This book covers the basic stories on allowances for doubtful accounts, including the approximate approaches on several estimations. Based on an academic structure, and publicly-traded firms, this book expects to show the simple insights on framework along with financial evidence toward the level of effectiveness of doubtful accounts. With the presence of other more technical books, at least, it is expected that this book is able to provide another angle of simple perspective on allowances for doubtful accounts and approximate estimations.
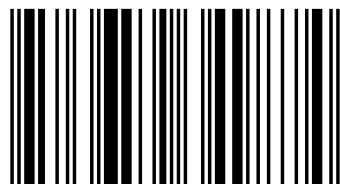
Dira Ayu Pradika

She started her accounting studies at Swiss German University in Indonesia. Following her internships at Total E & P Indonesie to focus on cost control within the project construction division, and at DB Schenker Indonesia, she joined PricewaterhouseCoopers in Indonesia since 2011 where she is involved with various audit assignments and projects.

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AFDA Estimation

Is It Effective?

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A Short Glimpse on the Authors

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CHAPTER 1 – INTRODUCTION

Nowadays, the majority of sales transactions are made through credit sales. Credit sales transactions can be assumed as the strategies of a company to attract the customer so they can improve their sales. It is preferable for buyers to use credit as a form of payment due to advantages for the company. Offering more on credit sales to the client will not only provide an increase in sales transactions, but there are also the risks following those transactions.

The major risk in credit sales transactions is the high possibility of customers or creditors who cannot comply with its obligation to pay all that they have received from the transaction both in goods and services. To reduce this risk, companies are expected to manage the accounts receivable and the accounts related. To specially manage the credit risks that are very likely uncollectible, a company can manage accounts using several methods. One of them is the allowance method, the method use the account of allocation for doubtful accounts, this account are then expected to help the true balance of accounts receivable and those expenses that will be undertaken by the company related to the doubtful accounts.

This is important for companies in determining the allowance for doubtful accounts effectively and efficiently as it can show the company's confidence and ability in managing their accounts receivable and how much will be the sacrificed cost by the company because of the allowance for doubtful accounts. There are several methods that can be used in determining the allowance for doubtful accounts (AFDA). The company can implement their strategies in determining the amount or percentage estimated in this account. The study attempts to evaluate a company's estimation process of allowance for doubtful accounts and find out effectiveness by using historical data available about a company.

Hence, it is interesting determine which evaluation process between the gap analysis and the three techniques analysis is more effective in evaluating the estimated process of AFDA. Also, it is interesting to understand the company patterns and strategies, including whether the evaluation results are applicable as potential basis for better future AFDA estimations.

In the attempt on determining AFDA, there are two methods that a company commonly uses, which are; the allowance method and the direct method. In the direct method or direct elimination method, losses on doubtful accounts are estimated and do not use the allowance for doubtful accounts, and it will be directly debit the write-offs account and deduct from the trade receivables account. On the other side, the allowance method requires the recognition of allocated amount for doubtful accounts in the period in which sales occurred, not within the period when actual deletion occurs. The method records the reserve amount of losses from doubtful accounts (AFDA) based on estimates. To determine the amount of reserves for doubtful accounts, there are two basic approaches. First is the percentage of sales (profit-loss approach) and second, the percentage of accounts receivable (balance sheet approach). In addition to these two

approaches, there is another approach, which is aging analysis of the receivables (Hasyim, 2009). Based on the methods and approaches above, it is beneficial for companies to evaluate the approach they used and find out which are in compliance and meet the criteria for effectiveness in processing the account, and knowing how useful the evaluation of these method in future estimation of AFDA.

In trying to study the details on AFDA approaches, there are three proposed problems:
1. Using gap analysis on a company's historical data to show the historical increase or decrease of bad debt expense (BDE), beginning for allowance of doubtful account (BADA), and write-off (WO) to evaluate AFDA estimation process.
2. Using the three techniques (Ratio of BDE to WO, Ratio of BADA to WO, and assessing the allowance exhaustion rate) on a company's historical data to evaluate the AFDA estimation process.
3. Understanding a company's strategies and patterns towards both methods, and finding out whether the methods are effective in estimating future AFDA.

In accounting and financial statements, estimates are used as an approach for delivery of elements of financial statements information that cannot be measured accurately. A good estimation is the one which considering the latest information relating to the accounts on its process, one example is in estimating the AFDA. The use of reasonable estimates in the preparation of financial statements is important because estimates are being used not to reduce the financial statements reliability (Martani, 2010; Sudrajat 2010).

Accounting estimation refers to a company estimation or approximate calculation on an account that likely to effect financial statements. Basic assumptions concerning accounting estimation are as follows:
1. Estimates should include the company consideration of the latest and the most reliable information available
2. Estimate can be applicable to help calculate several items that could influence the financial statements which cannot be determined accurately because of the uncertainties business activities.
3. Reasonable estimation becomes one of a crucial aspect to build a financial statement, since reasonable related to the report's reliability.

Estimation could also be changed and/or modified. Changes in estimation could be caused by new information, adjustments of assets or liabilities, expected future benefits and responsibilities related to the assets and liabilities. Hence, estimations are frequently calculated by considering the latest, new and more reliable information. In estimating AFDA, in fact, firms may likely to develop and gather additional information. By so doing, the disclosure of estimated allowance in firms' financial statements will be more reliable and valid.

In the attempts to study the AFDA, and to maintain focus of the study, the analysis of AFDA is limited to five different manufacturing firms within the food and beverage industry listed on the Indonesian Stock Exchange (IDX). The chosen firms are the one that used allocation method in setting up their allowance toward WO account. Also, the analysis covers only five years financial periods of 2004-2010.

CHAPTER 2 – LITERATURE REVIEW

The purpose of this study is to evaluate and analysis the companies decision and estimation toward their AFDA. The study will using the company financial data especially those on balance sheet and income statement which related with the allowance for doubtful account, the evaluation use the ratio and the gap analysis to see the pattern and effectiveness of management decision in setting up the estimation. This chapter presents related reference, definitions, and concepts to support the analysis in this study.

2.1. FINANCIAL STATEMENT

Financial statement is accounting statement. Accounting was defined as an information system that identifies, records, and communicates the economic events of an organization to interested users (Weygandt, et al, 2005). The analysis and interpretation of financial report is required to get deeper understanding of economic events. Financial statement analysis is the application of analytical tools and techniques to general purpose financial statement and related data to derive estimates and inferences useful in business analysis (Subramanyam & Wild, 2009). Financial statement consists of four major report, balance sheet, income statement, cash flows, and statement of change in equity.

2.1.1. BALANCE SHEET

Balance sheet is a summary of company financial position that represents three main parts which are assets as a company's economic sources, liabilities as an obligation and the last one is shareholders equity as the value of the company which comes from the result of total assets subtracted by the liabilities. Financial statement or also known by statement of financial position reports the assets, liabilities, and owner's equity at a specific date.

2.1.2. INCOME STATEMENT

Income statement is a statement that summarizes business transaction of a company for specific period of time. Income statement or also known as statement of operations list the revenue, expenses and the net income that also represent the different of revenues and expenses (Harvey, 2010; Guinan, 2009; Scott, 2003). There are two parts of income statement, operating and non-operating part. The operating part showed the information about revenues and expenses that related to the regular business operation but the non-operating part showed information that did not directly related to the regular business operation.

2.2. RATIO ANALYSIS

Ratio analysis is an analysis that studies the relationship between financial variables and systematically used to interpret the company financial condition, whether the strength and weaknesses, and comparison between company past performance and current

condition can be determined. Ratio analysis also used to assess the performance and the status of the firm. The term of ratio itself express the mathematical relationship between one quantity and another (Bergevin, 2010; Khan, and Jain, 2008; Weygandt, et al, 2007)

There are several reasons why ratio analyses are important (Bagad, 2008), in the book entitled "*Managerial Economics and Financial Analysis*":
1. Ratio analysis illustrates the current financial positions of the firm. The sets of ratio It helps insurance companies, banks, other financial institutions in assessing the financial conditions of any firms before deciding subsequent necessary action steps.
2. Financial ratios are useful for investors in evaluating the firm's profitability.
3. Financial ratios are easily comparable, both with the same firms (called intra-firm comparison), or different firms (called inter-firm comparison).
4. Ratio analysis provides the foundation for future plans and forecasts.
5. Ratio analysis reflects the proportion of assets and liabilities, which eases up the evaluations on strengths and weaknesses, including the ability of the firm to meet the financial obligations.
6. Ratios indicate the efficiency of the firm.

2.3. EFFECTIVENESS

Effectiveness is a condition that could interpret the successfully of reaching target by doing the right things (Anantadjaya, 2009; Komarudin 2000). Effectiveness on this research is related to the method use in analyzing and evaluating the estimated AFDA. The effectiveness of these method measures by how success the method represents the evaluation of past AFDA estimated by analyzing the accounts of BDE, BADA, and WO.

2.4. GAP ANALYSIS

Gap analysis is a tool to determine the company position and knowing the comparison between company actual performance and company desire performance (Hubbard, et al, 2007; Franklin, 2005). There are key benefits and disadvantages of gap analysis based on Grundy, and Brown (2004). The key benefits of gap analysis are as follows:
1. Gap analysis provides a very clear focus for sketching aspirations for the business
2. Gap analysis links in with the strategic breakthroughs required in order to move the business forward
3. Gap analysis emphasizes the longer and medium term and is not just confined to the shorter term.

Nonetheless, despite the key benefits of gap analysis, there are disadvantages, as follows:
1. Gap analysis is frequently used without supporting techniques
2. Gap analysis typically results in superficial thinking, rather than in truly creative analysis of potential breakthroughs.

Variance analysis is one of forms in gap analysis. A variance is the difference between actual results and expected performance. The analysis on total differences is calculated from standard and actual differences. Such differences are often called variance analysis (Horngren, et al, 2009). Variance analysis helps management to understand the

actual cost and hopefully being able to manage future cost. Variance analysis involves the analysis of the different between actual and standard cost or between actual cost and budget cost. The variance analysis is expected to enables management to determined problems which need deeper investigation with a view to implementing remedial action and also to isolate the specific area where the actual cost incurred and take remedial action. Variance analysis is also used to explain the difference between the actual dollars amount of sales and the budgeted sales dollars. Examples include sales price variance, sales quantity (or volume) variance, and sales mix variance. A difference in the relative proportion of sales can account for some of the difference in a company's profits.

2.5. ACCOUNT RECEIVABLES

The term 'receivables', means the amount due from individuals and other companies. Receivables are claims that are hoped to be received in cash. Receivables basically fall into three categories, account receivables, notes receivables and other receivables (Weygandt, et al, 2007; Simamora, 2000; Mulyadi, 2001).

2.5.1. ACCOUNT RECEIVABLES

Account receivables are amounts owed by customers on account. They are the result of credit transaction of the sale of goods and services. Companies generally expect to collect these receivables within 30 to 60 days. Account receivables are the most significant type of claim held by a company.

2.5.2. NOTES RECEIVABLES

Notes receivables are claims for which written or formal instruments of credit are issued as a proof of the debt. The notes receivables are normally used for debts in a period ranging from 60 to 90 days or more and there is interest that the debtor is required to pay. Those account receivables and notes receivable coming from sales transactions are called trade receivables.

2.5.3. OTHER RECEIVABLES

Other receivables are out from the trade receivables category. These receivables arise due to a company's lending without a direct connection with the sale to goods or services.

2.6. BAD DEBTS EXPENSE (BDE)

BDE is accounts receivable that will likely remain uncollectable and will be written off. BDE is also known as uncollectible accounts, which are on the company's income statement, thus reducing net income. In managing the bad debts account, a company needs to know the specific amount of accounts receivable that will be uncollectible. To calculate the account there are two methods that can be used (Machfoedz, 1999):

2.6.1. DIRECT WRITE-OFF METHODS

Based on this method, identifying and recording the process of credit losses is when the creditor is unable to pay its debts. Based on the method of direct write-

offs, BDE is not recorded until they are determined to not to be billed again, so the provision of accounts and journals adjustment clause is not required at the end of the period. Under this method, BDE will show only the actual losses from uncollectible. The direct write-off method is not acceptable for financial reporting purposes since company regularly record BDE in a different period when the revenue actually occurred. This method also does not require the account to match the BDE and to sales revenues in the income statement. The direct write-off method show accounts receivable in balance sheet at the company actual expected amount to be received.

2.6.2. ALLOWANCE METHOD

Allowance method requiring the recognizing of BDE on the same period when the sales occur, not in the period of actual WO. This allowance method records the trade receivable losses based on estimation. This estimation of uncollectible account is represented at the end of each period ensuring a company states its receivables in the net realizable value on the balance sheet. The account for this allowance method is allowance for doubtful accounts. It represents the company's best estimate of the amount of account receivable that will not be paid by customers.

2.7. THE THREE TECHNIQUES

This study conducts three main techniques which consist of two ratio and exhaustion rate. Based on the research that already being conduct by Riley & Pasewark in 2009, the techniques are being used to evaluate the estimation process of allowance for doubtful account. These techniques are useful to consider the accuracy of past estimates as mandated and complying with the Statement on Auditing Standard (SAS) no.57and AU Section 342, Auditing Accounting Estimates, which recommend the auditor to evaluate the reliability of the process used to develop estimates by comparing the prior accounting estimates with subsequent result:

2.7.1. BAD DEBTS EXPENSE (BDE) TO WRITE-OFFS (WO) RATIO

The first calculation was the ratio of BDE over WO. The ratio was one measure of the accuracy of bad debt estimates. A BDE booked in specific financial period indicates the necessity for that year and subsequent year WO. This ratio is being calculated over multiple periods to provide the most useful information. Analysis on this ratio may also indicate the sense of the consistency relationship between BDE and WO account over time.

The calculated ratios for multiple years showed that company may underestimate the impact of collection problems if the numbers are substantially lower than 1.0. Meanwhile, multiple-year ratios that significantly exceed 1.0 may indicate that company is accumulating an excessive allowance. Analysis on this ratio may also indicate the sense of the consistency relationship between BDE and WO account over time; it shows the standard deviation of those measures. The consistency happens when the standard deviation is low when it

compared with multiyear mean.

2.7.2. BEGINNING OF ALLOWANCE FOR DOUBTFUL ACCOUNT (BADA) TO WRITE-OFFS (WO) RATIO

The BADA to WO ratio indicates how adequately the allowance accommodated subsequent WO. Lower ratio showed that may be the BADA has not been large enough to covers impending WO, while the high ratios may indicate that the company was accumulating excessive allowance.

The mean examined in the ratio are comparable. It is being used to discover the benchmark figure of one to two years to find whether the relation between company's AFDA balance and subsequent WO are reasonable. In measuring the volatility the standard deviation in ratio is being used, signals of consistency shown by the relatively low standard deviation in the multiyear mean comparison. Meanwhile, the relatively high standard deviation indicates a volatile relationship between the allowance and subsequent WO.

This ratio is useful to examine both the mean and standard deviation of the BADA to WO ratio over a period of several years. The ratio being conducted each year involving the BADA as the numerator and WO of accounts receivable recorded during the year as the denominator. The BADA to WO ratio indicates how adequately the allowance accommodated subsequent WO. Lower ratio showed that may be the BADA has not been large enough to covers impending WO, while the high ratios may indicate that the company was accumulating excessive allowance.

2.7.3. THE EXHAUSTION RATE

The exhaustion rate is an indicator to measure the time taken to use the BADA in the form of actual WO. The exhaustion rate used to measure how long the allowance takes time into WO. The Exhaustion rate is calculated by subtracted each BADA amount in based year by its WO, then the remaining allowance left were divide by the following year's WO. To indicate the exhaustion rate, the ending result of that calculation must be added by 1.00 to include the last year period.

The exhaustion rate is an indicator to measure the time taken to use the BADA in the form of actual WO. For example, a company with year one data of a BADA of US\$ 45,000, and WO of US\$ 20,000, and US\$ 30,000 of WO for year two, would exhaust the allowance in 1.5 years (US\$ 45,000 – US\$ 20,000 = US\$ 15,000 left for the next year; US\$ 15,000/US\$ 30,000 = 0.5 years).

2.8. STANDARD DEVIATION

Standard deviation is a statistical measure of the level of dispersion in distribution of a set numerical data. Measuring the standard deviation it means measuring the variance from the mean value, which is also known as the root mean square deviation. The root mean square itself was the average size of element numerical on the data set. Mean

being considered as the mathematical average calculation of a set of numbers, it calculated by adding up all the number and dividing by the total number calculated. In analyzing the result of standard deviation, the result number indicates the wider the values are spread out, the larger standard deviation. In this study, standard deviation is being used to measure the consistency by comparing the result of data analyzed.

2.9. ACCOUNTING AND AUDITING STANDARDS
2.9.1 PSAK 25 AND IAS 8

Theory discussed in literature review chapter 1, accounting estimate were based on exposure draft PSAK 25 (revised 2009) "Kebijakan Akuntansi, Perubahan Estimasi Akuntansi, Dan Kesalahan" which adopted IAS 8 (2009) "Accounting Policies, Changes in Accounting Estimates and Errors" specifically the content in paragraph 30 & 31 that stated "*when the entity has not applied a new PSAK that have been issued but not yet effective, the entity shall disclose; (a) this fact; and (b) relevant information which can be estimated fairly or can be known to assess the possible impact of the new standard adoption on financial statements at the beginning of the period of implementation*".

In paragraph 31, it stated that, "*based in paragraph 30, the entity was consider to disclose: (a) the title of the new PSAK; (b) the nature of changes in standards that have not been effective or changes in accounting policies; (c) the date on which the application of PSAK required; (d) the date on which the entity initially plans to implement PSAK; and (e) if: (i) discussion of the estimated impact of initial adoption; or (ii) if impacts cannot be known or reasonably estimated, a statement on it*".

2.9.1. SAS NO. 57 AND AU SECTION 342

The three techniques used were complying with audit standard which are Statement on Auditing Standards (SAS) No. 57 and AU section 342, Auditing Accounting Estimates, the following regulation was suggesting the auditor to compare prior accounting estimates with subsequent results to evaluate the reliability of the process applied to build estimates. (Riley, Pasewark, 2009)

Based on AU section 342, accounting estimates are often included in historical financial statements because the measurement of some amounts or the valuation of some accounts is uncertain, pending the outcome of future events, and relevant data concerning events that have already occurred cannot be accumulated on a timely, cost-effectively basis.

There are six contents includes in company's management responsibility in establishing a process for preparing accounting estimates.
1. Identifying situations for which accounting estimates are required.
2. Identifying the relevant, sufficient, and reliable data on which to base the estimate.
3. Developing the assumptions that represent management's judgment of the most likely circumstances and events with respect to the relevant factors.
4. Determining the estimated amount based on the assumptions and other relevant factors.

5. Determining that the accounting estimate is presented in conformity with applicable accounting principles and that disclosure is adequate.

In measuring the reasonableness of an estimate, there are key factors and assumption that normally being concentrate by the role of auditor:
1. Significant to the accounting estimate.
2. Sensitive to variations
3. Deviations from historical patterns
4. Subjective and susceptible to misstatement and bias.

By over viewing this regulations and standards especially the reasonable measure, it indicates that the three techniques analysis proposed to evaluate the AFDA estimation was appropriate as an additional or substitute tools.

CHAPTER 3 – METHODOLOGY

This chapter contents of research methodology used and how the research was conducted, includes the research design and workflow, research questions, hypothesis, and data collection method.

3.1. RESEARCH DESIGN

There are total ten steps in the research design used in this research. The research design starts with the observation which expected to be able to identify the topic or theme that will become the research interest. At this step the research narrowing its concentration into particular topic and scope to be analysis on the next step. The research design continues with literature survey on financial statements related to the selected topic.

Figure 1: Research Design
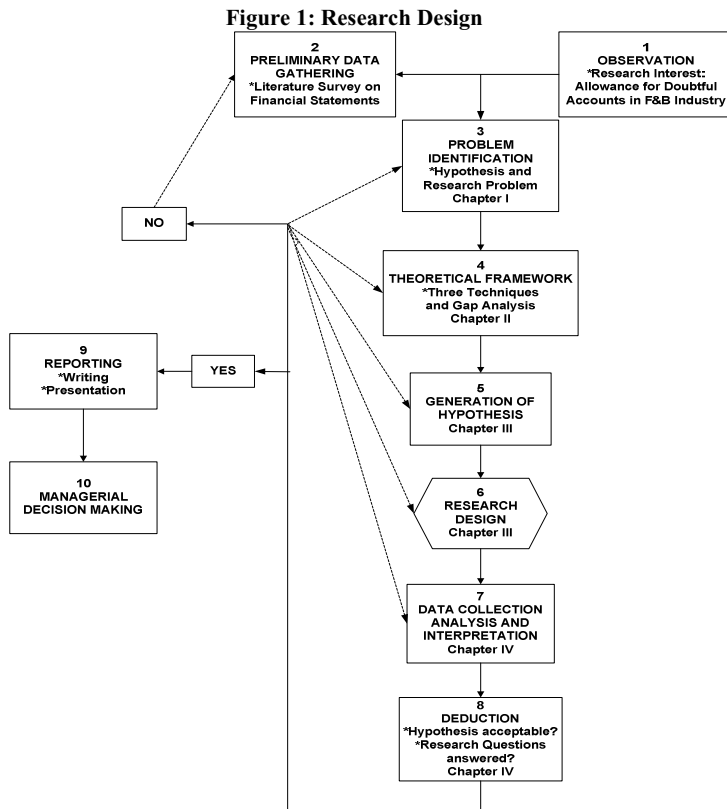
Source: Sekaran, 2000, modified

On the second step, the usable and the availability of data were then identified. After the topic and scope being selected and the data were available for further analysis, the research continue with the identification of research problem and potential hypothesis that could rise along with these problems.

On the fourth step, the theory that applicable and support those selected problems were specified. Then, those problems and theory selected were accumulated to create hypothesis for the research. This generation of hypothesis was performed on the fifth step of the research design. Along with the generation of hypothesis, selection of further thesis design was represented in chapter 3. In chapter 4, the gathered data were being analyzed and interpreted so it would be able to answer all the research problems and testing the hypothesis created. Both processes were occurred in the seventh and eighth step of research design.

Before the two final steps of research design, the answer of whether the data analyzed have answered the research problem and hypothesis directed the next step into two possible further steps. If the data analyzed proved to be unable to answer and tested the research problem and hypothesis, then the further stage required was back to the second step which is identifying again reliable data to be analyzed and the able to be used to answer and tested the problem and hypothesis. Mean while, if the data analyzed proved to be able answering the research problem and tested the hypothesis, the process could continue into creating a conclusion and recommendation includes presentation of the result, all this process was includes in reporting stage on step nine. The last stage was management decision making which used the research's result that has been made.

management decision making which used the research's result that has been made.

3.2. RESEARCH WORKFLOW

The research workflow started with the main topic of AFDA estimation. The AFDA estimation is used to measure the current AFDA for the year.

The AFDA estimation component was the closely related account of AFDA which are BDE, BADA, and WO. To be able analyzing the AFDA estimated this research has selected two basic methods, gap analysis and three techniques analysis. Each analysis will involve all those three accounts. The first account was BDE, BDE was allocation specifically made during the year to covers the WO of the year. Second was BADA, BADA was the ending balance of AFDA in previous year, BADA account was become the beginning balance to calculate the total balance of AFDA for the current year. The last account was WO, the amount of WO was the number of trade receivables that being written off along the year. The overall of AFDA calculation was begin with the BADA that being added or subtracted by BDE allocate for the year, and the result will be deducted with the number of WO. The final result of this calculation becomes the ending balance of AFDA for the current year and BADA on the next year.

Figure 2: Research Workflow
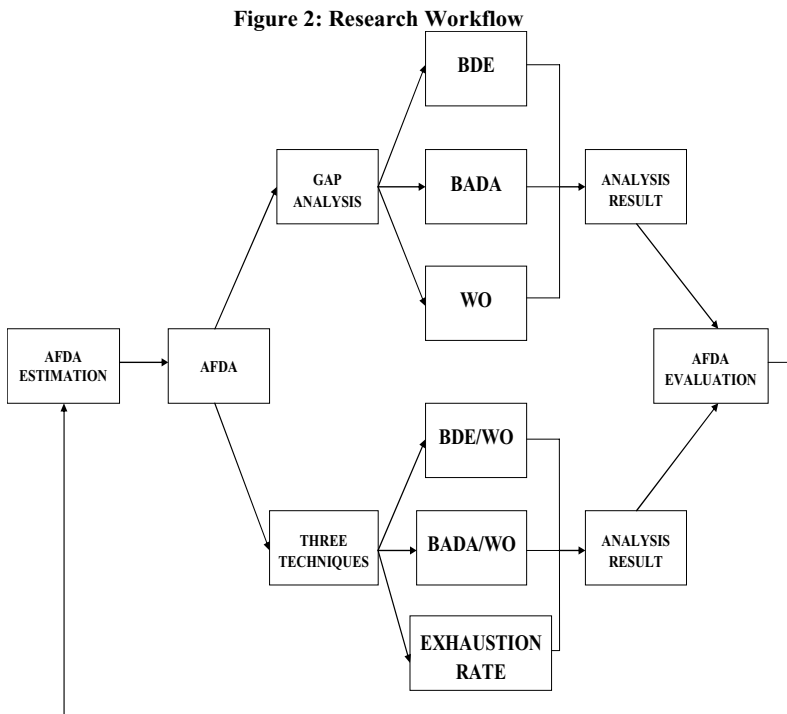
The gap analysis will determine the three account movement during the years, the gaps mentioned was the amount increase or decrease of accounts year by year. Mean while, the three techniques analysis consists of two ratios and one rate, those involving all the three accounts. Then, the analysis result of each method will be identified whether they could be effectively used as an evaluation tool for AFDA past estimation. The last, besides identifying the effectiveness the result will be analyzed to measure whether the result could be useful as a consideration to estimating future AFDA.

3.3.   RESEARCH QUESTIONS AND HYPOTHESIS

The following research question and hypothesis were conducted based on the research purpose. There are three main purpose of this research: first, the purpose is to determine whether the evaluation process of gap analysis or the three techniques analysis that is more effective to evaluate the estimation process of AFDA. Second purpose is to understand the company pattern and strategies by that evaluation. The last purpose is to find whether the evaluation result were applicable as main based for better AFDA future estimation.

3.3.1. RESEARCH QUESTIONS

Question # 1: How effective gap analysis used to analyze and evaluating the AFDA estimation process?

Question # 2: How effective the three techniques (Ratio of BDE to WO, Ratio of BADA to WO, Assess the allowance exhaustion rate) used to analyze and evaluating the AFDA estimation process?

Question # 3: Which method is more effective to analyze and evaluating the AFDA Estimation process and which one is more useful to be used in future AFDA estimation process?

3.3.2. HYPOTHESIS

The research will conduct the hypothesis testing to gather the evidence and supporting analysis to answer the research question.

H_1: The gap analysis successfully represents the evaluation of the AFDA estimation process and proves to be useful for future AFDA estimation processes.

H_2: The BADA to WO ratio more successfully represents the evaluation of the AFDA estimation process and proves to be useful for future AFDA estimation processes in three techniques analysis.

3.4.   DATA COLLECTION METHOD

Data is a collection of information. In business term, data is a collection of information needed for decision making. Data obtained by measuring the value of one or more variables in the sample (or population). Data is a variable that we can measure and can be classified into quantitative and qualitative data (Kuncoro, 2009). Quantitative data is

data that measured on a numerical scale and can be divided into two, namely: the interval data is the data measured by the distance between two points on a scale that is known, and then the ratio data which is the data measured by a proportion. On the other hand, Qualitative data is data that cannot be measured in a numerical scale. So, to be able being used to research process, qualitative data can be measure quantitatively by fall it into categories, there are two basic categorizing: (1) nominal data, data is expressed in terms of categories, then (2) ordinal data, data expressed in terms of categories of data are not yet equal position as stated in the rating scale.

Data based on its origin source divided into two categories, primary data and secondary data. Primary data usually being gathered by direct survey which use various original data collection method, data that called primary data is data that being collected first-hand by inquirer for specific purpose. Meanwhile, secondary data basically already gathered by the data collector which not the one of the original data creator that may have different purpose from the original creator purpose (Kuncoro, 2009; Ghauri & Grøhaug, 2005; Leedy & Ormrod, 2003).

The research will conduct and involve the quantitative and secondary data to its process. The author will gather data provided by Indonesia stock exchange for selected company listed in food and beverage sector. The data will consist of financial and annual report of the companies in a range period of 2004 – 2009 financial years.

CHAPTER 4 – RESULTS & ANALYSIS

4.1. COMPANY OVERVIEW

The following brief information on selected firms is mainly based on the annual reports, which are publicly available.

4.1.1. PT. AKASHA WIRA INTERNATIONAL, TBK. (ADES)

PT. Akasha Wira International, Tbk, was established under the name PT Alfindo Putrasetia in 1985. The Company's name has been changed several times; the most recent one was in 2009, when its name was changed to PT Akasha Wira International, Tbk. The company engages in bottled water industry and is producing and selling bottled drinking water under AndeS, AndeS Royal, and Nestlé Pure Life Brands.

In 1994, the company conducted an Initial Public Offering, by 14 July 1994; the company listed all of its shares at Jakarta Stock Exchange (JSX) and Surabaya Stock Exchange (SSX). In the same year, the company went through another big transformation. Water Partners Bottling S.A. (WBP), a joint venture company between Nestlé S.A and RSPI (a wholly owned subsidiary of The Coca-Cola Company), acquired a majority stake in the company.

4.1.2. PT. TIGA PILAR SEJAHTERA FOOD, TBK. (AISA)

PT. Tiga Pilar Sejahtera Food, Tbk, was established on January 26, 1990. The company has two main products. The first one is a consumer package goods and the second one is industrial goods. The consumer-packaged goods consist of products that are readily consumable without any further process, such as; instant noodles, and instant vermicelli products. Meanwhile, the industrial goods consist of products that are requiring a further process. Industrial goods include: egg noodle, dried noodle, and dried vermicelli products. On June 11, 1997, the company's shares have been listed at the Jakarta Stock Exchange (JSX).

4.1.3. PT. DELTA DJAKARTA, TBK. (DLTA)

Before it was formed as PT. Delta Djakarta, Tbk. in 1970, there was a factory that called Archipel Brouwerij, which was established in 1932. After several times changing its ownership, the company that mostly known as The "Anker Bir" was later listed using the name of PT. Delta Djakarta. The business scope of the company is mainly in manufacturing the Pilsener beer and Stout under the "Anker", "Calsberg", "San Miguel", "Kuda Putih" and "San Miguel Light" trademarks. The company's products are marketed both domestically and internationally.

4.1.4. PT. INDOFOOD SUKSES MAKMUR, TBK. (INDF)

PT. Indofood Sukses Makmur, Tbk. was established on August 14, 1990 under its original name PT. Panganjaya Intikusuma. The company activities were includes manufacture of noodles, flour milling, packaging, management service,

and research and development. In 1994, the company was listed in Jakarta Stock Exchange (JSX) with initial 763 million shares.

Indofood's strongest legacy today is the strength of its brands, many of which have been companions to the people of Indonesia for nearly two decades. These include a variety of instant noodles brands (Indomie, Supermi, Sarimi), wheat flour (Segitiga Biru, Kunci Biru, and Cakra Kembar), cooking oil (Bimoli), margarine (Simas) and shortening (Palmia). Those brands remain the market leader in their specific segments with a reputation for quality and value for money that remains unrivalled.

4.1.5. PT. PRASIDHA ANEKA NIAGA, TBK. (PSDN)

PT. Prasidha Aneka Niaga, Tbk was formed on April 16, 1974 under the name of PT. Aneka Bumi Asih. The company was originally dealing in the processing and trading agricultural product. In December 1993, the company's name was changing into PT. Prasidha Aneka Niaga. On September 22, 1994 the company was legally go public with offering 30 million shares. The Company's core business consists of the producing and trading commodities of coffee, crumb rubber, cocoa, tapioca, and instant coffee. Their main product lines are plantation and cultivating coffee beans.

4.1.6. PT. SEKAR LAUT, TBK. (SKLT)

PT. Sekar Laut, Tbk. (SKLT) was formed on July 19, 1976. The company business activities were food manufacturing and processing. The company specialized it operation on cracker, sauce and spices. The major product line of PT. Sekar Laut is under the name brand "Finna", and the second product line was "Bumi Food" which consists of meat product. The other product of the company includes chips and cashew nuts. On September 8, 1993, the company listed its share for trading in the Jakarta and Surabaya Stock Exchange.

4.1.7. PT. SIANTAR TOP, TBK. (STTP)

PT. Siantar Top, Tbk. was established on May 12, 1987. The company started its commercial operation on September 1989. The scope activities of the company are mainly to engage in the manufacturing of snack, noodle, crackers and candy. The company's products are markets both domestically and internationally, especially in Asia. On November 25, 1996, the company obtained the notice of affectivity from the Chairman of the Indonesian Capital Market Supervisory Agency for its public offering of 27 million shares to the public through the capital market in Indonesia. On December 16, 1996, the shares have been listed in the Indonesian Stock Exchanges.

4.2.   DATA ANALYSIS

The following data analysis follows the steps prescribed earlier in the previous chapter.

4.2.1. GAP ANALYSIS

Evaluating the estimation of allowance for doubtful account using the gap analysis is by analyzing the increase of every account annually. So that the analysis could reveal the gap amount and movement related to the other general account that represents company financial performance. Gap analysis is also used to analyze the studies of tax-related income of the company.

The gap analysis involved the accounts related to the AFDA, such as BADA, BDE, and also WO. The following table and chart are showing the average industrial gap accounts.

Figure 3: Industrial Average on Gap Analysis
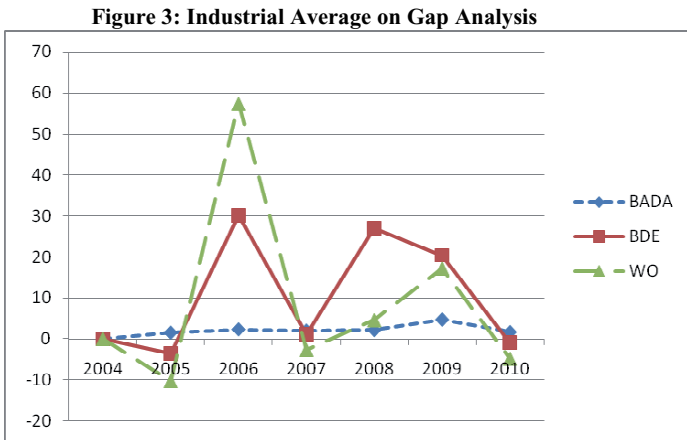
Source: Financial Statements 2004-2010, modified

Table 1: Industrial Average on Gap Analysis

	BADA	BDE	WO
2004	---	---	---
2005	1.56	-3.63	-10.28
2006	2.35	30.17	57.44
2007	2.06	1.06	-2.64
2008	2.18	27.04	4.61
2009	4.71	20.37	17.20
2010	1.70	-0.95	-4.78

Source: Financial Statements 2004-2010, modified

The data indicates that the average gap of BDE and WO in industry almost have a very similar pattern of movement. Starting from the beginning of period they show a decrease from 2004 to 2005, followed by significant number of gap which increase by each more than 30 and 50 for the next year. Even though the gap are drastically down for the year 2006 to 2007 for BDE and WO, the BDE show a positive increase again in 2008 and 2009 amounted more than 20. For

WO the gap continuously increase by the number of 4 to 17 in 2008 and 2009. Both gap for a period 2009 to 2010 were showing a decrease.

The movement of gap for AFDA and BADA shows a similar pattern since the current increase in AFDA was the amount increase in BADA for the next year. Since the ending balance of AFDA for a current year was next year's BADA.

4.2.2. THREE TECHNIQUES ANALYSIS

Same with the gap analysis, the three techniques analysis begin with showing the average calculation as per industrial based. The three techniques involved the accounts that are closely related to AFDA and try to evaluate its beginning estimation using the ratio among those accounts.

4.2.2.1. BDE TO WO RATIO

The first calculation was the ratio of BDE over WO, this ratio is calculated for multiple years, and an analysis for individual year of this ratio along with its standard deviation could shows the company's consistency of managing those two accounts. This first ratio shows the company under or over allocated their expense by the calculation benchmark of 1.0. If the calculation results are substantially lower than 1.0 it can be assumed that the companies are under allocated their expense. But if the calculations are exceeding 1.0 then the companies may be over estimate the impact of receivable collection. The actual relationship of these two accounts was determined by inspecting the arch year ratio and the standard deviation of those measures. The relatively low standard deviation when compared with the multiyear measure mean indicates a consistency.

4.2.2.2. BADA TO WO

The second ratio was involving the BADA and WO. This ratio are computed each year and used the BADA as the numerator which indicates how adequately the accounts subsequent WO. The ratio is computed each year, with a benchmark 1.00 or 2.00, lower ratio indicate that BADA may not have been large enough to absorb impending WO, meanwhile the bigger ratio indicate the companies may have bigger allowance that it needed. In this second technique the calculation is also being completed by multiyear measures and standard deviation. Different with the first ratio which its multiyear measure calculation was taken from the total amount of BDE per total amount of WO during the period of years, the second ratio was using the average ratio calculated during 2004 until 2010. Same with the first ratio, standard deviation is used to measure the consistency of both accounts BADA and WO. A bigger multiyear measure compare to the standard deviation indicates a consistency.

4.2.2.3. EXHAUSTION RATE

The third technique was assessing the allowance exhaustion rate. The exhaustion rate used to measure how long the allowance takes time into WO.

Basically, the management creates the benchmark for this exhaustion rate, it becomes part of company measure, whether they set the allowance under or over allocated. The standard benchmark for exhaustion rate is 1.0. This means that the allocated allowance was sufficient enough to fulfill the need of bad debt in the current year. Any number closing 1.0 indicates that the company had good estimation towards their allowance. The Exhaustion rate is calculated by subtracted each BADA amount in based year by its WO, then the remaining allowance left were divide by the following year's WO. To indicate the exhaustion rate, the ending result of that calculation must be added by 1.00 to include the last year period. The exhaustion rate is represent by year, and the reasonably benchmark for exhaustion rate is 1 to 2 years. (Riley & Pasewark, 2009).

The following data was the industrial average for the three techniques from the year of 2004 until 2010.

Table 2: Industrial Average on Three Techniques Analysis

AVG INDUSTRY	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	4.8	4.8	5.5	9.3	34.7	7.4	16.0	**4.4**	**10.8**
BADA/WO	4.4	3.7	5.1	6.2	28.2	10.9	8.3	**9.6**	**8.6**
Exhaustion Rate	8.0	4.9	20.1	7.5	8.2	6.7	---	**N/A**	**N/A**

Source: Financial Statements 2004-2010, modified

The table above shows the average data of the three techniques for food and beverage industrial companies for seven years. The data excluded the extraordinary items from PT. Akasha Wira International, Tbk. (ADES) and PT. Sekar Laut, Tbk and its subsidiary (SKLT) for the final year of 2010 since the second and three technique applied showing that they have huge amount of result that may not represent the industrial average as a whole. For the first technique, BDE over WO showing the result of multiyear measure of 4.4 way above its reasonably benchmark, indicates that the average companies have accumulating an excessive allowance for their WO, it also mean that in average the companies were overestimating their collection over the receivables.

For the BADA over WO ratio, the average industry showing a number that over the benchmark, starting from 4.4 in 2004 and slightly decrease in 2005. After 2005, the ratio showing an increase until reach its highest amount in seven years which is 28.2 in 2008, and drop to 10.9 on the next year and 8.3 on the last year 2010. The average industry showing almost a consistency for this second technique even though the overall result was over allocated the allowance, it indicates by amount of standard deviation that is smaller than the ratio's multiyear measure.

The average industrial exhaustion rate showing a fluctuated result, the amounts continuously increase and decrease during the years. Starting with 8.0 in 2004 then drop to 4.9 in 2005. The average exhaustion rate at its peak on 2006 with 20.1 and more than 60% decrease in 2007 in to 7.5. The rate slightly increases in 2008 but continuously decrease into final rate of 6.7 in 2009. The 2010 exhaustion rate cannot be determined because the entire BADA has not been utilized as in the form of WO. The entire number showing the average of more than 4.0, these indicate that the allowance settled by companies in average would exhaust in more than 4 years period. Supporting the other two techniques previously that average industry has over allocated its allowance over the WO.

4.2.3. PT. AKASHA WIRA INTERNATIONAL, TBK. (ADES)

4.2.3.1. ADES'S GAP ANALYSIS

In ADES, GAP analysis of the BADA and WO for the average year of 2004 until 2010 it shows that the account is decreasing; meanwhile in general the BDE is showing the average increase nearly 2.0. For 2005 until 2007, BDE showing the same movement with the WO, starting with negative gap in 2005 and followed in 2007, and positive gap at 2006. In 2008, the BDE showing a significant gap of increase by more than 13.03, different with the amount of WO which decreasing by more than 90%. It followed on the next year that BDE has positive gap in 2009 and negative gap in 2010, but on the other way around the WO showing the reverse. Different from the other two accounts, BADA showing less significant gaps during the year, that is why the standard deviation of BADA indicates a smaller number compare to 5.8 BDE and 1.86 WO of standard deviation.

Figure 4: ADES' Gap Analysis
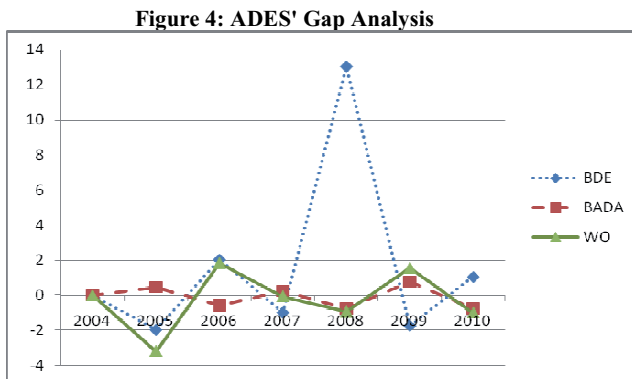
Source: Financial Statements 2004-2010, modified

By only showing this three account gap each year the companies may get the understanding of how the account increase and decrease each year and also the pattern of each account. But to measure whether the estimation of the

AFDA were effective, the gap analysis could only provide by analyzing the pattern and the standard deviation calculated has the same rhythm and almost standing in the same range of amount.

Table 3: ADES' Gap Analysis

ADES	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	-1.97	2.03	-0.98	13.03	-1.74	1.05	**1.90**	**5.68**
BADA	---	0.47	-0.55	0.25	-0.74	0.76	-0.73	**-0.09**	**0.66**
WO	---	-3.19	1.83	-0.06	-0.93	1.55	-0.99	**-0.30**	**1.86**

Source: Financial Statements 2004-2010, modified

Since the gap analysis only showing the movement of those accounts that closely related with AFDA each year, not providing the analysis about whether the accounts fulfilling the need of other accounts. So may be to see the effective of AFDA estimation, this analysis still was not convincing enough to say that the estimation of AFDA in ADES was effective or not.

4.2.3.2. ADES'S THREE TECHNIQUES ANALYSIS

In the three techniques analysis, each technique was calculated to measure whether the accounts were sufficient enough to accommodate the need of company's WO or not. The combination of these techniques represent whether the company have estimated the right amount of allowance for their collectability risk.

Table 4: ADES' Three Techniques Analysis

ADES	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	2.27	1.004	1.24	0.02	4.48	1.30	10.33	**0.91**	**3.54**
BADA/WO	2.72	1.83	0.99	1.31	4.56	3.15	134.0	**21.22**	**49.75**
Exhaustion Rate	0.21	0.003	1.01	3.24	0.39	337.0	---	**n/a**	**n/a**

Source: Financial Statements 2004-2010, modified

As it shown on the table, for the first technique, BDE over WO ratio indicates the inconsistency of the company in accumulated their BDE to be sufficient to the each year WO. But, as the number of multiyear measure shown, it is

close to its bench mark of 1.0, the BDE over WO defined as good, since it is unrealistic to get it perfectly match, it also indicates that in average the company have been underestimated the impact of collection problems.

Even though on each year analysis it show that ADES have way much over allocated their allowance, especially on 2010 and 2008. The company has been too much underestimated BDE in 2007. For exhaustion rate, ADES has exhaust its allowance for WO majority in less than a year except for 2006, 2007 and significantly in 2009, since the number of WO for the period of 2010 were very small compare to 2009's BADA.

4.2.4. PT. TIGA PILAR SEJAHTERA FOOD, TBK. (AISA)

4.2.4.1. AISA'S GAP ANALYSIS

The movements of those closely related accounts of AFDA in PT. Tiga Pilar Sejahtera Food, Tbk. during the year were shown on the table above. The BDE account showing a positive gap along the years except for the year 2009 to 2010, the highest gap they had was in the period of 2008 to 2009, reaching the number of 16.07. The standard deviation of 6.32 indicates that the company was inconsistency allocate the amount for BDE. For the BADA, the numbers were remaining the same from the previous year shown by the zero amount gaps for the year 2005 and 2010. During the year the BADA accounts show positive gaps it means over the years the accounts were increases.

Figure 5: AISA's Gap Analysis
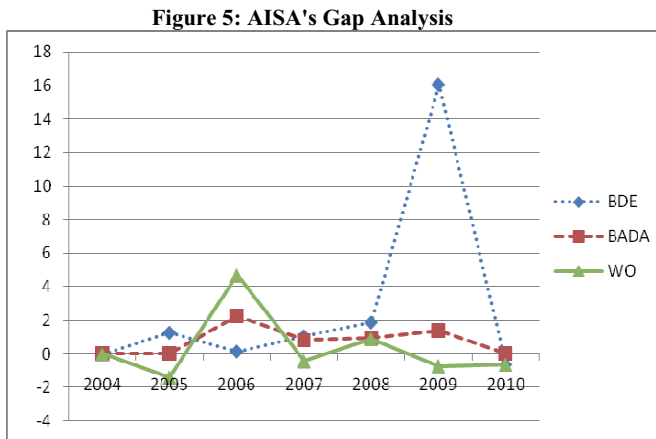
Source: Financial Statements 2004-2010, modified

The standard deviation was nearly reach 0.9, approaching its benchmark of 1.0 indicates that the company was consistent setting up their BADA. Different from the other two accounts, the WO seems to be decreasing during 2004 until 2010, except for the period 2004 to 2005 which has the highest

increase by 4.69, the same exact year that the number of BADA has the highest increase during period which is 2.27. The 2.23 standard deviation indicate that the company was inconsistent. But, if the amount in 2006 excluded, maybe the average of WO for the period is showing negative number and the amount of standard deviation will indicates a consistency.

Table 5: AISA's Gap Analysis

AISA	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	1.27	0.16	1.07	1.89	16.07	-0.62	**3.31**	**6.32**
BADA	---	0.00	2.27	0.81	0.92	1.39	0.00	**0.90**	**0.87**
WO	---	-1.39	4.69	-0.43	0.91	-0.71	-0.62	**0.41**	**2.23**

Source: Financial Statements 2004-2010, modified

4.2.4.2. AISA'S THREE TECHNIQUES ANALYSIS

The three techniques analysis in PT. Tiga Pilar Sejahtera Food, Tbk. shown in the table above shows more details to analyze the estimation of AFDA. For the first ratio used, BDE over WO, the table showed that the company has under allocate the BDE during the five beginning years and reach the exact perfect number of 1.0 for the two following years. But as the multiyear measure amounts indicates, it shows that over the period the company was under estimate their problem in trade receivables collection. The higher standard deviation compare with its multiyear measure also indicate that the company were inconsistency.

Table 6: AISA's Three Techniques Analysis

AISA	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	0.002	0.010	0.003	0.011	0.017	1.000	1.000	**0.131**	**0.484**
BADA/WO	---	0.004	0.004	0.012	0.012	0.101	0.267	**0.067**	**0.105**
Exhaustion Rate	---	1.270	2.743	1.518	4.464	3.379	---	**n/a**	**n/a**

Source: Financial Statements 2004-2010, modified

Little different with the first ratio, the second technique, the BADA and WO ratio, show that the allowance for BADA were too small to fulfilling the need of company's WO all over the years during the period. Same with the first ratio, the four beginning years indicates that the allowance in the BADA were way too small, which is lower than 0.1. In 2009 and 2010, the ratio shows little increases by 0.1 and 0.2, but stills its way too low and indicates that the company was under estimate the need of WO account during the years. It also

proves by the number of multiyear measure that is 0.067. The multiyear measure that is lower than the standard deviation indicates a volatile relationship between the allowance and subsequent WO. The exhaustion rate for the company were indicates that the number AFDA was still not enough to be used in the form of actual WO, since on the second ratio all result indicates under estimated. The number of exhaustion rate in the above table showing how many years needed by the company to make the AFDA were sufficient enough to be used in the form of WO. This is supporting the previous two ratios that the company was under allocated the accounts of BDE and BADA.

4.2.5. PT. DELTA DJAKARTA, TBK. (DLTA)

4.2.5.1. DLTA'S GAP ANALYSIS

Figure 6: DLTA's Gap Analysis
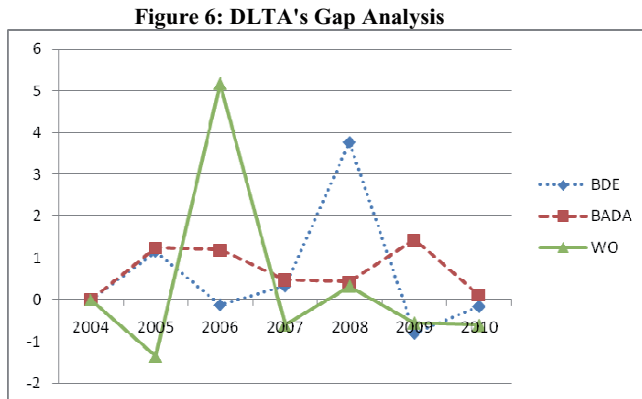
Source: Financial Statements 2004-2010, modified

Table 7: DLTA's Gap Analysis

DLTA	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	1.16	-0.12	0.33	3.77	-0.79	-0.15	**0.70**	**1.64**
BADA	---	1.25	1.20	0.48	0.43	1.44	0.12	**0.82**	**0.54**
WO	---	-1.35	5.17	-0.60	0.32	-0.55	-0.60	**0.40**	**2.39**

Source: Financial Statements 2004-2010, modified

Starting with the PT. Delta Djakarta, Tbk. standard deviation for the three accounts, as its compare to each average, the only account that shows consistency was the BADA. Since the standard deviation for BADA was

lower than its average account during the years, different with the BDE and WO account which both of them showing lower average than its standard deviation, which indicates the inconsistency of those accounts. The BADA also show a positive number of gaps along the period, while the WO showing a fluctuated number of gaps, showing that the WO were continuously increase and decrease over the years. The table also indicates the movements of the accounts were different except for the last three years from 2008 until 2010, the gap of both accounts of BDE and WO were increase in 2008 and slightly decrease by the rest of following years.

4.2.5.2. DLTA'S THREE TECHNIQUES ANALYSIS

The result of the three techniques analysis applied in PT. Delta Djakarta, Tbk. at glance, showing that the company was under allocated the accounts of BDE and BADA, as seen in the table above, the two ratios showing the number under 0.2 for most of the years. The only number that seems to be sufficient with the need of WO accounts was the second ratio at 2009; the number of 0.755 was closely enough to its benchmark 1.0. The BADA per WO ratio also indicates an over allocate number at the last year 2010 by 2.142.

Table 8: DLTA's Three Techniques Analysis

DLTA	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	0.013	0.080	0.017	0.056	0.201	0.093	0.199	**0.079**	**0.078**
BADA/WO	0.010	0.067	0.035	0.129	0.140	0.755	2.142	**0.468**	**0.782**
Exhaustion Rate	3.830	1.224	3.388	1.659	2.911	1.618	---	**n/a**	**n/a**

Source: Financial Statements 2004-2010, modified

On the first ratio, indication of under estimated allocation also shown in the multiyear measure by the number 0.079, and the standard deviation that is lower than the multiyear measure indicates that the company was consistent setting up their BDE to match their WO even though it's under estimated. Since the both ratio indicates an under estimation, the exhaustion rate above showing how many year that the company need to the current BADA to be able to covers the whole current WO in each year.

4.2.6. PT. INDOFOOD SUKSES MAKMUR, TBK. (INDF)

4.2.6.1. INDF'S GAP ANALYSIS

Starting with the BDE, the accounts were decreasing in the beginning period, from 2004 to 2005. The negative gap also occurred in the year of 2009 by -0.87, other years beside 2005 and 2009 were showing positive gap with

overall average indicates an increase by 0.59. The highest positive gap for BDE account in PT. Indofood Sukses Makmur, Tbk. was 3.01 in 2007. Standard deviation also shows that the gap was more than its normal consistency. For BADA, the accounts shows a decreasing from 2004 to 2005 and from 2005 to 2006, the decrease also occurred in the period of 2009 to 2010 for about 30% by the number of gap 0.32. The other BADA on that period shows positive number of gaps, as its show on average BADA calculation.

Figure 7: INDF's Gap Analysis
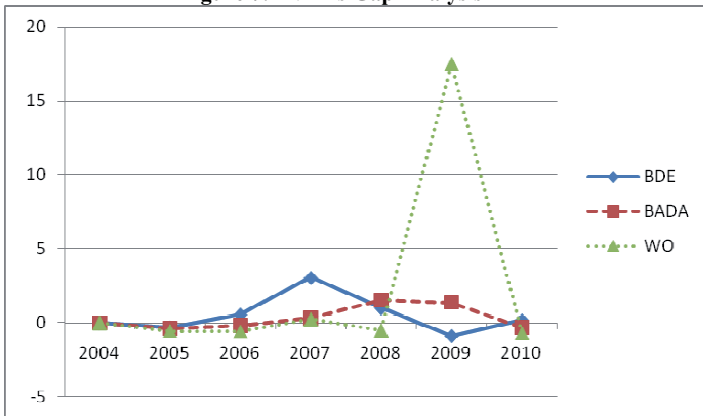
Source: Financial Statements 2004-2010, modified

The bigger number of standard deviation when compare to the average BADA indicates that may be the company was inconsistency setting up the account. The WO was fluctuated during the year starting with negative gaps from 2004 to 2006 and experiencing about 25% increase in 2007. In 2008, the WO back drop again by almost 50% but then followed with the highest increase with the number 17.49 in 2009 and in 2010, WO decreasing by almost 70%. The fluctuated numbers on WO account creating high standard deviation of 7.31 and setting up the average by 2.58 positive gaps.

Table 9: INDF's Gap Analysis

INDF	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	-0.31	0.53	3.01	0.99	-0.87	0.17	**0.59**	**1.35**
BADA	---	-0.38	-0.18	0.32	1.52	1.34	-0.32	**0.38**	**0.85**
WO	---	-0.54	-0.57	0.25	-0.49	17.49	-0.68	**2.58**	**7.31**

Source: Financial Statements 2004-2010, modified

4.2.6.2. INDF'S THREE TECHNIQUES ANALYSIS

Analysis of three closely related accounts of AFDA PT. Indofood Sukses Makmur, Tbk. using three techniques was showing a various number. For the first ratio, the BDE over WO, the calculation indicates that the first and the last two years was less than 1.0. For the year 2005 and 2010, these number were indicates that the company was getting close to its benchmark 1.0, means that the BDE in that year almost implies the necessity for WO since both of them reaching almost 70% by 0.629 in 2005 and 0.715 in 2010. From the 2006 until 2008, the ratio indicates that the company has over estimated the WO. The numbers of over allocated start from 2.23 until it reach the highest by 27.809. The huge over allocated amount seems has not been shown in the ratio's multiyear measure, the number only reach 1.455 which indicates almost 50% over allocated in average. The inconsistency was occurred in the relationship between Indofood's BDE account and WO is evidenced by higher standard deviation when compared with the multiyear measure.

Table 10: INDF's Three Techniques Analysis

INDF	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	0.42	0.63	2.23	7.19	27.81	0.19	0.72	**1.46**	**10.1**
BADA/WO	1.52	2.04	3.85	4.08	19.98	2.53	5.38	**5.63**	**6.46**
Exhaustion Rate	0.12	1.39	1.29	4.99	0.03	3.77	---	**n/a**	**n/a**

Source: Financial Statements 2004-2010, modified

The second ratio indicates an over allocated accounts since the beginning year 2004 until 2010. The highest number was reaching 19.98 in 2008, the same year when first ratio got the highest number, and the lowest was in 2004 by 1.52. The multiyear measure also shown an over allocated of 5.626 and since the standard deviation is bigger than the multiyear measure it means that the company was inconsistence in the relationship between the BADA and its subsequent to WO. The exhaustion rate showing a various number, the result is ranging from 0.026 until 4.995 years. Starting with 2009, the numbers of WO dramatically increases, that explained why the exhaustion rate from in 2008 for period of 2008 and 2009 were decreasing.

4.2.7. PT. PRASIDHA ANEKA NIAGA, TBK. (PSDN)

4.2.7.1. PSDN'S GAP ANALYSIS

The first accounts for gap analysis shown above was BDE, the calculation showing a fluctuated result starting with a decrease in 2005, the account was significantly increase in 2006 by the number 19.14 and continue with

decrease and increase for the following years by the number under 0.1. The average showing that over the years, the account was increasing by 3.0 or 300%, the number of average increase which still lower than its standard deviation, indicates that the account were changing inconsistently. The BADA does not have any changing in both year 2005 and 2009 and slightly decrease in 2006 and 2007. On the rest of the year the account increases by 2% and 15%. The average of the account shows a decrease by 3% for a period 2004 until 2010.

Figure 8: PSDN's Gap Analysis
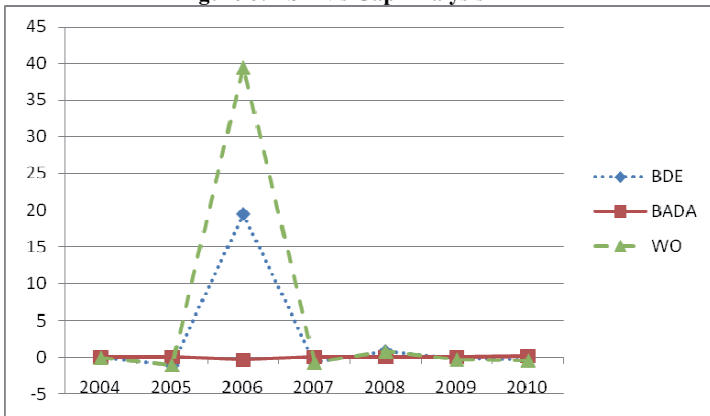
Source: Financial Statements 2004-2010, modified

For WO, the account starts with a negative gap from 2004 to 2005 by 1.03. On the following year, WO dramatically increases by a gap 39.47 by 2006. The rest of the year until 2010, the gaps were below the 1.0, with a decrease in 2007, 2009, and 2010. Because of the unusual gap in 2006, the average gap over the period was 6.35 and the standard deviation that reach 16.24. As seen in generally, the account of BDE and WO have a pretty similar pattern from the beginning of the period, the number are almost exactly the same except for the year 2006.

Table 11: PSDN's Gap Analysis

PSDN	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	-1.05	19.41	-0.66	0.87	-0.22	-0.35	**3.00**	**8.06**
BADA	---	0.00	-0.34	-0.004	0.02	0.00	0.15	**-0.03**	**0.17**
WO	---	-1.03	39.47	-0.66	0.87	-0.23	-0.36	**6.35**	**16.24**

Source: Financial Statements 2004-2010, modified

4.2.7.2. PSDN'S THREE TECHNIQUES ANALYSIS

Table 12: PSDN's Three Techniques Analysis

PSDN	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	1.08	2.09	1.00	1.00	1.00	1.02	1.03	**1.02**	**0.40**
BADA/WO	---	3.16	0.05	0.16	0.09	0.11	0.20	**0.63**	**1.24**
Exhaustion Rate	---	0.94	3.77	1.45	2.19	2.38	---	**n/a**	**n/a**

Source: Financial Statements 2004-2010, modified

For the three techniques applied in PT. Prasidha Aneka Niaga, Tbk. the first ratio shows that the company have successfully estimate the BDE to be sufficient with the need of WO. From the period of 2004 until 2010, the ratio indicates 1.0 or more; except for the 2005, that in that year the company had over allocate the account shown by the number of 2.09. As it's shown in multiyear measure, the number was indicating that the account was closely to its benchmark. The lower standard deviation when compare to the multiyear measure also indicate the consistency in the relationship between BDE and subsequent WO.

Different with the first ratio, the second ratio starting with indication of over estimation for the allowance as its show 3.16, for the rest of the year, the calculations were indicates that the company was under estimated the WO as the number shown from 2006 to 2010 were no more than 0.20. The multiyear measure also proved the indication of under allocation account, the standard deviation that are bigger compare with the 0.63 multiyear measure means that the relationship between the BADA and WO was inconsistent. The exhaustion rate indicates that the company may have longer period to take the current allowance for doubtful to be sufficient with the current WO.

4.2.8. PT. SEKAR LAUT, TBK. (SKLT)

4.2.8.1. SKLT'S GAP ANALYSIS

Gap analysis for BDE account in PT. Sekar Laut, Tbk. shows a fluctuated increase and decrease. Starting with a decrease from the beginning period of 2004 to 2005, the accounts occurring an increase by 5.88 then slightly decrease back again in 2007 by 0.85. The account was strengthening in the next two year and reaching the highest gap of increase by 8.84 in 2009. At the final year the account decreases by 0.99. The average gap for the BDE during the period was positive 2.22. The standard deviation of 4.22 indicates that the account was not consistency enough.

The movement of allowance for doubtful accounts was dominated by positive

gaps; the account was decreasing only in two period of years, 2006 and 2009. The average increase during 2004 until 2010 was 0.14 with the lowest increase by 0.22 and 0.65 for the highest. Different from the allowance for doubtful accounts, the WO experiencing most of the year decreasing, the only year that shows the WO increase was in 2006 by 4.58 which make the average gap for the accounts turn into positive by 0.12. The high standard deviation compare to the average account gap means that the account was not consistent enough.

Figure 9: SKLT's Gap Analysis
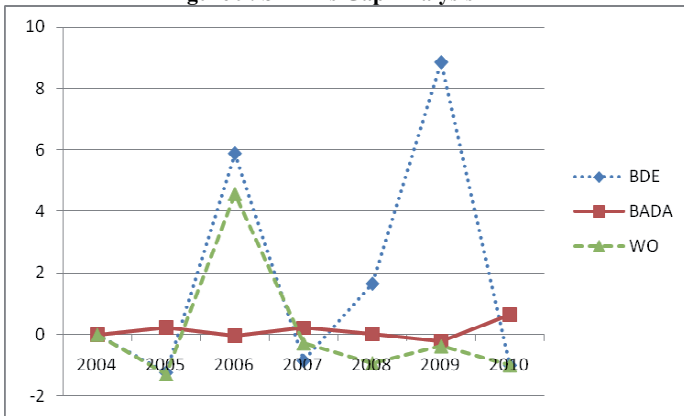
Source: Financial Statements 2004-2010, modified

Table 13: SKLT's Gap Analysis

SKLT	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	-1.23	5.88	-0.85	1.65	8.84	-0.99	2.22	4.22
BADA	---	0.23	-0.04	0.22	0.03	-0.22	0.65	0.14	0.30
WO	---	-1.28	4.58	-0.28	-0.92	-0.37	-0.99	0.12	2.22

Source: Financial Statements 2004-2010, modified

4.2.8.2. SKLT'S THREE TECHNIQUES ANALYSIS

Application of the three techniques analysis in PT. Sekar Laut, Tbk. has shown a closely similar pattern of both first and second ratio. They are starting with numbers that are lower than 0.5 that mean the company under estimate the risk of their collection problem. The BDE over WO ratio shows that they had over allocated the allowance by 3.8 and 2.5 in 2009 and 2010. The multiyear measure for this ratio indicates that the company had under allocated the BDE to be sufficient with the WO.

Table 14: SKLT's Three Techniques Analysis

SKLT	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
BDE/WO	0.03	0.03	0.04	0.01	0.24	3.8	2.5	**0.087**	**1.546**
BADA/WO	0.14	0.61	0.16	0.27	3.43	4.25	572.4	**83.04**	**215.8**
Exhaustion Rate	4.03	1.11	2.16	9.93	2.87	264.4	---	**n/a**	**n/a**

Source: Financial Statements 2004-2010, modified

The higher standard deviation compared with multiyear measure also indicate an inconsistency of both BDE and WO account relationship. If the first ratio indicates the over allocated starting from 2009, the second ratio have shown the indication of over allocated since 2008 with a huge number of 572.43 in 2010, it is caused by the number of WO that are increase significantly and on the other side, the number of BADA were increase. With the end result of multiyear measure by 83.041, it seems that the company has overestimated the WO. The standard deviation that bigger than the multiyear measures indicates that the two accounts relationship was far from consistency. A tremendous amount also shown in exhaustion rate, at the year of 2009, the exhaustion rate reaching the number of 264.4 because of the same reason stated above.

4.2.9. PT. SIANTAR TOP, TBK. (STTP)

4.2.9.1. STTP'S GAP ANALYSIS

Figure 10: STTP's Gap Analysis
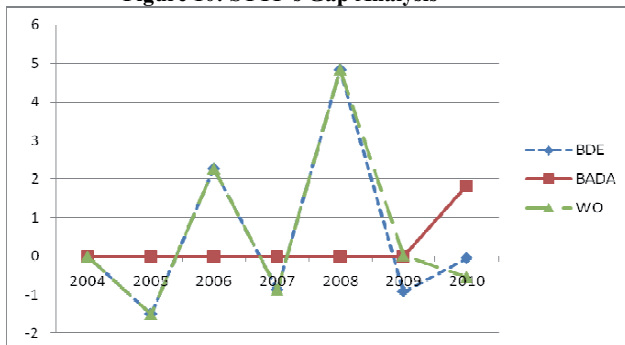
Source: Financial Statements 2004-2010, modified

The BDE in PT. Siantar Top, Tbk. analysis showing a majority of negative

gaps, it means, over the years, the account was much more decreasing rather than increasing. The BDE showed an increase in 2006 and 2008 by 2.27 and 4.48. The rest of the years the account was decreasing starting from 0.05 until 1.50. Even though the majority was decreasing, the average gap for the account was positive 0.63. Different with the BDE, the number of allocation for doubtful accounts for the beginning five years period did not show any increase or decrease, the account was remain the same until 2010 which the account was increase by 1.83 which make the average gap along the years by 0.30.

Table 15: STTP's Gap Analysis

STTP	2004	2005	2006	2007	2008	2009	2010	Average	Standard Deviation
BDE	---	-1.50	2.27	-0.87	4.84	-0.92	-0.05	**0.63**	**2.45**
BADA	---	0.00	0.00	0.00	0.00	0.00	1.83	**0.30**	**0.75**
WO	---	-1.51	2.27	-0.87	4.84	0.02	-0.54	**0.70**	**2.41**

Source: Financial Statements 2004-2010, modified

The WO itself showing a fluctuated gap, with almost similar number and pattern of the company's BDE, the WO's negative gaps were occurred in 2005, 2007 and 2010. The highest increase by BADA was 4.84 in 2008. All of the three account's standard deviation was bigger than its average account indicates that the account was not consistently formed.

4.2.9.2. STTP'S THREE TECHNIQUES ANALYSIS

Table 16: STTP's Three Technique Analysis

STTP	2004	2005	2006	2007	2008	2009	2010	Multiyear Measure	Standard Deviation
Metrics									
BDE/WO	1.022	1.00	1.00	1.00	1.00	0.08	0.16	**0.74**	**0.43**
BADA/WO	---	0.04	0.03	0.26	0.04	0.04	0.27	**0.12**	**0.11**
Exhaustion Rate	---	1.75	8.31	1.13	1.93	3.07	---	**N/A**	**N/A**

Source: Financial Statements 2004-2010, modified

Even though the last two year of the ratio indicate under estimation, the beginning five years of BDE per WO ratio had almost perfect allocated account to be sufficient fulfilling WO amount needed during the period of years. The multiyear measure that is close to 1.0 and the standard deviation that is lower compare to 0.74 indicates that the relationship between BDE and

WO account was consistent. Meanwhile, for the second ratio, the number shown on above table above indicates that the company was under estimated the WO account to be sufficient with the allocation for doubtful accounts, it also shown in the multiyear measure with the number of 0.12. For the relationship between BADA and WO, the standard deviation indicates that it was consistent even though the overall ratio indicates the under allocation, the exhaustion rate above indicates how many years needed by the company so the BADA to be WO equal to the current account.

4.3. HYPOTHESIS TESTING

4.3.1. HYPOTHESIS #1

H_1: The gap analysis successfully represents the evaluation of the AFDA estimation process and proves to be useful for future AFDA estimation processes.

The analysis of both the three techniques and gap analysis on companies historical data shown in this chapter previously indicates that gap analysis does not successfully represent the evaluation of the AFDA estimation process and does not proved to be useful for future AFDA estimation process (do no reject H_1 for hypothesis #1). The gap analysis only show the movement of the three accounts related to AFDA on each year based, whether it's on the industrial base analysis or individual company. Because the increase or decrease of an accounts mostly does represent the gap as it's in industrial trends. So to be applicable on future AFDA estimation, the gap analysis is less convincing enough to predict the uncertainties in the future.

Compare with the three techniques analysis, the gap analysis only show the increase or decrease of an account and how much the gap created by that increases or decreases. The gap analysis also unable to explain whether the accounts were sufficient enough for company's WO during the year. Even though during the year the WO show the same movement with BDE or BADA, increase and decrease in almost similar percentage, it is still cannot provide the analysis needed by the company to evaluate the estimation process of AFDA.

4.3.2. HYPOTHESIS #2

H_1: The BADA to WO ratio more successfully represents the evaluation of the AFDA estimation process and proves to be useful for future AFDA estimation processes in three techniques analysis.

The three techniques analysis was proved to be successful to represent the evaluation of the AFDA estimation process. In the three techniques analysis there are three contains of two ratios and on exhaustion rate. Each ratio reveals how each account has been successful or not at predicting anticipated WO. The first ratio was BDE over WO account. This ratio measures the accuracy of bad debts estimates. The calculation of ratio is multiple periods instead of a single year calculation based. The second ratio that is the BADA over WO, this ratio measures the sufficiency of the existing allowance. The calculation of this ratio

was on each year based. The third technique is the exhaustion rate, or also called the allowance exhaustion rate, is the amount of time stated in year based used to measure how long it take to WO an allowance. The allowance used to calculate the exhaustion rate was BADA.

Based on the data analysis above, the technique that more successfully represent the estimation of AFDA estimation among the first and the second ratio was the second technique, the BADA to WO ratio (Do Not Reject H_0 for hypothesis #2). This ratio was calculate on each year based, so the company could do the analysis intensively each year and analysis the movement of this ratio and its development to be sufficient with company WO each year. The BADA used is more preferable as it indicates the rest of allocation for doubtful account last year, it measuring whether the account still sufficient enough to fulfilling the need of WO for the current year before the company allocated the BDE. So with this ratio, the company could evaluate their past estimation of AFDA and determining how much the additional BDE were needed for the current year. This ratio also useful to help the company to estimate future AFDA, not only because of their annual based analysis but also on the three techniques analysis the BADA to WO ratio was completed by the exhaustion rate which using the BADA.

This exhaustion rate was measuring how long it takes for BADA to be written-offs completely. Each year analysis on this rate will also be very helpful for the company to predict the BDE need to be added so the future AFDA would be sufficient for WO account.

4.4.   RESEARCH QUESTIONS

4.4.1. RESEARCH QUESTION #1

Question # 1: How effective is gap analysis used to analyze and evaluate the AFDA estimation process?

The gap analysis was not effective enough to be used to analyze the AFDA estimation process. The gap analysis only show the movement of AFDA related accounts, which are BDE, BADA and WO. The gap was indicating the increase or decrease on an account on annual based. The gap analysis was expected to be able showing the same movement of the three accounts, but that was not enough since the number of gap would be different on each account, so the evaluation of AFDA past estimation did not clearly identified.

4.4.2. RESEARCH QUESTION #2

Question # 2: How effective are the three techniques (Ration of BDE to WO, Ratio of BADA to WO, Assess the allowance exhaustion rate) used to analyze and evaluate the AFDA estimation process?

In the three techniques, the accounts were measure by its relationship to WO that indicates whether the allocation of those accounts was sufficient to WO. Evaluation of AFDA estimation can be shown by the analysis, whether the ratio

occurring under or over estimated. Include in three techniques analysis was the exhaustion rate, this rate indicate how long it takes to clearly WO an allowance. For future AFDA estimation process, the company could used both analysis gap and the three techniques, to have clearly understanding about the account and to be more precise and detail in estimating future AFDA.

4.4.3. RESEARCH QUESTION #3

Question #3: Which method is more effective to analyze and evaluating the AFDA Estimation process and which one is more useful to be used in future AFDA estimation process?

The three techniques analysis proved to be more effective to evaluate the estimation of allowance for doubtful accounts compare with the gap analysis. Combination of those ratio and exhaustion rate was very useful for the company in estimating the future AFDA. The three techniques was successfully enough to evaluate the past estimation of allowance for doubtful account.

CHAPTER 5 – CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

Based on calculation and the data processing and analysis shown in chapter 4, it is safe to formulate the following conclusions;

1. The calculations on gap analysis were ineffective to be used as a tool in analyzing and evaluating AFDA estimation process. The calculations indicated that the gap analysis was unable to determine whether the accounts have been correctly allocated in accordance with the existed WO. Since the analysis was limited only to the movements of the respective accounts, the gaps created each year in relation to any movements of other accounts. Since the data analysis was not enough to represent the evaluation of estimated AFDA, future estimations based on AFDA may proof to be unreliable.

2. The three techniques was effective enough to be used to analyze and evaluate the AFDA past estimation. The evaluation was successfully represent by indication of under and over allocated by determining the data analysis as the result of calculation done in three techniques analysis. This analysis is very useful because the company be able to identify their position related to the accounts and use the analysis result to make a decision in allocated future AFDA.

3. The three techniques was effectively analyze and evaluate the AFDA estimation compare to the gap analysis because the three techniques represent how those accounts has sufficient enough to be allocated and being written off. The techniques were also able to determine the relationship between the account and the WO.

5.2. RECOMMENDATIONS

Based on the conclusion above, it is recommended that companies do the evaluations on AFDA estimations, and use the three techniques as an evaluation and estimating tool. Many companies were not really concern to evaluate their decision toward the allowance created, they did not study the effectiveness of allocated amount toward potential write-offs in the future. By only depending on particular method, the company would not be able to identify whether the amount allocate was right or not. Using the three techniques analysis, the company would be able to see and understand the accounts individually. By using the three techniques analysis the managements or accountants has potential benefit, the three techniques analysis reveal the accuracy of past estimates they have made. The analysis also will decrease the dependency of the common used technique, which is aging schedule analysis or several other methods that was not involved the closely related accounts of AFDA. The techniques also help the company to identify and positioning themselves as the aggressive risk taker or pessimistic, related to the allowance allocated for the collectability risk.

By processing the result of data analysis, the managements could see clearly the movement and the condition of each year, and then would be able to create a strategy for company progress. The techniques were easily applicable and suitable as a complementary along with the aging schedule or even become a major analysis to set an

allowance to be more precise. As the analysis using the past or historical data was allowable to develop future estimates in formal accounting procedure.

GLOSSARY

ADES	: A short code for PT. Akasha Wira International, Tbk.
AFDA	: Allowance for Doubtful Accounts
AISA	: A short code for PT. Tiga Pilar Sejahtera Food, Tbk.
BADA	: Beginning Allowance for Doubtful Accounts
BDE	: Bad Debts Expense
DLTA	: A short code for PT. Delta Djakarta, Tbk.
INDF	: A short code for PT. Indofood Sukses Makmur, Tbk.
IDX	: Indonesian Stock Exchange
PSDN	: A short code for PT. Prasidha Aneka Niaga, Tbk.
SKLT	: A short code for PT. Sekar Laut, Tbk.
STTP	: A short code for PT. Siantar Top, Tbk.
WO	: Write Offs

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APPENDICES

APPENDIX A – COMPANY PROFILE

1. PT. AKASHA WIRA INTERNATIONAL, TBK. (ADES)

Background:	PT. Akasha Wira International, Tbk, was established under the name PT Alfindo Putrasetia in 1985. The Company's name has been changed several times; the most recent one was in 2009, when its name was changed to PT Akasha Wira International, Tbk. In 1994, the company conducted an Initial Public Offering, by 14 July 1994; the company listed all of its shares at Jakarta Stock Exchange (JSX) and Surabaya Stock Exchange (SSX). In the same year, the company went through another big transformation. Water Partners Bottling S.A. (WBP), a joint venture company between Nestlé S.A and RSPI (a wholly owned subsidiary of The Coca-Cola Company), acquired a majority stake in the company.
Products:	The Company engages in bottled water industry and is producing and selling bottled drinking water under AndeS, AndeS Royal, and Nestlé Pure Life Brands.
Vision and Mission:	Maintaining its water quality by implementing high standards to safety and consistent taste guarantee to the consumer.

Source: ADES's financial and annual reports

2. PT. TIGA PILAR SEJAHTERA FOOD, TBK

Background:	PT. Tiga Pilar Sejahtera Food, Tbk, was established on January 26, 1990. Before known as PT. Tiga Pilar Sejahtera Food, Tbk, the company was named Perusahaan Bihun Cap Cagak Ular that begun in 1959 as a family business of corn-starch vermicelli plant in Sukoharjo,

which occurring a massive growing demand. On June 11, 1997, the company's shares have been listed at the Jakarta Stock Exchange (JSX).

Products: The Company has two main products. The first one is a consumer package goods and the second one is industrial goods. The consumer-packaged goods consist of products that are readily consumable without any further process, such as; instant noodles, and instant vermicelli products. Meanwhile, the industrial goods consist of products that are requiring a further process. Industrial goods include: egg noodle, dried noodle, and dried vermicelli products.

Vision and Mission: The Company would keep their position stronger and boost their market. They moving forward and are well positioned for a promising future.

Source: AISA's financial and annual reports

3. PT. DELTA DJAKARTA, TBK. (DLTA)

PT. DELTA DJAKARTA Tbk

Background: Before it was formed as PT. Delta Djakarta, Tbk. in 1970, there was a factory that called Archipel Brouwerij, which was established in 1932 as German brewery. After several times changing its ownership, the company that mostly known as The "Anker Bir" was later listed using the name of PT. Delta Djakarta.

Products: The business scope of the company was mainly in manufacturing the Pilsener beer and Stout under the "Anker", "Calsberg", "San Miguel", "Kuda Putih" and "San Miguel light" trademarks and non-alcoholic product like Sodaku and Soda Ice. The company's products are marketed both domestically and internationally.

Vision and Mission: To be the market leader in malt based beverage producer in Indonesia. To produce quality and save beverages at optimum cost, that will give the best value to our consumers through competent and oriented employees and business partners.

Source: DLTA's financial and annual reports

4. PT. INDOFOOD SUKSES MAKMUR, TBK. (INDF)

Background:	PT. Indofood Sukses Makmur, Tbk. was established on August 14, 1990 under its original name PT. Panganjaya Intikusuma. In 1994, the company was listed in Jakarta Stock Exchange (JSX) with initial 763 million shares.
Products:	The Company activities were includes manufacture of noodles, flour milling, packaging, management service, and research and development. . These include a variety of instant noodles brands (Indomie, Supermi, Sarimi), wheat flour (Segitiga Biru, Kunci Biru, and Cakra Kembar), cooking oil (Bimoli), margarine (Simas) and shortening (Palmia).
Vision and Mission:	To become a Total Food Solution Company. The company missions was continuously improve their people, process and technology, produce high quality, innovative, and affordable products, to ensure availability of the products in the market, to contribute the emphasis on nutrition to the improvement of the quality of life of Indonesians and improve stakeholder's value.

Source: INDF's financial and annual reports

5. PT. PRASIDHA ANEKA NIAGA, TBK. (PSDN)

Background:	PT. Prasidha Aneka Niaga, Tbk was formed on April 16, 1974 under the name of PT. Aneka Bumi Asih. The company was originally dealing in the processing and trading agricultural product. In December 1993, the company's name was changing into PT. Prasidha Aneka Niaga. On September 22, 1994 the company was legally go public with offering 30 million shares.
Products:	Coffee, crumb rubber, cocoa, tapioca, and instant coffee.

	Their main product lines are plantation and cultivating coffee beans.
Vision and Mission:	To be a leader in the Agribusiness with professional management company. Build an international reputation for excellence, integrity and reliability and to optimize the entire resources of the Company to reach its business goal.

Source: PSDN's financial and annual reports

6. PT. SEKAR LAUT, TBK. (SKLT)

Background:	PT. Sekar Laut, Tbk. (SKLT) was formed on July 19, 1976. The company business activities were food manufacturing and processing. On September 8, 1993, the company listed its share for trading in the Jakarta and Surabaya Stock Exchange.
Products:	The Company specialized it operation on cracker, sauce and spices. The major product line of PT. Sekar Laut is under the name brand "Finna", and the second product line was "Bumi Food" which consists of meat product. The other product of the company includes chips and cashew nuts.
Vision and Mission:	To inform the world community on good quality food that is healthy and nutritious. The Company was hope to be able to converting the vast natural resources of Indonesia with the aim of providing nutritious good quality healthy foods and developing and uplifting the social and economic condition of Indonesian people.

Source: SKLT's financial and annual reports

7. PT. SIANTAR TOP, TBK. (STTP)

Background:	PT. Siantar Top, Tbk. was established on May 12, 1987. The company started its commercial operation on September 1989. On November 25, 1996, the company

	obtained the notice of affectivity from the Chairman of the Indonesian Capital Market Supervisory Agency for its public offering of 27 million shares to the public through the capital market in Indonesia. On December 16, 1996, the shares have been listed in the Indonesian Stock Exchanges.
Products:	The scope activities of the company are mainly to engage in the manufacturing of snack, noodle, crackers and candy. The company's products are markets both domestically and internationally, especially in Asia.
Vision and Mission:	To become one of the top five consumer goods manufacturers in Indonesia. To be able acquiring 30% of competitor's market share. The Company were hoped to become a dynamic consumer goods company with excellence growth in supplying snack to the Indonesian society and inducing the company's products as national premium products

Source: STTP's financial and annual reports

APPENDIX B – GAP ANALYSIS CALCULATION
1. GAP ANALYSIS CALCULATION: BDE'S GAP

BDE			BDE's GAP	AVG Per year	Std. Dev
ADES	2004	3,327,000,000	---		
	2005	-3,211,000,000	-1.965		
	2006	3,309,000,000	2.031		
	2007	59,000,000	-0.982	1.90	5.68
	2008	828,000,000	13.034		
	2009	-612,000,000	-1.739		
	2010	31,000,000	1.051		
AISA	2004	31,064,142	---		
	2005	70,635,972	1.274		
	2006	82,079,235	0.162		
	2007	169,540,313	1.066	3.31	6.32
	2008	490,065,226	1.891		
	2009	8,365,875,815	16.071		
	2010	3,161,859,303	-0.622		
DLTA	2004	814,215	---		
	2005	1,755,793	1.156		
	2006	1,547,931	-0.118		
	2007	2,059,268	0.330	0.70	1.64
	2008	9,821,996	3.770		
	2009	2,049,993	-0.791		
	2010	1,736,204	-0.153		
INDF	2004	6,152,898,936	---		
	2005	4,222,794,958	-0.314		
	2006	6,465,000,000	0.531		
	2007	25,951,000,000	3.014	0.59	1.35
	2008	51,613,000,000	0.989		
	2009	6,753,000,000	-0.869		
	2010	7,875,000,000	0.166		
PSDN	2004	4,603,093,949	---		
	2005	-231,172,124	-1.050		
	2006	4,255,196,942	19.407		
	2007	1,461,554,997	-0.657	3.00	8.06
	2008	2,726,423,293	0.865		
	2009	2,132,722,156	-0.218		
	2010	1,394,749,173	-0.346		
SKLT	2004	410,055,018	---	2.22	4.22

BDE			BDE's GAP	AVG Per year	Std. Dev
	2005	-93,345,219	-1.228		
	2006	455,370,927	5.878		
	2007	69,672,600	-0.847		
	2008	184,818,230	1.653		
	2009	1,818,326,381	8.838		
	2010	14,964,094	-0.992		
STTP	2004	21,292,637,413	---		
	2005	-10,624,548,528	-1.499		
	2006	13,542,508,037	2.275		
	2007	1,788,012,541	-0.868	0.63	2.45
	2008	10,437,587,222	4.838		
	2009	849,870,729	-0.919		
	2010	807,756,940	-0.050		

2. GAP ANALYSIS CALCULATION: BADA'S GAP

BADA			BADA's Gap	AVG per Year	Std. Dev.
ADES	2004	3,985,000,000	---		
	2005	5,849,000,000	0.468		
	2006	2,638,000,000	-0.549		
	2007	3,287,000,000	0.246	-0.091	0.663
	2008	843,000,000	-0.744		
	2009	1,486,000,000	0.763		
	2010	402,000,000	-0.729		
AISA	2004	---	---		
	2005	31,064,142	0.000		
	2006	101,700,114	2.274		
	2007	183,779,349	0.807	0.898	0.866
	2008	353,319,662	0.923		
	2009	843,384,888	1.387		
	2010	843,384,888	0.000		
DLTA	2004	653,936	---		
	2005	1,468,151	1.245		
	2006	3,223,944	1.196		
	2007	4,771,875	0.480	0.819	0.540
	2008	6,831,143	0.432		
	2009	16,653,139	1.438		
	2010	18,703,132	0.123		

BADA			BADA's Gap	AVG per Year	Std. Dev.
INDF	2004	22,036,674,692	---		
	2005	13,664,605,011	-0.380		
	2006	11,172,108,649	-0.182		
	2007	14,738,000,000	0.319	0.383	0.848
	2008	37,078,000,000	1.516		
	2009	86,835,000,000	1.342		
	2010	59,265,000,000	-0.317		
PSDN	2004	---	---		
	2005	349,465,457	0.000		
	2006	228,906,080	-0.345		
	2007	228,096,080	-0.004	-0.029	0.166
	2008	233,494,730	0.024		
	2009	233,494,730	0.000		
	2010	268,615,940	0.150		
SKLT	2004	1,797,557,528	---		
	2005	2,207,612,546	0.228		
	2006	2,114,267,327	-0.042		
	2007	2,569,638,254	0.215	0.143	0.300
	2008	2,639,310,854	0.027		
	2009	2,054,619,736	-0.222		
	2010	3,390,071,961	0.650		
STTP	2004	---	---		
	2005	465,303,904	0.000		
	2006	465,303,904	0.000		
	2007	465,303,904	0.000	0.304	0.746
	2008	465,303,904	0.000		
	2009	465,303,904	0.000		
	2010	1,315,174,633	1.826		

3. GAP ANALYSIS CALCULATION: WO'S GAP

WO			WO's GAP	AVG per Year	Std. Dev
ADES	2004	1,463,000,000	---		
	2005	-3,197,047,143	-3.185		
	2006	2,660,000,000	1.832		
	2007	2,503,000,000	-0.059	-0.297	1.856
	2008	185,000,000	-0.926		
	2009	472,000,000	1.551		

WO			WO's GAP	AVG per Year	Std. Dev
	2010	3,000,000	-0.994		
AISA	2004	18,772,532,946	---		
	2005	-7,292,340,802	-1.388		
	2006	26,897,497,312	4.688		
	2007	15,373,165,522	-0.428	0.407	2.228
	2008	29,330,321,826	0.908		
	2009	8,365,875,815	-0.715		
	2010	3,161,859,303	-0.622		
DLTA	2004	62,925,442	---		
	2005	-22,001,919	-1.350		
	2006	91,645,896	5.165		
	2007	37,021,384	-0.596	0.398	2.395
	2008	48,955,126	0.322		
	2009	22,046,074	-0.550		
	2010	8,731,761	-0.604		
INDF	2004	14,524,968,617	---		
	2005	6,715,291,320	-0.538		
	2006	2,899,108,649	-0.568		
	2007	3,611,000,000	0.246	2.578	7.314
	2008	1,856,000,000	-0.486		
	2009	34,323,000,000	17.493		
	2010	11,017,000,000	-0.679		
PSDN	2004	4,253,628,492	---		
	2005	-110,612,747	-1.026		
	2006	4,255,196,942	39.469		
	2007	1,456,156,347	-0.658	6.345	16.240
	2008	2,726,423,293	0.872		
	2009	2,097,600,946	-0.231		
	2010	1,352,671,293	-0.355		
SKLT	2004	12,835,463,497	---		
	2005	-3,644,740,818	-1.284		
	2006	13,035,096,026	4.576		
	2007	9,443,497,501	-0.276	0.123	2.215
	2008	769,509,348	-0.919		
	2009	482,874,156	-0.372		
	2010	5,922,299	-0.988		
STTP	2004	20,827,333,509	---	0.703	2.405
	2005	-10,624,548,528	-1.510		

WO			WO's GAP	AVG per Year	Std. Dev
	2006	13,542,508,037	2.275		
	2007	1,788,012,541	-0.868		
	2008	10,437,587,222	4.838		
	2009	10,676,835,895	0.023		
	2010	4,941,911,862	-0.537		

APPENDIX C – THREE TECHNIQUES ANALYSIS CALCULATION

1. THE THREE TECHNIQUES CALCULATION: # 1 RATIO (BDE/WO)

Year		BDE	BADA	WO	#1	Multiyear Mean	Std. Dev.
ADES	2004	3,327,000,000	3,985,000,000	1,463,000,000	2.274		
	2005	3,211,000,000	5,849,000,000	3,197,047,143	1.004		
	2006	3,309,000,000	2,638,000,000	2,660,000,000	1.244		
	2007	59,000,000	3,287,000,000	2,503,000,000	0.024	0.912	3.542
	2008	828,000,000	843,000,000	185,000,000	4.476		
	2009	612,000,000	1,486,000,000	472,000,000	1.297		
	2010	31,000,000	402,000,000	3,000,000	10.333		
AISA	2004	31,064,142	-	18,772,532,946	0.002		
	2005	70,635,972	31,064,142	7,292,340,802	0.010		
	2006	82,079,235	101,700,114	26,897,497,312	0.003		
	2007	169,540,313	183,779,349	15,373,165,522	0.011	0.131	0.484
	2008	490,065,226	353,319,662	29,330,321,826	0.017		
	2009	8,365,875,815	843,384,888	8,365,875,815	1.000		
	2010	3,161,859,303	843,384,888	3,161,859,303	1.000		
DLTA	2004	814,215	653,936	62,925,442	0.013		
	2005	1,755,793	1,468,151	22,001,919	0.080		
	2006	1,547,931	3,223,944	91,645,896	0.017		
	2007	2,059,268	4,771,875	37,021,384	0.056	0.079	0.078
	2008	9,821,996	6,831,143	48,955,126	0.201		
	2009	2,049,993	16,653,139	22,046,074	0.093		
	2010	1,736,204	18,703,132	8,731,761	0.199		
INDF	2004	6,152,898,936	22,036,674,692	14,524,968,617	0.424		
	2005	4,222,794,958	13,664,605,011	6,715,291,320	0.629		
	2006	6,465,000,000	11,172,108,649	2,899,108,649	2.230		
	2007	25,951,000,000	14,738,000,000	3,611,000,000	7.187	-1.455	10.097
	2008	51,613,000,000	37,078,000,000	1,856,000,000	27.809		
	2009	6,753,000,000	86,835,000,000	34,323,000,000	0.197		
	2010	7,875,000,000	59,265,000,000	11,017,000,000	0.715		
PSDN	2004	4,603,093,949	-	4,253,628,492	1.082		
	2005	-231,172,124	349,465,457	110,612,747	2.090	1.019	0.405
	2006	4,255,196,942	228,906,080	4,255,196,942	1.000		

Year		BDE	BADA	WO	#1	Multiyear Mean	Std. Dev.
	2007	1,461,554,997	228,096,080	1,456,156,347	1.004		
	2008	2,726,423,293	233,494,730	2,726,423,293	1.000		
	2009	2,132,722,156	233,494,730	2,097,600,946	1.017		
	2010	1,394,749,173	268,615,940	1,352,671,293	1.031		
SKLT	2004	410,055,018	1,797,557,528	12,835,463,497	0.032		
	2005	-93,345,219	2,207,612,546	3,644,740,818	0.026		
	2006	455,370,927	2,114,267,327	13,035,096,026	0.035		
	2007	69,672,600	2,569,638,254	9,443,497,501	0.007	0.087	1.546
	2008	184,818,230	2,639,310,854	769,509,348	0.240		
	2009	1,818,326,381	2,054,619,736	482,874,156	3.766		
	2010	14,964,094	3,390,071,961	5,922,299	2.527		
STTP	2004	21,292,637,413	-	20,827,333,509	1.022		
	2005	10,624,548,528	465,303,904	10,624,548,528	1.000		
	2006	13,542,508,037	465,303,904	13,542,508,037	1.000		
	2007	1,788,012,541	465,303,904	1,788,012,541	1.000	0.738	0.432
	2008	10,437,587,222	465,303,904	10,437,587,222	1.000		
	2009	849,870,729	465,303,904	10,676,835,895	0.080		
	2010	807,756,940	1,315,174,633	4,941,911,862	0.163		

2. THE THREE TECHNIQUES CALCULATION: # 2 RATIO (BADA/WO)

Year		BDE	BADA	WO	#2	Multiyear Mean	Std. Dev.
ADES	2004	3,327,000,000	3,985,000,000	1,463,000,000	2.724		
	2005	3,211,000,000	5,849,000,000	3,197,047,143	1.830		
	2006	3,309,000,000	2,638,000,000	2,660,000,000	0.992		
	2007	59,000,000	3,287,000,000	2,503,000,000	1.313	21.22	49.74
	2008	828,000,000	843,000,000	185,000,000	4.557		
	2009	612,000,000	1,486,000,000	472,000,000	3.148		
	2010	31,000,000	402,000,000	3,000,000	134.0		
AISA	2004	31,064,142	-	18,772,532,946	---	0.067	0.105
	2005	70,635,972	31,064,142	7,292,340,802	0.004		

Year		BDE	BADA	WO	#2	Multiyear Mean	Std. Dev.
	2006	82,079,235	101,700,114	26,897,497,312	0.004		
	2007	169,540,313	183,779,349	15,373,165,522	0.012		
	2008	490,065,226	353,319,662	29,330,321,826	0.012		
	2009	8,365,875,815	843,384,888	8,365,875,815	0.101		
	2010	3,161,859,303	843,384,888	3,161,859,303	0.267		
DLTA	2004	814,215	653,936	62,925,442	0.010		
	2005	1,755,793	1,468,151	22,001,919	0.067		
	2006	1,547,931	3,223,944	91,645,896	0.035	0.468	0.782
	2007	2,059,268	4,771,875	37,021,384	0.129		
	2008	9,821,996	6,831,143	48,955,126	0.140		
	2009	2,049,993	16,653,139	22,046,074	0.755		
	2010	1,736,204	18,703,132	8,731,761	2.142		
INDF	2004	6,152,898,936	22,036,674,692	14,524,968,617	1.517		
	2005	4,222,794,958	13,664,605,011	6,715,291,320	2.035		
	2006	6,465,000,000	11,172,108,649	2,899,108,649	3.854	5.625	6.467
	2007	25,951,000,000	14,738,000,000	3,611,000,000	4.081		
	2008	51,613,000,000	37,078,000,000	1,856,000,000	19.977		
	2009	6,753,000,000	86,835,000,000	34,323,000,000	2.530		
	2010	7,875,000,000	59,265,000,000	11,017,000,000	5.379		
PSDN	2004	4,603,093,949	-	4,253,628,492	---		
	2005	-231,172,124	349,465,457	110,612,747	3.159		
	2006	4,255,196,942	228,906,080	4,255,196,942	0.054	0.628	1.241
	2007	1,461,554,997	228,096,080	1,456,156,347	0.157		
	2008	2,726,423,293	233,494,730	2,726,423,293	0.086		
	2009	2,132,722,156	233,494,730	2,097,600,946	0.111		
	2010	1,394,749,173	268,615,940	1,352,671,293	0.199		
SKLT	2004	410,055,018	1,797,557,528	12,835,463,497	0.140		
	2005	-93,345,219	2,207,612,546	3,644,740,818	0.606		
	2006	455,370,927	2,114,267,327	13,035,096,026	0.162	83.04	215.8
	2007	69,672,600	2,569,638,254	9,443,497,501	0.272		
	2008	184,818,230	2,639,310,854	769,509,348	3.430		
	2009	1,818,326,381	2,054,619,736	482,874,156	4.255		
	2010	14,964,094	3,390,071,961	5,922,299	572.42		
STTP	2004	21,292,637,413	-	20,827,333,509	---	0.115	0.115
	2005	10,624,548,528	465,303,904	10,624,548,528	0.044		

Year		BDE	BADA	WO	#2	Multiyear Mean	Std. Dev.
	2006	13,542,508,037	465,303,904	13,542,508,037	0.034		
	2007	1,788,012,541	465,303,904	1,788,012,541	0.260		
	2008	10,437,587,222	465,303,904	10,437,587,222	0.045		
	2009	849,870,729	465,303,904	10,676,835,895	0.044		
	2010	807,756,940	1,315,174,633	4,941,911,862	0.266		

3. THE THREE TECHNIQUES CALCULATION: # 3 EXHAUSTION RATE

Year		BDE	BADA	WO	Exch. Rate
ADES	2004	3,327,000,000	3,985,000,000	1,463,000,000	0.211
	2005	3,211,000,000	5,849,000,000	3,197,047,143	0.003
	2006	3,309,000,000	2,638,000,000	2,660,000,000	1.009
	2007	59,000,000	3,287,000,000	2,503,000,000	3.238
	2008	828,000,000	843,000,000	185,000,000	0.394
	2009	612,000,000	1,486,000,000	472,000,000	337.0
	2010	31,000,000	402,000,000	3,000,000	---
AISA	2004	31,064,142	-	18,772,532,946	---
	2005	70,635,972	31,064,142	7,292,340,802	1.270
	2006	82,079,235	101,700,114	26,897,497,312	2.743
	2007	169,540,313	183,779,349	15,373,165,522	1.518
	2008	490,065,226	353,319,662	29,330,321,826	4.464
	2009	8,365,875,815	843,384,888	8,365,875,815	3.379
	2010	3,161,859,303	843,384,888	3,161,859,303	---
DLTA	2004	814,215	653,936	62,925,442	3.830
	2005	1,755,793	1,468,151	22,001,919	1.224
	2006	1,547,931	3,223,944	91,645,896	3.388
	2007	2,059,268	4,771,875	37,021,384	1.659
	2008	9,821,996	6,831,143	48,955,126	2.911
	2009	2,049,993	16,653,139	22,046,074	1.618
	2010	1,736,204	18,703,132	8,731,761	---
INDF	2004	6,152,898,936	22,036,674,692	14,524,968,617	0.119
	2005	4,222,794,958	13,664,605,011	6,715,291,320	1.397
	2006	6,465,000,000	11,172,108,649	2,899,108,649	1.291
	2007	25,951,000,000	14,738,000,000	3,611,000,000	4.995
	2008	51,613,000,000	37,078,000,000	1,856,000,000	0.026

Year		BDE	BADA	WO	Exch. Rate
	2009	6,753,000,000	86,835,000,000	34,323,000,000	3.766
	2010	7,875,000,000	59,265,000,000	11,017,000,000	---
PSDN	2004	4,603,093,949	-	4,253,628,492	---
	2005	-231,172,124	349,465,457	110,612,747	0.944
	2006	4,255,196,942	228,906,080	4,255,196,942	3.765
	2007	1,461,554,997	228,096,080	1,456,156,347	1.450
	2008	2,726,423,293	233,494,730	2,726,423,293	2.188
	2009	2,132,722,156	233,494,730	2,097,600,946	2.378
	2010	1,394,749,173	268,615,940	1,352,671,293	---
SKLT	2004	410,055,018	1,797,557,528	12,835,463,497	4.028
	2005	-93,345,219	2,207,612,546	3,644,740,818	1.110
	2006	455,370,927	2,114,267,327	13,035,096,026	2.156
	2007	69,672,600	2,569,638,254	9,443,497,501	9.933
	2008	184,818,230	2,639,310,854	769,509,348	2.872
	2009	1,818,326,381	2,054,619,736	482,874,156	264.39
	2010	14,964,094	3,390,071,961	5,922,299	---
STTP	2004	21,292,637,413	-	20,827,333,509	---
	2005	10,624,548,528	465,303,904	10,624,548,528	1.750
	2006	13,542,508,037	465,303,904	13,542,508,037	8.314
	2007	1,788,012,541	465,303,904	1,788,012,541	1.127
	2008	10,437,587,222	465,303,904	10,437,587,222	1.934
	2009	849,870,729	465,303,904	10,676,835,895	3.066
	2010	807,756,940	1,315,174,633	4,941,911,862	---