ISO 9000 Implementation Impacts Towards Financial Performance, Evidences From Manufacturing Enterprises Of Indonesian Stock Exchange

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To achieve global competitiveness, firms need to create and develop strategies to deal with changing organizational operations and external environments. This includes situations such as creating business networks, improving productivity and quality, and promoting entrepreneurship orientation. Adopting an international standard is a concrete strategy for increasing competitiveness. ISO 9000 is the most commonly adopted form of such a standard and it refers to a series of five international standards that provide guidance in the development and implementation of an effective quality management system. ISO 9000 is a periodic continuous improvement in operational and administration on business industry and have impact on financial performance. This paper presents objective evidence on whether this criticism is indeed justified. First, we discuss the ongoing debate on ISO 9000 ability to significantly improve financial performance, the reasons for this debate, and the importance of resolving this debate one way or the other. Second, we present evidences on the financial results that publicly traded organizations have achieved from implementing ISO effectively. Financial results are measured using variables such as return on COGS (cost of good sold), total inventory, net income, gross income, operating income, and pretax income. Third, we discuss how the financial results vary by organizational characteristics such COGS (cost of good sold), total inventory, net income, gross income, operating income, and pretax income of the ISO before implementation, and post implementation by method one sample t-test. The result of an adoption ISO 9000 is better than before implementation in financial index.

Keywords: adoption ISO 9000, financial index, before and post implementation ISO

1. INTRODUCTION

Facing the free trade era, companies have to deal with increasing market demand for quality goods and services. ISO 9000 as an international standard is dealing with how an organization could produce high quality products (goods or services) for their customers consistently and applying continuous improvement on this process (Castka, et al., 2004). ISO 9001:2008 acknowledged that integrated quality process would involved all parts and functions of an organization. Each person would have their roles in ensuring quality and plays important roles in creating customer satisfaction (Hong & Phitayawejwiwat, 2005). The ISO 9000 has been accepted as the standard for quality management in more than 150 countries by 410,000 companies in 1999 (Houten, 2000). Based on survey conducted in 2004 (ISO/survey, 2004), by 2004 there are 670,000 companies have adopted this standard and granted ISO certificates. The additional advantage of ISO 9000 is its very general natures, therefore it can be implemented for various kinds of business or organizations and it can be combined with other management systems (Hong & Phitayawejwiwat, 2005).

The research done by Costin (as quoted in Hong & Phitayawejwiwat, 2005) stated that there is an evolutional quality movement in a company which started from the formal inspections stage, quality control (QC) stage, quality assurance (QA) stage and strategic quality management in which includes the total quality management (TQM). The implementation of ISO 9000 is the foundation to build the third stage which is quality assurance (QA). This stage, will focus more on the prevention instead of correction, and will provide a tool for conducting continuous improvements. Based on AC Nielsen of Vienna, Austria survey at 2005, there has been a significant growth in the adoption of ISO standard by organizations all over the world (as shown in Table 1). The similar trend is also happened in organizations in the Asian countries (Table 2).

Table 1. Number of ISO 9001 Certificates Holder Organization in the World

Year	Dec. 2001	Dec. 2002	Dec. 2003	Dec. 2004	Dec. 2005
World Total	44,388	167,124	497,919	660,132	776,608
World Growth	0	122,736	330,795	162,213	116,476
Number of country	97	133	149	154	161

Source: Helberling (ACNielsen survey 2005)

ISO 9000 became an important factor for companies who export their products to other countries and multinationals since 1992 in which it became the quality assurance for their products (Marquardt, 1992). Companies adopt or implement ISO 9000 in order to apply continuous improvement, which in the end will bring improvement toward the companies' performance. Research by Karapetrovic & Wilborn (2001) stated that there are five major reasons which encourage companies to adopt ISO 9000. These reasons are internal improvements, marketing positioning, supplier controlling, customer requirement, and regulatory requirement. While research conducted by Huarng et al. (1999) revealed that companies which have been successfully adopting ISO will

improved their quality level, improved their business in terms of their international competitiveness, cost reduction, sales improvement, human resources development and customer orientation. ISO 9000 may also promote collaboration between companies (Casper and Hancke, 1999).

Table 2. Number of ISO 9001 Certificates Holder Organization in the Far East

Year	Dec. 2001	Dec. 2002	Dec. 2003	Dec. 2004	Dec. 2005
Brunei Darussalam	4	13	36	46	53
Cambodia		5	5	5	6
China	7,413	40,997	96,715	132,926	143,823
Hong Kong, China	547	1,338	2,683	3,252	3,449
Macau, China	6	10	58	80	83
Chinese Taipei	634	1,316	2,991	5,676	7,652
Fiji	2	2	2	2	14
Indonesia	161	308	1,318	3,134	4,068
Japan	3,650	16,813	38,751	48,989	53,771
Korea, Democratic People's	106	130	163	773	939
Korea, Republic of	1,156	2,942	10,640	12,416	14,033
Malaysia	257	1,119	3,076	4,337	5,695
Mongolia		1	4	7	10
Myanmar			3	6	9
Nepal		4	6	25	83
Papua New Guinea				1	11
Philippines	43	270	456	1,108	1,414
Samoa					2
Singapore	333	1,953	3,341	3,964	6,282
Thailand	89	938	1,675	2,620	3,231
Tonga					1
Tuvalu				1	1
Vanuatu					1
Vietnam	33	354	1,237	1,598	2,461

Source: Helberling (ACNielsen survey 2005)

Croft (2009) conducts a research using survey method on 941 organizations from 63 countries (337 companies in USA, 70 companies in China, 58 companies in

Germany, 58 companies in United Kingdom, 45 companies in Mexico, 39 companies in Japan, 32 companies in Canada, 28 companies in Colombia, 25 companies in Australia, 20 companies in Italy, and 229 companies in Others). The companies characteristic based on its size is as follows, 377 medium enterprises, 290 large enterprises, 271 small enterprises and 3 uncategorized enterprises. The research suggests that out of 941, 137 enterprises done an excellent implementation of ISO, 565 enterprises done a good implementation, 167 enterprises need to do improvement in their implementation, 16 enterprises didn't implement ISO adequately, 14 enterprises not applicable and 42 enterprises didn't provide sufficient data. Croft's research divides the impact of ISO implementation into 3 major categories (as shown in Table 3).

Table 3. Impact Implementation ISO 9001

Impact Category	CRITERIA
High	Additional or reduced requirements significantly affecting many users
	Change in intent of requirement
	Need for urgent revision of related QMS standards
	Need for extensive changes of an organization's documentation
	Decreased compatibility with ISO 14001
	Inconsistency within the ISO 9000 family
	Need for recertification or significant transition period
	Need for extensive user education or training
Medium	Minor additional or reduced requirements for some users
	Possible impact on understanding by many users
	Need for limited changes of an organizations QMS documentation
	Need for eventual revision of other QMS standards
	No significant need for additional education or training for users
	Creates a minimal requirement for recertification or transition period
Low	No increased or reduced requirement
	No change in intent of requirement
	No impact on most users
	No need for additional education or training for users
	Only need for minimal or marginal changes of an organization's documentation

Source: Croft, 2009

Most previous researches discuss the benefit of ISO 9000 implementation towards the company organization, however these researches have not discuss the benefit of ISO 9000 from the financial report perspective especially from the characteristic of CoGS (Cost of Goods Sold), Total Inventory, Net Income, Gross Income, Operating Income and pre-tax Income before and after implementation. This research will discuss the comparison of those characteristic through the inventory turnover ratio, net profit margin, gross profit margin, operating profit margin and pre-tax margin.

2. VALUE OF ISO 9000

The concept of ISO 9000 consists of eight principles of quality management, which are focus on the customers, leadership, human resources involvement, process approach, system approach, continuous improvement, fact-based decision making approach, and mutual relationship with suppliers. These eight principles of quality management are concentrating on the quality of the products and services of the products (Bhujan, 1998). The improvements in the quality of the goods and services will improve the customers' satisfaction and strengthen the company's competitiveness (Belohlav, 1993). The adoption of ISO 9000 will easily and quickly influencing the improvement in the customers' satisfaction by providing the customers with what they expect and need (Brown, 1994). According to Huarng et al., (1999) the adoption of ISO 9000 will influence the process of information quality improvement in the financial department, operational department, company's management and marketing department. This condition will creates business networks, efficiency improvements and an excellent business targets accomplishment.

ISO implementation requires the companies to design and development of staffs' tasks and authorities as required by people who have high competency through these four stages. First, start the work and define how to do the task. Second, continue to work on what you have started and define how to accomplish the task. Third, measure what you have done. Fourth, apply continuous improvement through corrective and preventive actions. The four activities of designing ISO implementation will be conducted by documenting and creating the implementation guidelines for the organization which is known as quality manual. How to do and accomplish all activities will be described in the standard operating procedure (SOP), working instruction and form as quality records of the organization.

The values contained in the ISO 9000 have a significant relationship with financial performance measurement. This research focuses on the consumer goods companies with ISO certificates and listed in the Indonesian Stock Exchange. Data is taken from the related stock exchange publication on these companies' financial report prior to and after the ISO 9000 implementation. Financial performances reported on stock exchange are major interest and become performance indicator for senior management, employees, supplier, fund manager, organization and other investors. Many people believe that stock exchange listed companies' goal should be maximizing share value. This research explains the differences in financial performance prior to and after ISO 9000 implementation using inventory turnover ratio, net profit margin, gross profit margin, operating margin, and pre-tax margin (Robinson, et al., 2004) as the indicators.

Inventory Turnover Ratio

For any firm's physical inventory, this ratio addresses the heart of the firm's operations. The manufacturing firm has several classes of inventory, including raw material work in progress (WIP), and finished goods. Each of these inventories has unique characteristics and requires distinct management processes. The inventory management ratios provide one way to examine how a firm manages its inventory overall. These ratios include the following;

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold (CoGS)}}{\text{Average Total Inventory}}$$

The first ratio, inventory turnover, combines an item form the income statement, cost of good sold, with an item from the balance sheet, total inventory. The resulting number indicates how many times inventory was acquired and then sold over the year. Its can also use these ratio to evaluate quarterly or monthly performance where available.

Net Profit Margin

Net profit divided by net revenues, often expressed as a percentage. This number is an indication of how effective a company is at cost control. The higher the net profit margin is, the more effective the company is at converting revenue into actual profit. The net profit margin is a good way of comparing companies in the same industry, since such companies are generally subject to similar business conditions. However, the net profit margins are also a good way to compare companies in different industries in order to gauge which industries are relatively more profitable, also called net margin.

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Sales Revenue}}$$

Gross Profit Margin

A company's total sales revenue minus its cost of goods sold, divided by the total sales revenue, expressed as a percentage. The gross margin represents the percent of total sales revenue that the company retains after incurring the direct costs associated with producing the goods and services sold by a company. A financial metric used to assess a firm's financial health by revealing the proportion of money left over from revenues after accounting for the cost of goods sold. Gross profit margin serves as the source for paying additional expenses and future savings, also known as "gross margin".

$$\text{Gross Profit Margin} = \frac{\text{Sales Revenue} - \text{Cost of Goods Sold}}{\text{Sales Revenue}}$$

Operating Margin

A ratio used to measure a company's pricing strategy and operating efficiency. Operating margin is a measurement of what proportion of a company's revenue is left over after paying for variable costs of production such as wages, raw materials, etc. A healthy operating margin is required for a company to be able to pay for its fixed costs, such as interest on debt. This ratio is also known as "operating profit margin".

$$\text{Operating Margin} = \frac{\text{Operating Income}}{\text{Sales Revenue}}$$

Operating margin gives analysts an idea of how much a company makes (before interest and taxes) on each dollar of sales. When looking at operating margin to determine the quality of a company, it is best to look at the change in operating margin

over time and to compare the company's yearly or quarterly figures to those of its competitors. If a company's margin is increasing, it is earning more per dollar of sales and the higher of the margin is the better.

Pre-tax Margin

Pretax Margin is a measure of the operating efficiency of a company. Pretax margin is usually expressed as a percentage of revenues. Since pretax margin evaluates the relationship between pretax income and revenues, it is also considered a measure of the profitability of the company.

The calculation of pretax margin is:

$$\text{Pretax Margin (\%)} = \frac{\text{Pretax Income}}{\text{Sales Revenue}}$$

Profit margins can vary significantly between industries; therefore comparisons of pretax margin should be made between companies making similar products.

3. RESEARCH METHODOLOGY

This research observes the ISO adoption impacts toward financial performances of listed companies in Indonesian Stock Exchange, particularly companies which operate in consumer goods industry. Data taken using stratified sampling method with these following stages: selecting listed companies in Indonesian Stock Exchange based on the homogeneity of segment element which is consumer goods, afterward researcher contact these companies in order to know when the company started to implement ISO and received their ISO certificate. The communication was done using judgmental sampling with the purpose that the informants are appropriate and really understand these companies as the research object. There are 35 companies in consumer goods industry listed in Indonesian Stock Exchange, consist of 15 companies in food and beverages industry, 9 companies in pharmaceutical industry, 4 companies in cigarette industry, 4 companies in cosmetic industry and 3 companies in household equipments industry. Data collection done by observing and recording values related with Cost of Goods Sold (CoGS), total inventory, net income, gross income, operating income, and pre-tax income prior to and after ISO implementation.

Data assumed to be normally distributed based on the central limit theorem (McClave-Sincich, 2003, as quoted by Ari Christianti, 2006) which states that the bigger the sample size will caused the formed of binomial distribution to be closer to normal distribution which is a continuous distribution of binomial distribution with enlarged observation size. Therefore the assumption of the normality of data distribution has been fulfilled as the sample size is bigger than 30.

In order to test whether the ISO 9000 adoption has any impact toward financial performance, researcher will conduct a differential testing for condition prior to and after implementation using paired sample t-test on SPSS. The conclusion will be drawn by observing the resulted p-value. When p-value is higher than significant value, then

we are failed to reject H_0 and have to reject H_1. This means that there are no differences in the companies' financial performances prior to and after ISO 9000 implementation. The hypotheses will be unproven and could not be accepted. On the other hand, if p-value is smaller than or equal to significant value means that we will reject H_0 and accept H_1. The research hypotheses will be proven and could be accepted.

Hypothesis used in this research will test whether there is any difference between characteristic values of COGS, total inventory, net income, gross income, operating income, and pre-tax income. These characteristic values will be used to calculate inventory turnover ratio, net profit margin, gross profit margin, operating margin and pretax margin. Hypotheses in this research are as follows:

H1: Is there any significant difference between prior to and after ISO implementation in the factor of inventory turnover ratio?
H2: Is there any significant difference between prior to and after ISO implementation in the factor of net profit margin?
H3: Is there any significant difference between prior to and after ISO implementation in the factor of gross profit margin?
H4: Is there any significant difference between prior to and after ISO implementation in the factor of operating margin?
H5: Is there any significant difference between prior to and after ISO implementation in the factor of pretax margin?

4. RESULTS AND ANALYSIS

ISO 9000 application have been implemented by those 35 consumer goods companies, while 3 companies can not be included as the research's object due to the fact that these companies acquired the ISO 9000 certificates before they went public. Based on further examination, we summarize the data of these consumer goods companies for further analysis on table 4 and 5. Hypothesis will be tested by comparing the average value of financial performance prior to and after ISO 9000 implementation, which can be written statistically as follows:

$H_0 : \mu_1 = \mu_2$ There are no significant difference between prior to and after implementation of ISO 9000 in the factor of average value of inventory turnover ratio.

$H_1 : \mu_1 \neq \mu_2$ There are significant difference between prior to and afterimplementation of ISO 9000 in the factor of average value of inventory turnover ratio.

Based on the result using SPSS version 13.00, the significant value for the differential testing for inventory turnover ratio is 0.000 (as shown in table 8 and 9). Whereas this value (0.000) is ≤ critical value (0.050), which means we would reject H_0 and accept H_1. On other words, this hypothesis is proven or accepted, which means there is significant differences between the average of inventory turnover ratio prior to and after ISO 9000 implementation. Average inventory turnover ratio is increase from 59.53 prior to ISO 9000 implementation to 84.64 after ISO 9000 implementation. This indicates that these companies experienced efficiency improvement on their inventories and/or improvement on their CoGS, therefore improved their competitiveness.

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Table 4. Companies' Financial Ratio prior to ISO 9000 Implementation

No	Code	Companies Name	Prior to ISO 9000 Implementation					
			Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin
1	INDF	Indofood Sukses Makmur Tbk	4.1071	12.6610	0.1460	0.3229	0.1787	0.1488
2	GGRM	Gudang Garam Tbk	2.0497	25.3695	0.0657	0.1530	0.1027	0.0937
3	HMSP	HM Sampoerna Tbk	2.0327	25.5815	(0.0205)	0.3322	0.2313	(0.0190)
4	UNVR	Unilever Indonesia Tbk	6.8636	7.5762	0.1630	0.5196	0.2266	0.2340
5	KLBF	Kalbe Farma Tbk	2.8132	18.4842	0.0894	0.4856	0.1832	0.1630
6	DAVO	Davomas Abadi Tbk	10.4414	4.9802	0.0368	0.0671	0.0566	0.0757
7	RMBA	Bentoel International Inv. Tbk	6.1215	8.4947	(0.0056)	0.0838	(0.0117)	(0.0084)
8	TSPC	Tempo Scan Pacific Tbk	71.6516	0.7257	0.1614	0.4433	0.0164	0.2128
9	MYOR	Mayora Indah Tbk	5.6102	9.2688	0.0625	0.2485	(0.0036)	0.0912
10	KAEF	Kimia Farma Tbk	2.6607	19.5437	0.0928	0.3335	0.0323	0.1294
11	ULTJ	Ultra Jaya Milk Tbk (1.000.000)	(0.5698)	(91.2580)	0.0475	0.2497	0.1474	-
12	AQUA	Aqua Golden Mississippi Tbk	45.8283	1.1347	0.0290	0.0309	0.0112	0.0421
13	SUBA	Suba Indah Tbk	2.9297	17.7493	0.0957	0.2450	0.0506	0.1387
14	TCID	Mandom Indonesia Tbk	-	-	0.1030	0.3980	0.1567	0.1493
15	BATI	BAT Indonesia Tbk	16.2732	3.1954	(0.0453)	0.1415	(0.0601)	(0.0602)
16	MLBI	Multi Bintang Indonesia Tbk	226.1580	0.2299	0.1228	0.4344	0.1477	0.1833
17	DLTA	Delta Djakarta Tbk	2.6033	19.9749	0.1544	0.2534	0.0616	(0.0792)

Source : Data Analysis (JSX Annual report)

Table 5. Companies' Financial Ratio prior to ISO 9000 Implementation (Cont.)

No	Code	Companies Name	Prior to ISO 9000 Implementation					
			Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin
18	DVLA	Darya-Varia Laboratoria Tbk	1,276.0740	0.0407	0.1157	0.4878	0.1285	0.1811
19	CEKA	Cahaya Kalbar Tbk	2.6423	19.6800	(0.1446)	(0.0057)	(0.0699)	0.0464
20	KDSI	Kedawung Setia Industrial Tbk	2.1844	23.8053	0.0067	0.3833	0.2835	0.0870
21	LMPI	Langgeng Makmur Industri Tbk	1.8629	27.9137	(0.0000)	0.0000	0.0000	(0.0000)
22	STTP	Siantar TOP Tbk	5.1360	10.1246	0.0000	0.0000	0.0000	0.0000
23	AISA	Tiga Pilar Sejahtera Food Tbk	3.8388	13.5459	0.0000	0.0000	0.0000	0.0000
24	MERK	Merck Tbk	2.9923	17.3778	0.1635	0.5815	0.2263	0.2344
25	MRAT	Mustika Ratu Tbk	1.6830	30.8965	0.0000	0.0000	0.0000	0.0000
26	PSDN	Prasidha Aneka Niaga Tbk	4.2019	12.3754	0.0000	0.0000	0.0000	0.0000
27	SQBB	Bristol-Myers Squibb Indonesia Tbk (Seri B)	4.1840	12.4284	0.0968	0.5139	0.2033	0.2117
28	SKLT	Sekar Laut Tbk	4.3179	12.0429	0.0788	0.2770	(0.0302)	0.1230
29	ADES	Ades Waters Indonesia Tbk	22.6303	2.2978	(0.9537)	0.0620	(0.0119)	(0.9562)
30	SCPI	Schering Plough Indonesia Tbk	4.9964	10.4075	(0.0095)	0.3660	0.0460	(0.0042)
31	PYFA	Pyridam Farma Tbk	2.3094	22.5171	0.0282	0.6561	0.0658	0.0460
32	KICI	Kedaung Indah Can Tbk	1.8413	28.2414	0.1335	0.2419	0.0244	0.1573

Source : Data Analysis (JSX Annual report)

Table 6. Companies' Financial Ratio after ISO 9000 Implementation

No	Code	Companies Name	After ISO 9000 Implementation					
			Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin
1	INDF	Indofood Sukses Makmur Tbk	5.9631	8.7203	0.1247	0.3175	0.1849	0.1411
2	GGRM	Gudang Garam Tbk	1.7250	30.1458	0.1206	0.2537	0.1815	0.1710
3	HMSP	HM Sampoerna Tbk	2.1028	24.7294	0.1906	0.3638	0.2642	0.2741
4	UNVR	Unilever Indonesia Tbk	6.6134	7.8629	0.1442	0.4930	0.2032	0.2066
5	KLBF	Kalbe Farma Tbk	2.6161	19.8766	0.1113	0.5126	0.1884	0.1809
6	DAVO	Davomas Abadi Tbk	8.5145	6.1072	0.1076	0.1362	0.1265	0.1252
7	RMBA	Bentoel International Inv. Tbk	5.2637	9.8789	0.0192	0.1065	0.0090	0.0214
8	TSPC	Tempo Scan Pacific Tbk	131.9590	0.3941	0.1566	0.4556	0.0252	0.2046
9	MYOR	Mayora Indah Tbk	7.7411	6.7174	0.0268	0.2209	(0.0152)	0.0396
10	KAEF	Kimia Farma Tbk	3.8919	13.3610	0.1119	0.3650	(0.0054)	0.0002
11	ULTJ	Ultra Jaya Milk Tbk (1.000.000)	(0.5928)	(87.7149)	0.0926	0.2479	0.1564	-
12	AQUA	Aqua Golden Mississippi Tbk	46.2025	1.1255	0.0579	0.0678	0.0136	0.0814
13	SUBA	Suba Indah Tbk	3.8089	13.6522	0.0180	0.2531	0.0385	0.0479
14	TCID	Mandom Indonesia Tbk	47,285.3432	0.0011	0.1026	0.3716	0.1425	0.1488
15	BATI	BAT Indonesia Tbk	48.8026	1.0655	(0.0220)	0.1445	(0.0201)	(0.0310)
16	MLBI	Multi Bintang Indonesia Tbk	747.9499	0.0695	0.1021	0.4394	0.1481	0.1508
17	DLTA	Delta Djakarta Tbk	4.7797	10.8794	0.0596	0.2615	0.0731	0.0905

Source : Data Analysis (JSX Annual report)

Table 7. Companies' Financial Ratio after ISO 9000 Implementation (Cont.)

No	Code	Companies Name	After ISO 9000 Implementation					
			Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin
18	DVLA	Darya-Varia Laboratoria Tbk	1,378.2625	0.0377	0.1189	0.6709	0.2018	0.1818
19	CEKA	Cahaya Kalbar Tbk	2.2071	23.5600	0.0897	0.0833	0.0340	0.0212
20	KDSI	Kedawung Setia Industrial Tbk	4.3270	12.0176	0.0589	0.1671	0.0839	(0.0300)
21	LMPI	Langgeng Makmur Industri Tbk	2.0845	24.9463	(0.0000)	0.0000	0.0000	(0.0000)
22	STTP	Siantar TOP Tbk	6.2332	8.3425	0.0000	0.0000	0.0000	0.0000
23	AISA	Tiga Pilar Sejahtera Food Tbk	4.5755	11.3648	(0.0000)	0.0000	0.0000	(0.0000)
24	MERK	Merck Tbk	3.9144	13.2844	0.1548	0.5673	0.2200	0.2244
25	MRAT	Mustika Ratu Tbk	1.7130	30.3555	0.0000	0.0000	0.0000	0.0000
26	PSDN	Prasidha Aneka Niaga Tbk	4.4682	11.6377	0.0000	0.0000	0.0000	0.0000
27	SQBB	Bristol-Myers Squibb Indonesia Tbk (Seri B)	4.6331	11.2235	0.1821	0.6214	0.3200	0.2658
28	SKLT	Sekar Laut Tbk	5.2086	9.9834	0.0745	0.2564	0.0069	0.1189
29	ADES	Ades Waters Indonesia Tbk	(20.6922)	(2.5130)	(1.1771)	(0.0021)	(0.2174)	(1.1554)
30	SCPI	Schering Plough Indonesia Tbk	4.8467	10.7290	0.0204	0.3803	0.0692	0.0451
31	PYFA	Pyridam Farma Tbk	2.4377	21.3319	0.0201	0.6421	0.0480	0.0303
32	KICI	Kedaung Indah Can Tbk	1.6984	30.6162	0.0966	0.2307	(0.0057)	0.1243

Source : Data Analysis (JSX Annual report)

Table 8. Paired Samples Statistics Inventory Turnover

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Implementation ISO	59.531338	30	237.8979466	44.1765396
	After Implementation ISO	84.639452	30	284.9641503	52.9165142

Table 9. Paired Samples Correlations Inventory Turnover

		N	Correlation	Sig.
Pair 1	Before Implementation & After Implementation	30	.945	.000

Further examination on the "weeks of supply" indicates that the companies experiences more efficient process on their operation department after ISO 9000 implementation as shown by the reduction of 10% in average (explained in table 10 and 11).

Table 10. Paired Samples Statistics Weeks of Supply

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Implementation ISO	14.357479	30	9.0862203	1.6872688
	After Implementation ISO	12.897110	30	9.2243010	1.7129097

Table 11. Paired Samples Correlations Weeks of Supply

		N	Correlation	Sig.
Pair 1	Before Implementation & After Implementation	30	.929	.000

This proven the statement that these companies became more efficient in their inventory turnover which can be observed from the lower weeks of supply after ISO 9000 implementation on the critical level 0.050.

$H_0 : \mu_1 = \mu_2$ There are no significant difference between prior to and after implementation of ISO 9000 in the factor of average value of net profit margin.

$H_2 : \mu_1 \neq \mu_2$ There are significant difference between prior to and after implementation of ISO 9000 in the factor of average value of net profit margin.

Table 12. Paired Samples Statistics Net Profit Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Implementation	.083050	30	.0554529	.0113193
	After Implementation	.085100	30	.0533972	.0108996

Table 13. Paired Samples Correlations Net Profit Margin

	N	Correlation	Sig.

Pair 1	Before Implementation & After Implementation	30	.702	.000

Analyzing table 12 and 13, we can see that the significant value for net profit margin factor is 0.000. Whereas this value is lower than critical value of 0.050, which means that we would reject H_0 and accept H_1. In other words, we can say that the hypothesis is proven or accepted and we conclude that there are significant differences between condition prior to and after ISO 9000 implementation on the factor of net profit margin. The average net profit margin increase from 0.83 prior to ISO 9000 implementation to 0.85 after ISO 9000 implementation, which indicates increase in companies' profit and in the end will enhance these companies' competitiveness.

While to test the factor of gross profit margin, these hypotheses will be used:

$H_0 : \mu_1 = \mu_2$ There are no significant difference between prior to and after implementation of ISO 9000 in the factor of average value of gross profit margin.

$H_3 : \mu_1 \neq \mu_2$ There are significant difference between prior to and after implementation of ISO 9000 in the factor of average value of gross profit margin.

Table 14. Paired Samples Statistics Gross Profit Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Implementation	.274997	30	.1945448	.0355189
	After Implementation	.284893	30	.2034445	.0371437

Tabel 15. Paired Samples Correlations Gross Profit Margin

		N	Correlation	Sig.
Pair 1	Before Implementation & After Implementation	30	.952	.000

The test result for gross profit margin from table 14 and 15 showed significant value of 0.000. This significant value is lower than critical value of 0.050, which means that we would reject H_0 and accept H_1. In other words, the hypothesis is proven and accepted and we could conclude that there is a significant difference between condition prior to and after ISO 9000 implementation in the factor of gross profit margin. The average gross profit margin showed an increase from 0.275 prior to ISO 9000 implementation to 0.285 after ISO 9000 implementation; this indicates that the companies experienced an increase in profits and this will contributes to the increase in their competitiveness.

To test the operating margin (result shown in table 16 and 17), we used these following hypotheses:

$H_0 : \mu_1 = \mu_2$ There are no significant difference between prior to and after implementation of ISO 9000 in the factor of average value of operating margin.

$H_4 : \mu_1 \neq \mu_2$ There are significant difference between prior to and after implementation of ISO 9000 in the factor of average value of operating margin.

Table 16. Paired Samples Statistics Operating Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Implementation	.105171	31	.0907340	.0185210
	After Implementation	.112042	31	.0951979	.0194322

Table 17. Paired Samples Correlations Operating Margin

		N	Correlation	Sig.
Pair 1	Before Implementation & After Implementation	31	.820	.000

The result showed significant value of 0.000 which is lower than critical value of 0.050, therefore we would reject H_0 and accept H_1. We could conclude that the hypothesis is proven or accepted and there are significant differences between the condition prior to and after ISO 9000 implementation from the perspective of operating margin factor. The average operating margin is improved from 0.105 prior to ISO 9000 implementation to 0.112 after ISO 9000 implementation; this indicates that the companies operating margin is improved and this will also improved their competitiveness.

The fifth hypothesis for testing the difference in the factor of pretax margin is shown in table 18 and 19.

$H_0 : \mu_1 = \mu_2$ There are no significant difference between prior to and after implementation of ISO 9000 in the factor of average value of pretax margin.

$H_5 : \mu_1 \neq \mu_2$ There are significant difference between prior to and after implementation of ISO 9000 in the factor of average value of pretax margin.

Table 18. Paired Samples Statistics Pretax Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Implementation	.120995	30	.0755433	.0161059
	After Implementation	.112036	30	.0834750	.0177969

Table 19. Paired Samples Correlations Pretax Margin

		N	Correlation	Sig.
Pair 1	Before Implementation & After Implementation	30	.842	.000

The result showed significant value of 0.000 which is lower than critical value of 0.050, therefore we would reject H_0 and accept H_1. We could conclude that the hypothesis is proven or accepted and there are significant differences between the condition prior to and after ISO 9000 implementation in pretax margin factor. The average pretax margin is degraded from 0.121 prior to ISO 9000 implementation to

0.112 after ISO 9000 implementation; this indicates that the companies operating margin is reduced and this will reduced their competitiveness.

The main reason for the phenomenon is the huge decreased in pretax margin from two companies. The first one is, PT. Kedaung Setia Industrial from Rp. 17,478,783,579 prior to ISO 9000 implementation in 1998 to Rp. -7,192,826,743 after ISO 9000 implementation in 1999. This condition is mostly due to the financial crisis in Indonesia, whereas data in 1999 is the report from 1998. The second company is PT. Ades Waters Indonesia with the decrease in its pretax margin from Rp. -129,122,000,000 prior to ISO 9000 implementation in 2006 to Rp. -151,986,000,000 after implementation in 2007. This is most likely casused by PT Ades Waters Indonesia's actions of closed down three factories, six marketing offices, and dismissed seventy employees.

5. CONCLUSION

Based on the data analysis conducted on 32 consumer good companies listed in the Indonesian Stock Exchange, by comparing the financial performance index (using inventory turnover ratio, weeks of supply, net profit margin, gross profit margin, operating margin and pretax margin) prior to and after ISO 9000 implementation we draw conclusions as follows:

1. There is significant difference between the condition prior to and after ISO 9000 implementation in the factor of inventory turnover ratio, which is increased from 59.53 to 84.64.
2. There is significant difference between the condition prior to and after ISO 9000 implementation in the factor of weeks of supply, which is 10% lower causing companies to be more effective.
3. There is significant difference between the condition prior to and after ISO 9000 implementation in the factor of net profit margin, which is increased from 0.83 to 0.85; this indicates an improvement in the companies' competitiveness.
4. There is significant difference between the condition prior to and after ISO 9000 implementation in the factor of gross profit margin, which is increased from 0.275 to 0.285; this indicates an improvement in the companies' competitiveness.
5. There is significant difference between the condition prior to and after ISO 9000 implementation in the factor of operating margin, which is increased from 0.105 to 0.112; this indicates an improvement in the companies' competitiveness.
6. There is significant difference between the condition prior to and after ISO 9000 implementation in the factor of pretax margin, which is decreased from 0.121 to 0.112; this indicates a decrease in the companies' competitiveness. This condition is due to the huge decrease in pretax at PT Kedaung Setia Industrial and PT Ades Waters Indonesia.
7. In General, we can conclude that financial performance of these companies after ISO 9000 implementation are better compare with prior to ISO 9000 implementation.

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