Empirical Study on the Correlation Between Company's Financial Characteristics and Profit Manipulation

--Based on Information of Listed Companies in IT Industry

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Abstract

In China, the earnings indicators have been manipulated in quite many listed companies. If investors make their predictions based on these un-stabilized indicators, the result is not guaranteed to be correct. This article is trying to analyze the overall financial characteristics of companies that are subject to profit manipulation and discover the underlying principles. By revealing the financial characteristics of those companies that prone to profit manipulation, investors will be guided to identify the listed company's true profitability..

Keywords: Profit Manipulation, Financial Characteristics, Listed Companies

1. Worldwide Review

Over the years, scholars around the world have never stopped their study on the topic of Financial Information Distortion and Profit Manipulation. Their analysis of the information from public companies listed in Stock Exchanges in United States, London, New Zealand, Germany and Tokyo unearthed the fact: the profit manipulation exist before and after IPO and the issuance of new shares. Further study revealed the motivation and method behind this scenario, and different ways on how to identify such foul plays. Some scholars believe that corporate governance and external security holders can affect the company's earnings information capacity, there is a non-linear relationship between the two. There are other scholars believe that profit manipulation can be curbed by the balance sheet as it shows accumulated impact of accounting policies adopted by the company in the past years, so the value of its net assets is more or less in line with the level of its previous years' profit manipulation.

In China, along with the stock reform and the establishment of Security Exchange market, profit manipulation has gradually come into the picture. It gets more and more attentions from scholars due to the large number of enterprises being involved.According to Jiang Yihong, it is a common scenario from his

case study that companies overstate their profit for the sake of raising more capital. To avoid being delisted from the Stock Exchange, some companies will delay expected loss recognition and accumulate them until later to record them together in one fiscal year.The " 10% , 6% phenomenon" is a type of profit manipulation, the result of listed companies trying to meet the requirement of Stock allotment, according to the research done by Chen Xiaoyue, Xiao Xing, GuoXiaoyan,JiangYihong and Wei Gang.SunZheng and Wang Yuetang's study showed that listed companies have the tendencies to manipulate the profit, which are also related to the Government supervision policy. Li Yanxi ,YaoHong and others found a way to show the "safe zone" and "red-flag zone" by using the 17 financial indicators designed by them. So it becomes possible for investors to identify the profit manipulation in listed companies.

All the above showed that the research done by the scholars has so far focused on the existence of profit manipulation , the motive behind it , the methods and its impact on assets allocation. Nothing much was discussed about the relationship between the company's financial characteristics and its behavior of profit manipulations. Therefore, this article will explore and examine the financial characteristics of those companies that were involved in profit manipulations. The analysis is based on the information published during 2007 to 2011 of listed companies in IT industry. The possible methods used to adjust the net profit will be discussed as well. It will be useful reference for company executives and investors in the process of their decision-making.

2. the Theoretical Analysis and Research Hypotheses

For listed companies, its financial indicators will reveal its manipulative behavior. As long as we pay close attention to those financial characteristics reflecting profit manipulation, we have a big chance to identify such tricks and get a clear picture of the company's real profit level.

2.1. Correlation between the characters of financing and profit manipulation behaviour

The ability of a corporation to raise capital is very important for its development. It is one of the key factors for business activities and production growth. It also has positive effect on company profit generation, and the ability of making more profit in turns helps the company to achieve a better credit rating. In order to obtain bank loan and business credit, companies with poor performance and financial difficulties may have strong motives to manipulate their financial statements.The first hypothesis proposed by this article: The ability to raise capital is negatively correlated with the level of profit manipulation.

2.2. Correlation between Investment Characteristics and Profit Manipulation

The investment characteristics of listed companies can be inspected from the structure and efficiency of the investment. Obtaining return on investment is the number one objective of the investment company. The ability to achieve higher income is crucial on investment project evaluation. So investment efficiency is the best representative of investment characteristics.

Among the various methods of manipulating profit, the most effective one is to adjust investment income to boost profitability. More attention should

be given to the investment income section while analysing the income statement of the listed companies. Especially for those companies whose main income is from investment, further analysis on the source of investment income is advised in order to determine the stability and continuity of the income. It will be difficult for a company to ensure a stable long-term return if its main investment income is from a one-off project. Therefore , it means that the lower the investment efficiency, the higher chance of profit manipulation happening. The second hypothesis proposed by this article: Investment efficiency is negatively correlated with the level of profit manipulation.

2.3. The Correlation between Working Capital Characteristics and Profit Manipulation

A company's main income should come from its operating activities. The efficiency of using working capital on trading operation should be the indicator of the company's profitability level. People normally prefer using net or gross profit as indicators, but when talking about the company's profitability, these two indicators have their major flaws. As we know, the income from investment, non-business income and financial subsidies, they all have nothing to do with the company's normal business and can just disappear from the book once they play their part – to help the company to reach its profit goals. So these misleading indicators may cause users huge risk when they are trying to assess the company's profitability. Compared to profit margin on net assets or return on total assets ratio, operating profit seems less affected by profit manipulation and is more reliable on the calculation of relevant indicators, thus more useful to reflect the company's profitability. Studies have proven that a regular company normally showing much higher

trading to gross income ratio than a listed company which is prone to profit manipulation. In conclusion, corporate with low efficiency on working capital management has a higher chance to manipulate its profit. The third hypothesis proposed by this article: Return on working capital ratio is negatively correlated with the level of profit manipulation.

2.4. The Correlation between Dividends Distribution Characteristics and Profit Manipulation

Cash dividends policy is widely adopted in listed companies in China. It reduces a company's cash balance which means the asset liquidity is low. A company needs to maintain a certain level of asset liquidity in order to function well. The fundamental factor for dividend policy is weather the company can make stable long-term earnings. Companies with stable earnings normally have higher dividend pay-out capacity than companies without. On the other hand, companies with strong borrowing power are also likely to adopt a high dividend payment policy. For companies which have good investment opportunities, a large portion of the earnings will be reinvested. While other companies lack of such opportunities tend to give out high dividends. This means a company with strong growth normally pay low dividends while a company with downsizing operations is more likely to continue with high-dividend policy. From the above, we understand that the dividends distribution policy of a listed company is closely related to its profit making ability, borrowing power and the growth prospect of its business. When business slows down, a company has a high tendency to manipulate its profit in order to continue with its high-dividends policy, so to maintain good corporate image and stabilize investors' confidence. The fourth hypothesis proposed by this

article: Dividend payout ratio is positively correlated with the level of profit manipulation.

3. Empirical Analysis

3.1. the Definition of Variable

Explained variable. Profit manipulation ratio (PMT) is used as the explained variable in this article. We use the difference between fourth-quarter profit and the annual average profit to divide the annual average profit to get the ratio PMT. Because profit manipulation is most likely to happen in the last quarter, so the fourth quarter profit movement is normally the result of such manipulation. Therefore PMT is selected for explained variable.

Explanatory variables. We select Assets Liability Ratio (A-LR), Long-term return on capital ratio (ROCT), Working capital turnover ratio (WCTR), Cash Dividend payout ratio (RODD) as explanatory variables to represent Capital raising characteristics, investment characteristics, operation characteristics and dividend distribution characteristics respectively.

Control variable. Profitability Characteristics (PC) and Corporation size (SIZE) are both selected in this article as control variables.

- TABLE 1:variables definition

VARIABLES	RATIO	ABBREVIATION	DEFINITION
Explained variable	Profit Manipulation ratio	PMT	(4th quarter profit-average yearly profit) /Average yearly profit
Explanatory variable	Return on Capital ratio	ROCT	(gross profit +financial expenses)/long-term capital
	Assets Liability ratio	A-LR	Total liability/total assets
	Working capital turn-overratio	WCTR	Operating revenue/working capital
	Dividend payout ratio	RODD	Dividend per share/earnings per share
Control variable	Profitability characteristic	PC	0 if profit margin <0, 1 if profit margin >0
	Corporation size	SIZE	Logarithm of total assets

3.2. Sample Selection and Source of Data

191 listed companies in IT industries under SFC China are selected and their panel data for the period of 2007 to 2011 are used as sample data to test correlation between profit manipulation behaviour and financial characteristics. Sample data come from CSMAR Financial database. Excel and Eviews6 are used for data processing

3.3. Descriptive Statistics

- Table II: Descriptive Statistics

	PMT	ROCT	A-LR	WCTR	RODD	PC	SIZE
Mean	0.274511	0.449114	0.504372	1.788594	0.02765	0.772468	21.67357
Median	0.204011	0.052689	0.518730	1.21234758	0.070072	1.000000	21.61315
Maximum	180.7830	1019.951	0.798124	7.871408	9.466907	1.000000	26.16612
Minimum	-378.5529	-0.73491	0.007080	0.000089	-2.383	0.000000	17.66334
Std. Dev.	0.697673	0.26913	0.194274	0.712142	3.429948	0.419314	1.214630

Table II showing:

PMT average is 27.5%, Standard deviation is 69.8%, median is 20.4 %, indicating the big gap between each sample company. This is because all samples selected are from IT industry which has an uneven development, due to each company is at different stage of growth and has different structure of funding. A-LR is about the correlation between capital raising policy and profit manipulation. Its average is 50.4% with standard deviation is 19.4% and median is 51.8%. The average asset-liability ration is not so high, indicating no huge difference between enterprises. This is probably because each sample company has the access to multiple channels of financing, not only debt financing but also equity financing. Although it is more common for companies listed in China to have a higher proportion of equity financing. WCTR is used to describe the relevance between working capital and profit manipulation. The average is 178.9% with standard deviation is 71.2% and median is 121.2% .It seems there is no huge gap between companies, meaning the financial structure remains relatively stable.RODD reflects the relationships between dividend payment and earnings. Its average is 2.7%, standard deviation is 3.43, the median is 7%, indicating the average low dividend pay-out. There is also big difference between companies, probably because most IT enterprises are

in the path of growth and have huge demand of working capital, so less dividend is paid or even not at all

3.4. Empirical Analysis

191 listed IT companies under SFC china are selected and their panel data for the period of 2007 to 2011 are used for sample data. The regression analysis results are shown in Table III

- Table Ⅲ: Regression Results

	model 1		model 2		moedel 3		model 4	
	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
C	2.215568	0.4536	1.996279	0.508	2.198107	0.4572	2.205748	0.4559
Roct	0.001158	0.892						
A-lr			-0.323548	0.0183				
Wctr					-0.087169	0.07062		
Rodd							-0.002587	0.4559
PC	-0.232427	0.5528	-0.227958	0.5606	-0.234097	0.55	-0.232292	0.5531
Size	-0.106605	0.4305	-0.089093	0.5346	-0.102545	0.4495	-0.106136	0.4328
Adj-R^2	0.500723		0.306083		0.400609		0.507029	
F-statistic	3.323695		3.360929		3.364926		3.3185	
D.W stat	1.996813		1.997138		1.99697		1.996904	

Table III showing:

None of theAdj-R2 in the four models exceeds 0.6, indicating that in addition to financial characteristics there are other factors that are involved in profit manipulation. F is far more from zero when above 1% level, proved the model was established correctly. D.W Stat is close to 2, indicating that there is no self-correlation.

Although long-term return on capital and profit manipulation is positively correlated, but it isn't reliable with a probability as high as 0.892.

Asset-liability ratio is negatively correlated with profit manipulation, especially when the ratio is above 5%, meaning that the lower the financing capacity, the higher chance of profit manipulation happening.

Working capital turnover ratio and profit manipulation are negatively correlated , P has a value of 0.07062, more significant at the level of 10% , indicating profit is more likely be manipulated when working capital turnover rate slow down.

Dividend payout ratio is negatively correlated with profit manipulation, but not significantly.

3.5. Stability Test

Considering most profit-manipulated companies usually overstate their profits, therefore dummy variables instead of explained variables are used to examine the profit manipulation ratio. When profit manipulation ratio> 0 it is 1, otherwise it is 0 when the ratio <0. The results are shown in Table 4. According to the Table the results are basically unchanged meaning the model has certain stability. In addition, leverage coefficient which represents risk level and net profit growth rate which represents companies growing prospect are build into the model for further verification. The results are basically the same, which confirms the stability of the model.

- Table IV: Stability test table

	Model 1		Model 2		Model 3		Model 4	
	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
C	1.915568	0.5536	1.786279	0.4003	1.998107	0.4059	2.105764	0.3994
Roct	0.000949	0.902						
A-lr			-0.223991	0.0239				
Wctr					-0.07985	0.1006		
Rodd							-0.002	0.4002
PC	-0.19981	0.4998	-0.220072	0.5432	-0.3001	0.4995	0.330012	0.6031
Size	-0.09661	0.3939	-0.091088	0.5706	-0.09955	0.3976	-0.09692	0.3328
Adj-R^2	0.499723		0.296083		0.390609		0.482029	
F-statistic	3.390901		3.400911		3.37472		3.298501	
D.W stat	1.490166		1.490039		1.49168		1.491458	

4. Conclusion and Recommendations

4.1. The lower the operating and financing capability the more likely to have profit manipulation

The profitability of listed companies has a direct impact on their borrowing power with bank and business credibility. Therefore, companies with poor performance and unhealthy financial status have no choice but to window dress their financial statements in order to receive bank loan and business credibility.

4.2. The lower the investment efficiency the more likely to have profit manipulation

Investors should pay the most attention to the investment income showing on the Financial Statement. For those companies

whose investment income accounted for a larger portion of the total income, further analysis of the source of these income is advised so as to determine whether they are for long-term or not. If most of them are one-off investments, it is probably the result of profit manipulation, as it is difficult to guarantee such investment income in long term.

4.3. High cash dividends may be accompanied by profit manipulation

If a listed company 's operating and financing capabilities are weak, but the overall investment yield is high and its dividend pay-out is maintained at a high level, despite of non-long-term investment income accounted for a large proportion of its total investment income, then investors should be more careful to check if profit is being manipulated.

4.4. Recommendation

Profit manipulation brings a lot of irrational factors to the stock exchange market, and has a negative impact on the company itself, investors, accounting firms being involved, securities regulatory authorities and even the stock market for the whole region. When evaluating a list company, investors must examine its financial characteristics, i.e. profit manipulation is more likely to happen when assets-liability ratio and working capital turn-over rate is low but dividend pay-out ratio is high. As long as users of financial information pay enough attention to the financial indicators related to profit manipulation, they will be able to identify whether a listed company has profit manipulation or not from analyzing its financial characteristics and have a better understanding of the financial information published, and provide accurate information for decision-making.

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