CHAPTER I INTRODUCTION

I.1 Backgrounds

According to Kotler (2000), inventory management refers to all the activities involved in developing and managing the inventory levels of raw materials, semi-finished materials (workin- progress) and finished good so that adequate supplies are available and the costs of over or under stocks are. Keth et al. (1994) in their text also said that the major objective of inventory managementand control is to inform managers how much of a good to re-order, when to re-order the good, how frequently orders should be placed and what the appropriate safety stock is, for minimizing stockouts. Thus, the overall goal of inventory is to have what is needed, and to minimize the number of times one is out of stock. Inventory Management is one of important things that ensures the availability of inventory in accordance with customers/users demand with minimum inventory costs.

PT. Kereta Api Indonesia (Persero), hereafter PT KAI (Persero) or "Company", is a State-owned Enterprise that provides, organizes, and manages railways transportation services in Indonesia, PT KAI (Persero) operates the rail transportation services including passenger and freight. As the major operator of public railways in Indonesia, PT. KAI (Persero) has the largest infrastructures and facilities compared to other transportation services. To support the operational day-to-day, as of 2012, current PT KAI (Persero) have had facilities such as locomotives as much as 486 units, the units carriages 1716, hopper for goods transportation 6249 units, Electric Rail Train (KRL) 754 units, and a Diesel Railcar 166 units, while infrastructures such as rail road owned by PT KAI (Persero) were currently 2710 miles along Java Island and 1151.5 miles along the island of Sumatra. The condition of railway infrastructures and facilities requires treatrment in order to support the operation of the railway, so the reability of facilities and infrastructures can sustain the company in serving customers/users. With that number of infrastructures and facilities, the needs of spare parts availability is extremely required to perform replacement various component parts especially protective spare parts/items (defined to be V items), the company then must be dealing with inventory management to serve users because it consumes substantial

cost and very affects to company performance. Prior to 2013, PT KAI implemented traditional procuring inventory system by purchasing items and storing them with the all cost covered by PT KAI, yet due to various factors as a result of having poor planning inventory management, policy changes, recondition, and other factors caused only a few items or even no items ordered by users that were considered excessive stock from warehouses or overstock and most of those items then were changed into slow moving items category. According to data given by PT KAI, by 2015, total slow moving items reached 11,679 SKUs with the total number of 789.067 items that were worth IDR 69,9 billion. Tabel below shows comparation of cumulative total slow moving items value between 2010 and 2015.

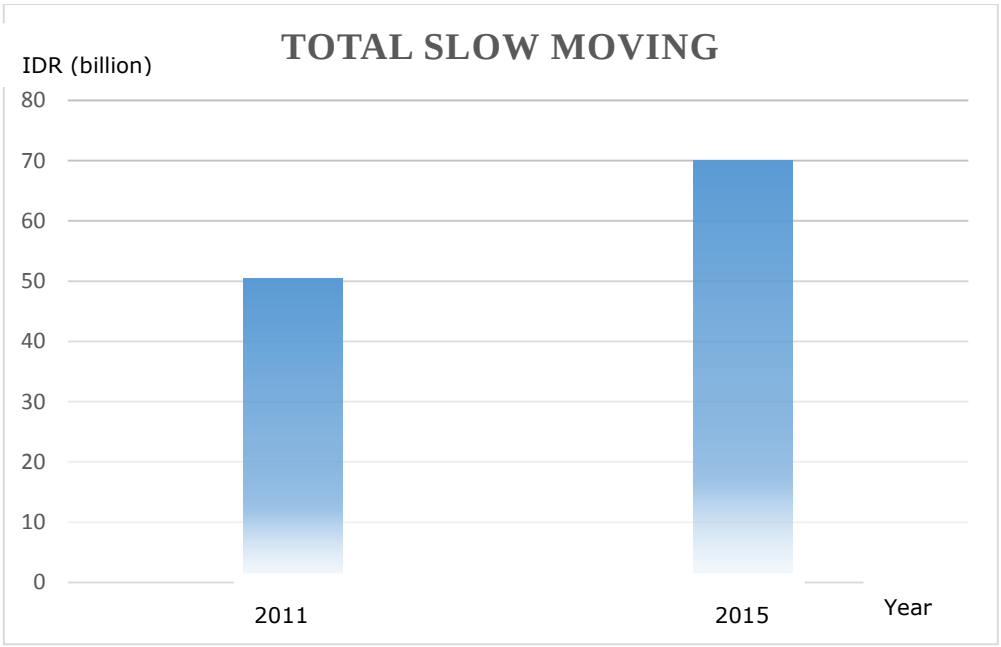

Figure I. 1 Slow moving cumulative value from 2010 and 2015

The tabel above describes there was a slightly increase of slow moving items value, the worst case of keeping slow moving items for long period of time is categorizing them into scrap (dead inventory) which will be tendered with selling price no more than 10% of purchasing price and the more important is to consume more inventory cost. The data below shows the comparison of slow moving items with other items.

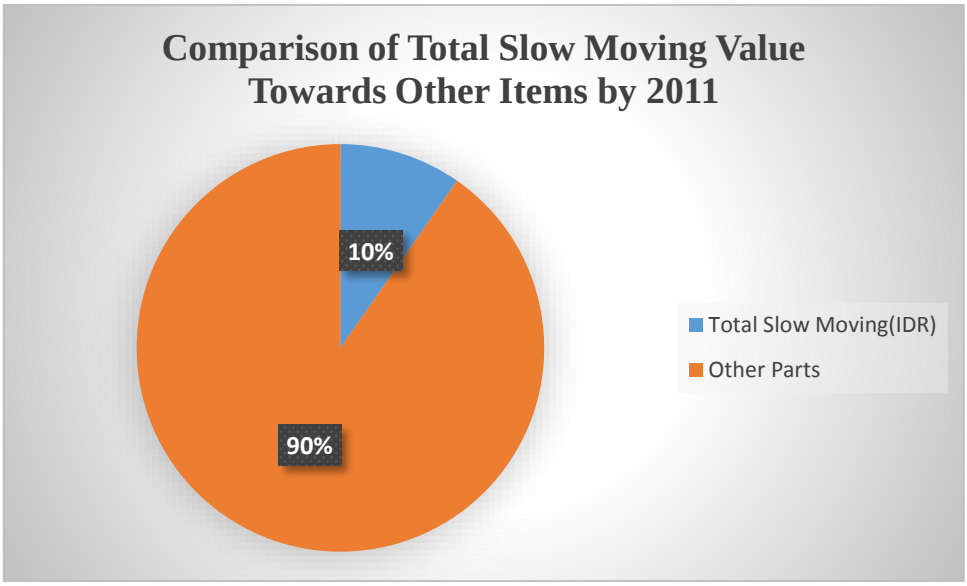

Figure I. 2 Comparison of inventory category

As of 2011, the slow moving inventory value dominated much or less 10% or IDR 50,430,009,417 to be exact of IDR 469,543,357,933 total inventory value.

The main cause of slow moving item emergence was because there always overstocked occurred in every year. The table below represents the slight difference between entry and demand from 2011 through 2013 (all are items that were categorized to be slow moving items at the end of 2015):

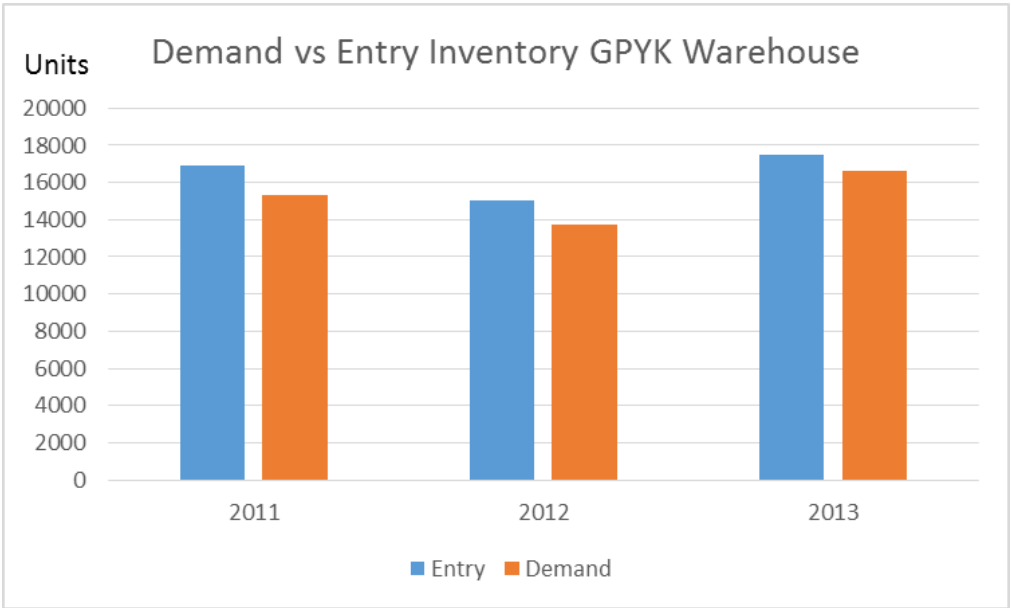

Figure I. 3 Comparison between entry and demand each year

Considering the inventory control of slow moving items, one of the PT KAI's warehouses which has most of slow moving items is Yogyakarta Central Warehouse (GPYK), located in Yogyakarta. The tabel below shows percentage comparation of the total slow moving item value at GPYK to other warehouses:

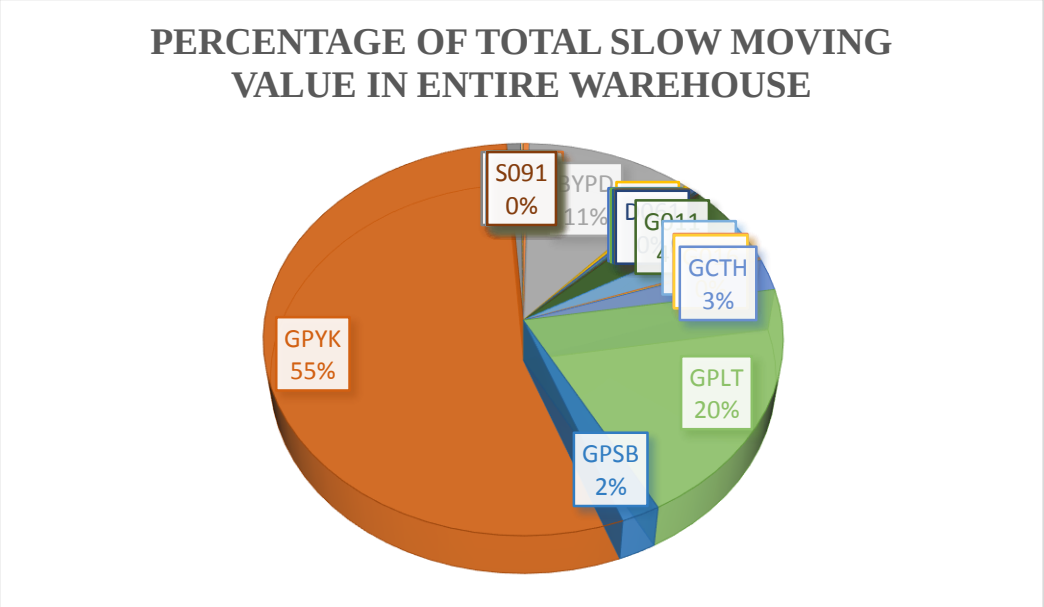

Figure I. 4 Percentage of slow moving value in all warehouses

GPYK warehouse seems dominating 55% of total value or approximately IDR 38.5 billion of all warehouse, implying that GPYK warehouse is the 1st rank in terms of slow moving value.

The overstock becomes vital to handle, judging from the tabels above describe how overstock impacting the unnoticed costs covered including oboselence cost (scrap) and particulary the inventory costs that must be burden to company in handling slow moving items for a long time. The longer handling period, the higher inventory cost would be burden to company regardless the advantage of having no stock-outs.

The overstock problem may occur due to unawareness the importance of forecasting the demand, or uninitiated appropriate forecasting or inventory policy model. As overstock at GPYK warehouse got increased as a result of having no appropriate inventory control planning that caused slow moving items, the inventory cost would also be increasing. This research is performed to stress or

lower inventory relevant cost (known as total relevant cost or TRC) by suitable inventory control model to overcome stockout as stated by (Assauri, 1999) pertaining to the function of inventory control is to “Control so the inventory doesn’t occur in over quantitiy, and cost occur from inventory is minimum”.

I.2 Problem Definition

Problem occur based on the research backround is:

1. What is the inventory policy to minimize cost by reducing overstock in Central Warehouse Yogyakarta (GPYK) of PT Kereta Api Indonesia (Persero)?

I.3 Research Objectives

The objective of this research is:

1. Determine the inventory policy to minimize cost by reducing overstock in Central Warehouse Yogyakarta (GPYK) of PT Kereta Api Indonesia (Persero.

I.4 Research Limitation

The limitations of this research are:

1. Data used are from January, 2011 through 2013.
2. The research is only performed until suggestion stage to company.

I.5 Benefits of Research

The benefits of this research are:

1. Consideration for PT Kereta Api Indonesia to determine inventory policy for present time and the future.
2. PT Kereta Api Indonesia could minimize overstock of supplies.
3. PT Kereta Api Indonesia could minimize total relevant cost (TRC) inventory.

I.6 Writing Systematics

This research will be described through this systematics writing as below:

Chapter I Introduction

This chapter contains a description of the research background, problem identification, research objectives, research limitation, research benefits, and systematics of writing.

Chapter II Literature Review

This chapter contains a relevant literature on the research conducted and also covered the previous studies related to this research.

Chapter III Research Methodology

This chapter describes the conceptual model and systematic problem solving to investigate the problem. The stages that will be carried out includes: the initial stage of research, data processing stage, analysis stage, and conclusion and suggestion stage.

Chapter IV Data Collection and Processing

This chapter describes about data that have been collected along this research. The data then will be processed to determine the inventory policy.

Chapter V Analysis

This chapter analyzes the result of data processing. The analysis describes about the comparison of total cost inventory policy for warehouse DAOP Yogyakarta of PT Kereta Api Indonesia.

Chapter VI Conclusion and Suggestion

This chapter describes the conclusion based on the research objective adjusted to the data processing result. Suggestion is also given to the company for next research.