

# The optimization of inventory of goods with Inventory Control Reorder Point and Safety Stock

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## ABSTRACT

Inventory control is the determination of the amount of goods ordered and planned by the company to reduce the occurrence of excess or lack of goods. Availability of goods is the most important thing in a company to meet consumer needs, lack of availability of goods will hinder the achievement of company goals in meeting demand while if there is an excess of goods it will accumulate in the warehouse. With a fluctuating number of requests, companies often experience shortages and excess inventory.

This research aims to determine how optimal the inventory control of goods ordered and received using Reorder Point and Safety Stock. The object of this research is PT. Sinar Sosro Bandung. The instruments of the research are in the form of data collection techniques by interviews, observation, secondary data collection, and literature studies, while descriptive contributions are used for large contributions.

**KEYWORDS :** Inventory Control, Stock Buffer, Safety Stock, Reorder point.

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## I. INTRODUCTION

Inventory control is a problem that is often faced by a company, where a number of items are expected to be obtained at the right place and time, at a low cost. Inventory of goods is needed because in the procurement of goods it takes a certain amount of time for the process of ordering the goods, so that with the demand in a company, the demand for an item that is expected can be fulfilled immediately when there is demand for goods made by consumers. Determination of the amount of inventory that is too much will result in waste in the cost of saving, but if the goods are too little or empty goods will result in the loss of the company's opportunity to make a profit if demand is greater than the expected demand. In terms of inventory control certainly does not escape the problems faced by companies, one of which is PT. Sinar Sosro located in Soekarno Hatta Bandung.

The problem that arises is in the incompatibility of the number of goods demand for the number of stock items in the warehouse of PT. Sinar Sosro Bandung because the planning is not optimal in determining the quantity of products processed by the PT. Sinar Sosro Cibitung. In addition, a problem that often occurs is also the existence of a difference that results in a stock of products that accumulate in warehouse PB & PI Factory Office PT. Sinar Sosro Cibitung. The accumulation of goods in PB & PI's warehouse will have a major impact on the occurrence of damage to the product, in this case there will be damage to the product carton packaging (tea bottle box) if there is a buildup that exceeds its storage capacity. This is because in actual realization the distributor does not take the product that is in accordance with the request input in order management (OMAN), so that it can be seen that there are differences and mismatches of the number of requests for

the stock of goods between the data input in the order management and actual realization for all products taken from each distributor. Therefore companies must carry out more planned inventory control using reorder points and safety stock.

Reorder points and safety stock are very important to optimize inventory in the company specifically to reduce the occurrence of vacancies and excess goods so that they can meet the urgent demand from consumers and also help in reducing the occurrence of discrepancies between demand and realization and surely, streamlining the production line so that there is no problem in the PPIC section. Every trading company or manufacturing and service company always supplies. Without the inventory, the company will be faced with the risk that at one time it cannot fulfill the customer's desires that require the demand for goods or services. This can happen because in every company not always goods and services are available at any time, which means the company will lose the opportunity to get the benefits that should be obtained. According to Haming and Nurnajamuddin [1] Inventories are economic resources that need to be held and stored to support the completion of a product. These economic resources can be in the form of production capacity, labor, experts, working capital, available time, and raw materials, as well as supporting materials. According to Irham [2] Inventory is the company's ability to regulate and manage every need for goods both raw goods, semi-finished goods and finished goods to always be available both in stable and fluctuating market conditions.

Based on the understanding above the researcher can conclude that inventory is goods produced by the company from raw materials, semi-finished materials and finished goods provided by the company to launch its operational activities in making new products ready for sale or in the form of shipping services where the company's production and service activities have the same goal is to meet the demands and needs of customers or consumers.

## II. MATERIALS AND METHODS

### A. Literature

#### Functions and Types of Inventory

According to Assauri [3] there are ten inventory functions including:

1. To be able to meet the anticipation of customer demand, where inventory is an effort to anticipate stock, because it is expected to maintain the satisfaction expected by the customer.
2. To separate various parts or components from production operations, so that obstacles can be avoided from fluctuations, because there has been an extra inventory to separate the production operations process with suppliers.
3. To separate the company's operations from demand fluctuations, and provide a stock of goods that will

enable the selection of customers. Inventory is a type of retail building effort.

4. Inventory functions is to facilitate the need for production operations, where inventory can build trust in dealing with seasonal patterns, so this inventory is referred to as seasonal inventory.
5. To be able to take advantage of the quantity discount, because it does a large number of purchases, so it might be able to reduce the cost of goods or its delivery costs.
6. To separate production operations with events or events, where inventory is used as a buffer between the success of production operations. Thus, continuity of production operations can be maintained, and can be avoided the occurrence of equipment damage, which causes production operations to stop temporarily.
7. To protect the stock shortages faced by the company, due to the late arrival of delivery and an increase in demand, so the possibility of the risk of supply shortages.
8. To fence off inflation, and increase price changes.
9. To take advantage of the benefits of the order cycle, by minimizing purchases, and inventory costs, which is done by buying in quantities that exceed the immediate needs.
10. To enable the company to operate by adding goods immediately, such as using goods that are in the process.

According to Assauri [3] to carry out the inventory function, companies generally maintain the existence of four types of inventory. The four types of inventory are:

#### 1. Raw Material Inventory

Unprocessed purchased. This inventory is used separately from the supply of the production process, in handling inventory of raw materials generally the preferred approach is to eliminate the difference from the supplier in the quality, quantity, or delivery time, so it does not need to be separated.

#### 2. Work-in-Process (WIP) Inventory

Components or raw materials that are under construction, but not yet finished. WIP is because of the time that has been used in the process, which is related to the product in its manufacture, called cycle time. The reduction in cycle time will reduce inventory. Along with carrying out this task is not difficult. During the time the product is made, in fact there is a time of unemployment or not walking. Basically the work time or run time is a small part of the material flow time.

3. *Maintenance/Repair/Operating Supplies (MROs)*  
Devote to maintenance/repair/ operating equipment needed, so that machines and processes can be maintained productively. These MROs exist, because there is a need and time for maintenance and repair of equipment, it is not known. Nevertheless the demand for inventory MROs is frequent, and is an unscheduled request for MROs, but must be anticipated.
4. *Finished Goods Inventory*  
They are products that have been processed and are waiting for delivery. Finished goods are inventoried, because demand from customers in the future is unknown.

### The Definition of Inventory Control

According to Rusdiana [4] inventory control management is an activity that relates to planning, implementing, and monitoring the determination of material needs/other goods so that a party's operational needs can be met on time and on the other hand investment in other material/goods supplies is optimally suppressed.

### Inventory Control Calculation Methods

Inventory is a general term that shows everything or resources, an organization that is stored in anticipation of fulfillment of demand, while control is a series of policies and controls that monitor inventory levels that must be maintained, when inventory must be filled and how much order must be made. The methods used are as follows.

#### 1. ROP (Reorder Point)

According to Heizer and Render [5] inventory level is where when inventory has reached a certain point. According to Sjahrial [6] the amount of inventory that must remain at the time the order is made is called the reorder point. According to Tampubolon [7] there are two systems that can be applied to determine when re-orders are held, namely:

- a) Quantity Reorder Point (Q/R System) system is the amount of inventory ordered back depends on the inventory requirements for the conversion process, in fact the use of material supplies is never constant and always varies.
- b) The system's Periodic Inventory System is a method of ordering by Constant Time Interval (every: Sunday, Month, Quarter, etc.), but the number of orders varies depending on how much material is used between the time of the last order and the time of the next order.  
From some of the definitions above, researchers can conclude that Reorder Point is a point where the company must re-order inventory so that there is no vacancy in inventory.

#### 2. Safety Stock

According to Herjanto [8] safety supplies are reserved for the needs while waiting for goods to arrive,

safety supplies function to protect or maintain the possibility of a lack of goods. For example, because of the use of goods is greater than the original estimate or delay in receipt of goods ordered.

Whereas according to Ristono [9] inventory is done to anticipate elements of uncertainty in demand and supply, if the security inventory is unable to anticipate these uncertainties, there will be a shortage of stock. Viewed from several definitions above the researcher can conclude that safety inventory is a stock of goods or raw material reserves provided by the company to avoid shortages of stock or empty stock.

## III. METHODS

In this research, researcher used descriptive data which included data on results from interviews, surveys, or observations to solve a problem solving that existed at PT. Sinar Sosro Bandung. This research uses descriptive analysis method in the case method, which is a research method arranged in order to provide a systematic description of scientific information that comes from the subject or object of research. Data collection techniques that researcher do is by using secondary data collection techniques in the form of reports on receipt and expenditure of goods. In data analysis, there are several techniques in managing data, for the first management, researchers use flow chart diagrams to find out the flow of the process of controlling inventory at PT. Sinar Sosro Bandung, the second researcher used a fishbone diagram to find out the causes or factors that cause uncontrolled inventory of goods at PT. Sinar Sosro Bandung, for the third one uses data processing with the method of Reorder Point and Safety Stock to calculate the number of inventory of safety items and calculate the point of reorder, to find out the amount then you can use calculation methods including:

#### 1. Re-order Point Method Calculation

According to Rangkuti [10] states that reorder points can be calculated using the following formula,

- Requirement Levels Calculation

$$U = \frac{D}{t}$$

Information:

U = Average Requirement Level  
D = Total Inventory  
T = Working time

- Re-order Point calculation

$$ROP = (U \times L) + SS$$

Information:

ROP = Reorder Point  
U = Requirement Level  
L = Lead Time  
SS = Safety Stock

## 2. The Safety Stock Calculation Method

According to Maimun [11] states that the safety stock can be calculated using the following formula,

- Estimated Use Calculation

$$x' = \frac{D}{F}$$

Information:

X' = Estimated Usage

D = Total Request

F = Order Frequency

## IV. STATISTICAL ANALYSIS

This research uses two techniques in the Economic Order Quantity method, namely Safety Stock and Reorder Point, which are expected to help companies to determine the quantity of safety goods and the right point in ordering goods and as a tool to obtain results of comparisons with company calculations. So that there is a conclusion, if the conclusion states that the calculation of the SS and ROP methods is more efficient, it is expected to become a reference for PT. Sinar Sosro Bandung to change its calculation method to minimize shortages and excess inventory.

### *Goods Inventory Control at PT. Sinar Sosro*

The application of inventory control to the company has a positive impact on operational activities carried out by the company. This makes it a great opportunity for companies to achieve company goals. In the process of controlling PT. Sinar Sosro Bandung has several items including RGB, PET, TETRA, CUP, POUCH, CAN, CONCENTRATES and bottled water. This study took eight items because they often experience shortages and excess stock every month. If shortages and excess stock continue to occur every month it will indirectly hinder the process of achieving company goals. The company places an order with the factory based on the data on the number of requests that exist in the system so that the company does not carry out a specific method of managing its inventory because everything already exists in the OMAN system.

Determination of the quantity of goods is done by looking at the data on the number of requests from retail because PT. Sinar Sosro Bandung is the Regional Sales Office, so the goal is to reach the target, so just look at the data from the number of retail requests, so that every month the inventory increases and decreases or the inventory in the company is unstable. To order goods to the factory, the company must carry out inventory control to ensure the availability of goods and keep the inventory at the minimum.

Inventory control carried out by PT. Sinar Sosro Bandung is divided into three stages, namely receipt of goods, storage of goods and distribution of goods to meet demand for consumers or customers. Control within the company is certainly endeavored to be able to support the

activities that exist within the company. In controlling the inventory of goods at PT. Sinar Sosro Bandung there are several important documents needed to streamline the inventory control process. In the process of receiving goods, the required documents include Factory Transport Road Letters, Goods Entry Permit (SIMB) and Goods Receipt reports. Whereas in the process of storing goods to the warehouse the required documents are the Control Stock Report and the rest of the inventory in the warehouse. The process of distributing goods requires a Plan and Realization of Visits (RKK) documents and Product Distribution Letters or Goods Expenditure Reports. The Data Administration section will provide print out requests from retail or consumers.

In controlling inventory there are weaknesses and strengths, one of the advantages of which is (a) the process runs more regularly (b) a more controlled process so that it can facilitate the process of receipt, storage and expenditure of goods. The weaknesses of inventory control are (a) in the process that is quite long, many employees do not understand more about the process of inventory control so that there are often differences regarding the number of requests with the realization between employees with each other, especially in the warehouse (b) control inventory affects the smooth operation of a company

The following are some of the factors that cause uncontrolled inventory at PT. Sinar Sosro Bandung. After conducting research with observations and interviews it was found that PT. Sinar Sosro Bandung has not used a special method in inventory control so that the company needs to apply the method that is the method of Safety Stock and Reorder Point in optimizing the inventory of goods at PT. Sinar Sosro Bandung.

PT. Sinar Sosro Bandung often orders goods to the factory suddenly because of a lack of inventory in the company's warehouse so the company cannot fulfill the demand for goods from consumers quickly and precisely. PT. Sinar Sosro Bandung places an order in accordance with the request of the consumer without doing the right calculation method so the researcher is interested in calculating the number of security items that must be provided by the company and calculating the exact reorder point in July-September 2018.

## V. RESULT

### **Calculations Made With the Safety Stock Method**

According to Ristono [9] inventory is carried out to anticipate the element of uncertainty in demand and supply, if the safety inventory is unable to anticipate such uncertainty, there will be a shortage of stock. Safety stock is useful to protect companies from running out and shortages of goods or raw materials with the delay in receiving raw materials ordered. Safety inventory is a stock of goods that are intentionally provided by the company in a certain amount, to avoid shortages of stock or even reduce the number of orders directly.

**Table 1. Data for Estimating Use of Each Item**

No	Name of Goods	Total Request (D)	Frequency	X'
1	RGB	115147	3	38382
2	PET	10469	3	3489
3	TETRA	4989	3	1663
4	CUP	7000	3	2333
5	POUCH	2011	3	670
6	CAN	304	3	101
7	AMDK	58989	3	19663
8	KONSENTRAT	84	3	28

After calculating the estimated use of goods then determine the number of standard deviations to consider the deviations that have occurred between the estimated use of goods with actual use so that the standard deviation is known by the following formula:

$$SD = \sqrt{\sum \frac{(x-x')^2}{F}} \quad SS = SD \times Z$$

**Table 2. Standard Deviations of Each Goods**

No	Information	Usage X	Estimation x'	Deviation x-x'	Square (x-x') <sup>2</sup>
	<b>RGB</b>				
1	July	38172	38382	-210	44100
2	August	32480	38382	-5902	34833604
3	September	44495	38382	6113	37368769
	<b>Amount</b>	<b>115147</b>		<b>1</b>	<b>72246473</b>
	<b>PET</b>				
1	July	3542	3489	53	2809
2	August	4164	3489	675	455625
3	September	2763	3489	-726	527076
	<b>Amount</b>	<b>10469</b>		<b>2</b>	<b>985510</b>
	<b>TETRA PAK</b>				
1	July	1644	1663	-19	361
2	August	1696	1663	33	1089
3	September	1649	1663	-14	196
	<b>Jumlah</b>	<b>4989</b>		<b>0</b>	<b>1646</b>
	<b>CUP</b>				
1	July	3000	2333	667	444889
2	August	1000	2333	-1333	1776889
3	September	3000	2333	667	444889
	<b>Amount</b>	<b>7000</b>		<b>1</b>	<b>2666667</b>
	<b>POUCH</b>				
1	July	529	670	-141	19881
2	August	581	670	-89	7921
3	September	901	670	231	53361
	<b>Amount</b>	<b>2011</b>		<b>1</b>	<b>81163</b>
	<b>CAN</b>				
1	July	104	101	3	9
2	August	100	101	-1	1
3	September	100	101	-1	1
	<b>Amount</b>	<b>304</b>		<b>1</b>	<b>11</b>

No	Information	Usage X	Estimation x'	Deviation x-x'	Square (x-x') <sup>2</sup>
	<b>AMDK</b>				
1	July	18404	19663	-1259	1585081
2	August	22438	19663	2775	7700625
3	September	18147	19663	-1516	2298256
	<b>Amount</b>	<b>58989</b>		<b>0</b>	<b>11583962</b>
	<b>CONCENTRATE</b>				
1	July	16	28	-12	144
2	August	43	28	15	225
35	September	25	28	-3	9
	<b>Amount</b>	<b>84</b>		<b>0</b>	<b>378</b>

After knowing the deviation, it can calculate the Safety Stock that must be provided by the company.

- RGB (*Return Glass Bottle*)  

$$D = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{72246473}{3}} = 4907$$
- Safety stock = 4907 x 1,65 = 8096,5 pack
- PET  

$$D = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{985510}{3}} = 573$$
- Safety stock = 573 x 1,65 = 945,5 pack
- TETRA  

$$SD = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{361}{3}} = 11$$
- Safety stock = 11 x 1,65 = 18,2 pack
- CUP  

$$SD = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{2666667}{3}} = 943$$
- Safety stock = 943 x 1,65 = 1555,0 pack
- POUCH  

$$SD = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{81163}{3}} = 165$$
- Safety stock = 165 x 1,65 = 272,3 pack
- CAN  

$$SD = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{11}{3}} = 2$$
- Safety stock = 2 x 1,65 = 3,3 pack
- AMDK  

$$SD = \sqrt{\sum \frac{(x-x')^2}{F}} = \sqrt{\sum \frac{11583962}{3}} = 1965$$
- Safety stock = 1965 x 1,65 = 3242,3 pack

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- CONCENTRATE

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{F}} = \sqrt{\frac{378}{3}} = 11$$

$$Safety\ Stock = SD \times Z = 11 \times 1.65 = 18.2\ pak$$

The result of the calculation is a safety stock that must be provided by the company to optimize inventory in the warehouse so that there is no shortage of goods or excess goods that cause consumer demand is not fulfilled or the accumulation of goods in the warehouse will harm the company.

**Calculations Made With the Reorder Point Method**

The following is a calculation using the reorder point method with the formula:

$$U = \frac{D}{t}$$

According to Tampubolon [7] there are two systems that can be applied to determine when re-orders are held, namely (a) Quantity Reorder Point (Q / R System) system is the amount of inventory ordered back depends on the inventory requirements for the conversion process, in fact the use of material supplies is never constant and always varies. (b) The periodic Inventory System of this system is a method of ordering a Constant Time Interval (every: Sunday, Month, Quarter, etc.), but the number of orders varies depending on the amount of material used between the time of the last order and the time of the next order.

**Table 3. Safety Stock and Reorder Points for July-September 2018**

Name of Goods	D	t	U	U*	L	SS	RO (The amount of goods)	ROP (Return Order Point)
RGB	115147	6	19191	57573	2	8096.5	123243	46478
PET	10469	6	1745	5235	2	945.5	11416	4436
TETRA	4989	6	832	2496	2	18.2	5010	1682
CUP	7000	6	1167	3501	2	1555.9	8558	3890
POUCH	2011	6	335	1005	2	272.3	2282	942
CAN	304	6	51	153	2	3.3	309	105
AMDK	58989	6	9832	29496	2	3242.3	61740	22906
KONSENTRAT	84	6	14	42	2	18.2	102	46

From the results of calculations in table 3, namely the reorder point and safety stock of each item of 8 types of goods that exist then it can be compared to the results of the calculation of PT. Sinar Sosro Bandung and the results of calculations using the method of reorder point and safety stock.

Comparisons are made about the number of safety supplies and the point when re-ordering is done using a safety stock and reorder point metoder. Calculations made by PT. Sinar Sosro Bandung, namely the amount of inventory of safeguards per three months and the reorder point policy or company reorder point, the calculation carried out using the SS and by comparing this, you can see

whether the calculations made by PT. Sinar Sosro Bandung is optimal or not. If the inventory control calculation done by using the results method is better than what PT. Sinar Sosro Bandung then PT. Sinar Sosro Bandung must apply the reorder point method and safety stock.

**Table 4. Comparison of Safety Goods Inventory Calculation of PT. Sinar Sosro Bandung and Calculation Using Safety Stock Method**

No	Names of Goods	Company Safety Stock			Safety Stock Menggunakan metode Safety Stock
		July	August	September	Per/Months
1	RGB	14559	16950	11621	8096.5
2	PET	2328	4076	6975	945.5
3	TETRA	1979	2226	1173	18.2
4	CUP	0	0	641	1555.9
5	POUCH	1188	531	337	272.3
6	CAN	1	0	2	3.3
7	AMDK	884	1515	765	3242.3
8	KONSENTRAT	9	28	39	18.2

**VI. DISCUSSION**

From the results of the analysis and calculations that have been made based on the data obtained from the object of this research, namely PT. Sinar Sosro Bandung then the comparison between the calculations made by PT. Sinar Sosro Bandung and calculations using the method of Safety Stock and Reorder Point. After paying attention to the results of the analysis in table 4, when compared with inventory control carried out by PT. Sinar Sosro Bandung can be seen in July-September 2018 the amount of safety stock for RGB, PET and CONCENTRAT products is too much so that it can cause excess stock which causes accumulation in warehouse, while the calculation using the safety stock method is more optimal with the amount of RGB products for each month 8096.5, PET amounting to 945.5, and CONCENTRATE amounting to 18.2 so as to minimize the occurrence of excess goods that cause accumulation in the warehouse of PT. Sinar Sosro Bandung.

Can be seen in Table 4 also in the calculation of safety stock carried out by PT. Sinar Sosro from July to September 2018 on TETRA, CUP, POUCH, CAN, and AMDK products experienced a shortage of goods or quite a lot of goods so that the company would be hampered in achieving its goal of meeting retail or consumer demand which would cause the company to lose profits because retail or consumers will move to other companies in fulfilling their demand for goods, while the calculation results using the safety stock method are more optimal, namely the number of TETRA products of 18.2, CUP of 1555.9, POUCH of 272.3, CAN of 3.3, and AMDK of 3242.3 so the company has sufficient safety inventory so it can meet retail or consumer demand quickly and precisely when the request is urgent so the company will not lose profits from consumers and consumers remain trustworthy to the company for the services provided.

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In Table 4 can be seen from the 8 items calculated the amount of safety stock carried out by the company there is one item, namely Rbb which can cause excess goods and accumulation of goods in the warehouse quite a lot while goods that can cause a lack of goods or goods vacancies in warehouse namely Can products because almost there is inventory in the warehouse for each month.

According to Herjanto [8] Safety inventory functions to protect or maintain the possibility of a lack of goods, for example because the use of goods is greater than the original estimate or delay in receiving goods ordered, so it can be concluded that the results are in accordance with the theory. Based on the results of calculations using the safety stock method, the company can minimize the occurrence of deficiencies or excess goods during the waiting time for orders due to varied usage so that the calculation results are in accordance with the theory.

**Table 5. Comparison of Reorder Point Calculation at PT. Sinar Sosro Bandung and Calculations Using the Reorder Point Method**

No	Nams of Goods	Company ROP	ROP Using the Reorder Point Method
1	RGB	4000	46478
2	PET	3000	4436
3	TETRA	5000	1682
4	CUP	2000	3890
5	POUCH	1000	942
6	CAN	100	105
7	AMDK	5000	22906
8	KONSENTRAT	50	46

In table 5 describes the comparison of the company's ROP with calculations using the Reorder Point method, ROP PT. Sinar Sosro Bandung obtained from factory policy, PT. Sinar Sosro Bandung provides direct ROP data in the form of a file that has been set. Can be seen in table 5 ROP calculations performed by the company namely for RGB 4000, PET 3000, TETRA 5000, CUP 2000, 1000 POUCH, CAN 100, 5000 AMDK, and 50 CONCENTRATES the policy is too risky because with the reorder point in company 5 table require a larger order quantity but order with a small quantity and do it repeatedly, while the results of calculations using the reorder point method will be more optimal with ROP on RGB 46478, PET 4436, TETRA 1682, CUP 3890, POUCH 942, CAN 105, AMDK 22906, and KONSENTRAT 46, so that with the results of the reorder point, the company can re-order inventory while waiting for the waiting time for the order to anticipate the delay in the arrival of goods.

According to Rangkuti [10] the reorder point is the limit or point of the number of re-orders, including the demand that is desired or needed during the order waiting time to avoid shortages or excess goods. Based on the calculation results using the reorder point method that the limit or reorder point that can be done by the company is optimal because it can minimize the occurrence of shortages and excess goods in the company during the

order waiting time, so that the calculation results are in accordance with the theory. After paying attention to the results of the analysis in table 5, when compared to inventory control carried out by PT. Sinar Sosro Bandung with the calculation of inventory control of safety goods and ordering return points is calculated using the method of safety stock and reorder point where the calculation using the method of safety stock and reorder points can minimize the occurrence of shortages and excess inventory at PT. Sinar Sosro Bandung and minimize the occurrence of delays because with these calculations the company can find out when the next order is made so that demand from retail and consumers can be fulfilled on time.

Thus this calculation can be used as a reference in an effort to minimize the occurrence of excess and lack of more optimal inventory of goods at PT. Sinar Sosro Bandung. For this reason, PT. Sinar Sosro Bandung can use the method of safety stock and reorder point, so that the process of providing goods can be more effective and can also be more optimal. Besides that, PT. Sinar Sosro Bandung can continue to serve more and more consumers and can continue to progress and develop.

## VII. CONCLUSION

The conclusion of research that has been done regarding the control of inventory at PT. Sinar Sosro Bandung is as follows:

1. The process of controlling inventory of goods carried out by PT. Sinar Sosro Bandung there are three controls, namely receipt of goods from the manufacturer, storing goods to the warehouse and expenditure of goods from the warehouse to be sent to retail or consumers.
2. There are four factors that cause uncontrolled control of inventory at PT. Sinar Sosro Bandung, these factors are the number of safety materials, when the company must re-order goods (calculation method), realization of demand for goods, and no control of the stock at KWP by the factory
3. Based on the results of calculations using the method of Safety Stock and Reorder Point, the calculation using the Safety Stock method can minimize the occurrence of vacancies and excess inventory and the company has sufficient safety supplies that can meet retail or consumer demand quickly and precisely when there is a request from retail or consumer compared to company calculations, in July to September 2018 goods often experience goods vacancies and excess goods in 3 months. Calculation of the ROP method can help companies determine more appropriate ordering points and can determine the right reorder quantity so as to minimize the occurrence of excess inventory at PT. Sinar Sosro Bandung. Safety Stock and ROP methods can be a reference for companies in controlling inventory because they can optimize inventory in the company.

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