

Corporate governance mechanism, earnings manipulation, and accounting standards: The study in Pharmaceutical industry

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Abstract.

The aim of this study is investigation of corporate governance, earnings manipulation, and local accounting standards in Iran. This research used 27 Tehran listed companies' data in Pharmaceutical industry from 2010 to 2015 to investigate how local accounting standards, state ownership, and board of directors (BOD) influence earnings manipulation. The result of study shows that there are relationships between study variables. We conclude that state ownership to an extent discourages earnings manipulation in the current environment of Iran. However, accounting standards implementation does not seem to deter earnings manipulation. When state-ownership is not the case, increasing the number of independent BOD seems to be a good practice to discourage earnings manipulation, although non-independent BOD does not make any difference.

Key words: corporate governance, earnings manipulation, and local accounting standards, pharmaceutical industry

1. Introduction

The main objectives of International Public Sector Accounting Standards (IPSAS) are the international accounting harmonization and comparability, as well as the improvement of the reliability and transparency of public accounts. According to the IASB, over 100 countries have adopted the international accounting standards officially known as International Financial Reporting Standards or IFRS. The United States is scheduled to decide sometime in 2011 about whether to incorporate

IFRS into the financial reporting system for U.S. issuers with the possibility of global adoption of IFRS imminent, this seems an opportune time to investigate the effects of IFRS on various issues. Several researchers have approached this topic from several different angles, e.g., IFRS's impact on earnings management; the relationship between IFRS and information asymmetry (Leuz, 2003); how IFRS affects the cost of equity capital (Daske, 2006; Lambert, Leuz, & Verrecchia, 2007); whether IFRS improves market liquidity (Daske, Hail, Leuz, & Verdi, 2008); and how IFRS affects Tobin's q, which measures effects beyond the cost of capital and market liquidity (Daske et al., 2008). This paper investigates the effect of state ownership, IFRS, and independent boards of directors on earnings management in Tehran Stock Exchange.

Earnings manipulation increases outsider uncertainty and potentially leads to information asymmetries among firm managers, resulting in decreasing investment efficiency. In prior studies, accounting conservatism was shown to reduce the adverse effects of existing information asymmetry between outside investors and managers by restricting managerial accounting manipulation (LaFond and Watts, 2008).

Bebchuk and Hamdani (2009) pointed out that good corporate governance practices at a publicly held firm will not necessarily be good practices at a publicly traded firm in which there is a controlling shareholder. This is because board independence, a key concept in structuring appropriate corporate governance practices, has a different meaning when a controlling shareholder is present. The research by Bebchuk and Hamdani (2009) inspired us to investigate the relationship between independent boards of directors and state ownership of Iranian companies. The significant change of accounting system starting 2007 also demands this research to evaluate IFRS effect on the interaction of independent board of directors, earnings management, and state ownership.

2. Literature review

Corporate governance has been a topic of research for decades. We herein review a few of recent studies regarding corporate governance. Li and Samsell (2009) suggest that economies vary in terms of their emphasis on formal rules versus informal relationships. In Anglo-American economies, the primary governance mechanism is the equity market (Saberwal & Smith, 2008). In China, the primary governance mechanism is the state and informal networks (Shen & Chen, 2009). Judge (2010) gives a complete review of corporate governance around the world.

Li (2010) examined tunneling by controlling shareholders in Chinese public companies. Tunneling is the transfer of assets out of public companies for the benefit of controlling shareholders. Li (2010) concluded that tunneling is severe and that private controlling ownership significantly increases the severity of it. Li's

(2010) research seems to support the conclusion by Shen and Chen (2009) that the primary governance mechanism in China is the state and informal networks. Recent study about ownership and corporate governance also includes Sueyoshi, Goto, and Omi (2010) research about Japanese firms. Their conclusion is that stable shareholding is an important aspect of traditional Japanese corporate governance, although stable shareholding enhances operational performance only when the ratio of shares held by stable shareholders is more than 61.21%.

However, Leuz, Nanda, and Wysocki (2003) finds that earnings management appears to be lower in economies with large stock markets, dispersed ownership, strong investor rights, and strong legal enforcement. This conclusion conflicts with research by Li (2010), Shen and Chen (2009), and Sueyoshi, Goto, and Omi (2010). These studies found that large/state shareholding was an important governance mechanism. Leuz et al. (2003) conclusions are based on data from 31 countries from 1990 to 1999. The countries include Asian countries such as Japan, Philippines, Indonesia, Korea, as well as the United States, United Kingdom, Belgium, etc. The dataset did not include China.

This paper investigates the effect on Chinese publicly traded companies of state ownership on corporate governance and earnings management. Extensive research has been done on the impact of outside directors as well. Musteen, Datta, and Kemmerer (2010) found that firms with a greater proportion of outside directors and those with larger boards exhibited better reputations than those with smaller boards and a higher proportion of insiders. The study sample involved companies included in the 2000 Fortune List of America's Most Admired Corporations. Duchin, Matsusaka, and Ozbas (2010) conclude that the effectiveness of outside directors depends on the cost of acquiring information about the firm. When the cost of information acquisition is low, performance increases when outsiders are added to the board. When the information acquisition cost is high, performance worsens when outsiders are added to the board. The data are from American firms over the period 2000–2005.

Shen and Chih (2007) examined the impacts of corporate governance on earnings management. They conclude that firms with good corporate governance tend to conduct less earnings management and large size firms are prone to conduct earnings smoothing. The paper used CLSA (Credit Lyonnais Securities Asia) corporate governance measures. CLSA calculated an index with corporate governance rankings for 495 firms across 25 emerging markets and 18 sectors. The paper examined the relationship between Leuz et al.'s (2003) earnings management proxies and corporate governance.

The topic of earnings management has grown to be a concern throughout the world (Islam et al., 2011). Earnings management occurs when managers use judgment in financial reporting in structuring transactions to alter financial reports, to either mislead some stakeholders about the underlying economic performance of the economy, or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). Scott (2009) states that earnings management is the choice of accounting policies, or actions affecting earnings, made so as to achieve specific managerial objectives. Watts and Zimmerman (1990) find that earnings management occurs when managers implement their discretion over the accounting numbers with or without restrictions, and that such activities can be either firm value maximizing or opportunistic. Jorissen and Otley (2010) find that financial misrepresentation is broader than just earnings management and include the management of balance sheet numbers and disclosure management with other issues.

Dyreg et al. (2012) researched a sample of 2133 U.S. multinational firms from 1994–2009, showing that companies with foreign employments have more external earnings manipulation than do companies with subsidiaries in a country where the rule of law is strong. Ascioğlu et al. (2012) investigated a sample of NYSE firms from 1996 to 2001 and found that earnings management improved the degree of information asymmetries between insiders and outsiders. They also found an association between greater earnings management and lower market liquidity.

Chekili (2012) examined 20 anonymous listed Tunisian firms from 2000 to 2009, and explored the effect of certain governance mechanisms on earnings management. The result demonstrated that the board size, the presence of exterior directors within the board, and the existence of a CEO have a strong effect on earnings manipulation.

Hazarika et al. (2012) examined whether managers with earnings manipulation increase the risk of losing their jobs. The result indicated that boards tend to punish managers who manipulate earnings aggressively before their management leads to costly external consequences. Managers have more incentive to manage earnings when companies are earning small profits or suffer an unexpected loss, misleading investors regarding the true firm value.

3. Research Methodology.

This research used 27 Tehran listed companies' data in Pharmaceutical industry from 2010 to 2015 to investigate how local accounting standards, state ownership, and board of directors (BOD) influence earnings manipulation. Earnings management is generally understood to mean attempts by company insiders to protect their positions and benefits by manipulating the financial information provided to outsiders. This often takes the form of income smoothing or income manipulation. We use the method defined by Leuz et al.'s (2003) to

quantify earnings management. We first introduce accruals and cash flow. The operational definition of accruals is:

$$\text{Accruals} = (\Delta\text{CA} - \Delta\text{Cash}) - (\Delta\text{CL} - \Delta\text{STD} - \Delta\text{TP}) - \text{Dep}$$

where:

- ΔCA change in total current asset;
- ΔCash change in cash/cash equivalents;
- ΔCL change in total current liabilities;
- ΔSTD change in short-term debt included in current liabilities;
- ΔTP change in income taxes payable;
- Dep depreciation and amortization expense.

We then calculate cash flow from operations:

$$\text{Cash flow from operations} = \text{Operating earnings} - \text{Accruals}$$

$$\text{EM} = |\text{Accruals}| / |\text{Cash flow from operations}|$$

where: EM stands for earnings management. The larger EM is indicative of large-scale use of discretion to manipulate reported accounting earnings. (Leuz et al. (2003) identifies other measures of earnings management. Table 1 shows statistics.

Table 1. Central indexes, Diffusion indexes, and distribution indexes (Statistics)

	Profit management	Board structure	Ownership structure	Institutional investors
Valid Data	27	27	27	27
Average	2.648	0.423	0.273	0.385
Mean	3.3500	0.4200	0.2800	0.2710
Mode	-3.0	0.00	0.00	0.00
Standard Deviation	1.947	0.290	0.267	0.329
Variance	3.79	0.084	0.072	0.109
Skewness	-8.595	-0.051	0.472	0.382
the standard error of skewness coefficient	0.128	0.128	0.128	0.128

4. Experimental Results.

Table 2 represents the statistical data on profit management, size, leverage, firm history, the number of non-independent board, and the number of independent board. The data is divided into two groups: Group 1 shows observations related to the state ownership less than 20%. Group 2 shows observations related to at least 20 % of the state ownership.

Table 2. Data statistics

Variable	Profit management	Size	Leverage	Firm's age	Board	
					Independent	non-independent
Ownership group of State firms less than 20 %						
Average	18.70	19.10	1.8	120	0.26	0.12
Standard deviation	1201.78	1.98	13.28	49.21	0.6	0.03
Ownership group of State firms by at least 20 %						
Average	1.98	21.4	1.38	158.66	0.261	0.11
Standard deviation	14.33	0.85	22.65	46.12	0.18	0.065

Although the average of profit management criterion for group 1 is much more than that of group 2 which are 18.70 % and 1.98 % respectively, but t test didn't show any significant difference between criteria. The variances of the criteria at the level of $p < 0.0001$ have significant difference. By evaluating the average of this criterion with standard variation of this criterion and also according to this point that the variances of this criterion for the two groups are completely different, we conclude that profit management criterion for observations related to state ownership of less than 20 % is very different while it seems that observation related to state ownership of at least 20 % has lower changes.

Average, size, firm history, the number of non-independent board, and the number of independent board at the level of $p < 0.0001$ for these two groups have significant differences. The most important point is the

number of independent board. The number of independent board in observations relate to state ownership of less than 20 % is significantly more than observations relate to state ownership of at least 20%.

Table 2 shows the regression results associated with profit management rank as the dependent variable. We executed this model separately for the two groups. The overall results of the model for both groups at the level of $0.0001 > p$ were significant. For both groups: the larger the size of firm, the less the profit management at the level of $p < 0.0001$ will be; the greater the firm history, the more profit management at the level of $p < 0.01$ will be. Leverage had little impact in state ownership group of less than 20% but it increased the profit management strongly at the level of $p < 0.01$ in state ownership group of more than 20 %. Independent board reduced the profit management related to state ownership group of less than 20% significantly at level of $p < 0.01$ while it didn't have any effects on profit management, when the state ownership was greater than or equal to 20%. Non-dependent board had no significant impact on the profit managements of the two groups.

Table 3. Correlation coefficient, determination coefficient and Durbin-Watson test

Model	Correlation coefficient	Determination coefficient	Adjusted determination coefficient	error of estimation benchmark	Durbin-Watson
1	0.185	0.034	0.032	3870	1.643

Table 4. Regression results

variable	Group 1 (state ownership less than 20 %)			Group 2 (state ownership of at least 20 %)		
	estimation	T statistics	Pr> t	estimation	T statistics	Pr> t
intercept	6715.02	13.69	0.0001 >	19124.00	19.39	0.0001 >
size	-138.77	-4.17	0.0001 >	-387.40	-9.62	0.0001 >
leverage	-2.80	-0.78	0.3589	135.50	2.30	0.0014
Firm's age	4.00	5.62	0.0001 >	4.84	3.70	0.0001 >
Dummy IFRS	33.87	0.30	0.6292	-87.41	-0.19	0.8843
Non-independent	278.78	1.10	0.3416	48.0	0.61	0.8969
Independent BOD	-1485.52	-2.08	0.0015	941.38	0.88	0.4140

Table 5. Statistic data related to profit management rank

Profit management	Variable
State ownership group of less than 20 %	
Average	4581
Standard deviation	3007
State ownership group of at least 20 %	
Average	5313
Standard deviation	3064

Results didn't show any negative effect of IFRS implementation on profit management after considering state ownership levels. High state ownership significantly reduces the profit management. In the case of firms that are not owned by government, independent board significantly reduces the profit management while non-independent board doesn't have such effect. When a high state ownership exists, the board has no impact on profit management.

Organizational size is one of the factors preventing profit management. Profit management is reduced by increasing the size. Firms' history is one of the effective factors on profit management. Because the higher the history, the more profit management increases. The results of this study are consistent with the results of research by Yang Wang and Michael Campbell (2012). But it seems that the implementation of IFRS doesn't prevent profit management. When there is a state ownership, apparently increasing the number of independent board is a suitable way to prevent profit management. As a result, the requirement of the rules based on the matter that at least a part of the board members of directors from outside the organization appears to be effective for private firms.

5. Conclusion.

The aim of this study is investigation of corporate governance, earnings manipulation, and local accounting standards in Iran. This research used 27 Tehran listed companies' data in Pharmaceutical industry from 2010 to 2015 to investigate how local accounting standards, state ownership, and board of directors (BOD) influence earnings manipulation.

As we mentioned in tables, significant state ownership significantly decreases earnings manipulation. For companies without significant state ownership, independent BOD significantly decreases earnings management, while non-independent BOD does not. When significant state ownership exists, BOD does not make a difference

on earnings management. Size is a deterring factor of earnings management. Earnings management goes down with size. Age is an encouraging factor of earnings management. Earnings management goes up with age.

To sum up, in the current environment of Pharmaceutical industry in Tehran Stock Exchange, state-ownership to an extent discourages earnings management. This finding is consistent with Li (2010), Shen and Chen (2009) and Sueyoshi, Goto, and Omi (2010). However, IFRS implementation does not seem to deter earnings management. When state-ownership is not the case, increasing the number of independent BOD seems to be a good practice to discourage earnings management. Thus, the rules requiring at least 1/3 of the members of the BOD to be outside directors seem to be effective for private companies.

References:

- Abaoub, E., & Ben Amar, A. (2009). L'effet de l'expertise, de l'indépendance et de l'activité du comité d'audit sur la gestion du résultat. *Management Sciences Sociales*, 7, 117–138.
- Aljifri, K. (2007). Measurement and motivation of earning management: A critical perspective. *Journal of Accounting Business and Management*, 14, 75–95.
- Aminul, I., Ruhani, A., & Zamri, A. (2011). Is modified Jones model effective in detecting earnings management? Evidence from a developing economy. *International Journal of Economics and Finance*, 3(2), 116–125.
- Bebchuk, Lucian A., & Hamdani, Assaf (2009). The Elusive Quest for Global Governance Standards. *University of Pennsylvania Law Review*, 157, 1263–1317.
- Daske, Holger (2006). Economic Benefits of adopting IFRS or US-GAAP-Have the expected cost of equity capital really decreased? *Journal of Business Finance and Accounting*, 33(3 and 4), 329–373.
- Daske, Holger, Hail, Luzi, Leuz, Christian, & Verdi, Rodrigo (2008). Mandatory IFRS reporting around the world: Early Evidence on the Economic Consequences. *Journal of Accounting Research*, 46(5), 1085–1142.
- Dechow, P., & Skinner, D. (2000). Earnings management: reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, 14, 235–250.
- Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, 70, 193–225.
- Duchin, Ran, Matsusaka, John G., & Ozbas, Oguzhan (2010). When are outside directors effective? *Journal of Financial Economics*, 96, 195–214.
- Healy, P., & Wahlen, J. (1999). A review of earnings management literature and its implications for standard setting. *Accounting Horizons*, 13, 365–383.
- Judge, William (2010). Corporate Governance Mechanisms throughout the world. *Corporate Governance: An International Review*, 18(3), 159–160.
- Lambert, Richard, Leuz, Christian, & Verrecchia, Robert E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45(2), 385–419.
- Leuz, Christian (2003). IAS Versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market. *Journal of Accounting Research*, 41(3), 445–472.
- Leuz, Christian, Nanda, Dhananjay, & Wysocki, Peter D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69, 505–527.
- Musteen, Martina, Datta, Deepak K., & Kemmerer, Benedict (2010). Corporate reputation: Do board characteristics matter? *British Journal of Management*, 21, 498–510.
- Saberwal, S., & Smith, S. (2008). Concentrated shareholders as substitutes for outside analysts. *Corporate Governance: An International Review*, 16, 562–577.
- Shen, W., & Chen, Lin (2009). Firm profitability, state ownership, and top management turnover at the listed firms in China: A behavioral perspective. *Corporate Governance: An International Review*, 17, 443–456.
- Sueyoshi, Toshiyuki, Goto, Mika, & Omi, Yusuke (2010). Corporate governance and firm performance: Evidence from Japanese manufacturing industries after the lost decade. *European Journal of Operational Research*, 203, 724–736.
- Sercu, P., Vander Bauwhede, H., & Willekens, M. (2006). Earnings management and debt. Belgium: KU Leuven Department of Accounting.
- Sun, J., Liu, G., & Lan, G. (2011). Does female directorship on independent audit committees constrain earnings management? *Journal of Business Ethics*, 99, 369–382.
- Teoh, S. H., Welch, I., & Wong, T. J. (1998). Earnings management and the underperformance of seasoned equity offerings. *Journal of Financial Economics*, 50, 63–99.
- Van Tendeloo, B., & Vanderstraelen, A. (2003). Earnings management and audit quality in Europe: Evidence from the private client segment market. *European Accounting Review*, 17(3), 447–469.
- Willekens, M., Vander Bauwhede, H., & Gaeremynck, A. (2004). Voluntary audit committee formation and practices among Belgian listed companies. *International Journal of Auditing*, 8(3), 207–222.
- Xie, B., Davidson, W., & DaDalt, P. (2003). Earnings management and corporate governance: The roles of the board and the audit committee. *Journal of Corporate Finance*, 9, 295–316.