent to

which elements in the financial aspect change regarding what is selected (Surya, 2016). After carrying out calculations using the financial assessment aspect, it is necessary to carry out a sensitivity analysis to measure the changes that occur.

The variables studied are changes in the increase in the raw material for rice coffee and a decrease in the selling price of the product while the others remain constant, which are conditioned as follows:

1. Increase in the price of rice coffee raw materials by 3.61%
2. Decrease in product selling price 3.61%

The sensitivity percentage is determined based on the highest annual inflation report (Consumer Price Index) for the last three years.

## RESULTS AND DISCUSSION

### Fee Structure

The Sintaro Gold industry's costs include investment and production costs. Investment costs include purchasing land, buildings and production equipment at the start of a business. Total costs are the sum of fixed and variable costs (Hidayat, 2018). The fixed costs in the Sintaro Gold small and medium industry include electricity, water, land and building tax, NPWP, and equipment and building depreciation costs. Meanwhile, variable costs include raw materials for rice coffee, packaging, employee salary, LPG gas, and electricity usage.

### Sintaro Gold Ground Coffee Industry Costs

The costs incurred by the Sintaro Gold industry are classified into three types of costs: investment costs incurred at the start of setting up the business, fixed costs, namely costs whose fixed amount must be paid for the running of the business and are not influenced by the number of products produced and non-fixed or non-fixed costs. Must be issued depending on the desired production plan. Details of the overall costs can be seen in Table 1.

Table 1. Total costs of Sintaro Gold business

Costs	Total costs for the year (IDR)					
	(0)	(1)	(2)	(3)	(4)	(5)
Invest. costs	96,431,000					
Fixed costs		1,923,450	1,923,640	1,924,551	1,923,500	1,924,400
Variable costs		19,265,837	19,246,387	23,781,337	31,349,487	39,684,087
Total costs	96,431,000	21,189,287	21,170,027	25,705,888	33,272,987	41,608,487

Source: calculated data

Table 1 shows that investment costs were only incurred in the year when the business was first set up, amounting to IDR 96,431,000. In the first year of production, the number of fixed costs and non-fixed costs increased starting from the (1st) year of 2014, amounting to IDR 21,189,287, continuing to increase until the (5th) year of 2018, reaching IDR 41,608,487. The average production cost is IDR 28,589,335. This increase was due to changes in the production volume, so it was necessary to increase production costs.

### Production Amount

The amount of production is the total product produced by the Sintaro Gold small and medium industry, namely in the form of powdered coffee in packaging with three packaging size variants, namely 100 grams of premium quality (pq), 150 grams of speciality quality (sq) and 200 grams of regular quality (rq). The production of ground coffee in detail can be seen in Figure 1.

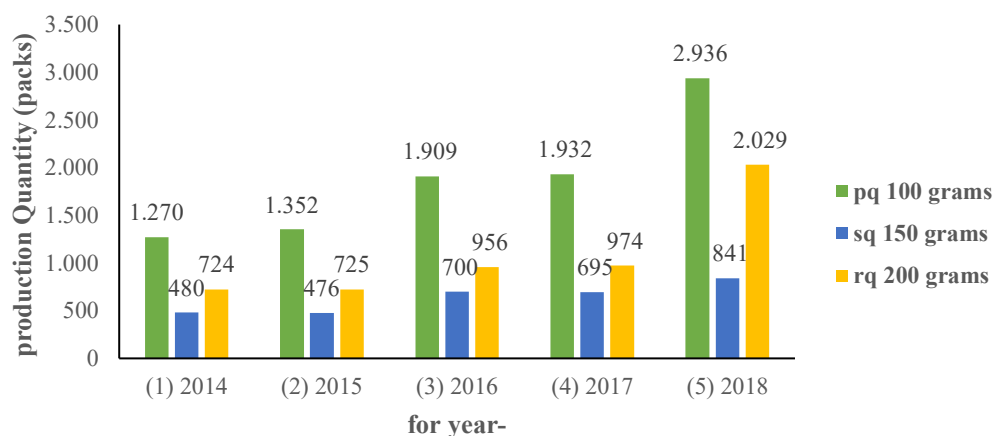


Figure 1. The production of Sintaro Gold ground coffee

Figure 1 shows that the increase in production occurred from the 1st year (2014) to the 5th year (2018). This occurred because of public acceptance of Sintaro Gold ground coffee products, and the marketing process had also begun to reach outside areas such as Curup, Lubuk Linggau, and Bengkulu. For products with 150 grams packaging, there was only a slight increase in production because the 150 grams packaging is coffee with higher quality compared to other packages. The 150-gram packaging is of specialty quality, so the price is higher than that of other packages. Business owners are wary of the behavior of local consumers who ignore quality

when purchasing products, so they only produce them in small quantities.

### Revenue

Revenue is the total product multiplied by the product selling price. Each package of ground coffee is sold at a different price. Coffee with a 100-gram package is sold for IDR 10,000, a 150 grams package is sold for IDR 15,000, and a 200-gram package is sold for IDR 20,000 in the first year (2014) to the 3rd year (2016) in the 4th year, it increased, causing changes in revenue. Details of the total revenue obtained by the Sintaro Gold industry during the last five years period can be seen in Table 2.

Table 2. Total revenue per year

For year	Revenue per pack (IDR)			Total revenue for year (IDR)
	pq 100 grams	sq 150 grams	rq 200 grams	
(1) 2014	12,500,000	6,900,000	13,600,000	33,000,000
(2) 2015	13,500,000	7,125,000	13,660,000	34,285,000
(3) 2016	18,820,000	10,275,000	17,900,000	46,995,000
(4) 2017	23,687,500	17,000,000	21,600,000	62,287,500
(5) 2018	34,937,500	20,500,000	44,302,500	99,740,000

Source: calculated data

Table 2 shows that the total revenue generated from the sale of three product packaging variants each year always increases starting from the first year (2014) amounting to IDR 33,000,000 to the fifth year (2018), reaching IDR 99,740,000. If you look at this increase, this industry is very profitable.

### The financial aspect of the business

The business's financial feasibility in this research is calculated based on production costs, production quantity, production price, revenue (Benefit), income (Net Benefit), and R/C ratio. Next, it is analyzed using Net Present Value (NPV), Net Benefit Cost Ratio (NBCR), Internal Rate of Return (IRR), and Business Sensitivity analysis. The results of the financial feasibility analysis can be seen in Table 3.

Table 3. Financial aspect *Sintaro Gold* business

Description	Value	Justification	Decision
R/C	1.56- 2.40	R/C > 1	feasible
NPV	6,844,209	NPV > 0	feasible
Net BCR	1.071	Net BCR >1	feasible
IRR	9.07 %	IRR > 7.05%	feasible

Source: calculated data

### Revenue cost ratio

Efficiency is the best comparison between an effort and the results achieved. Whether a business is efficient or not is determined by the size of the results obtained from the business and the size of the costs required to obtain those results. A business's efficiency level is usually determined by calculating the revenue-cost ratio, which balances business results and the total

production costs. The R/C ratio calculation for the Sintaro Gold ground coffee business can be seen in Table 4. The Sintaro Gold ground coffee business is worth pursuing. It is based on the results of calculating an R/C ratio greater than one (R/C ratio > 1), namely 1.56 to 2.40, so the business is profitable and worth pursuing. R/C ratio > 1 indicates that if you use a fee of 1 rupiah, you will get revenue of 1.56 to 2.40 rupiah,

Table 4. R-C ratio for the Sintaro gold Ground coffee business

For year-	Revenue (IDR)	Cost (IDR)	R C Ratio
(1)2014	33,000,000	21,189,287	1.56
(2)2015	34,285,000	21,170,027	1.62
(3)2016	46,995,000	25,705,888	1.83
(4)2017	62,287,500	33,272,987	1.87
(5)2018	99,740,000	41,608,487	2.40

Source: calculated data

so Sintaro Gold is classified as profitable and efficient. Apart from that, an R/C ratio > 1 also shows that the Sintaro Gold Powder coffee business is feasible and has the potential to be developed. (Hidayat, et al. 2018; Sari, et al. 2023)

### Net Present Value

Net Present Value (NPV) analysis determines the current net income from an investment activity. Based on the NPV analysis calculations, the NPV value obtained at a discount factor of 7.05% is IDR 6,844,209 for the small and medium industry of Sintaro Gold, which has been running for five years. This calculation shows that the Sintaro Gold small and medium industrial ground coffee business is financially feasible because the Net Present Value (NPV) obtained is positive (+), as stated in the NPV assessment criteria. (Sari et al. 2023)

### Net Benefit Cost Ratio

Net Benefit Cost Ratio Analysis is an analysis that compares positive NPV with negative NPV. Net Benefit Cost Ratio (NBCR) is used to compare the current benefit value at the prevailing interest rate, namely 7.05%. Based on the Net Benefit Cost Ratio analysis calculation results at a discount factor of 7.05%, an NBCR value of 1.071 was obtained. This means that during the five years this business operated, the net benefit obtained was 1.071 times the costs incurred. It can also be interpreted that for every Rp. 1 spent, you will get a net benefit from Rp. 1,071.

This calculation shows that the Sintaro Gold ground coffee industry is financially feasible because the value obtained is more significant than one (NBCR > 1), as stated in the Net Benefit Cost Ratio assessment criteria. If the Net B/C ratio is > one, then Sintaro Gold's business is worth pursuing (profitable); therefore, it is hoped to be improved and developed.

### Internal Rate of Return

Internal Rate of Return (IRR) analysis determines how much a business can return the amount of capital invested by looking at the positive Net Present Value with the negative Net Present Value, which is close to 0 (zero). The positive Net Present Value closest to zero at an interest rate of 9% is IDR 218,336. Meanwhile, the negative net present value is close to zero at an interest rate of 10%, IDR -2,947,943. Based on the IRR analysis calculations, an IRR value of 9.07% is obtained, meaning that the Sintaro Gold industry, if it uses bank loan funds in its development, can return the loan funds when the bank loan interest rate is below 9.07%.

This calculation shows that the Sintaro Gold ground coffee industry is financially feasible because the rate of return on capital obtained is greater than the prevailing interest rate, namely 7.05%, as stated in the IRR assessment criteria. If the IRR > bank loan interest is worth developing.

### Sensitivity Analysis

Sensitivity analysis is used to see how much the Sintaro Gold ground coffee business can withstand the influences of changing circumstances. It is necessary because project analysis is based on projections uncertain about what will happen in the future. The sensitivity analysis used in this research is to reduce product selling prices by 3.61% and increase operational costs when raw material prices increase by 3.61% and other conditions are considered constant.

The determination of the sensitivity percentage is seen from the prevailing inflation value, namely 3.61% (consumer price index inflation report based on annual inflation calculations, the highest over the last three years). The results of the sensitivity analysis can be seen in Table 5.

Table 5. Sensitivity analysis *Sintaro Gold* business

Sensitivity Scenarios	Financial Aspect	Value	Justification	Decision
Increase of raw material price 3,61%	NPV	+5.095.897 (IDR)	NPV > 0	Feasible
	Net BCR	1,053	Net BCR >1	Feasible
	IRR	8,56 %	IRR > 7,05%	Feasible
Decrease of selling product price 3,61%	NPV	- 1.004.883 (IDR)	NPV < 0	Not Feasible
	Net BCR	0,990	Net BCR < 1	Not Feasible
	IRR	6,75%	IRR < 7,05%	Not Feasible

Source: calculated data.

### **Sensitivity analysis due to a 3.61% increase in raw material prices for rice coffee**

The results of the financial analysis of the Sintaro Gold ground coffee business due to the increase in raw material prices of 3.61%, show that at a Net Present Value of IDR 5,095,897 with justification above zero  $NPV > 1$ , this business is still able to provide profits. The Net Benefit-Cost ratio value is still above 1.053, so this business is profitable and worth developing. The increase in raw materials does not affect the continuity of this ground coffee business, and judging from the rate of return on bank interest, it is found that the IRR is more significant than bank interest, namely 8.56%; this shows that this industry is still feasible to develop.

### **Sensitivity analysis due to a decrease in product selling prices of 3.61%**

Based on the financial feasibility analysis description, the assumption is that there will be a decrease in product selling prices of 3.61%. It can be seen that this decline has an impact on the viability of the Sintaro Gold ground coffee business based on its financial value. By lowering the selling price of the product, this business is only able to produce an NPV value of IDR -1,004,883 with the justification that an NPV value of less than one indicates that the business is making a loss while carrying out business activities, then the net B/C value is also below one, namely 0.990.

This shows that the business is losing money. The rate of return on capital, namely the IRR value of this business with a decrease in selling price of 3.61%, is below the applicable interest rate, namely 6.75%, indicating that this business is not worth developing. The scenario of reducing the selling price of the product by 3.61% from the initial price affects the feasibility of the Sintaro Gold ground coffee business, so this business will not be able to develop if it has to reduce the selling price of the product.

## **CONCLUSION**

The financial feasibility of the Sintaro Gold small and medium industry at an interest rate of 7.05% in 2013-2018 is financially feasible to undertake and develop. The results of the

financial feasibility analysis include a Revenue Cost Ratio value greater than 1, namely 1.56 - 2.40, a Net Present Value (NPV) of IDR 6,844,209, a Net B/C value of 1.071 and an Internal Rate of Return (IRR) of 9.07%. The sensitivity of the Sintaro Gold small and medium industry to an increase in raw material prices of 3.61% and a decrease in selling prices of 3.61%. The Sintaro Gold small and medium industry is not sensitive to the increase in raw material prices of 3.61%, so it is still worth pursuing and developing. The Sintaro Gold small and medium industry is sensitive to a decline in selling prices of 3.61%, so it is not worth cultivating and developing.

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