

# A Financial Study of Profit Management

Iwao HAYAKAWA

## 利益管理の財務的研究

早川 巖

The author thinks it extremely important for managers to design a profit planning and provide rationale for executing the profit planning as a management activity, and further, using the management information provided by the company achievement evaluation standard based on the rationale, review the management strategy. Therefore, the author would like to describe his opinion, though it may be dogmatic.

### 1. Introduction

while one recognizes a business enterprise (corporation) as an organic body and believes that its growth, development and prosperity can be achieved by its corporate efforts, one can assume that it may decline or perish caused by its free-wheel management. It is necessary, therefore, to find the cause of its decline or extinction. The author, however, believes that, in order for the workers of a corporation to enjoy affluent life in the affluent society, their corporation should grow, develop and prosper and earn constant and stable profit, or otherwise they can not enjoy such benefits.

For the above reason, when corporate managers examine a profit planning to try to secure internal reserve, the first thing they should do is to grasp the present situation and, based on this, design a strategy for increasing profit. When they form a future profit planning, they should examine the future break-even point, the future marginal profit statement, the future fund raising statement and the future fund investment statement, and simulate them to check for sure that the fund will be sufficiently raised.

Further, because the recovery of the investment in facilities is made on cash flow, they should always bear in mind the recovery of the value in the present value

, and think much of the recovery of the present value of the invested capital. This is a key to the successful recovery of investment (ROI). Therefore, it is necessary to find the cause of the corporate's extinction, or corporate's bankruptcy, on one hand, but it would be reasonable to search for the standard of profit growth management and the corporate's financial characteristics to design the corporate's management strategy on the other hand.

### 2. Standard of Corporate Profit Growth Management, and Detection and Measurement of Financial Characteristics

There are various and diversified methods of detecting the corporate financial characteristics. Among of them are the following two major methods: (a) questionnaire method to search for basic management functions by means of interview, question, checklist, flow chart, organization chart and written instruction, and (b) management analyzing method to search for the financial characteristics by means of analysis, comparison, general commentary, examination and confirmation.

(1) Search for the basic management function (planning, organizing, commanding, and controlling) by the questionnaire method

1) Checklist method based on Martindal Correction Method

This method subdivides four basic functions of the management control, or Martindel Management Evaluation Factors, i.e., (1) planning, (2) organizing, (3) commanding, and (4) controlling, into ten groups, i.e., (1) economic function, (2) corporate organization, (3) profit soundness, (4) dividend on shares, (5) R & D activity, (6) power of board of directors, (7) financial strategy, (8) productivity, (9) selling strength and (10) execution management function, and evaluates each factors in scores by the questionnaire method with the evaluation reference of 100 scores to read the corporate condition.

#### 2) SPI (American Strategy Planning Institute) method

This method divides the investigation section into five subdivisions and reads the management condition based on the PIMS Data Base such as (1) PIMS Data Form 1. "Business Description: Relation between Products and Service, Customers and Corporation," (2) PIMS Data Form 2. "Financial Information," (3) PIMS Data Form 3. "Market and Competition," (4) PIMS Data Form 4. "Industry or Business Line Data," and (5) PIMS Data Form 5. "Short- or Long-Term Assumption or Estimate Related to market Size, Price and Cost." This method has been reported by Sidney Schoeffler (H.B.R. 1974, March - April, pp. 137-145) and M. Wagner Harry (H.B.R. 1984, September - October, PP. 121 - 135).

#### (2) Search for the financial characteristics through financial statement analysis

To search for the financial characteristics through the financial statement analysis, there are five methods: (1) MITI (the Ministry of International Trade and Industry) method, (2) MOF (the Ministry of Finance) method, (3) BOJ (the Bank of Japan) method, (4) TKC method, and (5) Integral relative value method. The author uses a method which he considers is the most appropriate and reveals the financial characteristics of those industries which are largely dependent of oil (automobile manufacturing and chemical industries) from the phase of the management cost information to provide

them with the basic materials for their future management strategy.

#### 3. Financial Characteristics of Manufacturing Industries (Automobile Manufacturing and Chemical Industries) Viewed from Management Cost Information Phase

In this section, the author analyzes the financial statements of the major automobile manufacturing and chemical corporation of Japan for the period from 1975 to 1985 mainly from the financial viewpoint, and then comparatively analyze the financial statements of those corporations who are largely dependent on oil. This is designed to reveal the characteristics of these corporations and prepare the management strategic materials.

In selecting the corporations, the author sets a criterion that they should have the continuous industrial characteristics.

#### (1) Best Technique for Financial Analysis

Robert N. Anthony, James and Reece say in their "Management Accounting (fifth edition, 1965, pp. 350-351) "that, although various calculations are made in analyzing the financial statements, the best analyzing technique is not to mechanically calculate their ratio but to determine such ratio that is related to the specific survey and calculate using such ratio only. The annual report of M company lays stress on (1) ratio of turnover to total liabilities and net worth, (2) ratio of net profit to net sales, (3) ratio of net profit to net worth, and (4) average ratio of profit to total liabilities and worth. The annual report of D Company states that the eventual evaluation scale is the numerical value of profit return to each shareholder, which is also the scale to evaluate their achievements. From these statements, it is found that the financial ratios thought much of in the United State are (1) ratio of net profit to stock capital, (2) debt to net stock capital ratio (loan/capital, loan /stock capital), and (3) liquidity ratio.

Therefore, the meaningful ratio with the suitability for a purpose is important in the financial analysis. the ratios though much of in Japan are those related to profitability, safety, growth and market

price stability. It is necessary, therefore, to calculate these important ratios and use them to evaluate the corporate management condition and financial standing.

(2) Restrictions on Financial Analysis

The financial statement (a) has a restriction of its status as an official document, (b) lacks in the descriptions of human resources, equipment capacity, turnout and turnover, (c) evaluates the assets based on the current price but registers them based on the historical cost, (d) separates the accounting evaluation from the economic evaluation, particularly requiring attention directed to the current appreciating yen value against lowering dollar value, and (e) delays in issuance in terms of time. attention should be directed to these defects. The financial statement is, however, an information source which is essential and useful for grasping the financial standing and management achievement of a corporation. Therefore, these defects should be made up for in any other ways.

(3) Comparison Profitability between Automobile Manufacturing Industry

The ratio of net profit to capital is regard as an important financial ratio. In the United States, however, the ratio of net profit to stock capital has been traditionally thought much of weight with the profit per share. In Japan, the ratio of net worth is less weighed, and therefore it would be problematic to judge the profitability of corporations based on the profit ratio to net worth. If net worth is small, the ratio of profit to net worth is likely to be calculated to be excessive for the profit amount. Because the ratio of the ordinary profit of total assets have been weighted as the ratio measured the profitability of corporations in Japan, the author has a general look of corporate profit making condition using this ratio.

Table 14-1 Profitability of Leading 11 automobile manufacturing companies in Japan

Ratio of ordinary Profit to total liabilities	Ratio of ordinary profit to net sales
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year	and net worth	
1975	4.88%	3.38%
1976	9.11	6.08
1977	8.97	5.67
1978	8.21	5.00
1979	9.78	5.54
1980	9.85	5.32
1981	8.33	4.65
1982	7.78	4.05
1983	7.81	4.58
1984	9.20	5.40
1985	10.19	5.73

Ratio of turnover to total liabilities and net worth

Year	
1975	1.44%
1976	1.50
1977	1.58
1978	1.64
1979	1.77
1980	1.85
1981	1.79
1982	1.92
1983	1.70
1984	1.71
1985	1.78

The average profitability of all the Japanese automobile manufacturing companies is the highest in history in 1976, 1979, 1980, 1984 and 1985. It is understood that the deviation of the ratio of ordinary profit to net sales of 11 automobile manufacturing companies in Japan is larger than that of their turnover of total liabilities and net worth.

The profitability of major chemical companies in Japan is high in 1979 and 1984, and particularly it is the highest in history in 1984. Just like the 11 automobile manufacturing companies, it is also understood that 15 chemical companies have larger deviation of the ratio of ordinary profit to net sales than that of total liabilities and net worth.

Table 14-2 Profitability of 15 chemical companies in Japan

Year	Ratio of ordinary profit to total liabilities and net worth	Ratio of ordinary profit to net sales
1976	0.91%	1.11%
1977	0.82	1.05
1978	1.76	2.26
1979	4.05	4.45
1980	2.68	2.72
1981	1.07	1.17
1982	0.61	0.67
1983	2.58	2.81
1984	4.65	4.88
1985	3.75	4.07

Year	Ratio of turnover to total liabilities and net worth
1976	0.81%
1977	0.79
1978	0.78
1979	0.91
1980	0.98
1981	0.92
1982	0.91
1983	0.92
1984	0.95
1985	0.92

In the automobile manufacturing companies, in the ratio of ordinary profit to total liabilities and net worth, (1) Toyota Motor (19.53%) and (2) Mazda Motor (9.50%) are the highest two, and in the ratio of ordinary profit to net sales, Toyota Motor (10.69%) is the highest, and in the ratio of turnover to total liabilities and net worth, (1) Aichi Machine Industries (2.23 times), (2) Honda Motor (2.16 times), Suzuki Motor (2.15 times) and (4) Mazda Motor (2.10 times) are highest four. As shown in the data, these manufacturers have maintained their high profitability by far from their competitors. This is because they (1) have large market share, (2) are competitive on cost, (3) are strong enough to maintain the product price, and (4) have efficient investment in facilities.

Table 14-3 Evaluation of 11 automobile manufacturing companies in Japan in terms of profitability, growth, safety, market price

[A] Profitability

	ratio of ordinary profit to total liabilities and net worth	ratio of ordinary profit to net sales
(a) Toyota	(R)(1)19.53%	(R)(1)10.69%
(b) Nissan	5.02	3.32
(c) Isuzu	1.86	1.26
(d) Hino	3.65	1.77
(e) Mazda	9.50	4.52
(f) Daihatsu	4.07	2.23
(g) Honda	7.53	3.48
(h) Subaru	6.97	3.97
(i) Suzuki	5.30	2.50
(j) Aichi	3.95	1.77
(k) N.Diesel	0.56	0.51
(l) Average	10.19	5.73

Ratio of turnover to total liabilities and net worth

(a) Topyota	(R)(6) 1.83 times
(b) Nissan	1.51
(c) Isuzu	1.48
(d) Hino	2.06
(e) Mazda	2.10
(f) Daihatsu	1.82
(g) Honda	2.16
(h) Subaru	1.75
(i) Suzuki	2.15
(j) Aichi	2.23
(k) N.Diesel	1.09
(i) Average	1.78

[B] Safety

	Liquidity ratio	Ratio of net worth to total capital
(a)	(R)(1) 172.3%	(R)(1) 63.4%
(b)	(3) 108.3	46.9
(c)	(9) 83.1	16.5
(d)	(8) 88.9	32.1
(e)	(5) 99.5	55.4

(f)	(6)	92.8	27.2	(f)	62	7
(g)	(4)	103.4	40.1	(g)	32	2
(h)	(2)	114.4	31.4	(h)	40	4
(j)	(10)	80.0	24.3	(i)	60	6
(j)	(11)	80.0	25.9	(j)	64	8
(k)	(7)	89.9	17.0	(k)	90	11
(l)		117.8	46.3	(l)	--	--

	Ratio of fixed assets to long-term capital	market value of net worth per stock (50 yen)
(a)	(R)(1) 66.0 %	(R)(1) 883.40
(b)	(3) 95.1	544.60
(c)	(9) 123.8	140.40
(d)	(7) 115.1	225.60
(e)	(5) 100.5	251.30
(f)	(6) 112.1	211.90
(g)	(4) 97.5	399.60
(h)	(2) 81.5	274.90
(i)	(11) 143.3	292.60
(j)	(10) 127.8	320.90
(k)	(8) 120.1	208.80
(l)	86.9	494.60

## [C] Growth

	Rate of growth of sales	Rate of growth of net worth
(a)	(R)(5) 110.8%	(R)(4) 113.7%
(b)	(9) 103.8	(8) 105.3
(c)	(1) 132.1	(1) 150.5
(d)	(8) 105.9	(10) 104.1
(e)	(7) 109.6	(2) 117.8
(f)	(6) 109.8	(7) 105.6
(g)	(3) 116.4	(6) 109.3
(h)	(4) 114.3	(5) 111.3
(i)	(2) 124.4	(9) 105.1
(j)	(10) 96.0	(3) 113.9
(k)	(11) 93.2	(11) 103.1
(l)	110.8	111.2

	Ranking score	Overall ranking
(a)	21	1
(b)	47	5
(c)	72	10
(d)	68	9
(e)	38	3

Among the chemical companies, in the ratio of ordinary profit to total liabilities and net worth in 1984, The Shin-Etsu Chemical (9.45%) and Asahi Glass (8.93%) are the highest two. In the rate of ordinary profit to net sales, Asahi Glass was the highest with 8.85%, in the ratio of turnover to working capital, Kanegafuchi Chemical Industry and The Shin-Etsu Chemical are the highest two with 1.27 times and 1.19 times respectively. Asahi Glass is producing mainly glass and chemical products, while The Shin-etsu Chemical is producing mainly silicon, resin, vinyl chloride and electronic materials. Both the companies have an overwhelming share of the market with their main products, exerting a great influence upon the market prices. Their high productivity owes to such dominant market share, the favorable efficient of the investment in plant and machinery, the strong cost competitiveness and the strong power to maintain or raise the price.

Looking into the quality phase of the profit, it is found that both the chemical companies and the automobile manufacturing are comparatively high in cost depreciation, and therefore it is important to observe the ordinary profit after being completely summed up. Because there is a considerable difference in cost depreciation and profit between the fixed rate method and the straight line method, care should be directed to the effect of the difference in the cost depreciation method on the them. As to the stability of profit, it can be said that those companies who have been ordinarily summing up stable profit enjoy high quality of the company profit. also important is to evaluate the R & D expenditure as an index of potential profit.

Reviewing the overall automobile

manufacturing companies through the cost of sales, Toyota Motor and Honda Motor are remarkably low, which indicates that these two companies have been maintaining outstandingly characterized cost management.

Table 14-4 Cost of sales of 11 automobile manufacturing companies in Japan, 1985

	Sales (A)	Cost of Sales (B)
(a) Toyota	6,164,420	4,958,434
(b) Nissan	3,754,172	3,099,244
(c) Isuzu	1,016,250	905,162
(d) Hino	470,590	446,969
(e) Mazda	1,569,553	1,327,998
(f) Daihatsu	515,911	453,320
(g) Honda	2,245,743	1,836,163
(h) Subaru	768,424	644,433
(i) Suzuki	722,336	608,619
(j) Aichi	202,851	193,877
(k) N.Diesel	261,550	239,587

	B/A	Gross profit ratio	Rank
(a) Toyota	81.8%	18.2%	1
(b) Nissan	82.6	17.4	3
(c) Isuzu	89.1	10.9	8
(d) Hino	95.0	5.0	10
(e) Mazda	84.6	15.4	6
(f) Daihatsu	87.9	12.1	7
(g) Honda	81.8	18.2	2
(h) Subaru	83.9	16.1	4
(i) Suzuki	84.3	15.7	5
(j) Aichi	95.6	4.6	11
(k) N.Diesel	91.6	8.4	9

Table 14-5 Development of cost sales marked by Toyota Motor corporation

	sales (A)	Cost of sales (B)
1986	6,304,858	5,391,910
1985	6,064,420	4,958,433
1984	5,472,669	4,542,595
1983	4,892,663	4,040,652
1982	3,849,544	3,441,635
1981	3,506,417	3,208,589

1980	3,310,181	2,895,323
1979	2,802,469	2,500,696
1978	2,617,407	2,320,205
1977	2,288,069	1,984,468

	B/A	Gross profit
1986	85.5%	14.5%
1985	81.8	18.2
1984	83.0	17.0
1983	82.6	17.4
1982	89.4	10.6
1981	91.5	8.5
1980	87.5	12.5
1979	89.2	10.8
1978	88.6	11.4
1977	86.7	13.3

#### 4. Conclusion

To identify the corporate profit growth management standard adopted, the author took the automobile manufacturing and chemical industries as examples, review the status of the companies using various conventional techniques of analyzing, and evaluated their achievements. All of these techniques are useful for comparing the companies evaluated and ranking them. The author thinks it extremely important for managers to design a profit planning and provide rationale for executing the profit planning as a management activity, and further, using the management information provided by the company achievement evaluation standard based on the rationale, review the management strategy. Therefore, the author would like to describe his opinion, though it may be dogmatic.

As Harrey M. Wagner and Sidney Schoeffler point out, as a managerial method of relative value judgment, the relation between the market share and the return of investment appears quite obviously in various forms, which can be clearly recognized. In addition, the management capability, company defensive power, creditability and personal property of a manager are important factors particularly for family companies. For non-family companies, not only these factors, but also the character of a manager is an important factor not to be neglected, that enables

him to cope sedately with any unfavorable political, social and economic factors, general change in environment and acute financial difficulties and protect his company.

As a value judgment method using the absolute numerical value of management, the following three can be pointed out as important indexes to be used in evaluating corporations specifically and individually : (1) analysis of cash flow using a fund working table, (2) static liquidity judged by the level of liquid ratio or the like, and dynamic liquidity judged by the ratio current expense to current income or the like, and (3) profitability judged by the ratio of net profit to capital. Particularly, as profitability evaluation items, the after-tax and before-tax amount of the following four ratios should be added for evaluation: (a) standard (and necessary) ratio of ordinary profit to total liabilities and net worth, (b) standard (and necessary) ratio of operating profit to working fund, (c) standard (and necessary) ratio of current profit to net worth, and (d) standard (and necessary) ratio of current profit to capital stock. For example, in standard ratio of ordinary profit to total liabilities and net worth and the standard ratio of operating profit to working fund, the capital interest and finance expense against respective capitals should be estimated as about 10% and risk ratio as 3%, and 13% should be deducted respectively as a tax. For before-tax amount, a tax rate of 50% should be anticipated and a profit of about 23% should be secured respectively.

In the standard rate of ordinary profit to total liabilities and net worth, if the ratio of net worth to the total liabilities and net worth of Japanese industries on an average is 20%, and if the capital interest to net worth is taken as 10%, the after-tax rate of necessary ordinary profit to total liabilities and net worth will be 5%, and or the before-tax amount, with a tax rate of about 50% taking into account, it should be 7%. In the standard ratio of ordinary profit to net worth, the after-tax amount should be (5% deduct by 20% equals) 25%, and the

before-tax amount should be 35%. In the standard ratio of ordinary profit to net worth, if the component ratio of capital fund is taken as 15%, the after-tax amount should be 33%, and the before-tax amount should be 46%. (See Note.)

Though the numerical values introduced in this paper are extremely high, they are purely theoretical values. For the corporate profit growth management standard, the author finds it necessary in performing the financial management to consider the value judgment standard using the absolute financial values on management together with the relative value judgment standard.

[Note]

Standard formulas for calculating the profit ratio

(a) Rate of ordinary profit to total liabilities and net worth (after-tax) =  $\frac{\{(Interest\ of\ total\ liabilities\ and\ net\ worth) + (Financial\ expense) + (Risk\ fee)\}}{(Total\ liabilities\ and\ net\ worth)} = 13\%$

Ratio of operating profit to working fund (after-tax) =  $\frac{\{(Working\ fund\ interest) + (Financial\ expense) + (Risk\ fee)\}}{(Working\ fund)} = 13\%$

Before-tax profit ratio when tax rate is 50% =  $10\% / (1 - 0.5) + 3\% = 23\%$

(a)' standard (and necessary) rate of ordinary profit to total liabilities and net worth =  $\frac{(Ordinary\ profit)}{(Total\ liabilities\ and\ net\ worth)} = \frac{\{(Capital\ interest) + (Risk\ fee)\}}{(Total\ liabilities\ and\ net\ worth)} = \frac{(Capital\ interest)}{(net\ worth)} (10\%) \times (Net\ worth) / (Total\ liabilities\ and\ net\ worth) (20\%) + (Risk\ fee) / (Total\ liabilities\ and\ net\ worth) = 5\%$

@ (When the ratio of the net worth Japanese industries on an average is 20%)

(a)" Standard (and necessary) ratio of ordinary profit to net worth (before-tax) =  $(10\% \times 20\%) / (1 - 50\%) + 3\% = 7\%$

(b) Standard (and necessary) ratio of ordinary profit to net worth (before-tax) =  $\frac{\{(Ordinary\ profit) / (Total\ liabilities\ and\ net\ worth\ (Current\ term\ on\ an\ average)) (5\%)\}}{(Net\ worth) / (Total\ liabilities\ and\ net\ worth)}$

(current term on an average))(20%)) =  
25%

(b)' standard (and necessary) ratio of  
ordinary profit to net worth (before  
-tax) =  $7\%/20\% = 35\%$

(c) Standard (and necessary) ratio of  
ordinary profit to capital fund = (  
Ordinary profit) / (Capital fund (Current  
term on an average)) =  
{( Ordinary profit )}/(Total  
liabilities and net worth (Current  
term on an average))){(Capital fund  
(Current term on an average))}/(Total  
liabilities and net worth ( current  
term on an average))} = (Ratio of  
ordinary profit to total liabilities  
and net worth)/(Component ratio of  
capital fund)\*

\*When 15%,

(After-tax)= $5\%/15\% = \text{approx. } 33\%$

(Before-tax)= $7\%/15\% = \text{approx. } 46\%$

#### Bibliography

- 1) Kazuto Kunihiro: Exercise of Financial  
Analysis, Second Edition; Tax Accounting  
Association, 1975
- 2) Kazuto Kunihiro: Systematic Management  
Analysis, New Edition; Diamond, 1983
- 3) H. Thomas Johnson and Robert S. Kaplan,  
"The Rise and Fall of Management  
Accounting," Management Accounting,  
January 1987, pp. 20-30

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