

## **CHAPTER I PLERIMINARY**

### **I.1 Background**

In recent years the development of automotive business in Indonesia experiencing an attractive growth. Data from “Gabungan Industri Kendaraan Bermotor Indonesia” (GAKINDO), in 2019 sales of cars reaches 851.430 units. It increases 10,85% from 2018. To facing this condition, besides make sure that production or import process of vehicles going well, they also needs to maintain the inventory of spare parts well.

One company that runs automotive business is PT PQR. It is a company that stand as a single agent that hold Peugeot brand in Indonesia. Business that run by this company are selling cars and spare parts. All cars and spare parts are imported in CBU from Peugeot automobile in France. Other than that, this company also offer after sales service for customer that use Peugeot car.

The unpredictable demand is a challenge for company that runs in automotive business and provide after sales services. To survive and even gain much profit, it is important to maintain stock of those spare parts well. So, the usage and stock could be balance. If not there could be problem that occurs in their inventory system such as overstock and stock out. Inventory condition of PT PQR is shown in figure I.1.

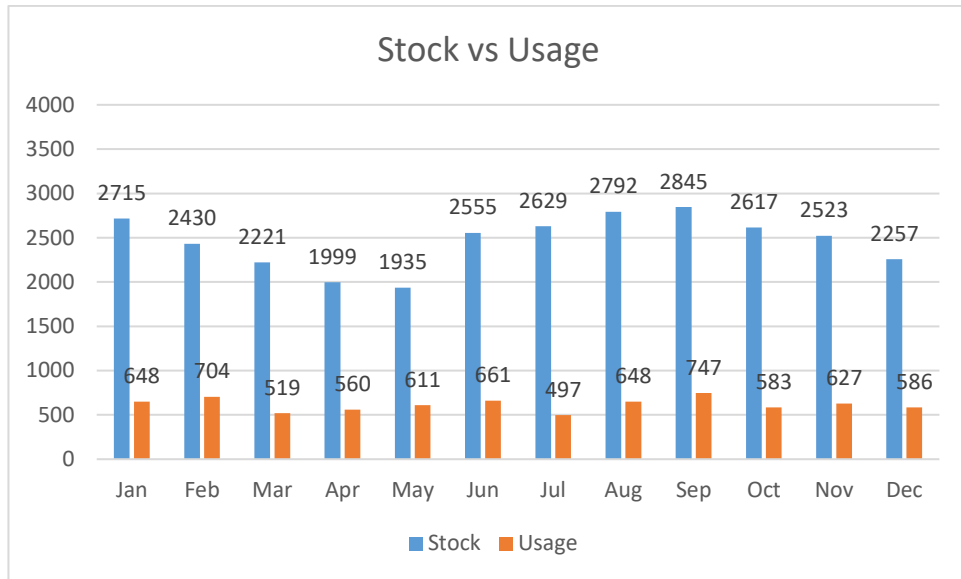


Figure I. 1 Spare Parts Usage and Stock Comparison

As it seen on figure I.1, number of stock is around 1900- 2900 and number of usage is around 450 - 750. Number of stock is so much higher than its usage. It means stock in the company inventory system is run into pile up. This condition could be recognized as an overstock. Overstock condition affects total inventory cost that expense by company, it exceeds inventory cost allocation that has been set. Total inventory cost that exceeds the inventory cost allocation is Rp167.766.171. Total inventory cost condition shown in figure I.2.

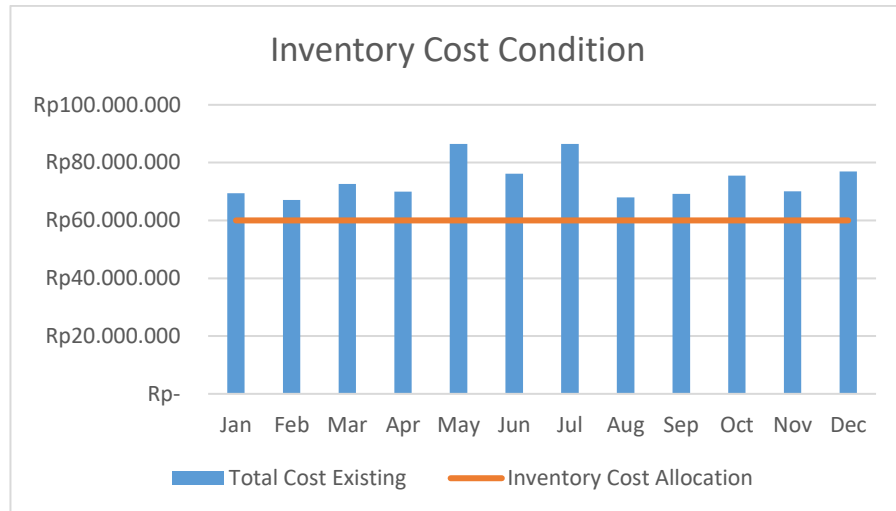


Figure I. 2 Inventory Cost Condition

Overstock condition occurs because company considers all spare parts have same importance. Hence, purchasing or replenishment decision for all spare parts are same. Other than that, amount they ordered to do replenishment is also high because company only uses historical usage data of every spare parts to determine amount of required spare parts. The calculation of required spare parts sometimes inaccurate, it leads to not fixed result of required spare parts. Hence it affects amount of spare parts that they should ordered. Amount of ordered spare parts shown in figure I.3.

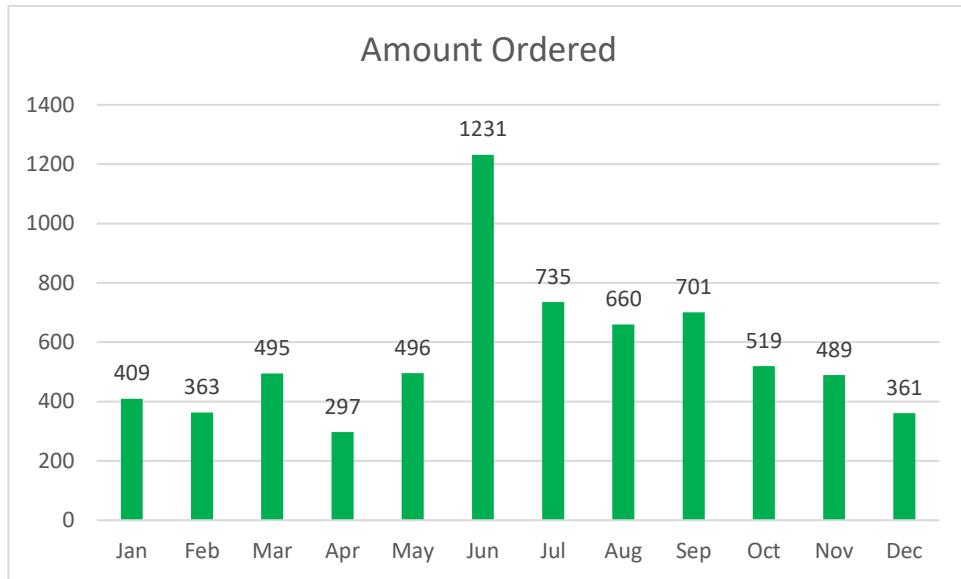


Figure I. 3 Amount Spare Parts Ordered

Generally problem that occurs in PT PQR is spare parts stock that occurs in company's inventory system run into pile up. It causes total inventory cost that needs to expense by company is high and exceeds inventory cost allocation. Regarding to this condition, it is important for company to take a look at their inventory policy. Company needs to do classification for their spare parts to determine importance of each spare parts. Then they can determine maximum stock and re-order point for inventory policy. Because the objective of inventory management itself is to have the appropriate amounts of materials in the right place, at the right time and at low cost. (Tersine, 1994). In this research, inventory classification will be done using ABC-XYZ analysis in order to classify spare parts based on its cost consumption and demand variability. For inventory policy, it will be done using periodic review (R,s,S) and periodic review (R,S) because in current condition company have agreement with parent company to order spare parts based on their order batch or once a month. This inventory policy could be a consideration to minimize overstock that caused total inventory cost high.

## **I.2 Problem Formulation**

Based on background that has been explained, problem formulation in this research :

1. How is inventory classification that plausible to support replenishment decision?
2. How is optimal inventory policy that can be useful to reduce overstock that caused total high inventory cost?

## **I.3 Purpose**

Based on problem formulation, purpose of this research :

1. Determine inventory classification that plausible to support replenishment decision.
2. Determine optimal inventory policy that can be useful to reduce overstock that caused high total inventory cost.

## **I.4 Limitation**

Based on the purpose, limitation of this research are :

1. Research conducts in inventory system at PT PQR.
2. Data that used in this research is data from January 2019 – December 2019.
3. Demand data that used in this research comes from usage data of company.
4. Calculation does not consider inflation and price increasing.
5. Order cost is same for every order.
6. Lead time is constant 2 months.

## **I.5 Benefits**

Benefits that can be taken from this research are :

1. As a consideration to determine inventory policy to minimize overstock.
2. As a consideration to minimize total inventory cost

## **I.6 Writing Systematic**

### **CHAPTER I Preliminary**

In this chapter, background of problem is explained and it will be used to formulate the problem in this research. Other than that purpose, benefit and limitations of the problem also explained in this chapter.

## **CHAPTER II Theoretical Baseline**

In this chapter, Theory that used as a baseline of this research are shown. Other than that result of previous researches also shown. Both used to support this research.

## **CHAPTER III Research Methodology**

In this chapter, conceptual model that involve relation between each variable that occurs in this research are shown. Other than that detailed step that take to solve the problem in the research are explained. Start from identification of problem phase, collecting data, data processing, conduct several analysis and explain the conclusion.

## **CHAPTER IV Data Processing**

In this chapter, data that collected from company shown. Then it is processed and calculated using the concept and steps that has been explained in previous chapter.

## **CHAPTER V Analysis**

In this chapter result of data processing in the previous chapter are shown. It will be compared to the company existing condition. Other than that several analysis will conduct to the calculation result.

## **CHAPTER VI Conclusion and Recommendation**

In this chapter, conclusion about the result of the research that has done explained. Other than that, recommendation for the next research also mentioned.