Financial Ratio Analysis of the Textile and Apparel Industries[+]

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Abstract

This paper is to focus the financial ratio analysis of the Korean textile and apparel companies due to fast changing domestic industry. Financial ratios are playing a pivotal role in management analysis to assess the present conditions to predict the future.

Subjects are belonging to textile and apparel manufacturers based on Firm Classification Standard while registered as securities listed-firms or Kosdaq-listed firms under the Electronic Notification System of Korean Banking Supervisory Authority. 41 companies' data have been analyzed including 17 apparel companies and 24 textile companies.

14 representative financial ratios are analyzed. In this paper, financial ratios can be classified into four categories as follows: stability ratios, profitability ratios, growth ratios and activity ratios.

The independent t-test was performed using SPSS 18 for a 10 year simple arithmetic average.

The following conclusion has reached regarding aspects of management conditions and performances. When compared the ratios indicating stability, textile and apparel companies did not show much difference in debt ratio and the ratio of earning to interests. However, when compared the profitability ratios measuring the ability to produce incomes, apparel companies showed higher ratios than textile companies.

Thus it is important to recognize financial characteristics of each industry.

Key Words : Financial Ratios, Clothing companies, Textile companies

Ⅰ. Introduction

The Korean textile and apparel market, already in severe competition among the domestic companies, is getting more competitive every day by the increasing challenges of the foreign companies. Moreover, the fast spread of information by the internet is rapidly changing the domestic industries affecting the market structure, flow and consumer's purchasing behaviors. Under this ongoing atmosphere of severe competition and rapid changes, textile and apparel companies should go through changes even more rapidly because they put much weight on fashion as a key element of their business.

As the multinational fashion SPA brands with huge capitals beginning to position themselves in the domestic market, the domestic competitive brands are forced to prepare themselves in various ways introducing new items more frequently in swift manners and scaling up their sales storefronts. In preparing against the increase in sales of the imported apparel and accessory brands, concerned domestic brands are actively making distinction of their products, increasing services to the consumers, engaging in closer cooperation with foreign brands and extending their businesses to the foreign markets more actively.

As regards to the operation of fashion business under this free market economy, never before has been emphasized more of the importance of business capital management.

Only when based on sound capital structure can a business fully exert its knowhow and ability in purchasing materials, production and sales for the fashion goods. It is very common, even for a world renowned designer brand, to be bankrupt or absorbed by other firms when it does not manage capital efficiently.

For example, Kenzo, upon absorbed and operated by a European multinational business, introduced new brands and is operating in the market as interior designer and, DKNY, a US company, upon absorbed by a multinational business, is operated with some of its original products either abolished or reduced. And, management failures of some fashion-oriented companies in the wake of insolvency of Tomboy and Ssamgi, Korea's long-standing native brands, sounded the alarms for the importance of sound capital management and necessity of managers specializing in fashion.[1]

To promote the fashion industry and achieve the management objectives, the companies, in the first place, should be assured of stable financial structure. In the initial stage of the establishment of management planning, they should discuss stable financial structure as an important factor to be assured.

The soundness of business and brand is ultimately dependent on the management of capital, in that, efficient decision-making is induced and managed in accordance with the direction of capital flow. Companies should, above all, effectively conduct financial management for the sustained growth and achievement of management objectives of the textile and apparel businesses. Effective financial management cannot be achieved without clear financial analysis.

Not only are the internal characteristics and external management environment of a company understood through financial analysis, but the general characteristics and tendencies of the industry under which the company belongs to could be understood by the comprehensive analysis of them. Therefore, financial analysis could be used to help the general public understand the company as well as to be served as an investment guidance, and to help business

managers establish management policies by understanding the situations of competing companies and their own positions in the market. Furthermore, they could help industrial and economic policy makers understand related industry and economy and thus could be reference materials for establishing relevant policies.

Therefore, financial analysis could be an important index to look through the realities of the business and industry, and thus to predict the future trends.

Kim Hyunjong[2], upon comparing the financial analysis of the various industries, said that textile and apparel industries are the low-growth industries having low rate of increase in sales volumes. Suh Sooduk[3], upon considering the sewing and textile manufacturing industries to be homogeneous in nature, suggested management strategies suitable for various business situations using DEA of the return on investment. However, upon considering the necessity of more specific business strategies in the rapidly changing industry environment, it may be useful to observe textile industry and apparel industry separately to understand each industry's specific characteristics.

Thus, in the efforts to help fashion industry managers and concerned personnel make reasonable decisions and conduct efficient business management, We centered this study on utilizing the financial ratio analysis method as an understanding tool of the financial structure and management environment of the fashion industry. The purpose of this study, therefore, is to prepare and suggest basic materials for assessing the management performances by examining the financial conditions and sales activities. To do this, two steps have been taken as follows; firstly, found out differences between the textile and apparel business through financial analysis, and, secondly, by comparing the financial ratios

of, textile and apparel industry with the whole manufacturing ratio, assessed their financial characteristics in bigger pictures.

II. Theoretical Background

1. Basis of the Financial Analysis

In financial analysis, the financial statement(prepared in accordance with the fixed standard to provide the company's concerned people with the company's financial conditions and management performances) is being utilized. According to the "Korean Business Accounting Standard" the financial statement includes balance sheet (B/S), statement of income (I/S), statement of appropriations of retained earnings and cash-flow statement (C/F).[4][5][6]

There are object analysis and ratio analysis, of which object analysis is useful in recognizing realistically the size of the fund. On the other hand, ratio analysis (often referred to as financial ratio analysis) is utilizing financial statements to show in ratio the relationship between each composing account.

Financial ratio, in the first, is helpful in mutual comparison of the asset or financial structure, and revenue or expense structure of the businesses differing in size. In the second, by observing how a company's asset or financial structure and revenue or expense structure change over the passage of time, the real picture of the company's management could be shown and its abilities could be considered in many different angles. In the third, it can be used to assess a company's credit risk, to predict insolvency, to decide credit rating, to analyze intrinsic value of a share and to provide information necessary for preparing estimated financial statement[7]. Therefore, financial ratio is

playing a pivotal role in management analysis to assess the present conditions thus to predict the future, there being no wonder a lot of industry-related studies have been made utilizing the ratios.

Gupta & Huefner[8], in their efforts to find out industry characteristics, used hierarchical cluster analysis to examine the descriptive or representative power of financial ratios with the basic industry attributes. Lee Jungyeon[9] adopted the same method of analysis by using the Korean domestic data. Much research regarding various industries using financial ratios has been made as follows; Medium and Small companies[10], Venture Business[11], Travel Agency[12][13], Convention Specialist Companies[14], Hotel[15], Communication Companies[16], Restaurant Businesses[17], Sports Businesses[18].

Under the Article 8 of the " Act on External Audit of Stock Companies", a stock-listed company has to submit external audit report which has to include 14 representative financial ratios as follows; ①current ratio ②debt ratio ③dependency on the creditors, ratio of current liabilities to net worth ④ratio of earning to interest ⑤operating profit ratio to net sales ⑥net profit to net sales ⑦ratio of net profit to gross capital ⑧net profit to net worth ⑨cash ratio ⑩ratio of gross sales increase ⑪ratio of operating profit increase ⑫ratio of net profit increase ⑬ratio of gross asset increase ⑭total assets turnover ratio. There have been some studies using mainly these 14 representative financial ratios but adding some other financial ratios suitable for the specific industry.[19][20][21][22][23]

Textile as industrial raw material, sold to apparel companies and other industries, is an image strongly embedded in its characteristics. It is very important for textile companies to react sensitively to the consumer needs and well manage the carry-over inventory because its products are seasonal with short marketing cycles.[24] Thus the financial ratios regarding sales and inventory could be important indices. These financial ratios can be classified into four categories as follows.

1) Stability Ratios

Stability ratios representing the company's financial stability are comprised of ①current ratio ②debt ratio ③dependency on the creditors, ratio of current liabilities to net worth ④ratio of operating expense to net sales ⑤ratio of earning to interest and ⑥cash flow ratio. But, sometimes, ratio of inventory to operating assets is added because inventory control is very important for the textile and apparel companies.[25]

The current ratio compares a company's current assets to current liabilities and measures its ability to cover short-term(maturing) obligations. This ratio is the basic index used by the financial institutions for credit ratings and thus also called banker's ratio.[26][27]

Debt ratio shows the relationship between creditor's equity and owner's equity. It is a measure of the total debt a company owes compared to the equity of the shareholders. It tells you just how much of the capitalization is the owners vs. the creditors. Obviously, the liquidity improves as the ratio becomes lower. At the time of IMF crisis, the Korean Banking Supervisory Authority and government demanded capital restructuring so that 200% could be the standard ratio. Of course, standard debt ratio varies with the time, country and industry. The debt ratio for the whole Korean manufacturing sector is higher than those of the U.S. and Japan,[28] and the debt ratio for the textile industry turned out to in the middle cluster(598%) level.[29]

Dependency on the creditors(also called the ratio of current liabilities to net worth) shows the degree of dependency on the creditors. Generally, if this ratio goes up, the interest burden of the company goes up worsening profitability and stability.

The ratio of operating expense to net sales is also called ratio of operating expenses to earnings. It is considered acceptable, if it is over 100%.

The ratio of earning to interest represents the degree of ability to pay for the interest expenses out of sales earnings. The debt stability can be shown by the analysis of this ratio. There is no standard ratio, but, if higher than the industry average, it is considered acceptable good.[30]

Cash flow ratio is the ratio of cash and bank savings to current liabilities. Same industry average is usually used as the standard ratio.

If the ratio of inventory to operating assets is above 100%, it could adversely affect the company's ability to pay short-term debts.

2) Profitability Ratios

Profitability ratios are the representative financial ratios showing overall sales results utilizing personal and material resources mobilized by the company's capital investment, Profitability ratios measure a firm's ability to generate profits. There are a number of common profitability ratios, including operating profit ratio to net sales, ratio of net profit to net sales, ratio of net profit to gross capital and ratio of net profit to net worth in the above-mentioned 14 ratios.

The operating profit ratio to net sales(also called gross profit margin) is a measure of how efficiently a company converts its cost of goods sold into sales. There being no standard ratio for this, thus its feasibility is decided by comparing with the ratio of the concerned business or industry average.

The ratio of net profit to net sales(also called profit margin on sales) measures a company's efficiency in converting sales into net income. The ratio of net profit to gross capital(also called ROI) is the representative ratio generalizing the profitability. It measures the efficiency with which a company is utilizing its assets to generate net income. If higher than industry average, it is considered acceptable. The ratio of net profit to net worth(also called ROE) measures the profits generated for each won of equity investment. If higher than same industry average, it is considered acceptable.[31]

3) Growth Ratios

Growth ratios show the increase or decrease of the company's size(scale) or sales results. Out of the basic 14 ratios, ratio of gross sales increase, ratio of operating profit increase, ratio of net profit increase and ratio of gross asset increase belong to this category. Additionally, this study included the ratio of inventory to operating assets.

The ratio of gross sales increase, being the representative ratio showing the outward growth of the company, shows the increase rate of gross sales from the previous year. The ratio of operating profit increase shows the increase rate of operating profit from the previous period. If these two ratios show similar extent of change, it may be presumed that variable cost outweighs fixed cost. On the other hand, if the extent of change is substantial, then there must be a tendency that the fixed cost outweighs variable cost.[32]

The ratio of net profit increase shows the increase rate of net profit from the previous period. Net profit is sales profit deducted by capital cost and reflecting extraordinary gain and

loss. The ratio of gross asset increase shows the increase rate of gross asset from the previous year. These growth ratios do not have standard ratios, but it is considered acceptable if higher than those of the industry average. Quality is more important than quantity in assessing the growth ratios. Thus the ratio of gross sales increase and the ratio of net profit increase should be higher than the ratio of gross asset increase.[33]

Besides, the ratio of inventory to operating assets increase shows the increase rate of inventory to operating assets over the previous year. There is no standard for this. But, any abrupt rising or falling from the level of related industry average may be judged to be undesirable.

4) Activity Ratios

Activity ratios measure how efficiently a company utilizes its assets. Since they show the degree of effectiveness of utilization of specific asset they are also called efficiency ratios or asset utilization ratios. They are also called turnover ratios since the company's net sales divided by an asset produces turnover for the specific asset to be appraised. Out of 14 basic ratios, total assets turnover ratio belongs here and it measures the efficiency with which a company is utilizing its assets to generate sales. A high asset turnover ratio means current asset and fixed asset are well utilized. Usually this ratio is lower for heavy chemical industry and higher for light industry, wholesale and retail businesses.[34]

Turnover ratio for inventories is another one belonging to activity ratios. Inventory turnover measures how many times a company sells and replaces its inventory in a period(quarter or year), that is, how efficiently a company utilizes its inventory. A low inventory turnover means

excessive investment on the inventory asset tying up funds over an extended period of time. On the other hand, if there is a high inventory turnover, the company may have the problem of not being able to meet the emergency demands of the customers due to lack of ability to hold appropriate amount of inventory.[35]

2. Characteristics of Apparel and Textile Industries

Korean textile industry imports 1/3 of their raw material from overseas and exports 2/3 of the finished-goods to overseas. With this heavy dependency on the overseas, it is a representative processing trade-type export-oriented industry.

Out of total Korean industries, textile industry's shares are 10.3% of the total traders and manufacturers, 7.1% of the employment and 3.2% of the gross product. It employs the largest number of workers, and, with the substantial shares of traders and gross output as mentioned above, it is a key industry having highly pervasive effect on the economy backward and forward. This industry has relatively low proportion of small traders and manufacturers in the competitive structure. Rather, big businesses have larger market shares in this industry.[36]

Anderson, et al.[37] says in their study that textile industry is competitive and unstable because of the large role played by gray market formed by the intrinsic characteristics of their products. That is, textile industry products are fabrics more or less standardized having only slight differences with each other while the degree of technology concentration is low. Thus other manufacturers can easily produce similar products catering to the many purchasers and sellers crowding in the market. To make it worse, a wide variety of fabrics is giving the consumers easy choices to switch to other products, thus

<Table 1> Concept & Formula of Financial Ratios

	Ratios	Concept	Formula
Stability Ratios	Current Ratio	compares a company's current assets to current liabilities and measures its ability to cover short-term(maturing) obligations	Current Assets / Current Liabilities*100
	Debt Ratio	shows the relationship between creditor's equity and owner's equityIt tells you just how much of the capitalization is the owners vs. the creditors	Total Liabilities/Owner's Equity*100
	Degree of dependency on the creditors.	Out of total capital, shows composition of interest-bearing borrowings and liabilities	Short-term borrowings +fluid long-term debts +long-term borrowings +debenture/Total Capital*100
	Ratio of operating expense to net sales	Shows the composition of operating expense out of net sales	Total Operating Expense/Net Sales*100
	Ratio of earning to interest	Shows the composition of earning out of interest expense	Sales earnings/Short-term and lon-term interest expense*100
	Cash flow	Shows the composition of cash out of total capital	Cash/Total Capital*100
	Ratio of inventory to operating assets	Shows the composition of inventory out of current assets	Inventory/Current Assets*100
Profitability Ratios	Ratio of operating profit to net sales	Shows the composition of operating profit out of net sales	Operating Profit/Net Sales*100
	Ratio of net profit to net sales	Shows the composition of net profit out of net sales	Net Profit/ Net Sales*100
	Ratio of net profit to gross capital	Shows the composition of net profit out of gross capital. Also called ROI (Return on Investment)	Net Profit/Gross Capital*100
	Ratio of net profit to net worth	Shows the composition of net profit out of net worth	Net Profit/Net Worth*100
Growth Ratios	Ratio of gross sales increase	Shows increase or decrease rate of gross sales from the previous period	Current Period Gross Sales-Previous Period Gross Sales/Previous Period Gross Sales*100
	Ratio of operating profit increase	Shows increase or decrease rate of operating profit from the previous period	Current Period Operating Profit-Previous Period Operating Profit /Previous Period Operating Profit*100
	Ratio of net profit increase	Shows increase or decrease rate of net profit from the previous period	Current Period Net profit-Previous Period Net Profit/Previous Period Net Profit*100
	Ratio of gross asset increase	Shows increase or decrease rate of gross asset from the previous period	Current Period Gross Asset-Previous Period Gross Asset/Previous Period Gross Assets*100
	Ratio of inventory to operating assets increase	Shows increase or decrease rate of inventory from the previous period	Current Period Inventory-Previous Period Inventory/Previous Period Inventory*100
Activity Ratios	Total Assets Turnover Ratio	Shows how many times total assets turned over to get the gross sales	Gross Sales/total Assets*100
	Inventory Turnover Ratio	Shows how many times inventory turned over to get the gross sales	Gross Sales/Inventory*100

the market gets more and more competitive. However, the fabrics market requiring special knowhow and technology like dyeing, tidying-up and final treatment process is less competitive because of high market barrier.

Textile industry, because of its technological feature, belongs to loosely coupled technological system and linear technology group. Thus there is less uncertainty on cause and effect of technological advancement, so technologies could be learned gradually in linear tendency through prospectus like programs. Thus non-technological factors often decide the characteristics of this industry group. But, sometimes, technological innovations can bring about better opportunities.[38] For example, by going through technology advancement, US textile industry in the 1980s could bring about higher productivity and lower employment cost than apparel industry.[39]

On the other hand, Stanback[40] said in the study made in the latter part of 1950s that cotton fabrics clothing, compared to other industries, showed clear case of long-term continuity with 2-3 years of consumption cycles, and that, although very sensitive to the foreign economic trend, cotton fabrics clothing was less sensitive to the trend of end-user demands. An analysis made in recent financial crisis, however, showed that textile was less sensitive than apparel and that each country showed variations.[41]

Compared to textile industry, a key industry with large share of big businesses, apparel industry is less dependent on technology, having low entry barrier, and it costs less operating expenses. For the process of, labor cost is important because apparel production is basically a labor-intensive trait. Thus, once labor cost goes up, firms begin to look for countries costing less labor, thereby occupying better posi-

tions than their competitors.[42]

Gupta and Huefner[43] said that, for the inventory turnover rate, apparel industry belonged to the middle cluster of group but textile industry belonged to the low cluster of group. Generally speaking, shorter product cycle or higher product-holding expenses means lower inventory and higher inventory turnover. And longer production processing time needs more cash to hold. Labor-intensive industries have higher cash flow ratio than capital-intensive industries. According to Patrone and DuBois[44], finished goods have higher liquidity than production goods or raw materials, and jewelries or apparels have higher liquidity than foods.

Centering on brand and intangible assets, consumer brand assets were higher than industrial brand assets, and apparel brand assets were higher than textile brand assets. And, for intangible assets, apparels were higher than textiles.[45]

Kim Soyoung[46], on the other hand, appraised that apparel industry was placed at disadvantageous position compared to the other industries. Low burden on facility investment and potential to create high value-added products are its bright sides. But, its risk factors are high vulnerability to business fluctuations, low entry barrier, severe competition, low bargaining power against large circulating chains, and nature of its product being quickly out of fashion, all adding to the easy rise and fall of its business. Incidentally regarding apparel business, realistic valuation of the inventory assets is said to be the most important factor in assessing an apparel business.

As shown above, textile and apparel businesses are closely related, but each industry shows differences on business environment, products, production and purchaser propensity.

III. Research Method

1. Subject

Companies subject to analysis in this study are belonging to textile and apparel manufacturers based on Firm Classification Standard while registered as securities listed-firms or Kosdaq-listed firms under the Electronic Notification System of Korean Banking Supervisory Authority. The companies having large proportion of manufacturing like BYC, Try, Wacoal and 4 other companies and fur company Jindo were excluded. Even though belonging to textile industry, companies producing either semi-conductor chips or auto-related parts have been excluded, too. Also, excluded are companies having no available data because they have been recently listed, companies dishonored and companies having insufficient data on financial statements.

Finally, 41 companies' data have been analyzed including 17 apparel companies and 24 textile companies(11 securities-listed and 13 Kosdaq-listed). The listed years for the apparel companies are 4 in the 1980s, 4 in the 1990s and 9 in the 2000s, the largest in numbers. The listed years for the textile companies are 1 in the 1950s, 1 in the 1960s, 8 in the 1970s, 9 in the 1980s, the largest in numbers, 7 in the 1990s and 4 in the 2000s.

Under the Classification Standard of the listed firms, all apparel companies belonged to sewing-clothing manufacturer, but textile companies are as follows; 10 for spinning and fabricated-thread manufacturer, 5 for textile fabrics and woven goods manufacturer, only 1 for dyeing, tidying and finishing processor, 4 for knitting raw cloth and knitted goods and 4 for synthetic fiber manufacturer.

2. Analysis

Financial statements submitted by the subject companies to the Electronic Notification System[47] of Korean Banking Supervisory Authority have been used for the analysis.

Financial ratios to be analyzed are 14 representative financial ratios(①current ratio ②debt ratio ③ratio of current liabilities to net worth ④ratio of earning to interest ⑤operating profit ratio to net sales ⑥net profit to net sales ⑦ratio of net profit to gross capital ⑧net profit to net worth ⑨cash ratio ⑩ratio of gross sales increase ⑪ratio of operating profit increase ⑫ratio of net profit increase ⑬ratio of gross asset increase ⑭total assets turnover ratio) to be submitted as reference data under the Article 8 of the "Act on External Audit of Stock Companies". In addition, considering the characteristics of the textile and apparel businesses, ratio of operating expenses to net sales, ratio of gross profit to interest, ratio of inventory assets to current assets and turnover ratio of inventory assets are included in this paper.

In order to observe the average differentials of financial statement ratios for the textile and apparel businesses, an independent t-test was performed using SPSS 18. In the event the period for the analysis is centered on short-term like 1-2 years, there is a risk of being influenced by external environment like financial crisis.[48][49] Thus the year-ending closing financial statements for 10 year periods(2000.1-2009.12) were used and, for the whole manufacturing industry, a 10 year simple arithmetic average was used for comparison.

IV. Results

1. Stability Ratios

Stability ratios, except for debt ratio and ratio of earning to interest, showed statistically significant differences between textile companies and apparel companies. For current ratio, apparel companies(223.05%) were higher than textile companies(162.95%) showing better fund liquidity.

Compared to 10 year manufacturer average of 186.35%, textile companies were a little lower, and apparel companies were higher. This result, supporting the conclusion of the study by Patrone & DuBois[50], is reflecting the fact that apparels as finished goods are having better liquidity than textiles which are production materials.

As to the debt ratio, showing little difference between textile and apparel companies, both textile companies(137.55%) and apparel companies (126.78%) have lower ratios than the manufacturer average(224.44%) indicating stability. These debt ratios have been reduced sharply from the figures identified by a study made in the 1980s[51] seemingly reflecting the recent newspaper article[52] that the financial policies of the textile businesses showed a flavor of conservatism.

As for dependency on the creditors, textile companies(32.62%) were significantly higher than apparel companies(24.73%). When compared to the whole manufacturer(27.50%) it was identified that financial stability of the textile companies was relatively weak.

As for the ratio of operating expense to net sales, textile business (103.90%) was relatively higher than apparel business(94.15%). Compared

<Table 2> Stability Index Standard Financial Ratios

Financial Index	Class	Total manufacturer' Mean	Mean	S. D.	D. F.	t	P-value
Current Ratio	Textile	186.35	162.95	202.03	373.40	−3.40	.001**
	Apparel		223.05	144.06			
Debt Ratio	Textile	224.44	137.55	256.16	356.71	.56	.579
	Apparel		126.78	118.59			
Dependency on the creditors	Textile	27.50	32.62	20.40	305.78	3.92	.000***
	Apparel		24.73	10.63			
Ratio of operating expense to net sales	Textile	99.78	103.90	25.86	382	4.34	.000**
	Apparel		94.15	16.88			
Cash Flow Ratio	Textile	3.80	1.23	7.421	332.72	−3.20	.002**
	Apparel		3.57	6.64			
Ratio of earning to interest	Textile	9.65	−49.73	723.31	198.36	−1.32	.189
	Apparel		19.71	75.60			
Ratio of Inventory to Current Assets	Textile	28.60	39.12	16.95	326.99	−3.00	.003**
	Apparel		44.12	15.57			

P value: *** $p \leq 0.001$, ** $p \leq 0.01$, *$p \leq 0.05$

to the whole manufacturer average(99.78%), textile business was higher and apparel business was lower. It is presumed that apparel companies, having assured of stable headquarter -related circulating chains like the agencies or department stores, need less operating expenses than textile companies.

As for the cash flow ratio, textile business(1.23%) was lower than apparel business(3.57%), and the whole manufacturer average(3.80%) reflecting the fact that the scale of total assets of the textile business was relative large. Also, the fact that cash flow ratios of the both businesses were not in the minus indicated that for both of them cash inflow exceeded cash outflow.

As for the ratio of earning to interest, textile business(-49.73%) showed minus figure, but apparel business(19.71%) was higher than the whole manufacturer average(9.65%) thereby proving to be in relatively good shape.

As for the ratio of inventory to current assets, textile business(39.12%) was lower than apparel business(44.21%). However, compared to the whole

manufacturer average(28.60%), both businesses were showing higher ratios.

The result of stability index financial ratios can be summarized as follows. As regards to debt ratio and the ratio of earning to interest, there is virtually no difference between textile and apparel business. Except for the ratio of inventory to current assets, apparel business is either in better shape(current ratio, dependency on the creditors) or similarly positioned (ratio of operating expense to net sales and cash flow ratio). Comparing to the whole manufacturer average, apparel business is a little bit lower for ratio of operating expense to net sales, cash flow ratio and the ratio of inventory to current assets, but it is turned to be in good shape in liquidity, debt ratio, dependency on the creditors and the ratio of earning to interest, thereby rendering its stability relatively acceptable.

2. Profitability Ratios

It turned out that profitability ratios differed between textile and apparel businesses. For ratio

<Table 3> Profitability Index Standard Financial Ratios

Financial Index	Class	Total manufacturer' Mean	Mean	S. D.	D. F.	t	P-value
Ratio of operating profit to net sales	Textile	0.22	-2.45	18.95	376.85	-5.48	.000***
	Apparel		5.85	10.63			
Ratio of net profit to net sales	Textile	-11.95	-8.14	41.29	380.00	-3.12	.002**
	Apparel		2.84	12.79			
Ratio of net profit to gross capital	Textile	1.12	-1.95	17.36	379.55	-4.05	.000***
	Apparel		4.00	11.37			
Ratio of net profit to net worth	Textile	-7.34	-5.38	31.11	152.00	-6.82	.000***
	Apparel		85.35	158.79			

P-value: *** p ≤ 0.001, ** p ≤ 0.01, *p ≤ 0.05

of operating profit to net sales, textile business(-2.45%) was lower than apparel business(5.85%) compared to the whole manufacturer average(0.22%). Especially, apparel business showed exceptionally high ratio of operating profit to net sales.

For ratio of net profit to net sales, although both apparel(2.84%) and textile(-8.14%) companies were higher than the whole manufacturer average(-11.95%), apparel business showed better ratio. Even for the ratio of net profit to gross capital, apparel companies showed better results. Compared to the whole manufacturer average(1.12%), apparel companies(4.00%) were higher, but textile companies(-1.95%) showed similar ratio.

For the ratio of net profit to net worth, apparel companies(85.35%) showed better result than textile companies(-5.38%; $p < 0.001$). Even the textile companies showed a bit higher ratio than the whole manufacturer average(-7.34%), but it was apparel companies that showed exceptionally

good ratio.

As shown above, for ratio of net profit increase and ratio of gross asset increase, there was not much difference between apparel and textile companies. And, ratio of gross sales increase, ratio of operating profit increase and ratio of inventory to operating assets increase were lower, thereby suggesting that apparel and textile companies were in relatively better shape among the whole manufacturing companies.

3. Growth Ratios

Among the growth index ratios of the companies, no statistically significant differences were found for ratio of operating profit increase, ratio of net profit increase and ratio of gross asset increase. But, for ratio of gross sales increase, and ratio of inventory to operating assets increase, some statistically significant differences were found.

<Table 4> Growth Index Standard Financial Ratios

Financial Index	Class	Total manufacturer' Mean	Mean	S. D.	D. F.	t	P-value
Ratio of gross sales increase	Textile	9.90	-1.43	22.84	357.67	-4.01	.000***
	Apparel		6.65	15.69			
Ratio of operating profit increase	Textile	45.64	51.31	271.92	221	-0.73	.464
	Apparel		148.40	1431.78			
Ratio of net profit increase	Textile	68.27	64.03	256.97	198	0.41	.681
	Apparel		50.56	190.74			
Ratio of gross asset increase	Textile	5.98	5.13	33.91	364	-0.62	.538
	Apparel		7.12	21.25			
Ratio of inventory to operating assets increase	Textile	20.95	-0.53	31.96	362	-3.86	.000***
	Apparel		13.47	36.03			

P: *** $p \leq 0.001$, ** $p \leq 0.01$, *p ≤ 0.05

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For ratio of gross sales increase, apparel companies(6.65%) showed higher ratio than textile companies(-1.43%). But both businesses showed lower ratios than the whole manufacturer average(9.90%) supporting the theory[53] that textile and apparel companies belonged to the industries having low rate of gross sales increase. However, the fact that there exists some difference between textile and apparel companies for ratio of gross sales increase attracts the attention of the author of this study.

For ratio of inventory to operating assets increase, textile companies(-0.53%) and apparel companies(13.47%) showed some substantial difference. While both of them showed lower ratios than the whole manufacturer average (20.95%), textile companies turned out to be in far worse position.

For ratio of operating profit increase, where there is no statistically significant difference between textile and apparel companies, an exceptionally large standard deviation was found for apparel companies. Here, the ratios of operating profit increase are shown to be higher than the whole manufacturer average(45.64%).

Also, a wide range of fluctuations in ratios of gross sales increase and operating profit increase is more likely to be due to heavy weight of fixed charges of the business[54], thus it can be inferred that apparel companies have a large

share of fixed charges. For ratio of net profit increase, where there is no statistically significant difference between textile and apparel companies, both of them showed ratios lower than the whole manufacturer average(68.27%). Also for ratio of gross asset increase, where there is no statistically significant difference between textile and apparel companies, both of them showed ratios close to the whole manufacturer average(5.98%).

Therefore, when compared the ratios for growth, textile and apparel companies were similar to the whole manufacturer average and, generally, were not showing high growth ratios. However, apparel companies showed higher ratio for gross sales increase than textile companies.

4. Activity Ratios

As indices for activity, total assets turnover ratio and inventory turnover ratio showed statistically significant differences. For total assets turnover ratio, textile companies(0.77%) turned out lower than apparel companies (1.16%; $p < 0.001$) Compared to the whole manufacturer average(0.97%), apparel companies turned out higher while textile companies turned out lower. Yang Namha[55] says that a high ratio of total assets turnover means efficient utilization of current assets and fixed assets and that a light industry usually has high ratios. This study shows

<Table 5>Activity Index Standard Financial Ratios

Financial Index	Class	Total manufacturer' Mean	Mean	S. D.	D. F.	t	P-value
Total Assets Turnover Ratio	Textile	0.97	0.77	.35	237.04	-8.42	.000***
	Apparel		1.16	.49			
Inventory Turnover Ratio	Textile	23.83	6.94	6.68	382	2.06	.041*
	Apparel		5.67	4.13			

P-value: *** p ≤ 0.001, ** p ≤ 0.01, *p ≤ 0.05

there are some differences between textile and apparel companies while they are belonging to same light industry.

When compared the inventory turnover ratio, it is observed that some difference exists between textile companies(6.92%) and apparel companies (5.70%; p<0.005). When compared to the whole manufacturer average (23.83%), both of them are found to be on the low side of inventory turnover ratio, and are less dynamic in activity.

Contrary to the result of the study by Gupta and Huefner[56], textile companies turned out to have higher inventory turnover ratio than apparel companies, thereby avoiding the stigma of belonging to the low cluster of the group. This is because, as pointed out by the study of Datta & Christoffersen[57], faster inventory turnover was a natural result of the changes brought about by the technological innovations that impacted the textile industry far more positively than apparel industry not only in labor and capital but also in the field of raw materials.

Ⅴ. Conclusion

Focusing on pursuit in interest as well as maximization of business values is an indispensable aspect and factor in assessing the management conditions and performances. Only when the managers make reasonable decisions in severely competitive atmosphere can they positively influence the business management performances. Thus, in our efforts to help managers of the textile and apparel companies in severe completion make reasonable decisions for effective and successful management, we tried to introduce and show how financial analysis can be utilized in assessing management conditions and performances. In this study financial

ratios of the apparel and textile businesses were compared with the ratios of the industry average, and the following conclusions have reached regarding aspects of management conditions and performances.

When compared the ratios indicating stability, textile and apparel companies did not show much difference in debt ratio and the ratio of earning to interests. However, debt ratios for both textile and apparel companies were lower than the whole manufacturer average indicating the conservative policies in their financial management. For current ratio, dependency on the creditors, cash flow ratio and the ratio of inventory to current assets, apparel companies showed better stability than textile companies.

When compared the profitability ratios measuring the ability to produce incomes, apparel companies showed higher ratios than textile companies and the whole manufacturer average, indicating that their sales activities were bringing in good results.

When compared ratios for growth and activity of the companies, for ratio of operating profit increase, ratio of net profit increase and ratio of gross asset increase, no statistically significant differences were found. Textile business showed higher ratio of net profit increase than apparel business. However, apparel companies showed higher ratios for gross sales increase and inventory to operating assets increase than textile companies indicating they were on the better side of growth.

When compared ratios for activity of the companies, for total assets turnover ratio, apparel companies showed higher ratio than textile companies. Usually, the total capital of an apparel company is relatively small compared to a textile company, so apparel company's ratio tends to be more sensitively react to any

changes in gross sales than textile company. On the other hand, for inventory turnover ratio, textile companies were higher than apparel companies, reflecting the fact that cloth as raw material are utilized in various fields not only for clothing but also for industrial usages.

Since beginning stock-listing in the 1950s, Korean textile companies have been entering later period of maturity, thus they showed low ratios in most of the financial statements. On the other hand, apparel companies which began stock-listing in the 1980s showed more favorable ratios in most of the financial statement than textile companies. However, when observed the aspect of their growth, their ratios are still in the same level with that of whole manufacturer average. Therefore, to induce long-term profitability and spur growth potential, domestic companies should more actively seek for new markets and advance toward production of high value-added products. Only then can they surely elevate the potential of their business growth.

Nowadays, comparative analysis of financial statements in accordance with accounting principles and practices is much emphasized, but proper assessment of brand value of the intangible assets is no less important. Therefore, in the modern society where both financial and intangible aspects are esteemed, we need management strategy fully reflecting these two aspects.

In order to carefully observe the changes in industry characteristics in the future, it may be well worthwhile to do comparative analysis dynamically on yearly basis. Besides, it will be interesting to study the financial characteristics based on firms' launching years. Finally, it may be also useful to do subsequent studies on establishing marketing strategies based on linking marketing factors with the result of financial analysis.

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