

CHAPTER I

INTRODUCTION

This chapter explains about the research background, problem formulation, research objective, problem limitation and outline of the report used in writing a research report.

1.1 Background

Populated by 267 million people, Indonesia becomes a promising market target for every industry and society. That factors encourage the emergence of new industries that continue to grow, wether small, medium or large scale industry and simultaneously giving positive impact on economic growth. One parameter that can be judged as the economic growth of country is gross domestic product (GDP).

GDP is the value of goods and services produced in the country concerned for a certain period of time, which includes output goods and services in an economy produced by company owned by the citizen concerned or owned foreign nationals domiciled in the country concerned (Hasanah, 2012). Indonesia GDP growth structure can be seen in the figure below.



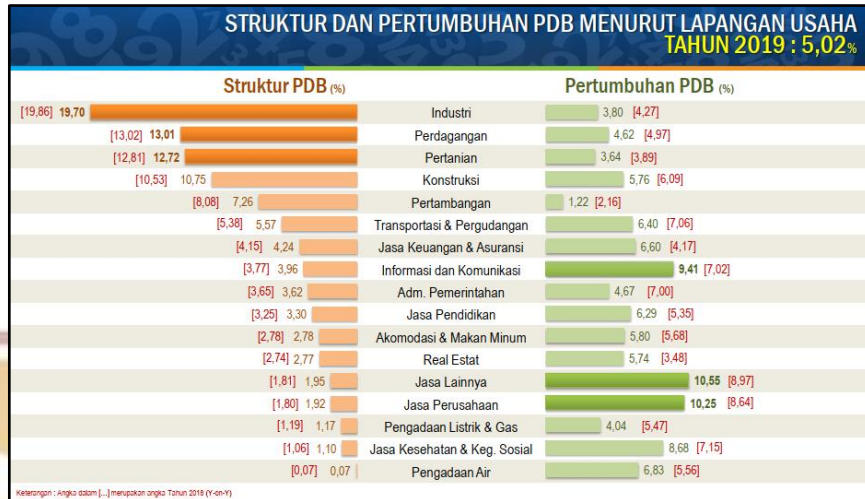


Figure 1.1 Indonesia GDP growth and structure percentage in 2019
(Badan Pusat Statistik, 2020)

During 2019, the industrial sector gave the most significant contribution to the Indonesian economy based on GDP, where the contribution reaches 19,86% for Indonesian Gross Domestic Product (GDP). The growth increases 0,04% from a year before. The industrial sector is known to have a wide variety of products that provide benefits as well as added value for society so that industrial products can have a higher selling value than other sectors. According to Law (UU) Num. 3 of 2014 about Industry, industrial activities are all forms of economic activity that process raw materials and utilize the resource to produce products with added value or higher benefits, including the service industry. Consistent industrialization activities will bring a broad chain effect for the national economy. The effects are increasing the added value of domestic raw materials, spreading job opportunities, foreign exchange earnings from exports and taxes, and continuous natural resource-based economic activities. Indonesia as maritime and agrarian country certainly has many kind of natural resources that scattered all over areas. Underline one of the impact, that factor obviously encourages the nation to exploit those resources to bring benefits and run many local industry that utilize the resources itself.

Soybean (*Glycine max*) is a plant or natural resource that is originated in Southeast Asia, including Indonesia. In the period from 1890 to 1900, the U.S. Department of Agriculture (USDA) systematically investigated the selection of

soybean strains for the different growing conditions in each agricultural state. Since then, soybeans have become an important crop in the United States. Ironically, the United States has become a major provider of soybeans to Japan and other Asian countries (Heber, 2006). In Indonesia, soybean especially produced dominantly in Java and Sumatera regions. There are many foods that are based on soybean as the main ingredient as well as tempeh, tofu, tauco, and soy sauce. Usually before soybean can be processed to be good foods as mentioned before, it throughs fermentation process with certain duration. As example, soybean must be fermentated first then stored for weeks before it is mixed with condiments and brown sugar to become soy sauce.

Before it became an improtant condiment in Indonesia, soy sauce has been made by Chinese settler in Java since eleventh century. At first, soy sauce was recognized as salty condiment, but the Javanese made sweet soy sauce by adding brown sugar into it. Since it was born in Java, it's no wonder that sweet soy sauce has grown there too and spread to all over archipelago. Moreover, there are many Javanese foods that is based from the sweet taste of soy sauce because its existence in the region. Over the time, the sweet taste on soy sauce became an ordinary characteristic of soy sauce.

Actually sweet taste is not the only characteristic of soy sauce itself since the emergance of companies which produce soy sauce. Now people distinguishes soy sauce based on its brand as each brand has its own typical taste. One of company that was born since a long time ago is PT Korma Jaya. It has been established since 1948 in Solo which was still as home industry scale at that time. In 1974, the new site was built in South Jakarta. At first, the company's main target was satay seller, because they believe satay sellers must be very concern to the taste of soy sauce that can support the satay. This belief is paid off since the increasing number of demand from satay sellers, especially Madura satay, because the product taste is really suit to be served with satay. Now, Korma soy sauce is kind of iconic condiment that can be seen on satay sellers cart.

One of soy sauce main ingredient obviously is soy bean. PT Korma realize about that. As soy sauce main ingredient, they only choose a high quality of soy bean to keep their product iconic taste and quality for years. It is proven as they still pick their supplier in Solo, while the company is located in Jakarta. PT Korma order the soy four times in a year with three months interval. This term is based on the duration of soybean that is stored since the arrival at the company. The company orders to the supplier for delivering soybeans to be arrived a day before or on the limit date, so there will be a rotation between the older soybeans and the new ones in the warehouse. They use the soy that is not longer than ninety days in the company, to keep their product quality. After three months, the company abandon the soy to collectors and surely it becomes a loss for the company. The company seems struggle to handle it optimally, because they leave a certain amount of inventory in each period. **Figure 1.2** and **Figure 1.3** present the historical data of soy inventory in 2019 and 2020.

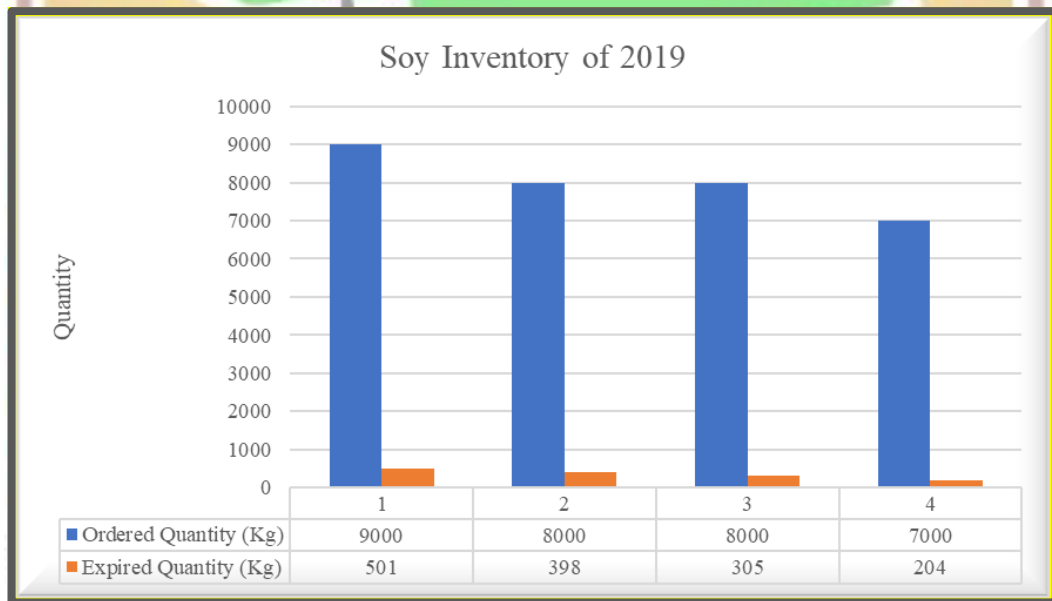


Figure 1.2 Historical Data of Soybean in 2019

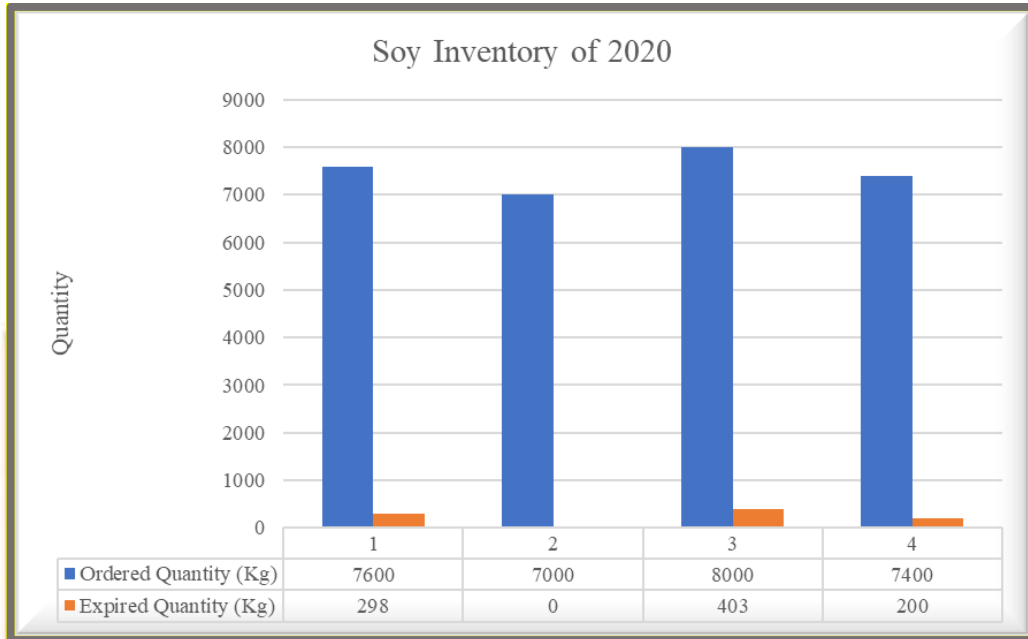


Figure 1.3 Historical Data of Soybean in 2020

The expired inventory becomes a content problem of PT Korma. Unfortunately, they do not have any plan to get over it, it becomes a problem that seems looked fine. In addition, the employee mentioned that the only consideration to decide the order quantity is by the historical record. For some certain events in a year, usually the demand of the product rise higher than usual. Although the production is stochastic, the inventory control characteristic is deterministic. There are several assumptions of deterministic inventory (Bahagia, 2014) which are occurred in the company:

1. Demand is known and constant. The company material needs are based on production planning of regular consumers or retailers demand.
2. Lead time is constant. The company calls the supplier a week before the raw materials are delivered.
3. The price of raw materials is stable. The soybean is counted by a kilogram and is priced at Rp13,000 annually.
4. Holding cost and order cost are constant. The inventory fraction is 2% in a year.
5. Quantity discount is not applied
6. There is no back order.

1.2 Problem Formulation

Based on the background, the problem formulation in this final project are:

1. How to determine the optimum order interval and order quantity of soybean inventory in PT Korma Jaya?
2. How to reduce the cost of soybean inventory in PT Korma Jaya?
3. How is the feasibility of soybean quality based on time duration?

1.3 Research Objectives

The objectives of this research are:

1. Determine the optimum order interval and ordered quantity of soybean in PT Korma Jaya.
2. Determine the reduction of inventory cost in PT Korma Jaya.
3. Determine the feasibility of soybean quality based on stored duration

1.4 Research Scopes

The scopes of problem in this research are:

1. The price of raw material is constant toward the quantity of raw material ordered.
2. The order cost is constant and lead time has been known and constant.

1.5 Outline of Report

This report consists of several chapters are as follows:

CHAPTER I INTRODUCTION

This chapter contains the background of research that is supported by problem formulation, research objectives, research scopes, assumptions, and outline of report.

CHAPTER II LITERATURE REVIEW

This chapter contains a literature that is related to this research. There are production planning control, inventory, inventory cost, function of inventory, safety stock, inventory deterministic model and previous related research.

CHAPTER III RESEARCH METHODOLOGY

Research methodology consists of explanation of the research steps, there are preliminary study, literature study, problem formulation, method selection, data collection, data processing, result, discussion, and conclusion.

CHAPTER IV DATA COLLECTION AND DATA PROCESSING

This chapter contains the collection of data, equations construction, and data processing.

CHAPTER V DISCUSSION

This chapter consists of results analysis and comparison between the results and actual condition.

CHAPTER VI CONCLUSION

This chapter consists the conclusions based on the results and also the suggestion for research in the future.