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Contents

Does investor protection affect the choice of earnings management methods through real activity manipulation and accrual manipulation? Asian comparison

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Abstract: This paper examines systematic differences in earnings management through real activity manipulation and accrual manipulation across 7 Asia countries. The study proposes arguments that in economies with high investor protection, managers prefer to manage earnings through real activity manipulation rather than through accrual manipulation because accrual manipulation is more likely to draw auditors or regulators scrutiny than real decisions about pricing and production. The study findings are consistent with prediction. Despite being in economies with high investor protection, managers still have bigger discretion in managing earnings through real activities rather than accrual manipulation.

Key words: earnings management; real activity manipulation; investor protection

1. Introduction

The protection of investor rights, particularly outside investors, is important in creating economic incentives for the development of financial markets (Hart, 1995). More developed financial markets create greater external financing opportunities for firms because legal systems protect investors by conferring on them rights to discipline insiders (e.g., to replace managers), as well as by enforcing contracts designed to limit insiders' private control benefits (e.g., La Porta, et al., 1998; Nenova, 2000; Claessens, et al., 2002; Dyck & Zingales, 2002). Thus, legal systems protecting outside investors reduce insiders' need to conceal their activities.

This paper focuses on investor protection as a significant determinant of earnings management activity. Leuz, et al. (2003) argues that strong and well-enforced outsider rights limit insiders' acquisition of private control benefits, and consequently, mitigate insiders' incentives to manage accounting earnings because they have little to conceal from outsiders. This insight suggests that the pervasiveness of earnings management is increasing in private control benefits and decreasing in outside investor protection.

Prior research documents greater financial transparency in countries with stronger investor protection

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regimes (Bhattacharya, et al., 2003; Bushman, et al., 2004), and there is evidence that earnings are less managed and in these countries (e.g., Ball, et al., 2000; Hung 2000; Leuz, et al., 2003). Leuz, et al. find that earnings management is more pervasive in countries where the legal protection of outside investors is weak, because in these countries insiders enjoy greater private control benefits and hence have stronger incentives to manipulate firm performance.

Roychowdhury (2006) finds evidence that managers in US firms manipulate earnings through real activity. Roychowdhury finds evidence suggesting price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures are used to improve reported margins. This is contrary to Leuz's finding that in countries with strong legal protection, managers are less aggressive to manage earnings. We argue that in strong legal enforcement economies, managers prefer to manage earnings through real activity manipulation rather than through accrual manipulation.

The manipulation of real activity potentially reduces firm value. Real activities manipulation can reduce firm value because actions taken in the current period to increase earnings can have a negative effect on cash flows in future periods. For example, aggressive price discounts to increase sales volumes and meet some short-term earnings target can lead customers to expect such discounts in future periods as well. This can imply lower margins on future sales. Overproduction generates excess inventories that have to be sold in subsequent periods and imposes greater inventory holding costs on the company. There is evidence that managers manipulate real activity in strong investor protection country (Roychowdhury, 2006). So the purpose of this study is to examine whether legal systems affect the choice of earnings management methods.

According to surveys conducted by Bruns & Merchant (1990) and Graham et al. (2005), financial executives indicate a greater willingness to manipulate earnings through real activities rather than accruals. There are at least two possible reasons for this. Firstly, accrual manipulation is more likely to draw auditor or regulator scrutiny than real decisions about pricing and production. Secondly, relying on accrual manipulation alone entails a risk. The realized year-end shortfall between un-manipulated earnings and the desired threshold can exceed the amount by which it is possible to manipulate accruals. If that happens, and reported income falls below the threshold, real activities cannot be manipulated at year-end. So, we argued that in countries with high investor protection, managers don't have discretionary to manage earnings through accrual manipulation because accrual manipulation is easily to detect. Managers will prefer to manage earnings through real activities.

This study focuses on Asia countries to make contributing to the future of the society and Asia by expanding its range of the responsibilities through legal enforcement and investor protection in order to enhance economic development, mutual understanding and cooperation in Asia. The East Asian countries of Hong Kong, Malaysia, Singapore, Indonesia, Japan, Korea and India provide a useful setting for testing the importance of investor protection. These countries have accounting standards that are generally viewed as high-quality, but (with the possible exception of Hong Kong). They have institutional structures that give preparers incentives to issue low-quality financial reports. Reporting quality of earnings ultimately is determined by the underlying economic and political factors influencing managers' and auditors' incentives, and not by accounting standards per se. Shareholder litigation is an important mechanism to enforce high quality financial.

Reporting-particularly timely lose recognition—in common-law countries. The Asian countries experience comparatively little litigation. Saudagaran & Diga (2000) report that there have been no cases of judicial actions against auditors in Malaysia and Thailand. While there have been lawsuits against auditors in Singapore and Hong Kong, they are less frequent than in common-law countries (Choi, et al., 1999).

While prior research has provided evidence on managers' incentives for earnings management and earnings management more aggressive in countries with low legal enforcement but there is relatively little evidence on what manager's methods to manage earnings in different legal environment. In addition, prior research used accrual manipulation to measure earnings management but actually managers have flexibility to manage earnings with accrual manipulation, real activities manipulation or classification shifting. This paper attempts to provide evidence that investor protection determines manager's choices between real activities manipulation versus accrual manipulation when they have the flexibility to engage both. To measure earnings management through real activity manipulation we use Roychowdhury's model.

Firstly, this study is useful to identify factors that affect method choice by managers to manage earnings. Secondly, this study gives understanding to evaluate effectiveness of legal enforcement in protect outsider (minority) investor when managers have flexibility to choose earnings management method.

2. Hypothesis

Legal systems protect investors by conferring on them rights to discipline insiders (e.g., to replace managers), as well as by enforcing contracts designed to limit insiders' private control benefits (e.g., La Porta et al., 1998; Nenova, 2000; Claessens et al., 2002; Dyck & Zingales, 2002). As a result, legal systems that effectively protect outside investors reduce insiders' need to conceal their activities. Earnings management can be defined as non-neutral financial reporting in which managers intervene intentionally in the financial reporting process to produce some private gain (Schipper, 1989). Managers can intervene by modifying how they interpret financial accounting standards and accounting data, or by timing or structuring transactions (Healy & Wahlen, 1999).

Prior accounting research has documented three main methods of earnings management. The most commonly studied method is accrual management (e.g., Healy, 1985; Jones, 1991; McNichols & Wilson, 1988; Rangan, 1998; Teoh, et al., 1998; Phillips, et al., 2003). A second type of earnings management can occur through the manipulation of real activities, such as providing price discounts to increase sales and cutting discretionary expenditures, to manage earnings (e.g., Baber, et al., 1991; Dechow & Sloan, 1991; Bushee, 1998). Third type of earnings management tools is the misclassification of items within the income statement.

We focus on accrual manipulation and real activities because in study comparison across countries, earnings management through classification shifting can be detected if these countries use the same standard. Real activities manipulation as departures from normal operational practices is motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations. These departures do not necessarily contribute to firm value but the departures enable managers to meet reporting goals. Certain real activities manipulation methods, such as price discounts and reduction of discretionary expenditures, are possibly optimal actions in certain economic circumstances. However, if managers engage in these activities more extensively with the objective of meeting/beating an earnings target, they are engaging in real activities manipulation (Roychowdhury, 2006).

Bruns & Merchant (1990) and Graham, et al. (2005) indicate that financial executives have greater willingness to manipulate earnings through real activities rather than accruals. There are at least two possible reasons for this. Firstly, accrual manipulation is more likely to draw auditor or regulator scrutiny than real decisions about pricing and production (Dechow & Sloan Dan Sweeney, 1996). Secondly, relying on accrual manipulation alone entails a risk. The realized year-end shortfall between un-manipulated earnings and the desired

threshold can exceed the amount by which it is possible to manipulate accruals. If that happens, and reported income falls below the threshold, real activities cannot be manipulated at year-end.

A number of studies discuss the possibility that managerial intervention in the reporting of financial statement process can occur not only via accounting estimates and methods, but also through operational decisions. Manipulation by management through real activities is less likely to draw auditor or regulator scrutiny. In contrast accrual manipulation is more easily to detect. We therefore propose that earnings management through accrual manipulation is less pervasive in countries where the legal protection of outside investors is strong, because in these countries legal system protect investor by conferring on them right to discipline insider.

H1: There is negative relationship between investor protection and abnormal accruals. Countries with high investor protection exhibit lower abnormal accruals than in countries with weak investor protection.

There is evidence that manager in US firms manipulate earnings through real activity (Roychowdhury, 2006). US firms are characterized by large stock markets, low ownership concentration, extensive outsider rights, high disclosure, and strong legal enforcement. Leuz, et al. (2003) finds that in countries with strong legal protection, managers are less aggressive to manage earnings through accrual manipulation. So we argue that in strong legal enforcement economies, managers prefer to manage earnings through real activity manipulation rather than accrual manipulation. Accrual manipulation is more easily to detect, in other hand, real activities manipulation can be subjective, and auditors might be limited in their ability to verify the appropriate classification. In countries with low legal enforcement, managers have great discretionary to manage earnings with both accrual manipulation and real activity manipulation. In hypothesis 2 we argue that when legal enforcement strong, managers prefer to manage earnings through real activity manipulation, such as sales manipulation, reduce discretionary expenses reduction and production increases rather than accrual manipulation.

H2: There is positive relationship between investor protection and real activity manipulation.

3. Research method

3.1 Measurement of earnings management through real activity manipulation

Real activities manipulation is departures from normal operational practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations (Roychowdhury, 2006).

To detect real activities manipulation we investigate patterns in CFO (Cash Flow from Operations) and production costs following Roychowdhury (2006). Sales manipulation is defined as managers' attempts to temporarily increase sales during the year by offering price discounts or more lenient credit terms. The cash inflow per sale, net of discounts, from these additional sales is lower as margins decline. The lower margin due to the price discounts causes production costs relative to sales to be abnormally high. These are essentially price discounts and lead to lower cash inflow over the life of the sales, as long as suppliers to the firm do not offer matching discounts on firm inputs. In general, sales management activities to lead to lower current-period CFO and higher production costs than what is normal given the sales level.

Following Roychowdhury (2006), normal cash flow from operations is a linear function of sales and change in sales in the current period. To estimate the model, we run the following cross-sectional equation:

$$CFO_t / A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \alpha_2(S_t / A_{t-1}) + \alpha_3(\Delta S_t / A_{t-1}) + \varepsilon_t \qquad (1)$$

Where, A_t is the total assets at the end of period t, S_t is the sales during period t and $\Delta S_t = S_t - S_{t-1}$. For every

firm-year, abnormal cash flow from operations is the actual *CFO* minus the ''normal'' *CFO* calculated using estimated coefficients from the corresponding industry year model and the firm-year's sales and lagged assets.

$$\text{Abnormal level} = \text{Actual level-Normal Level.} \tag{2}$$

To manage earnings upward, managers of manufacturing firms can produce more goods than necessary to meet expected demand. With higher production levels, fixed overhead costs are spread over a larger number of units, lowering fixed costs per unit. As long as the reduction in fixed costs per unit is not offset by any increase in marginal cost per unit, total cost per unit declines. This implies that reported COGS (Cost of Goods Sold)is lower, and the firm reports better operating margins. Nevertheless, the firm incurs production and holding costs on the over-produced items that are not recovered in the same period through sales. As a result, cash flows from operations are lower than normal given sales levels. Ceteris paribus, the incremental marginal costs incurred in producing the additional inventories result in higher annual production costs relative to sales.

The model for normal COGS is estimated as:

$$COGS_t \ /A_{t-1} = \alpha_0 + \alpha_1 \ (1/A_{t-1}) + \alpha_2 \ (S_t/A_{t-1}) + \varepsilon_t \tag{3}$$

The model for "normal" inventory growth using the following equation:

$$\Delta INV_t/A_{t-1} = \alpha_0 + \alpha_1 \ (1/A_{t-1}) + \alpha_2 \ (\Delta S_t/A_{t-1}) + \alpha_3 \ (\Delta S_{t-1}/A_{t-1}) + \varepsilon_t \tag{4}$$

Where, ΔINV_t is the change in inventory in period t.

Production costs as:

$$PROD_t = COGS_t + \Delta INV_t \tag{5}$$

Using (3) and (4), normal production costs from the following industry-year equation:

$$PROD_t/A_{t-1} = \alpha_0 + \alpha_1 \ (1/A_{t-1}) + \alpha_2 \ (\Delta S_t/A_{t-1}) + \alpha_3 \ (\Delta S_t/A_{t-1}) + \alpha_4 \ (\Delta S_{t-1}/A_{t-1}) + \varepsilon_t \tag{6}$$

"Discretionary expenses" is expressed as a linear function of contemporaneous sales, similar to COGS.

The relevant equation would then be:

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1 \ (1/A_{t-1}) + \alpha_2 \ (S_{t-1}/A_{t-1}) + \varepsilon_t \tag{7}$$

Where, $DISEXP_t$ is discretionary expenses in period t. Discretionary expenses as DisExp = R&D + Advertising + SG&A expenses.

3.2 Measurement accrual manipulation

Signed abnormal accruals are used rather than absolute (unsigned) abnormal accruals (Hribar & Nichols, 2006). A cross-sectional Jones (1991) model is not practical for the calculation of abnormal accruals with international data because the number of industry observations per country can be quite small, and this may explain, at least in part, why Jones-type abnormal accruals perform unreliably in international settings (Wysocki, 2004; Meuwissen, et al., 2005). We avoid this problem by using a linear expectation model adapted from DeFond and Park (2001) which uses a firm's own prior year accruals in calculating the expectation benchmark. Specifically, expected accruals are based on a firm's prior year ratio of current accruals to sales, and the prior year's ratio of deprecation expense to gross property plant and equipment (hereafter PPE). Another benefit of this approach is that we also implicitly control for cross-country differences in accounting standards by using a firm as its own control to compute abnormal accruals. Therefore abnormal accruals are contextualized relative to the specific accounting standards of a particular country.

Using data from OSIRIS Database, predicted accruals are calculated as:

$$Predicted \ accruals = \{[Sales_t \ (Current \ accruals_{t-1}/sales_{t-1}]$$
$$+ \ Gross \ PPE_t \ (Depreciation_{t-1}/Gross \ PPE_{t-1}/Total \ assets_{t-1}] \tag{8}$$
$$Abnormal \ accruals = Firm's \ actual \ total \ accruals_t - Predicted \ total \ accruals_t. \tag{9}$$

Total accruals in year *t* are calculated as follows:

$$Total\ accruals = \{Earnings\ before\ extraordinary\ items - Operating\ cash\ flows\}/Total\ assets_{t-1} \quad (10)$$

$$Current\ accruals = Change\ in\ non\text{-}Cash\ working\ capital$$

$$= \Delta\,[Total\ current\ assets - Cash\ and\ short\ term\ Investments$$

$$- Treasury\ stock\ shown\ as\ current\ assets] - \Delta\,[Total\ current\ liabilities$$

$$- Total\ amount\ of\ debt\ in\ current\ liabilities - Proposed\ dividends] \quad (11)$$

3.3 Measurement of investor protection

We begin with a descriptive country cluster analysis, which groups countries with similar legal and institutional characteristics. We use multiple investor protection measures as follows:

(1) Outside Investor Right: This is an aggregate measure of minority shareholder rights and ranges from zero to five;

(2) Disclosure requirements.

(3) Important of equity market: This is measured by the mean rank across three variables used in La Porta et al. (1997). Each variable is ranked such that higher scores indicate a greater importance of the stock market.

(4) Legal enforcement: This is measured as the mean score across three legal variables used in La Porta et al. (1998). Three variables range from 0 to 10.

Cluster analysis is based on four measurement of investor protection. Then we compare score earnings management between clusters. We use accrual manipulation and real activities to measure earnings management activities.

To test H1 we compare abnormal accrual between clusters. To examine more explicitly which institutional factors are the determinant of earnings management, we undertake equation analysis based on Model 1 to test H1:

Model 1:

$$AB\_ACCR_{it} = \beta_0 + \beta_1\,LAW + \beta_2\,OUTSIDE\_RIGHT$$

$$+ \beta_3\,DIS\_REQ + \beta_4\,LEG\_ENF + \beta_5\,IM + E_{it} \quad (12)$$

To test H2a- H2b, we use Model 2a and Model 2b:

Model 2a:

$$AB\_CFO = \beta_0 + \beta_1\,LAW + \beta_2\,OUTSIDE\_RIGHT + \beta_3\,DIS\_REQ + \beta_4\,LEG\_ENF + \beta_5\,IM + e_{it} \quad (13)$$

Model 2b:

$$AB\_Prod = \beta_0 + \beta_1\,LAW + \beta_2\,OUTSIDE\_RIGHT + \beta_3\,DIS\_REQ + \beta_4\,LEG\_ENF + \beta_5\,IM + e_{it} \quad (14)$$

Where, AB_ACCR_{it} = Abnormal accruals scaled by lagged total assets for firm *i* in year *t*; AB_CFO = Abnormal cash flow; $AB\_DiscExp$ = Abnormal discretionary expenses; AB_Prod = Abnormal production cost. $INVPRO$ = Proxies of investor protection, measured six ways; $Outside\_Right$ = Outside investor right; DIS_REQ = Index of disclosure requirement; LEG_ENF = Legal enforcement; IM = Important of equity market.

Because abnormal cash flow, discretionary expenses and production cost are more aggressive in suspect firm (firm close to zero earnings), we conduct sensitivity analysis to regress Model 1, Model 2a and Model 2b in full sample (suspect & non suspect firm).

4. Results

4.1 Descriptive statistics

Our data obtained from OSIRIS database, which contains financial data from annual reports of publicly

traded around the world. Only industrial companies are included in empirical analysis. Each firm must have income statement and balance sheet information for estimation period. The final sample consists of 5,931 firm-year observations, across 7 countries for fiscal years 2003-2007.

Table 1 panel A presents the number of firm-year observation per country as well as descriptive statistic for three individual earnings management measure. Panel B presents institutional characteristics of each country.

Table 1   Descriptive statistics for earnings management and institutional characteristics

Panel A   Country score for earnings management measures

Countries	Firm-years	Cluster	Abnormal CFO	Abnormal prod cost	Abnormal accrual
Korea	1141	3	0.0012	-0.1281	0.0834
Japan	2785	2	0.0005	-0.0003	0.0631
Malaysia	792	1	0.0315	-0.0002	0.0561
India	566	3	-0.0269	0.0000	0.1201
Indonesia	129	3	0.0000	0.0000	0.0788
Hongkong	101	1	0.0002	0.0000	0.1440
Singapore	398	1	0.0001	0.0055	0.0995

Panel B   Institutional characteristics of the sample countries

Countries	Outside investor right	Legal enforcement	Important equity market	Disclosure index	Cluster (1: high, 3: low)
Korea	2	5.6	11.7	62	3
Japan	4	9.2	16.8	65	2
Malaysia	4	7.7	25.3	76	1
India	5	5.6	14	57	3
Indonesia	2	2.9	4.7	na	3
Hongkong	5	8.9	28.8	69	1
Singapore	4	8.9	28.8	78	1

Panel A of Table 1 provides descriptive statistics for three individual earnings management measures. The three individual earnings management measures exhibit striking differences across countries. The statistics of the mean abnormal *CFO* and abnormal production cost show that earnings management with real activity manipulation aggressive in economies with high investor protection such as Singapore, Hongkong compared to in economies with low investor protection such as Korea and India. The mean abnormal accrual is high in Singapore compared to Japan.

4.2 Result earnings management with real activities manipulation

Table 2 presents descriptive statistics comparing suspect firm-year to the full sample. Firms that just meet the zero earnings (suspect firm) are probably trying to meet the zero target earnings through real activities manipulation. Suspect firm-years have a lower mean of abnormal low CFO than non suspect firm (-0.0031 versus 0.0023). Mean of abnormal production cost is higher for suspect firm compared to non suspect firms (0.1388 versus -0.0074).

4.3 Estimation model

Table 3 reports the regression coefficients for some of the key regression used to estimate 'normal level'. We estimate using the entire sample of 5,931 firm-years. The coefficient generally as predicted by Roychowdhury (2006). The coefficient of CFO on sales change actually positive, for all country, and marginally significant,

indicating that conditional on contemporaneous sales, a higher change in sales implies higher CFO.

Table 2   Descriptive statistics comparing suspect firm-year to rest of the sample

	Suspect firm year	Non suspect firm	Rest of the sample
Full sample 5,931 firm-years with 273 suspect firm-year			
	means	means	means
Net Income/ TA	0.0029	0.0378	0.3620
Abnormal Accruals	-0.0884	-0.0675	-0.0685
Abnormal CFO	-0.0031	0.0023	0.0021
Abnormal Prod	0.1388	-0.0074	-0.0006

Table 3   Model Parameters

	Indonesia		Malaysia		Japan		Hongkong		Korea		India		Singapore	
	CFOt/ At-1	Prodt/ At-1	CFOt/ At-1	Prodt/ At-1	CFOt/ At-1	Prodt/ At-1	CFOt/ At-1	Prodt/ At-1	CFOt/ At-1	Prodt/ At-1	CFOt/ At-1	Prodt/ At-1	CFOt/ At-1	Prodt/ At-1
Intercept	0.020	-0.119	0.046	-0.072	0.062	-0.140	0.037	-0.095	0.049	1.108	-0.039	-0.027	0.020	-0.101
1/At-1	-2.35	-1.54	-3.36	-8.14	-8.86	-3.827	-1.137	-2.015	-5.83	-8.01	35.127	-2.089	-2.35	-4.83
St/At-1	0.030	0.870	-0.003	0.874	-0.007	0.946	0.37	0.847	0.027	0.130	0.114	1.049	0.030	0.878
ΔSt/At-1	0.000	0.001	0.088	0.161	0.029	0.005	-0.19	0.107	-0.055	-0.089	0.009	0.179	0.00	-0.12
ΔSt-1/At-1		-0.023		-0.079		-0.105		0.246		0.056		-0.123		-0.11
Adj. R2	0.035	0.896	0.058	0.923	0.015	0.933	0.012	0.925	0.057	0.07	0.041	0.993	0.035	0.85

Notes: *significant at level 10%; This table reports the estimated parameters in following equation: $CFO_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \alpha_2 (S_t/A_{t-1}) + \alpha_3 (\Delta S_t/A_{t-1}) + \varepsilon_t$; $PROD_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \alpha_2 (\Delta S_t/A_{t-1}) + \alpha_3 (\Delta S_t/A_{t-1}) + \alpha_4 (\Delta S_{t-1} / A_{t-1}) + \varepsilon_t$.

4.4 Comparison of suspect firm years with non suspect firm-years and the rest of sample

If firm-year that report profit just above zero undertake activities that adversely affect their CFO, then abnormal CFO for these firm-years, should be negative compared to the rest of sample. To test this, we estimate the following equation:

$$Y = \alpha + \beta_1 (Net\ Income) + \beta_2 (Suspect\_NI) + \varepsilon \tag{15}$$

The dependent variable, Y is abnormal CFO and abnormal production cost in period t. $Suspect\_NI$ is an indicator variable that is set equal to 1 if firm-years belong to the earnings category just right of zero, and zero otherwise.

Table 4   Comparison suspect firm years with non suspect sample

	Abnormal CFO	Abnormal production costs
Intercept	0.022	-0.002
	(2.614)	(-0.200)
Net Income	0.008*	-0.269*
	(1.061)	(-5.518)
Suspect_NI	-0.217*	0.142*
	(-5.552)	(3.246)

Notes: *significant at level 10%.

The first column in Table 4 provides evidence that abnormal CFO is unusually low for suspect firm years, consistent with Roychowdhury's model. When dependent variable is CFO in equation (15), the coefficient on SUSPECT_NI is negative (-0.217) and significant at level 10%. Suspect firm-years have abnormal CFO is lower than non suspect firm.

When *Y* is abnormal production cost, the coefficient on *SUSPECT_NI* is positive 0.142. The coefficient indicates that the mean abnormal production cost of suspects firm-years is larger 14.2% of assets than the mean across the rest of sample.

4.5 Descriptive cluster analysis

To provide descriptive evidence on systematic pattern in earnings management method across group of countries with similar institutional characteristics, we begin with cluster countries based on institutional characteristics (Leuz, et al., 2003). The first cluster is characterized by large stock markets, low ownership concentration, extensive outsider right, high disclosure, and strong legal enforcement. The second and third cluster show markedly smaller stock markets, higher ownership concentration, weaker investor protection, lower disclosure level, and weaker enforcement, with the distinction that countries in the second cluster have significantly better legal enforcement than countries in the third cluster. Based on institutional characteristics, we refer countries in the first cluster as 'high investor protection economies'. The countries in the second and third cluster

To provide descriptive evidence on the systematic patters of earnings management method across cluster, we use ANOVA analysis to compare aggressiveness of real activity manipulation and accrual manipulation across group of countries.

Table 5 shows the difference of aggressiveness earnings management method across cluster.

Table 5　Pervasiveness of earnings management by cluster

	Cluster 1 (high investor protection)	Cluster 2	Cluster 3 (low investor protection)
Abnormal CFO	-0.0075	0.0005	0.0193
Different between cluster	F: 8.753	Sign: 0.000	
Abnormal Production Cost	0.0015	-0.0003	-0.0757
Different between cluster	F: 69.443	Sign: 0.000	
Abnormal Accrual	-0.1013	-0.0631	-0.0533
Different between cluster	F: 2.795	Sign: 0.061	

Table 5 shows that the differences between cluster's average earnings management are statistically significant. High investor countries (Cluster1) exhibit lower level of earnings management with accrual manipulation than low investor protection countries. This finding consistent with leuz et al. (2003) that earnings management is expected to decrease in investor protection because strong protection limits insider's ability to acquire private control benefit, which reduces incentives to mask firm performance. But earnings management with real activity management is higher in economies with strong investor protection. Real activity manipulation can be detected by investigate the pattern of CFO and production cost. Deviation from normal level of CFO and Production cost are termed abnormal CFO and abnormal production cost. The abnormal CFO is lower in economies with high investor protection rather than in low investor protection. Abnormal production cost is higher in economies with high investor protection than in low investor protection.

Suspect firm year more aggressive in real activity manipulation, we conduct sensitivity analysis to compare differences in earnings management activity between clusters for suspect firm year. Thus, these results are sensitive to sample selection.

Table 6 shows that suspect firm-years in cluster high investor protection exhibit abnormal low CFO and abnormal high production cost comparing to cluster low investor protection. This result is consistent with previous

analysis.

Table 6   Pervasiveness of real activity manipulation suspect year firm by cluster

Cluster	Abnormal CFO	Abnormal production cost
(1) (high investor protection)	0.0130	0.0189
(2)	-0.0255	0.0556
(3) (low investor protection)	0.0342	-0.2067
Differences between clusters	2.369	47.419
	(0.096)	(0.000)

Notes: *significant at level 10%.

In summary, the evidence earnings management with real activity manipulation is higher in economies with high investor protection rather than in economies with low investor protection. Earnings management with accrual manipulation is more aggressive in economies with low investor protection than in economies with high investor protection.

4.6 The role of investor protection: Multiple regression analysis

The previous analysis shows that pervasiveness of earnings management with real activities manipulation or accrual manipulation is systematically related to a country's institutional characteristics. A key question is which institutional factors are primary determinant of earnings management's method choice. We posit that better investor protection result in less earnings management with accrual manipulation because accrual manipulation is easy to detect and hence lower incentives to conceal firm performance with accrual manipulation. Our multiple regression examines the relation between earnings management's method choice and investor protection.

Table 7   Earnings management's method choice and investor protection

	Abnormal accrual	Abnormal CFO	Abnormal production cost
Constant	1.974	0.392	-0.725
	(4.023)	(1.511)	(-2.259)
Outside investor right	-0.082*	-0.006	0.059*
	(-3.627)	(-0.874)	(6.709)
Legal enforcement	-0.013	-0.009*	0.009*
	(-1.318)	(-2.517)	(2.191)
Important equity market	0.013*	-0.006*	-0.006*
	(1.806)	(-2.309)	(-1.879)
Disclosure index	-0.036*	-0.001*	0.007*
	(-4.350)	(-0.238)	(0.044)
R^2			

Notes: *significant at level 10%.

Our multiple regression results presented at Column 1 of Table 7 report regression analysis using abnormal accrual as the dependent variable. Results show that outside investor right, legal enforcement and disclosure index exhibit a significant negative association with abnormal accrual. The higher level of investor protection will reduce aggressiveness earnings management with accrual manipulation. All variables consistent with prediction, with the exception important of equity market variables.

We attempt to provide evidence on hypothesis that investor protection is positively related to earnings management with real activity manipulation. We use abnormal low cash flow from operation and abnormal high production cost as a measure earnings management with real activity manipulation. The results presented in column 2 of Table 6 show that investor protection and abnormal low CFO exhibit negative association as predicted by our hypothesis. Results show that legal enforcement, important equity market and disclosure index

exhibit a significant negative association with abnormal low CFO. The higher outside investor right, legal enforcement and disclosure index, the lower level abnormal CFO. The result also support that investor protection and abnormal high production cost are positively related. Column 3 of Table 6 show that outside investor right, legal enforcement, and disclosure index exhibit a significant positive association with abnormal production cost.

In summary, the multiple regression results are consistent with the hypothesis that investor protection affects earnings management method choice. In economies with high investor protection, it is too costly to manage earnings with accrual manipulation. The cost of detection of accrual manipulation is high because essentially, a manager can borrow earnings from future periods, through the acceleration of revenues or deceleration of expenses, in order to improve current earnings. The cost of detection bears a one-to-one cost of earnings reduction in the future; Future-period earnings will be mechanically lower by the net income that was accelerated to current earnings. The other type of earnings management can occur through the manipulation of real activities, such as providing price discounts to increase sales and cutting discretionary expenditures, such as R&D, to manage earnings. Such actions can increase revenues or net income, but they are also costly. For example, cutting R&D spending to manage earnings may result in the loss of future income related to the forgone R&D opportunities. On the other hand, because the manipulation of real activities is not a GAAP violation, this earnings management tool is expected to have a lower cost of detection than accrual management. So we argue that in economies with high investor protection, manager prefer to use real activity manipulation to mask firm performance. The results of our analysis are consistent with our prediction.

5. Limitation and conclusion

This paper documents systematic differences in the earnings management method across countries with different level of investor protection. The authors perform ANOVA and multiple regression analysis to test differences earnings management's method across cluster countries based on institutional characteristics. The analysis suggest that in economies with high investor protection earnings management with accrual manipulation is lower than in economies with low investor protection.

Prior research has provided evidence on managers' incentives for earnings management and earnings management more aggressive in countries with low legal enforcement but there is relatively little evidence on what manager's method to manage earnings in different legal environment. In addition, prior research used accrual manipulation to measure earnings management but actually management has flexibility to manage earnings with accrual manipulation, real activities manipulation or classification shifting. Earnings management through accrual manipulation is more likely to draw auditor or regulator scrutiny than real decisions about pricing and production. So this paper attempts to provide evidence that investor protection determine manager choice between real activities manipulation and accrual manipulation when they have the flexibility to engage both. We expect that earnings management through accrual manipulation decreases in legal protection because when investor protection is strong, accrual manipulation will decrease because it is easy to detect. But in strong investor protection countries, earnings management through real activities manipulation more aggressive because real activities manipulation can be subjective, auditor might be limited in their ability to verify the appropriate classification. In countries with weak investor protection, manager have great discretionary to manage earnings with both accrual manipulation and real activity manipulation.

Consistent with the hypothesis, the regression result show that accrual manipulation is negatively associated

with quality of outside investor right, legal enforcement, and quality of disclosure. Real activities manipulation is positively association with outside investor right, legal enforcement and quality of disclosure. This finding highlight that level of investor protection determine management's choices on earnings management's method.

The limitation of this study: The study does not include abnormal discretionary expenses to measure real activity manipulation because of unavailable data. We only measure the pattern of abnormal CFO and abnormal production cost. We argue that pattern abnormal discretionary expenses have been captured at the pattern of abnormal CFO. Reducing discretionary expenses has a positive effect on abnormal CFO in the current period, possibly at risk of lower cash flow in the future.

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How selected primary schools in rural New Zealand manage their financial resources of limited government funding in order to effectively meet their schools objectives

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Abstract: This study evaluates the extent to which primary schools in a region of New Zealand are challenged by limited funds to enable the effective management and performance of their school. The study involved interviews with school principals and analysis of their schools' financial statements. The aim of this project is to gain a current understanding of the issues and challenges facing primary schools in a defined region (Waikato) to see whether the trends identified in national research studies, confirms the problem that schools are underfunded. The results of the current study identified the issues experienced by the Waikato schools and in most cases supported previous research findings. The findings of the current study also suggest that schools share the dilemmas associated with limited government funding and rely significantly on local funding sources to achieve their basic objectives. Although schools may be effective in the management of their school objectives, there is more government funding required to relieve the pressures and challenges.

Key words: schools; budgets; funding; management; finance

1. Introduction

Since the decentralization of school management from the introduction of tomorrow's schools (1989) there has been much recent discussion about how schools are underfunded by the government. How do primary schools deal with the challenges that arise as a result of limited government funding to enable the effective management and performance of their school?

A number of New Zealand research studies about how schools manage their finances have been undertaken in recent years. For instance Wylie (2007a, 2007b), on behalf of the NZ Council for Education Research, has discussed her findings and identified pressure points facing schools in their financial management. The most underlying aspect of the studies showed that underfunding of schools was a paramount concern facing stakeholders in school education.

2. Literature review

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Over the last 20 years, the effects of the tomorrows schools reforms have played out their part in how schools manage the financial constraints imposed and how they have dealt with them (O'Neill, 1998). During 1990 to 1997 studies were conducted on the application of government funding of schools and what was happening with that funding. There was a decline in government funding that did not cover the additional costs of administrative workload. A trend emerged of a rise in parental expenditure on children's education and expenditure differences between parents in professional occupations and others. There came to be what is known as the "user pays" system that reinforced the institutionalized comparisons between those who were well-off and those who were not. Schools were split into decile groups of which lower decile schools were limited by their parent's capacity to donate and contribute, while higher decile schools had a greater capacity of parents to spend (O'Neill, 1998).

With the introduction of the New Public Financial Management procedures in the 1990s, the reforms' impact on the NZ education system meant that education providers had to be more responsive and accountable for the efficient and effective use of their resources (ERO, 1994; Picot Report, 1988; Tooley & Guthrie, 2003). How schools were actually behaving in response to those reforms was evaluated in a study by Tooley and Guthrie (2003) that identified aspects of schools' budgeting systems and decision-making practices. That study identified issues of lack of funding, changing roles of principals from leadership to managerial roles, and the notion of school's budgeting philosophy of "running an operating deficit to let government know we are not getting enough money" (Tooley & Guthrie, 2003).

In the last five years an issue in education research has been how effective schools were managing their finances. An important finding of the studies conducted in 2004 found that although schools were effective, this was dependent on the hard work, dedicated staff and expertise available through boards and financial and property advisors (Wylie & King, 2004). Schools were becoming dependent on funds, they were able to raise from local fundraising and this became far more prevalent since decentralization of schools.

Financial pressure points that impacted negatively on a school's performance included: the affordability of good support staff, employment and/or retention of good quality teachers, ICT, property maintenance, depreciation costs and allowing for teacher non-contact time (Wylie & King, 2005).

While government funding of schools had increased compared to previous years, the increase was not enough to keep up with CPI increases. Furthermore, higher decile schools were found to be relying more heavily on parental funding such as donations, increased school fees more so than before. What was also significant was that a new trend began to develop–parents were becoming reluctant in paying voluntary donations (Wyle & King, 2005).

The Education Review Office (ERO, 2006) released a report on its investigation into how schools used their operational funding. Patterns of income and expenditure and the processes used by schools to manage their operations grant and sources of income were evaluated by the ERO. The study found that the ways schools used their government funding was influenced by a number of factors. These factors included the amount of local fundraising they generated, the overheads associated with running their school, the community expectations, the financial and strategic capability to which the schools have access and the amount of TFEA (Targeted Funding for Educational Achievement) they received as part of their operations grant. Some schools that were medium and high decile in the evaluation were dependent on locally raised funds for their day-to-day operation, whereas low decile schools received additional funding through the TFEA system.

Further to the investigation in 2006, the ERO released a further report on how some of the schools made

financial decisions (ERO, 2007). The report identified examples of good practice that schools implemented and also identified the challenges and risks that schools faced and ways to manage those risks.

Wylie (2007a) published her findings of surveys conducted with primary and intermediate schools about funding issues facing schools. Funding was still a major issue for principals in schools (Wylie, 2007b). Primary schools were largely positive places with an interest in continuously developing their practice to meet children's needs. The schools had benefited from recent support from the Ministry of Education in the way of professional development, curriculum and assessment resources. What was also apparent was that self-managing schools need continual support to sustain their gains and the workload, funding and staffing issues that have been increasingly evident in the surveys will not go away unless some new approaches are taken in what is being asked of schools (Wylie, 2007a).

3. The current situation

The current study investigates how selected types of primary schools in the Central Waikato region managed their financial resources in order to meet their school's objectives. This study also aims to assess the extent primary schools are underfunded by government, and what they do to ensure the effective management of their school. Finally, this current study investigated the issues actually facing selected primary schools in the Waikato region and compared these to issues identified in previous research studies.

4. Method

For this research project, full primary school principals in the Waikato region were selected as respondents. Each was invited to participate in a semi-structured interview with the researcher. The schools selection process in this current study was based on three main criteria.

The first criterion was based on the school's decile rating. The decile rating is an indicator of the socio-economic status (10 being high, and 1 being low) of the school's local community. The Ministry of Education determines each school's decile rating based on a rating system for school funding purposes. Schools in decile one have the highest proportion of students from low socio-economic background while schools in decile ten have the lowest proportion of these students.

The second criterion for selecting schools was based on their school type. School types for primary schools include contributing primary (Year 1-6) or full primary (i.e., includes intermediate level) (Year 1-8). For the purpose of this study, only full primary schools were selected.

The third criterion was based on the authority type of the school. This refers to state, state integrated (special character) and private schools. The authority type of school chosen for this research project was restricted to either a state or state integrated schools. Both these types of schools teach the New Zealand curriculum, are co-educational and receive the same government funding. However the distinguishing difference between the two is that the state integrated schools have a special character (religious or philosophical belief) as part of their school programme and does not receive government funding to resource capital works/expenditure relating to the school's land and buildings. These assets are privately owned (i.e., by the Catholic Bishop of each diocese who is the proprietor of the land and buildings). Furthermore, these schools charge attendance dues (a legal requirement in attending the school) to all students and it is these funds that contribute to capital works related expenditure for

that school.

The source for selecting the sample schools was obtained from the Ministry of Education website, "Decile 2008 list of all schools in NZ". This list was then refined to include only full primary, state or state integrated schools in the Waikato Region. Six participant schools were to participate in the study, with at least two schools representing in each of the three main decile groupings (low, medium, high). These three ranges are considered typical ERO/Ministry ranking descriptors for all schools whereby low includes deciles 1-3, medium includes deciles 4-7 and high includes deciles 8-10. In addition, it was decided to select all sample schools based on a similar roll size so that the results could be compared accurately. Roll size is also determined by ERO/Ministry guidelines and refers to the numbers of students in the school during a given year. Small rolls are 0-150 students, medium are 151-300 students, and large referring to 301+ students for primary schools. For this research study, a medium roll size school from the sample of candidates was chosen to represent typical schools. The method chosen for selecting the final respondents was based on "non-probability convenience sampling"–schools were chosen from the sample based on their location within Hamilton city and close surrounding.

Of the eight schools invited, four accepted the invitation, two declined and two failed to respond because of a tight timeframe for completing the research fieldwork. The acceptance rate of 50% was considered reasonable.

To maintain confidentiality of the participant schools, the identities of the schools have been disguised using pseudonyms. Their general descriptions are outlined in Table 1.

Table 1   School participant characteristics

School	Decile grouping	Decile rating	Roll size	Authority and school type	Location
Tahi	Medium	6	289	State, full primary	Rural
Rua	Medium	5	265	State integrated, full primary	Urban
Toru	Low	3	247	State, full primary	Urban
Wha	High	10	206	State, full primary	Rural

In addition to the interview data, the annual reports and financial statements relating to the two preceding years (December 31, 2006 and 2007) were obtained from each school. Selected financial data from those reports were analysed to report on any similarities or differences between the schools' funding sources and to provide quantitative data to support the principals verbal comments made during the interviews.

5. Results

The following results are presented in four main themes, school objectives, budget process and decision-making, local funding sources, and pressures, constraints and challenges.

5.1 School objectives

Most schools had "raising the levels of academic achievement of their students" as their primary objective, with many identifying a focus on literacy, numeracy and ICT. However, the low decile school in this study described its objectives a differently as "to nurture and grow quality learning for the whole family (not just the students)".

Challenges to achieving their objectives were very similar for three schools, with most describing the lack of financial resources or funding as the main challenge. However, the low decile school did not see the lack of funding as a challenge but as an opportunity to think of innovative ways of doing things to meet their objectives.

In addition, three schools had similar methods of measuring and reporting on their objectives to the relevant community through regular reviews and monitoring of their student assessment data and reporting these to the board on a monthly basis. The low decile school described how their objectives were being met from a different perspective however, by using feedback received from 'external parties' as an indicator of the school doing an effective job in meeting its objectives.

5.2 Budgets and decision-making

Three of the schools used similar processes in developing their budgets each year. This involved using an "historical approach" to setting budgets. Working from base-line data of the previous year's actual figures reported in that budget. The principal and finance person (usually on the school board) were involved in the setting of the draft budgets before the end of December each year. These drafts were then presented for Board approval in the first meeting usually held in February the following year. All had consulted with various teachers and/or curriculum leaders and/or PTA committees in setting their estimated revenues and costs, and the final decisions were then made by the Principal prior to recommending to the Board.

The low decile school had a slightly different approach in that it did not use an "historical approach", but instead described theirs as a "needs analysis" approach in formulating its budgets. Consultation was made with several groups prior to setting the draft budget, and this commenced as early as October that year. Their approach was a "whole school approach" seeking input from teachers, support staff, board, parents, their accounting services provider and auditor when drafting the budgets.

When setting revenue sources for the budgets, the Operations Grant was mostly predictable, other sources such as PTA fundraising, community grants or fundraising activities and parent donations were also reasonably determinable based on actual intended activities planned for the following year. These activities were usually in line with the school's priorities or targets for expenditure planned for that year. Some of the schools would underestimate their "base line funding" from the Operations Grant, by lowering the student rate to allow for a contingency buffer for other unplanned events or planned activities – this approach was taken by the high and low decile schools.

When setting costs for the year, fixed costs were relatively determinable based on previous years actual (current year) or budgeted figures, with some schools adding 2-3% to allow for unexpected increases in those costs. However the low decile school looked at this further by taking a "stock-take" of actual costs last year, physical resources (impairment) and professional development needs required for the following year. Again, costs were taken on a "needs analysis" basis and looked at what was needed, or what outgoings could be saved on without compromising quality.

When determining priorities in the budget, most schools had particular areas in the curriculum they planned to fund in the following year, with a notable trend of professional development being a focus for achieving the curriculum objectives.

5.2.1 Planned deficit or surplus

When setting the budgets for the previous years, schools were asked whether they had planned for a deficit or surplus for that year. A review of the school's financial statements for the past two years showed all three schools under estimated the surplus and the low decile school over estimated the surplus.

5.2.2 Working capital surplus or reserves

All schools confirmed they budgeted for a reserve when setting their budgets. The Ministry usually

recommends schools allow for 10% of their funds for this purpose. Many of the schools tended to budget for a higher percentage. Some of the schools used the reserve as a contingency fund or "cushion" for unexpected events, emergencies or to see them through "stretched cashflow periods" during the year. Some schools would also use these reserves for future planned projects involving significant capital expenditure–e.g. building plans, new furniture or equipment. The low decile school also used this reserve for "start up capital" when investing in future "sustainable projects" for their local fundraising.

5.3 Local funding sources

The third theme of this study focused on what local funding sources each school received to determine how much reliance or support was needed from this funding source to assist the school to meet its objectives. Data obtained from the interviews and financial data obtained from the schools annual financial statements were analysed to provide these results.

Table 2   Summary of total funding sources received

School	Decile type	Total funds ($)	Operating grant ($)	SES grant ($)	Other govt grants ($)	Local funds total ($)
School Wha						
31-Dec-2007	High (10)	262,646	177,071	15,312	26,106	44,157
31-Dec-2006		260,455	162,469	10,484	26,351	61,151
School Tahi						
31-Dec-2007	Medium (6)	332,878	274,663	21,411	0	36,804
31-Dec-2006		288,511	240,948	18,854	0	28,709
School Rua						
31-Dec-2007	Medium (5)	434,440	234,909	44,161	94,936	60,434
31-Dec-2006		430,923	235,796	41,037	101,737	52,353
School Toru						
31-Dec-2007	Low (3)	450,076	328,233	6,006	49,419	66,418
31-Dec-2006		434,198	298,463	114	77,902	57,719

Table 3   Summary of local funding sources

School	Local funds net surplus ($)	Percent of local funds to total funds (%)	Parent donations ($)	Percent of parent donations to total funds (%)	Total percent of local funds to total funds (%)
School Wha					
31-Dec-2007	30,290	16.7	13,867	5.2	21.9
31-Dec-2006	43,918	16.8	17,232	6.6	23.4
School Tahi					
31-Dec-2007	30,777	9.2	6,027	1.8	11.0
31-Dec-2006	26,440	9.1	2,269	0.7	9.9
School Rua					
31-Dec-2007	60,434	13.9	0	0	13.9
31-Dec-2006	52,353	12.1	0	0	12.1
School Toru #					
31-Dec-2007	66,418 #	14.7	0	0	14.7
31-Dec-2006	57,719 #	13.2	0	0	13.2

Note: # Local Funds income includes net income received from International Students-2007 $31,316 (47%); 2006 $19,343 (33%).

The above results in Table 2 show the total funds each school receives with a breakdown of these funds into

government grants and local funds. The grants represent government operating funds but exclude grants for teacher salaries, which are reported as a separate figure in the financial statements. The local funds represent the combined total of parent donations, community grants, and net surplus from fundraising or trading activities. A further breakdown of the local funds is provided in Table 3.

5.3.1 Parent donations

Only two of the schools set a parent donation in their school–the high (School Wha) and one medium (School Tahi) decile school. School Rua stated they had not set a parent donation in previous years, but were looking at introducing it for the following 2009 year. School Toru does not charge its parents donations rather they rely on parents to provide contributions by way of manual labor (e.g., painting fences–or their other fundraising activities).

School Wha had an 80% collection rate of parent donations, though this rate has declined recently. The principal commented that although their donation "fee per student" has increased over the years and also there has been an increase in the school roll numbers, he has noticed a reluctance in some parents paying the donations–"parents are more reluctant to pay a donation when they know they are not legally required to–it is widely publicised that it is a donation". "There's a little bit of resistance in that parents see they are paying taxes for education (supposedly free education) so why should they pay any more".

Principal of school Wha stated that he considers the school has a successful collection rate with parent donations compared with other schools in the area (low-high deciles). He suggests this is most likely due to their donation rates ($125 per child) being much lower than what decile 10 schools in Auckland charge ($300 per child). But he does recognize across the board (Decile 1-10) that their school donation rate is quite high compared to other schools in their location.

School Tahi was not aware of any trends with its collection rate for donations–he "did not consider it a priority".

From Table 3, parent donations for the high decile school represent 5% of the Total Operating Revenue, while for the medium decile school it only represents under 2% of total revenue.

5.3.2 Community grants

It was noted that these funds were not identified separately in the financial statements for all of the schools, suggesting these funds have been included under fundraising sources. All the schools did receive some form of community or charitable trust grant in previous years. It was interesting in that the School Tahi (medium) and School Wha (high) received only one grant for a targeted resource–pool cover or books. These two schools found that applications for grants were not always successful, and although each school had a person dealing with the applications (school secretary or PTA person) they were looking at refocusing their expertise in this area by harnessing support from parents who had some expertise in the applications process as well as tightening up on their "financial reporting data" to support the application process (School Tahi).

In contrast, School Rua (medium) and School Toru (low) decile schools received a number of community grants in one year. School Rua noted they had a person specialized in the application process and the PTA committee who were focused on these areas.

The principals from the schools recognized that specific projects for the school can be "targeted to specific community grants" and they identify this when planning their priorities for "equipment type resources" when setting their budgets.

Another constraint experienced by one of the medium schools (School Tahi) was that due to their "religious philosophy" (which excluded participating in "gambling" type events) they were limited to the types of community grant funding they could apply for. For example "pub charities" (gaming machines) and other similar community funding avenues were excluded from their potential charity sources.

5.3.3 Other fundraising activities

Table 3 indicates there are some differences between High and Medium-Low decile schools in the amount of funding they received from fundraising activities. The high decile school received slightly higher results of local fundraising funds (i.e., excluding parent contributions) 16.7% compared to 14% for the low and medium decile schools. School Tahi (medium) recorded a much lower percentage of local funds (9%) compared to its counterparts.

Almost all schools had a very active PTA (parent fundraising committee) that was committed to managing the fundraising activities. However, the low decile school did not have a PTA to manage fundraising. This school operated a model based on "business plans". The model involved the whole school community approach to fundraising, which was encouraged and lead by the principal–30% of his time is involved in looking at funding activities of some form, that are not only just for one-off projects, but are sustainable projects that yield continuous future revenue for the school. "It's about the big picture or finding a model that if I leave the school, it continues".

The other three schools' PTA fundraising activities involved raising funds for specific resources planned for the school identified from their budget process. For example, School Wha has held funds in reserve from fund-raising to build a new junior adventure playground. Their PTA committee prefers to see visual evidence as a result of their fundraising income. School Tahi also raises their funds for specific targeted projects, such as planning to build a new "school hall" in the future for basketball and sports events. In addition, some of their money raised is also used in the general operating pool to fund or subsidise school costs such as subsidizing "school camps" for parents who cannot afford the camp fees. School Rua also uses targeted resources (e.g. a sandpit for the school). It also uses part of these funds to fund ICT and some curriculum areas.

While all three of the PTA fundraising schools had similar types of activities–gala days, lunch/canteens, raffles, school newsletter sponsorship and such like, the low decile school operated the same plus significantly different types of events. For instance, School Toru made use of large national corporation sponsorships as well as running an after school programme (extended recently to a before school and Holiday programme) for its own students as well as for other nearby local schools. In addition, the school uses what it calls the "green dollar" model whereby it grows its own vegetables, and products are either used in their commercial kitchen, and produce sold at local markets. In addition, the low decile school was the only school that received fundraising money from international students.

5.4 Pressures, constraints and challenges

The current study investigated pressures, constraints and challenges (financial or managerial or other) that schools were facing, how they dealt with them, and how it affected the management or performance of their school.

5.4.1 Did the school experience financial pressure?

None of the schools experienced any financial pressures as a result of reduced government funding (e.g., decile rate increase or school roll decline). Although one of the schools (School Tahi) had a decile increase the

previous year (which results in reduced operation grant funding) that was compensated by a roll growth which provided additional operations grant funding.

All schools, with the exception of the low decile school, confirmed they experienced some form of financial pressure and explained how they dealt with these.

School Wha found that there was not enough operation grant funding to support the relief teacher budget (in times where they had a run of staff sickness), professional development, special needs (ORRS) funding for specialized circumstances–their school uses their operating grant to top up this resource due to the nature of the service they provide. Their school bus system is also an additional cost to the school not funded by the Ministry. The principal noted there is a lot of "cost-benefit" decision-making that is required to get through these pressures.

School Tahi's principal reported not having enough "financial nous he would like to have and thinks his school could do better if he had more. The only financial pressure he could recall was when the school had purchased some assets (computer laptops) for the school in advance of payment through the Telecom Connection Points Catalogue scheme. The school had planned to pay for the assets through future earnings in Telecom points. However when the scheme disbanded last year, the school was caught out and had to find the money to pay for them. That put some pressure on the school finances, but they managed through it.

School Rua reported there was a financial pressure in funding ICT–where the costs are increasing and the funding for this has taken more money out of their discretionary curriculum money. Furthermore, professional development provided for in the numeracy and literacy contract in previous years was initially funded by the Ministry, however the funding is becoming lesser and putting more pressures on teachers from having to do more testing/assessment reports after school, or having to do professional development courses after school hours. This creates pressure on the teaching staff during the day.

School Toru did not report any financial pressures, only global financial pressures from fuel prices/food price increases which had a slight impact on their school consumables (e.g., school runs a bus, school lunches).

5.4.2 How did these pressures affect the management performance of the school?

School Wha principal stated they had to "limit their horizons by not having the budget to do things". It was also stated that not having the support staff (not having enough funds) also placed pressure on his time and workload as he spent a lot of his time on administration and property issues. He recognised that his job could be done more effectively if he wasn't putting much of his time into that, and could be spent more on focusing on the performance of his staff and the curriculum.

School Tahi principal also noted the lack of funding for additional support staff, and that current support staff only employed for a limited number of hours.

School Rua principal also noted that his time spent on reports to the Ministry ("doing justification stuff") take up a lot of his and his staff's time. He feels this is a pressure that drags him away from his leadership responsibilities and leading the professional development of his staff, and the school could do a lot better without this constraint.

School Toru principal did not note any particular pressures affecting his school's performance. "Our philosophy is different–we don't have challenges, we call them opportunities…Anything that comes forward we look at from an innovative perspective or 'outside the square thinking' about how we are going to take this opportunity on."

5.4.3 Effective management of the school–what is working well for the school?

Each school was asked to comment on what things were working for the school despite any of the financial pressures. Most schools reported a similar comment relating to student achievement levels increasing in response to particular ministry initiatives such as numeracy, literacy and ICT. This was also a result of investment in teacher's professional development to resource those initiatives, with principals noting there has been some "pay-back" or benefits of that cost including teacher's acknowledging they have grown professionally compared to previous years. Other specific comments included School Wha principal noting that there seems to be a high degree of parent satisfaction with his school as the school is growing rapidly, and it has a good reputation in the community–parents make a deliberate choice by sending their kids to this school (rural school). School Toru principal believes his school is effective as they have empowered the families within the school, not just the students. "We give the parents the confidence to go out and get a job, from the experiences they have had from the school (being on the Board, engaging in school activities, being involved in their children's learning). "Parents hear the talk, and walk the talk". He also notes the positive feedback from external community sources and the results from surveying their students on their learning, confirms their school is effective in managing their objectives.

5.4.4 What contributes to the effective management of the school?

School Wha principal noted it was the quality of his teaching and support staff–they do the extra yards to make the school offer something special. He also noted the supportive Board–they had a good sense of direction and there were "no members with an agenda".

School Toru principal noted the reason for his school's effectiveness was as a result of the whole whanau approach to doing things in the school, and his role as principal as a leader of learning and to manage and foster leadership within the school community–students, teachers, and parents. It works well with the people, both physical and emotional, resources they have. He notes "he sows the seeds, and they carry it on".

5.5 Room for improvement–Is the current system of funding working?

Finally, schools were asked for a general view on how they saw the current system of government funding of schools and in what ways could improve things. Responses were varied but the most common response was noted that more funding in the operations grant was needed especially to support the different types of activities for each school.

School Wha noted more funding was required for professional development to support the ministry initiatives being brought in–what was provided was not enough. In addition the special needs funding system needed to be reviewed to specific school situations. "The current system is a juggling act between the priorities of different kids in the region". In addition, this school welcomed more government funding towards specialized learning areas such as drama, music and languages for primary schools.

All schools believed more funding for support staff should be provided (including increased pay rates, increased hours) to cover the principal's workload due to increased administration duties forced on principals as well as additional legislation requirements being brought to the school (e.g., telephoning parents re absentee students). Another thought from School Rua was the need to adjust (lower) pupil-teacher ratios across all school years, not just having lower ratios for junior level.

School Toru believed that the Ministry should remove the "contestable funding" system as a lot of schools are put off by the current process. If policymakers introduced a "non-contestable" system, more schools would have to be made more accountable for their choices. Furthermore, the principal of this school believed that a

pre-training program should be made a priority for principals relating to school leadership around the "big picture" of engaging the community (family) in the school and the principals should be trained to have more "financial acumen". He believes the historical budgeting model (incremental) restricts the incentive for principals to look at the 'big picture in budgeting'.

6. Discussion

6.1 School objectives

In the current study each school had a charter which includes the school's strategic plan. Raising the levels of academic achievement and focusing on the literacy, numeracy and ICT focuses appeared to be the main objectives of three of the schools. This objective aligns with the ministry's statements of expectation of government in regards to board's responsibilities.

Three schools appeared to have similar planning and reporting frameworks in place as well as measurement of their achievement of objectives by reporting their regular reviews and monitoring of student achievement through assessment data. These were reported to the board by the management on a monthly basis. It was evident that the schools were clear in following the expectations of government. The high decile school was particularly specific in following good practices set by the ministry in terms of getting feedback from the school community (surveys) and surveying the staff on how they were managing the implementation of the EHSAS contract. The low decile school also had the same objectives but described them in a different way–presence, engagement and achievement of students. The measurement framework of that school or the perception of meeting objectives was based on verbal "feedback" from the school community–parents, students–and "third party" or external community medium.

6.2 Budgets and decision-making practice

A common theme identified in three of the schools (high-medium) was the use of the "incremental budgeting" technique–working from base-line data of the previous year's figures and allowing for adjustments due to projected influences. "The incremental approach allows principals, as the primary budget setters, to focus on the smoothing and maintenance of existing education activities, rather than seeking constantly to question and define what is being done" (Tooley & Guthrie, 2003). "Much of the budget preparation carried out within schools involved allocating an amount that was reflective of historical trends. This means of budgeting seemed to reinforce the status quo, and encouraged repetition, despite fundamental shifts in perspectives and approaches to operations being demanded by other aspects of the changes made throughout the education system." (Tooley & Guthrie, 2003)

In this study, the low decile school appeared to apply a "zero-based" budgeting approach based on a needs analysis methodology applied to expenditure expected in the year and relied on input from the whole school community–teachers, parents, board–as well as financial advice from their auditor and accounting services provider.

Schools are not required by the Ministry to follow a particular technique of budgeting process. However, Wylie (2007) noted in her studies of effective school management that the budgeting process did involve similar approaches used by the schools–"the schools looked at historical data on spending and locally raised revenue, taking a conservative approach to what they might raise".

6.2.1 Planned deficits and surplus

As reported in the *Ministry of Education: Review of Schools' Operational Funding (2006),* there was a worrying trend identified. Schools recording a deficit in one year-in 1995, 29% of schools recorded a deficit, and this had increased to 43% by 2004. In addition, schools showing a consecutive deficit over three years increased from 4% in 1997 to 11% in 2004.

In the current study, two schools had stated they planned for a deficit (both medium decile schools) while the other two schools (high and low) planned for a surplus. The financial statements for both previous years (2007 and 2006) showed the high decile school had a planned deficit, but actually achieved a significant surplus. The medium (6) school reported a budgeted surplus and achieved their surplus over and above budget, while the other medium school (5) planned for a deficit but achieved a reduced deficit for both years. Principal from School Rua stated "I was conscious we had run deficits for the last few years and I know the Ministry does not look favourably on schools running deficits after deficits. So that is why we wanted to have a moderate surplus this year. We had to cut back on some curriculum and professional development and ICT support to do this. We are currently running to budget". The low decile school while it did budget for a surplus, actually achieved a deficit in the last year.

Tooley and Guthrie (2003) noted in his research of schools planning for deficits with school principal (decile 4) noting "running an operating deficit was not uncommon amongst schools with a political intent to let the government know they are not getting enough money" or another principal (decile 10) "its deliberate decision to deliver the curriculum adequately. The consequence of that is a deficit".

6.2.2 Working capital surplus or reserves

All schools in the current study confirmed they budgeted for building up reserves and maintaining a working capital surplus, however each school had differing motivations for those reserves. Some schools used the reserves as a cushion for unexpected events or managing stretched cash flow periods, while other schools used the reserves for planned future events such as capital expenditure or investing in future sustainable fundraising projects. School Wha and School Tahi both planned to use their reserves for future planned 'building extension' activities, and in fact did have reasonable surpluses achieved in their previous years' financial reports. While School Rua and School Tahi, both achieved deficits in their financial year, they had not planned their reserves to be used for any specific future capital requirements.

6.3 Local fundraising sources

It was clear that the high decile school had a higher rate of return from local fundraising sources compared to the other schools. This was reflected in both the source of local fundraising activities (parent fundraising, activities) being 16.7 percent and parent voluntary contributions of 5.2%. Compared to the other medium decile school that did charge a parent contribution, it had a collection rate of parent contributions of only 1%, and a total local fundraising surplus of 9%. While the percentages may be lower for the medium decile school, its financial results still reflected a surplus in its accounts for the year. The high decile school also reflected a healthy surplus in both years, which was also much higher than the comparative medium decile school.

The high decile school principal in this study noticed reluctance in some parents paying voluntary donations due to their knowledge that they are not legally required to pay. However the school has a reasonably good collectability rate (80%) and he suggests this is most likely due to their donation rates being much lower than decile 10 schools charging in cities such as Auckland. Thus, the trend identified by Wylie and King (2005) of

increased parent resistance was not so strong in the Waikato area.

ERO Schools Use of Operational Funding (2006) found that some schools were more able to raise funds locally and did so in a more cost effective way. "High decile schools, on average, raised the highest amount of funds per student, followed by middle decile schools, then low decile schools. While decile rating does appear to be an indicator of a school's capacity to raise funds, it is important to note that the variation in locally raised funds within decile groups was much larger than the difference between decile groups. This indicates that factors related to individual schools other than their decile rating may have an impact on their capacity to generate local funds."

In a Consumer's institute survey conducted in 2005 (Consumer, November 2005), the topic of school donations was discussed as an issue. Consumer's survey of 119 state and state integrated schools, found only four schools (decile one) wouldn't ask parents for a donation. The figures from that survey supported the research of Wylie & King (2005) that higher decile schools were more likely to ask parents to donate. Most schools seem to have a growing reliance on donations. While previously they would have been regarded as the "icing on the cake", today they are seen as increasingly necessary to the running of the school.

The results of the schools in this current study reflect the general trends identified in the national research. Whether the source of the local funds is from parent donations or PTA fundraising activities, there is a definite pattern to the Waikato Schools in this study. Schools are reliant on the contributions of their parent communities. Whether the contribution is from money, manual labor, and professional expertise or enterprise skills is determinant on the "available capacity" of the decile of the school and how each school taps into and uses that capacity to deliver its goals.

6.4 Pressures, constraints and challenges

Following on from Wylie's study (2007a) there were a number of similar pressures encountered in the Waikato schools. The three schools in the high and medium decile agreed that there was not enough operational funding to support such things as: Relief teacher costs, increased ICT costs, maintaining professional development of staff, special needs, additional support staff.

There was a common theme of additional administrative work that the principals had to do, such as "paperwork" for the ministry, managing property issues, administration issues (where lack of support staff resources did not cover). These activities eroded the principal's available time as leader for his teaching staff focusing on staff performance, development and the curriculum.

From the Snapshot of New Zealand Primary Schools, Wylie (2007a) noted from her survey of primary and intermediate schools, all but 5% of principals said their funding was not enough to meet their school's needs. Only 15 percent of principals thought they had enough funding to employ the support staff the school needed.

Despite the financial pressures facing the Waikato schools, most reported that the school's objectives to raising student achievement levels (in response to ministry initiatives of literacy and numeracy) were working. Most also stated that the investment or resources put into the professional development as a result of these initiatives were showing some "payback" in the benefits of improved student achievement in these areas. However, there were also comments made that more government funding was required to support professional development in the "sustainability" of those initiatives. Funding for relief teaching to cover the professional development (out of school hours) and "non-teacher class time" (assessment marking or attending courses, for example) were some of the issues principals noted required additional support in the operational funding.

Factors that contributed to the effective management of the schools that principals highlighted include:

- The quality of teaching and support staff–they do the extra work to make the school offer something special (High decile)

- Having a supportive board with a sense of direction

- Having a whole community approach to doing things in the school–involving all students, parents, board members and staff–under the leadership of the principal by promoting presence, engagement and achievement philosophy in their school (low decile, medium decile).

There was a strong sense of community involvement in all of the schools and most of the schools had received positive feedback from their communities regarding their school's effectiveness and achieving school objectives.

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The views and control of environmental cost[*]

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Abstract: This article explores the concept of company environment cost, its classification and feature, and points out the difficulty for company to control environment cost actively. It offers the opinion that environment cost in regional economy development should be controlled by taking government as the center and discusses the control focus.

Key words: environmental cost; government; control

1. Classification of company environmental cost and the difficulty in controlling it

It is pointed out in *Public notice on the standing of environmental accounting and report* made in the 15th meeting among the heads of the United Nations Inter-governmental Panel that, environmental cost refers to the expenditure spent on environmental impact to manage company operation and other cost generated by the company to carry out environmental requirement based on the principle of environment responsible. The environmental cost hereafter refers to the environment cost of the company.

1.1 Divide as per environmental cost's occurring time

Seeing from occurring time of environmental cost, it could be divided into environmental control cost and environment failure cost.

Environmental control cost is to prevent or to stop company's operating behavior having possible bad impact on environment. It refers to various expenditures occurred to fulfill company's obligation on environment. Its concrete expression is capital expenditure on the purchase of environmental protection machine and cost spent to maintain normal running of environmental protection machine, cleaning expenditure on improvement of process to make exhaust within standard and training cost to achieve cleaning production standard, etc.. Generally speaking, the higher this kind of cost shows the higher degree that company actively fulfills its environmental protection responsibility is.

Environmental failure cost refers to the expenditure generated because the company did not fulfill its environmental responsible by which environmental failure occurred. Its concrete expression is shown as cost to recover normal function of natural resources which generally includes natural loss cost and ecological resource grade down cost, cost to maintain basic inventory cost of natural resource and protect ecological resources or tax, fees and penalty that company is required to pay by the government so as it can recover and manage as a whole.

There is a relationship of this increase when that decreases between environmental control cost and failure cost for a company. Generally speaking, the higher the environmental control cost of a company is, the higher

responsibility on environmental protection the company fulfills and the lower correspondingly its environmental failure will be.
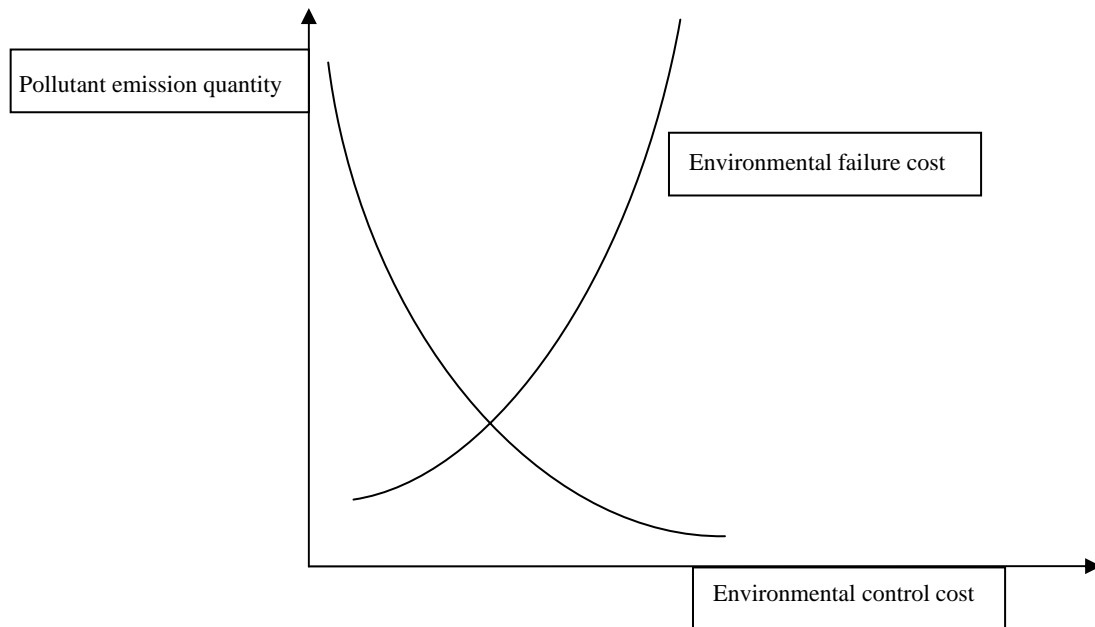
Figure 1　Sketch of relationship between environmental control cost and environmental failure cost

Seeing from current laws and regulations on pollution control, if the company actively fulfills its social responsibility and carries out environmental cost control, the State will show very low stimulation or no award, and if it does not fulfill its responsibility and emits pollutants illegally, the government will impose at most a penalty of RMB100,000 yuan. This indicates that now in China the cost of breaking law is very low for a company and correspondingly if a company carry out environmental cost control, it needs to purchase environmental control machine and make capital input. If normal investment of the machine is RMB3,000,000 and its economic durable time is three years, in that way the depreciation cost of the machine will be 1,000,000 yuan each year. Suppose the machine works normally after purchase, calculate running cost at RMB 3,000 yuan per day, in that way the running cost each year will be more than 1,000,000 yuan. This shows that the environmental control cost of the company is RMB2,000,000 yuan per year, so that environmental control cost departs from environmental failure cost is the root cause for the company not to do environmental control cost actively.

1.2 Divide as per functions environmental cost occurs

Seeing from environmental expense that occurs to the company, environmental cost includes environmental expense to make up environmental loss that already occurred and also environmental expense that is used to prevent bad environmental result that might happen in future.

It is found through investigation that currently companies rarely actively make up environmental loss that already happen and environmental loss that already happen is hard to form matching relationship with the company and government also can not force the company to be responsible for the already occurred environmental loss and recover it.

Ask a company to do pollutant emission control for future environment, no matter from the government or

the company, corresponding driving force is lacked. First for the company, currently government has not requirement on company to carry out environment responsibility contract systems, therefore, as long as the company can emit pollutants successfully, for government it is hard to call to account. Moreover, what is carried on governors is fixed-term appointment system, once the term of some governor is expired, pollution responsibility formed within the term will be undertaken by the next government and next government finance, it is thus clear that no matter for the company or the governor, they both lack the driving force of being responsible to monitor the future environment in this region.

1.3 Divide as per space scope of environmental cost

According to space scope of environmental cost, it can be divided into internal environmental cost and external environmental cost.

Internal environmental cost refers to the expense resulted by environmental factor and already made clear to be undertaken and paid by the company, for example, pollutant emission fees, environmental damage penalty, environmental treatment and protection investment and increase of product environmental performance. One of the prominent features of internal environmental cost is that currency computation can be made, which will be undertaken by the company.

External environmental cost refers to those bad environmental results which are caused by company economic activity but can not be clearly computed and still not be undertaken by the company for various reasons.

For current Chinese law does not provide that the company has to undertake all the result of pollution caused by the company, therefore, from company's point of view, environmental cost is divided into external environmental cost and internal environmental cost.
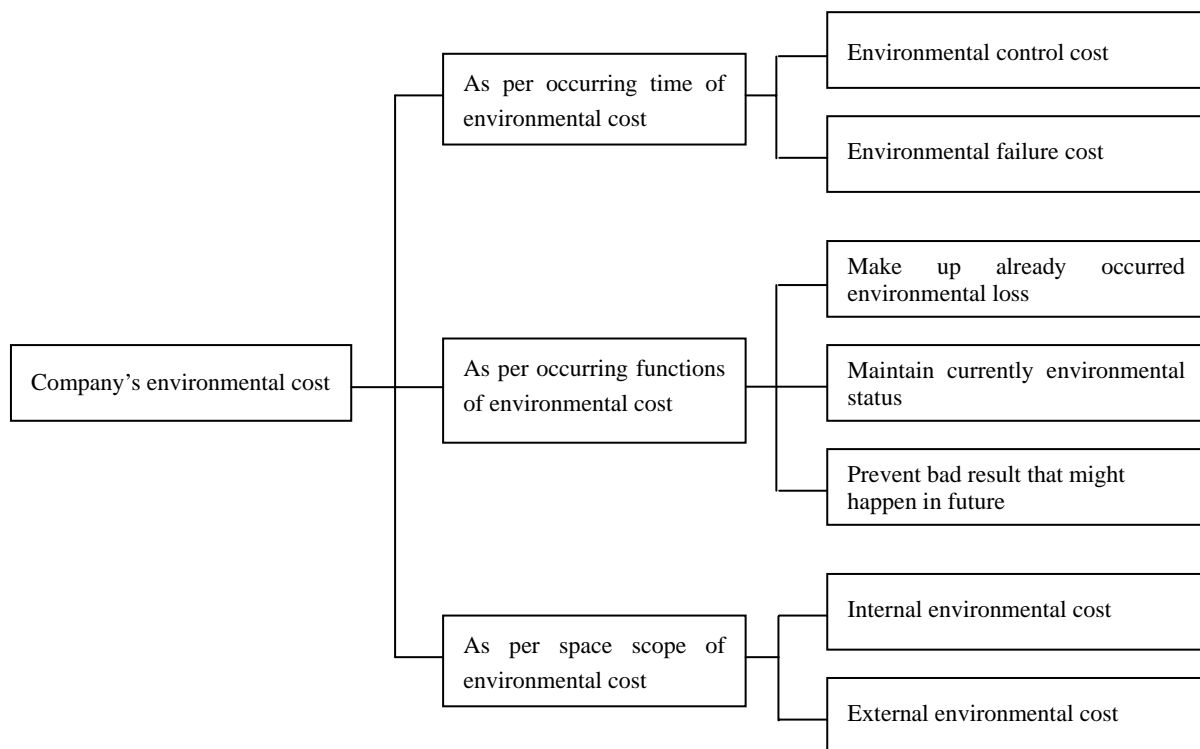

Figure 2   Sketch of classification of environmental cost

2. Government should be taken as the center to control environmental cost

Because of external feature of environmental cost, company lacks the driving force of controlling environmental cost. Therefore, this article suggests that government should be taken as the center to control environmental cost and fully exert the function of government in macro management. Concretely speaking, government could plan environmental cost through industrial policy. Therefore, calculation and computation of environmental cost become not important, what is important is control of regional environmental cost.

2.1 Environmental cost and its classification in regional economic development

Environmental cost in regional economic development refers to the expense occurred to prevent, control or treat impact economic development on environment by taking environmental responsible as the principle.

Because environmental cost possess the feature of publicity and lacks independency to some object. Generally speaking, control of environmental cost of certain specific object will be active, therefore, this article thinks that, to control environmental cost in regional economic development, government should take a certain industry from the whole region as the object to be computed and control pollution of all companies of this industry administered in this area to reduce occurrence of environmental cost.

Table 1   Classification of environmental cost in regional agricultural production processing industry

Item	Classification	Object to bear environmental cost	
As per occurring time	Environmental control cost	Borne by enterprise	Borne by local government
	Environmental failure cost	Borne by enterprise	Borne by local government
As per occurring function	Expenditure to make already occurred environmental loss		Borne by local government
	Expenditure to maintain current environmental status	Borne by enterprise	Borne by local government
	Expenditure to prevent bad environmental result that might happen in future	Borne by enterprise	Borne by local government
As per if belonging object can be made clear	Environmental cost that can be paid by the company	Borne by enterprise	
	Environmental cost undertaken by the government because the object it belongs to is not clear		Borne by local government

2.2 Stress taken by government on controlling over environment cost

Based cognition on regional company environmental cost and company environmental cost, this article thinks that government control over regional environmental cost should start from following several aspects:

2.2.1 Environmental control cost of a company should be lower than its environmental failure cost

Government could make efforts from two aspects: one is to increase company's environmental failure cost and the other is to reduce company's environmental control cost.

(1) The way of increasing company's environmental failure cost and judgment on its applicability

Increasing company's failure cost shows as increasing standard of pollutants emission fees, strict monitor and high penalty on the company which emits pollutants illegally, high resource tax or environment tax on levied on the use of resource and environment and increasing resource charge, etc.. These measures might influence introduction of local investment and might have bad impact on vigor of local economy and even cause temporary recession of local economy, at least it will make government or investors worry about economic development. Before the economy of a country achieves certain developed degree, it is suggested to adopt this policy prudently.

(2)The way of reducing company's environmental control cost and how to judge its applicability

Another way to make company's environmental control cost lower than its environmental failure cost is reducing company's environmental control cost. There are following several concrete methods:

● Consider cheap environmental protecting machines or the State provides subsidy to the company producing environmental protecting machines to make high polluting company's investment on environmental protecting machine decreased;

● Government could make high polluting company's investment cost lower through providing subsidy to its investment on environmental protecting machine;

● Government could carry out environmental cost audit on company and provide high subsidy to those active environment friendly companies. All these methods need government's input support.

(3) How should government make environmental control cost lower than environmental failure cost under low fiscal revenue?

Based on above description, generally, only when the economy of a country or region develops to a certain degree and local fiscal revenue increases to certain degree, it could easily generate change of relationship between environmental control cost and environmental failure cost. But this is not to say government can not change the relationship between environmental control cost and environmental failure cost under low fiscal revenue. This article believes under insufficient fiscal revenue condition, government could more utilize industrial policy and achieve maximum reduction of environmental cost through adjusting industrial structure, industry upgrade, developing recycling economy and better use of industrial garden.

2.2.2 Produces done by the government

The government should try to avoid that company makes environmental cost externalized because once it is externalized. It is hard for government to give this environmental responsibility clearly to the company. This externalized environmental cost in developed countries might only be paid by the country. While the treatment cost is very big, under low fiscal input, government should avoid externalization of environmental cost at the beginning of developing and planning industry. Concretely speaking, it could carry out environmental responsibility contract system with the company that is it could require company to contract corresponding resource. If the company does not carry out pollution control, because resource is polluted, company has to recover polluted resource. Generally, the cost to recover will be greatly higher than control cost, thus, it can pouch company to control environmental cost actively.

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The effect of earnings forecast precision on firm value and insider trading under voluntary disclosure in Taiwan

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Abstract: Taiwan changed its earnings forecast policy from mandatory to voluntary disclosure in 2005. In this study, the inferences of voluntary earnings forecast are examined based on forecasts issued by listed firms. This study suspects that insiders have a temptation to strategically manipulate financial forecast information to influence markets and thus receive extra rents. Under the new earnings forecast disclosure policy, the number of disclosing firm decreases but the precision of earnings forecast increases. The empirical result from dynamic panel data evidences the forecast error of voluntary disclosure may negatively impact firm values. Furthermore, there is a positive relationship between insiders' trading profit and manipulation of earnings forecasts. As volatility in insider manipulation increases, it is difficult for the investors to predict the real intention of insiders, and insiders may achieve greater benefits from trading. This study also observes that many listed companies hold investor conferences to provide earnings guidance in Taiwan. The reason may be that investor conference is more flexible and has less forecast error cost than the formal financial forecast. This study provides important insights into earnings forecast policy in emerging markets. The competent authority should improve corporate governance and develop monitoring functions to abate forecast manipulation.

Key words: earnings forecast; earnings management; manipulation of informed information; voluntary disclosure

1. Introduction

The Taiwan Financial Supervisory Commission (FSC) changed its earnings forecast policy from mandatory to voluntary disclosure in 2005. The main reason for this change was that the regulations on mandatory disclosure of earnings forecasts encouraged managers to issue excessively optimistic earnings forecasts, which subsequently leads to reported earnings being managed upwards using discretionary accruals to reduce the forecast error (Jaggi, Chin, Lin & Lee, 2006). The new policy on financial forecasts is more flexible than the old one, with listed companies voluntarily publishing financial forecasts in the form of either a "summary financial forecast" or "complete financial forecast".

The Taiwan Securities and Futures Exchange Commission (TSFEC) issued *Guidelines for Disclosure of Financial Forecasts by Public Companies* in 1991. These guidelines required firms to include earnings forecasts in their prospectuses for years in which they raise additional capital. The firms are also required to disclose the earnings forecast for two years after the security issuance. The main motivation for this was to reduce the information asymmetry between investors and firms.

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The recent wave of corporate finance scandals and accounting restatements has increased the demand for transparency in financial markets. These events have inspired finance and accounting research to focus on the quality and transparency of financial reports. The low level of information transparency and disclosure quality of public companies has been under criticism in the many Asian markets including Taiwan. To improve financial forecast quality, Taiwan changed its earnings forecast policy from mandatory to voluntary disclosure in 2005.[1] According to *Regulations Governing the Publication of Financial Forecasts of Public Companies* in Taiwan, a public company shall plan its financial forecast in accordance with reasonable and appropriate assumptions in good faith, and exercise professional due diligence in appropriately disclosing relevant information.

Information asymmetry enables the controlling owners to simultaneously conceal their private perquisite consumption and, prospectively, boost the image of the company; with the result that future share issuance may bring higher prices for both the firm and the owners (Teoh, et al., 1998). Whether the disclosure of firm's financial information should be mandatory is thus an important question. Admati & Pfleiderer (2000) argue that there may be multiple Nash equilibria to the disclosure game, where in one equilibrium, firms choose to disclose no information. Thus, there is a role for mandatory disclosure regulation when firm values are correlated and disclosing information is costly. Requiring mandatory forecasts has the potential to reduce self-serving biases by management in situations where corporate governance structures are weak. Mandatory forecast requirements exist in Singapore, Malaysia, China, Hong Kong and Taiwan (1991 to 2004).

The issuing has the option of issuing inaccurate or biased forecasts in order to promote higher stock market prices, and revising those numbers as the actual earnings report release date nears. Taiwan's regulations require issuing firms to revise their forecasts as new information becomes available. Reputation effects of making chronically incorrect forecasts aside (Libby, Blumenthal & Nelson, 2002). First, they can issue optimistically biased forecasts to achieve their ends (Williams, 1996). Second, they can revise their forecasts or use earnings management techniques to avoid violating the 20 percent threshold set forth in the regulations.

In my opinion, the disclosure decision of earnings forecasts is more complicated than other financial information, due partly to earnings management. Kasznik (1999) provides evidence that managers use positive discretionary accruals to manage reported earnings upward when earnings would otherwise fall below management's earnings forecasts. Chin, et al. (2006) examine 528 forecasts issued by Taiwanese listed firms from 1999 to 2001, and find that firms with serious agency problems tended to revise their forecasts more frequently, or were more likely to manipulate discretionary accruals in order to avoid violating the 20 percent forecast error threshold.[2] GUAN, LIN & FANG (2008) evidence that managers of publicly listed Taiwanese firms tend to engage in earnings manipulative activities, rounding earnings numbers to achieve key reference points. The motivation for reducing the forecast error is generally to avoid costs associated with potential legal actions by shareholders if the reported earnings would deviate from the forecasted earnings considerably.

This study addresses two questions: First, how does the potential for manipulation influence insiders' expected

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[1] In Taiwan, during the period 1991 to 2004, public companies were required to publish financial forecasts for the following fiscal year in any of the following circumstances: IPO, SEO, merger, or changes of one-third or more of the directors.

[2] According to the article 20 of "Regulations Governing the Publication of Financial Forecasts of Public Companies" in Taiwan, a company that has published its financial forecast shall evaluate from time to time the impact of any changes in particularly sensitive basic assumptions on the results of the financial forecast and on a monthly basis analyze the status of its achievement in terms of operating results and evaluate whether there is any need to update the financial forecast. When key elements and basic assumptions underlying the preparation of the financial forecast have changed, causing the pre-tax profit or loss to vary by 20 percent or more and the affected amount is NT$30 million or more and 0.5 percent of the paid-in capital, the company shall duly publicly announce and report the updated financial forecast.

profits? Second, what is the relationship between firm value and forecast error of voluntary disclosure? The inferences of this study are examined based on forecasts issued by Taiwanese listed firms, which have been disclosed financial forecasts on voluntary basis since 2005. Under the new earnings forecast disclosure policy, the disclosures are not mandated by legislation and the number of disclosing firm decreases but the precision of earnings forecast increases.

The empirical result from dynamic panel data evidences the forecast error of voluntary disclosure may negatively impact firm values. Furthermore, there is a positive relationship between insiders' trading profit and manipulation of earnings forecasts. Insiders profit from forecast manipulation, and thus have an incentive to manipulate earnings forecasts. As volatility in insider manipulation increases, it is difficult for the investors to predict the real intention of insiders, and insiders may achieve greater benefits from trading. The competent authority thus should improve corporate governance and ask public companies to make properly use the public disclosure system to let shareholders and stakeholders understand the financial conditions of the firm.

The remainder of this paper is organized as follows. The next section is the literature review and hypotheses development. The research methodology is presented. Next, descriptive statistics and the results of the empirical tests are reported. Finally, the last section presents concluding remarks.

2. Literature and hypotheses development

The literature on information disclosure has primarily focused on insider trading and market liquidity, spillover effects, and private information production incentives (Boot & Thakor, 1997). The general result from insider trading and market liquidity literature is that information disclosure is good. Bhattacharya & Nicodano (1999) argue that disclosure of insider information can improve welfare by reducing payoff uncertainty in interim states that is of value to liquidity-seeking investors who may wish to sell their holdings in those states. In the literature on spillover effects, the general result is that disclosure might be undesirable for competitive reasons. Bhattacharya & Chiesa (1995) show that disclosure to investors also results in information spilling over to the firm's competitors. Thus, disclosure should be limited to information that does not have sensitive competitive implications.

The literature on private information production incentives (e.g., Diamond, 1985) says that disclosure can weaken the gain to private information production. Since such information production involves duplication across uncoordinated investors and has no inherent social value in the models in this literature, the implication is that disclosure by firms is desirable. Verrecchia (2001) & Dye (2001) offer insightful discussions of extant disclosure models, advancing our understanding of why some firms disclose private information voluntarily while other firms do not. Suijs (2007) shows that a firm may prefer not to disclose its private information if it is uncertain about investor response to disclosure. Nondisclosure arises if the risk of an unfavorable response by investors is too high. In this setting, the unraveling argument that yields full disclosure need not apply because the disclosure by the better firm types that is required to initiate the unraveling process may not occur. In equilibrium, disclosure takes place because firms want to attract investor capital away from the risk free asset.

Briefly speaking, it is reasonable to suspect that insiders have a temptation to strategically manipulate financial forecast information to influence markets and thus receive extra rents; However, the true state eventually becomes common knowledge and any deceiving attempt will derogate the reputation of the firm. The costs of financial forecast error include litigation costs, reputation costs, and cost of capital.[3] Karpoff, Lee & Martin (2005)

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[3] Beneish, Billings & Hodder (2006) find that firms disclosing internal control material weaknesses under Section 302 of the *Sarbanes-Oxley Act*, experience an increase of 4.4 percent in the cost of equity.

indicate an average valuation effect of -41% for accounting and enforcement actions related to financial fraud. They show that direct penalties account for only a small portion of the value loss and that the bulk of the decline in value results from damaged reputations of the firms. The above arguments suggest the first hypothesis:

H1: A negative relationship exists between firm value and earnings forecast error of voluntary disclosure.

Some literature assumes that each firm's goal is to choose a disclosure policy that maximizes its expected market value (e.g., Boot & Thakor, 2001; Langberg & Sivaramakrishnan, 2008). Other literature assumes that disclosure decisions are made by corporate insiders who wish to maximize trading gains based on their private information (e.g., Huddart & Hughes, 2001; Zhang, 2001). The entrepreneur can decide whether to disclose earnings forecast or not. The voluntary disclosure of earnings forecast may induce uninformed traders to trade. Insiders profit from forecast manipulation, and thus have an incentive to manipulate earnings forecasts. The discussion suggests the hypotheses as follows:

H2: There is a positive relationship between insider's trading profit and earnings forecast error.

H3: The profit from insider trading under disclosure increases in the levels of the uncertainty regarding earnings forecast manipulation.

3. Research methodology

3.1 Calculation of forecast error and Tobin's Q

Forecast error (FE) is calculated as the difference between actual earnings (AE) and predicted earnings (PE) divided by the absolute value of predicted earnings. If FE is greater than zero, actual earnings exceed predicted earnings.

$$FE = \frac{AE - PE}{|PE|} \tag{1}$$

This study uses quarterly forecasts and results to conduct empirical analyses. Calculations of forecast error can be based on initial predictions, the first revision of predictions, or the last revision of predictions. However, most forecasts were revised only once. This study uses the nearest prediction of this quarter to calculate forecast errors.

This study uses Tobin's Q as the measurement of firm value. Tobin's Q is calculated using the relationship between the market value of the company and the replacement value of its assets. This indicator reveals the potential added value of the firm as perceived by the market and thus reflects firm performance. If Tobin's Q is greater than 1.0, it indicates that the company has a market value exceeding the price the replacement cost of its assets. In this case, Tobin's Q is calculated using an approach proposed by Chung & Pruitt (1994), which is easy to implement. The approximate value of Tobin's Q is thus obtained simply as shown by the following equation.

$$Q = \frac{VMA + CL - CA + LTD}{AT} \tag{2}$$

Where, VMA denotes the market value of the stocks. The value of VMA is calculated simply by multiplying the number of stocks of the company by price quoted by the Stock Exchange. AT denotes total firm assets as evaluated by book value. Furthermore, CL represents the book value of the current liability of the company. Additionally, CA represents the book value of current firm assets, while LTD denotes the book value of long-term debts. Asset replacement value is denoted by AT. In this way Q thus can be easily calculated based on simple information found in the financial statement of any company.

3.2 Measures of earnings management

Previous researches reveal that there is a positive relationship between earnings forecast error and earnings

management. Since earnings forecast manipulation is difficult to observe, this study uses earnings management as the proxy of forecast manipulation. This study follows Dechow et al. (1996) & Leuz, et al. (2004) to compute the accrual components of earnings:

$$Accruals_{it} = (\triangle CA_{it} - \triangle Cash_{it}) - (\triangle CL_{it} - \triangle STD_{it} - \triangle TP_{it}) - Dep_{it} \tag{3}$$

Where, ΔCA_{it} is the change in total current assets of firm i at time t; $\Delta Cash_{it}$ is the change in cash equivalents; ΔCL_{it} is the change in total current liabilities; ΔSTD_{it} is the change in short-term debt included in current liabilities; ΔTP_{it} is the change in income tax payable; and Dep_{it} is depreciation and amortization expenses. Another measure of total accruals, TAC_2, is defined as the difference between earnings from continuing operations and cash flow from operations. In line with Bhattacharya, et al. (2003), this study measures earnings management of firm i at time t of $Accruals$ divided by total assets in the prior quarter:

$$EM1_{it} = Accruals_{it} / TA_{it-1} \tag{4}$$

$$EM2_{it} = TAC_{2\ it} / TA_{it-1} \tag{5}$$

4. Empirical analysis

4.1 Sampling and data sources

The sample includes Taiwanese publicly listed companies that disclose earning forecasts voluntarily. The sample period runs from 2005 to 2008. This period is selected because it witnessed the introduction of a new policy regarding earnings forecast disclosure in Taiwan. The voluntary forecasts and financial data were retrieved from the Taiwan Economic Journal (TEJ) database and the Market Observation Post System of the Taiwan Stock Exchange. The total sample includes 154 firms, with 97 disclosing earnings forecast in 2005 while only 34 did so in 2006. Eight firms adjusted reported earnings upward, and twenty-eight firms revised their earnings forecasts downward, including six firms that issued two downward revisions of earnings forecasts. Most of the sample firms (74%) did not violate the 20 percent forecast error threshold. Table 1 gives the description of the sample.

Table 1　The description of the sample

Types of financial forecast		Taiwan Stock Exchange				GreTai Exchange			
		2005	2006	2007	2008	2005	2006	2007	2008
Complete financial forecast	No revision	5	1	3	2	12	1	0	0
	Upward once	2	0	0	0	2	0	0	0
	Downward once	2	1	0	0	8	0	0	0
	Downward twice	2	0	0	0	0	0	0	0
	Number of firms	11	2	3	2	22	1	0	0
Summary financial forecast	No revision	32	13	5	6	21	10	1	2
	Upward once	1	0	1	0	2	1	0	0
	Downward once	4	3	0	0	3	1	3	0
	Downward twice	0	3	0	0	1	0	0	0
	Number of firms	37	19	6	6	27	12	4	2

Notes: This table indicates number of observations that voluntarily disclose earnings forecast. The sample includes Taiwanese publicly listed companies that disclose earnings forecast voluntarily. The sample period runs from 2005 to 2008. This period is selected because it witnessed the introduction of a new policy regarding earnings forecast disclosure in Taiwan. The total sample includes 154 firms that voluntarily disclosed earnings forecast.

4.2 Return structure of forecast revision

In the empirical analysis of forecast revision on stock returns, I first investigate the Abnormal Return (AR) and Cumulative Abnormal Return (CAR). Market adjusted return is used as the abnormal return. As is documented in Figure 1, the abnormal returns are negative around the announcement date of the first downward revision. The cumulative abnormal return is about -7% during four days after announcement. However, the abnormal returns are first positive and then turn negative later on after the announcement date of upward revision in Figure 2.
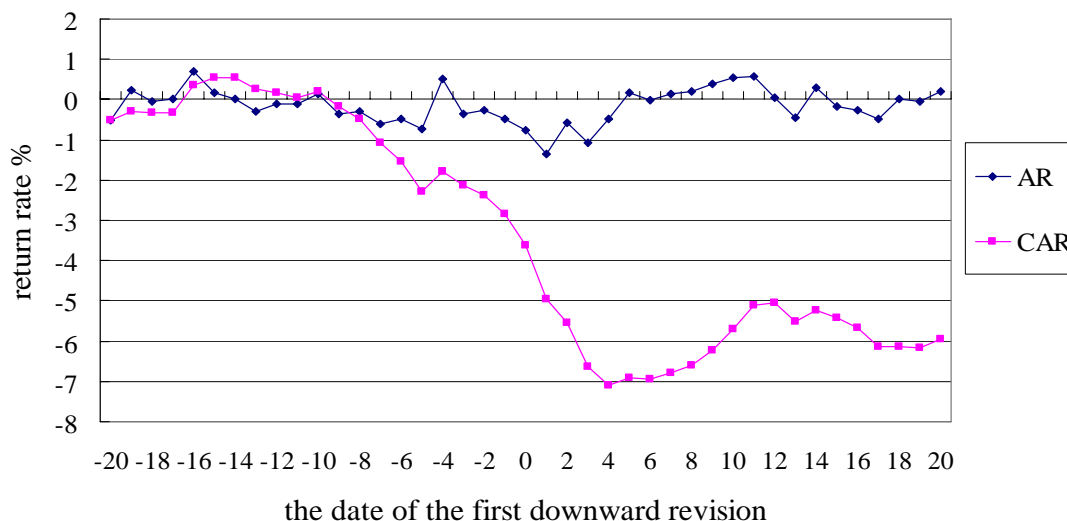
Figure 1 Abnormal Return (AR) and Cumulative Abnormal Return (CAR) around the announcement date of the first downward revision.
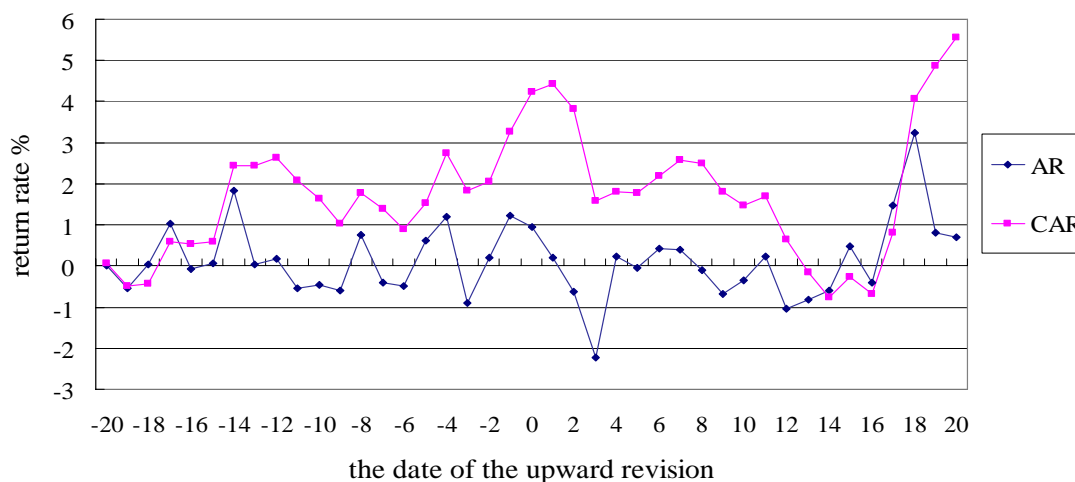
Figure 2 Abnormal Return (AR) and Cumulative Abnormal Return (CAR) around the announcement date of the upward revision.

4.3 Firm value and earnings forecast error

Listed companies in Taiwan are required to release quarterly financial statements, in addition to annual reports in April of each year. Semiannual reports are released in August. In order to test the model prediction that forecast error under voluntary disclosure reduces firm value, I estimate the relationship between firm value and

forecast error. Tobin's Q is used to measure firm value. The market value of the stock is based on the market price at the end of the month following the release of the financial statements. Dynamic panel datasets play an increasingly significant role in corporate finance research because researchers frequently require models that include lagged dependent variables as well as fixed effects to control for unobserved heterogeneity. This paper specifies a simple dynamic model, equation (6), in which the firm value Q_{it} depends on its past value Q_{it-1} and on the absolute forecast error and the firm size. Hossain, et al. (1995) find a positive relationship between size and the level of information disclosed. The following dynamic fixed effects model is estimated using quarterly panel data.

$$Q_{i,t} = a_i + b_1 \cdot Q_{i,t-1} + b_2 \cdot AFE_{i,t} + b_3 \cdot Size_{i,t} + \varepsilon_{i,t} \qquad (6)$$

Where, Q denotes the Tobin's Q ratio, AFE represents the absolute value of quarterly forecast error, $Size$ is the natural logarithms of firm market value and a_i is a fixed effect. Table 2 lists the estimated results of equation (6). The estimated coefficient on AFE is negative at the 1% level, consistent with the prediction that there is a negative relationship between firm value and earnings forecast error. Tobin's Q is positively associated with the size of the company. The Sargan test (J-statistic) suggests that a dynamic specification of model for the sample of voluntary disclosure firms is valid.

Table 2   GMM estimates of a Tobin's Q model for dynamic panel data

		Predicted sign	Model 1 (One-step)	Model 2 (Two-step)
Intercept	Coefficient		-2.3274***	-2.2596***
	p-Value		(0.0000)	(0.0000)
Q_{t-1}	Coefficient	+	0.2828***	0.2858***
	p-Value		(0.0000)	(0.0000)
AFE	Coefficient	-	-0.0408***	-0.0417***
	p-Value		(0.0005)	(0.0003)
$SIZE$	Coefficient	+	0.2012***	0.1968***
	p-Value		(0.0000)	(0.0000)
Adjusted-R square			0.9880	0.9881
Sum squared resid.			22.5024	22.4561
J-statistic			1.2550	1.1377

Notes: Q denotes the measurement of the firm value, AFE represents the absolute value of quarterly forecast error, and $Size$ is the log value of firm market value. Equation (6) is estimated by dynamic fixed effects model with instrumental variables, using the following as instruments: lagged earnings forecast error, lagged firm size, ratio of net income to net sales, growth rate of revenue and industry. Industry is a dummy variable that expresses the sector of operation of the company. The received value =1 if the company is in the electronics sector. The panel data consists of 117 cross-sections and 4 observations in a cross-section. Significance levels (p-values) of each independent variable are reported. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

4.4 Correlation between trading profit and forecast error in prior period

The stock returns around the announcement of forecast revisions are calculated to measure the potential trading profit of insiders.[4] For example, insiders can make profit by selling short prior to the announcement of a

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[4] For example, one of the return rate series around the announcement of downward revision among the sample firms as follows: 2.29, -0.81, -2.26, -0.21, 0, -0.63, -0.42, -1.28, 0, -4.31, -6.98, -6.78, -6.75, -2.79, -1.72, 0. Where -4.31 is the rate of return on the event date. The return rate (R) during this period is -28.5%. Insiders can make profit by selling short prior to the announcement of a downward revision in earnings forecast, and buy back after the price fall.

downward revision in earnings forecast, and buy back after the price fall.[5] The hypothesis is tested by regressing the return rate around the announcement of forecast revision (R) on lagged earnings forecast error ($PreFE$), the market return (Rm) during the period and lagged return rate. That is,

$$R_{i,T} = \alpha_0 + \alpha_1 \Pr eFE_{i,T} + \alpha_2 Rm_T + \alpha_3 R_{i,T-1} + \sigma_{EM}^2 + \varepsilon_{i,T} \tag{7}$$

Here, $R_{i,T}$ denotes the holding period returns for a single stock around the announcement of forecast revision. Due to the performances of return regarding downward and upward revision are different on Figure 1 and Figure 2, $R_{i,T}$ is measured as follow:

$$R_{i,T} = R(t\text{-}9\sim t\text{+}5), \quad R_{i,T} = \left[\prod_{t=-9}^{5}(1+R_t)\right]-1 \quad \text{(if } t \text{ is the announcement date of downward revision)} \tag{8}$$

$$R_{i,T} = R(t\text{-}9\sim t\text{+}1), \quad R_{i,T} = \left[\prod_{t=-9}^{1}(1+R_t)\right]-1 \quad \text{(if } t \text{ is the announcement date of upward revision)} \tag{9}$$

And $R_{i,T-1}$ is the lagged return rate, $R_{i,T-1} = R(t\text{-}14\sim t\text{-}10)$ with downward or upward revision. This study calculates EM_1 and EM_2 based on quarterly data, and then σ_{EM}^2 is measured by variance of EM_1 and EM_2 during the twelve most recent past quarters.

The earnings forecast error could arise from uncertainty inherent in the business environment or from forecast manipulation. In order to capture the manipulation component, I adjust earnings forecast error by the industry effect. The proxy of the earnings forecast error from manipulation in Model 3 of Table 3 is defined below:

$$FE_{man} = \frac{AE_{benchmark} - PE}{|PE|} \tag{10}$$

Forecast error from manipulation (FE_{man}) is measured as the difference between actual earnings adjusted by the performance of benchmark firms ($AE_{benchmark}$) and predicted earnings (PE) divided by the absolute value of PE. This study matches firms based on performance in the same industry and select five benchmark firms for each sample. The average ROA of the benchmark firms is estimated.[6] Then the actual earnings adjusted by the performance of benchmark firms ($AE_{benchmark}$) is derived by multiplying the average ROA by the assets of the sample firm. Negative FE_{man} ($FE_{man} < 0$) indicates that the predicted earnings are higher than actual earnings adjusted for business uncertainty, and the forecasts are referred to as optimistic forecasts manipulation.

The empirical result of the regression in Model 2 of Table 3 indicates that the coefficient for earnings forecast error in prior period is 0.0087 and is significant at the 10% level. Meanwhile, the coefficients of the control variables R_m and R_{T-1} are positive and significant at the 1% level. This study's empirical result supports H2, namely that there is a positive relationship between insiders' trading profit and earnings forecast error.

In Model 4 and Model 5, the coefficients for variances of $EM1$ and $EM2$ are both negative and significant at the 10% level. Since, insiders can make profit by selling short prior to the announcement of a downward revision in earnings forecast, and buy back after the price fall. The negative holding period return could be transformed into positive insider's trading profit. Thus, the empirical result supports H3, namely that the profit from insider

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[5] According to the article 157-1 of "*Securities and Exchange Act*" in Taiwan, upon learning any information that will have a material impact on the price of the securities of the issuing company, and prior to the public disclosure of such information or within 12 hours after its public disclosure, the insiders shall not purchase or sell shares of the company that are listed on an exchange or an over-the-counter market, or any other equity-type security of the company. However, dummy accounts may be used to evade supervision.

[6] Kothari, Leone & Wasley (2005) use the method of performance matching on return on assets to control the effect of performance on measured discretionary accruals.

trading under disclosure increases in the levels of the uncertainty regarding earnings forecast manipulation.

Table 3   Empirical relation between prior forecast error and stock return rate around the announcement of forecast revisions

		Predicted sign	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	Coefficient		-0.0404***	-0.0333**	-0.0346**	0.0014	0.0014
	p-Value		(0.0011)	(0.0112)	(0.0104)	(0.9558)	(0.9562)
PreFE	Coefficient	+	0.0131**	0.0087*		0.0117**	0.0117**
	p-Value		(0.0075)	(0.0950)		(0.0374)	(0.0370)
R_m	Coefficient	+	0.9586***	1.1398***	1.1240***	1.0137***	1.0132***
	p-Value		(0.0013)	(0.0005)	(0.0007)	(0.0011)	(0.0011)
R_{T-1}	Coefficient			0.6929***	0.7166***	0.6712**	0.6705**
	p-Value			(0.0095)	(0.0049)	(0.0167)	(0.0169)
FE_{man}	Coefficient	+			0.0111		
	p-Value				(0.5148)		
σ_{EM1}^{2}	Coefficient	-				-0.8576*	
	p-Value					(0.0964)	
σ_{EM2}^{2}	Coefficient	-					-0.8570*
	p-Value						(0.0946)
Adjusted-*R* square			0.1692	0.2496	0.2325	0.2709	0.2711
N			46	46	46	46	46

Notes: This table reports the results of regression analyses for stock returns around the announcement of forecast revisions. There are 46 sample firms that revised their earnings forecasts during the sample period from 2005 to 2008. PreFE is lagged earnings forecast error, and R_m denotes the market return during the period. R_{T-1} is lagged return rate, $R_{T-1} = R(t\text{-}14\sim t\text{-}10)$. Newey-West correction is used in ordinary least squares regression analysis for heteroskedasticity and serial correlation. Significance levels (*p*-values) of each independent variable are reported. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

5. Conclusion

Beginning from 2005 the disclosure policy of financial forecasts for Taiwanese public companies has been changed from mandatory disclosure to voluntary disclosure. The inferences of voluntary earnings forecast are examined based on forecasts issued by Taiwanese listed firms. This study suspects that insiders have a temptation to strategically manipulate financial forecast information to influence markets and thus receive extra rents. The empirical result evidences the forecast error of voluntary disclosure may negatively impact firm values. Furthermore, there is a positive relationship between insiders' trading profit and manipulation of earnings forecasts. Insiders profit from forecast manipulation, and thus have an incentive to manipulate earnings forecasts. As the uncertainty regarding earnings forecast manipulation increases, it is difficult for the investors to predict the real intention of insiders, and insiders may achieve greater benefits from trading.

Under the new earnings forecast disclosure policy in Taiwan, the disclosures are not mandated by legislation, and the number of disclosing firms decreases. In addition, firms are allowed to voluntarily publish financial forecasts in the form of either a "summary financial forecast" or "complete financial forecast". When a public company voluntarily discloses forecast in the form of summary financial forecast, the forecast is permissible to cover a period of at least one quarter, while in the form of complete financial forecast, the forecast should cover every quarter in the year. As Table 1 indicates, more than seventy percent of the sample firms choose to disclose

in the form of summary financial forecast, which seems safer than the other form. My explanation for this phenomenon is that the entrepreneur takes the cost of forecast error into account when he makes disclosure decision. The opinion is consistent with the viewpoint in Bradbury (1992) who finds that managers choose the safest method of disclosure, either non-quantified disclosure or non-disclosure.

The empirical results of this paper are consistent with Fischer & Verrecchia (2000). Their model indicates that when the market cannot perfectly adjust for the manager's bias, the manager may be strictly better off with the option to bias. Although this study shows that the forecast error of voluntary disclosure may negatively impact firm values, insiders reduce the degree of forecast manipulation when the cost of forecast error is taken into consideration, such behavior also can result in earnings management. It means that firms use positive discretionary accruals to manage reported earnings upward when earnings would fall below earnings forecasts. Additionally, audit committees have become a more common mechanism for ensuring good corporate governance in some countries. For example, the United States, Australia, Canada, Hong Kong, Singapore and Thailand mandate that public companies have an audit committee as part of their corporate structure (Chen, Duh & Shiue, 2008). In Taiwan, however, the formation of an audit committee is voluntary. Dechow, Sloan & Sweeney (1996) report that firms without audit committees are more likely to manipulate earnings. Thus, audit committees should be set up to develop monitoring functions and strengthen governance mechanisms. The competent authority thus should improve corporate governance and require public companies to make properly use the public disclosure system to let shareholders and stakeholders understand the financial conditions of the firm.

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Analysis on the exchange rate of Australian dollar[*]

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Abstract: Australian dollar (AUD) maintains a fluctuant increase for long period, but in recent two years, this currency represents an anomalistic change. In order to forecast the trend of AUD, this essay examines the exchange rate of AUD in then years from March of 2000 to March of 2010, and argues the factors which create these trend changes. By means of secondary research and graphs analysis, the relevant evidence and argument was selected into four terms below: relative raw materials prices changes, relative domestic price level and Import-Expert changes, relative interest rate changes, and other factors. The examples based on the theoretics, graphs, statistics and experts' opinions.

Key words: real exchange rate; nominal exchange rate; Australian dollar (AUD)

1. Introduction

As a result of the general influence of globalization, the world community has become more integrated and inter-dependent. Citizens from all countries have the demand for foreign currency in order to create fortune by international trade; Government have the demand for foreign exchange reserves to ensure economic stability. For more and more foreign students go to Australia to study, and the continued extended international trade between other counties and Australia, the research of exchange rate of Australian dollar (AUD) go into more significant. AUD represents a driving fluctuation for long period, and has a total increased trend since March of 2001. But in recent two years, this currency represents an anomalistic change after the influence of international economic crisis of 2008, the value of AUD has complicated and confusing. In order to examine the trend of AUD in future, this essay analyze the trend of exchange rate in ten years and the factors which can influence the AUD. The influences are complex. This will be analyzed by the relative raw materials prices changes, relative domestic price level and import-expert changes, relative interest rate changes, and any other factors.

2. Previous analysis, methodology and the data

Generally speaking, there are several types of exchange rate, the nominal exchange rate which are similar to stock exchange markets; the real exchange rate (RER), which I will research more detailed below; the trade weighted index which also called effective exchange rate; and the more difficult one, which is real effective exchange rate. I will use the real exchange rate mostly in this analysis, and compare it with the nominal one.

According to Kipici & Kesriyeli (1997), who work in the research department of Central Bank of the Republic of Turkey, the RER has been one of the most debated rates both in theory and the practice, can be

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defined as "the nominal exchange rate that takes the inflation differentials among the countries into account"; the two calculate method are the purchasing power parity (PPP) and whether tradable and the non-tradable goods. The RER is calculated as (e x P)/P^* in general, e is the nominal bilateral rate, P is the price level of the home country, and P* is the price level in the foreign country, but the question is that how to ensure the P and P^*? According to the Reserve Bank of Australia, depend on the different purposes, the choice of the price level can movement on the Trade, Import and Export Weights, Third-country Export Weights, GDP Weights, or Capital Account Weights (Ellis, 2001).

The data in my analysis are based on the Reserve Bank of Australia and Australian bureau of statistics, and they choose the Trade Weighted Index, Import Weighted Index, Export Weighted Index, and GDP Weighted Index to represent the RER of AUD.

3. The trend of AUD in ten years

In particular, Figure 1 and Figure 2 apply a filter rule to the nominal exchange rate in AUD against a major currency in the world—USD (Figure 1), compares it to the RER in ten years (Figure 2) from March 2000 to March 2010, and illustrates the ten years trend of AUD. The exchange rate data were all obtained from the Reserve Bank of Australia.
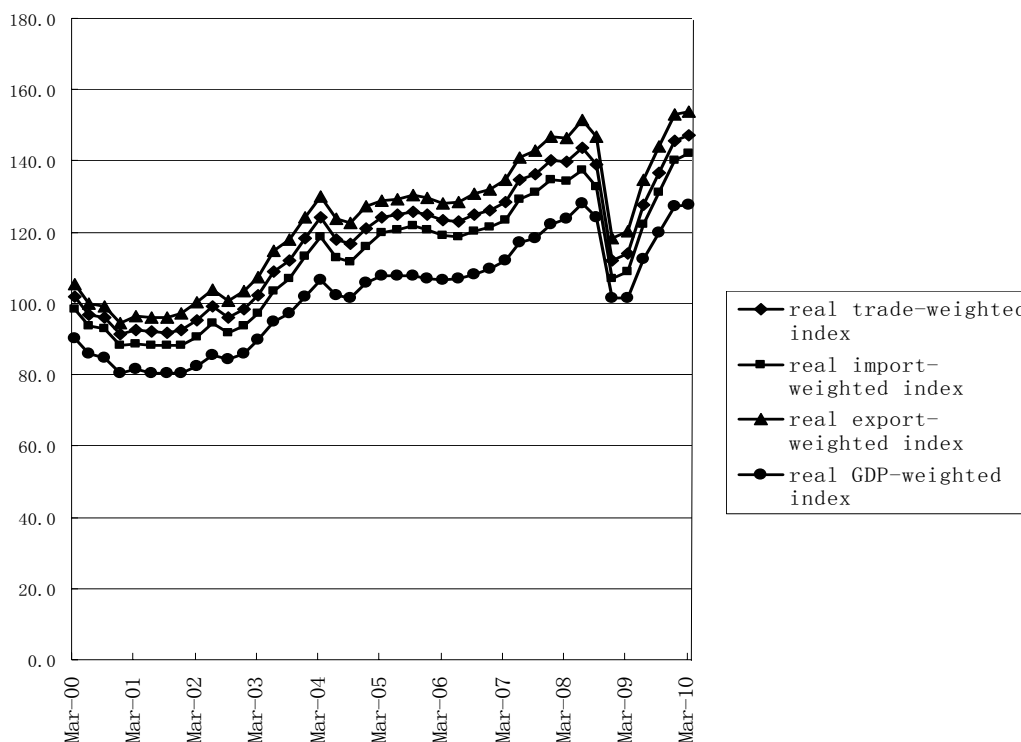

Figure 1   Real exchange rate of AUD

The trend of AUD in ten years indicates that Australian dollar has continued appreciate in the long time. But there have depreciation in the middle time. There is at least some evidence in the Australian data and the graphs to suggest that the exchange rate trend towards a long-run equilibrium level, but have fluctuation in the short-time. It can be seen that the exchange rate continued decrease from 2000 to 2001, in March 2001 decreased to the bottom;

but remained fluctuated increase later, and peaked the highest level now.

In addition, it can be seen that the trend of nominal exchange rate compare to the trend of RER are the approximately similar during long period according to the Figure 1 and Figure 2. Mark Crosby also gives the support to this comparability; he illustrates the high correlation between the real and the nominal exchange rate for AUD according to the pricing-to-market models in a long period (Crosby, 2005). So it can be said that the trend of real and the nominal exchange rate are mostly the same in this ten years. But the difference between the nominal exchange rate and the RER is that, when the domestic currency's nominal exchange rate increases, the currency appreciate; when the RER increases, according to the formula $(e \times P)/P^*$, P is higher than the foreign price level P^*, this indicates that the value of domestic currency to purchase the same foreign goods and services have relatively increased, that means need more domestic money to buy the same things, so the currency depreciate.

Because of the high correlation, I chooses both the two rates to support this argument according to the sources which download from government's statistics.
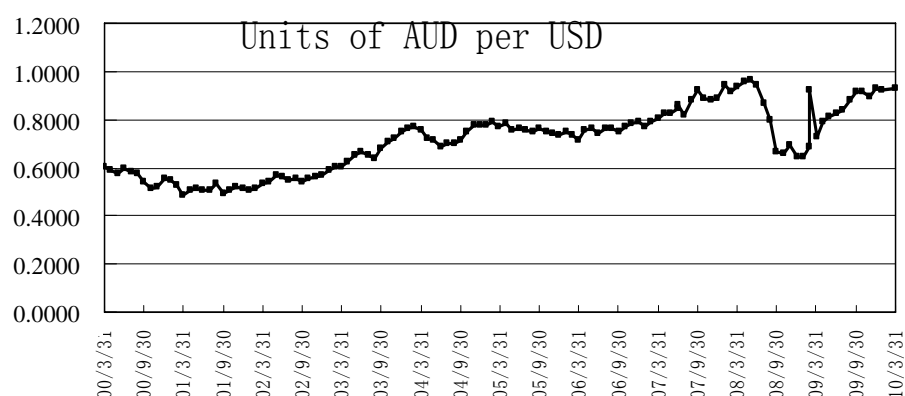

Figure 2   Nominal exchange rate of AUD/USD

4. Factors affecting the changes

Under the floating exchange rate system, money is volatile and determinants by the law of supply and demand also. There are many factors inducing the changes of supply and demand of money, so the market equilibrium of money can be influenced. These influences are so complex, any factors which change the money supply and demand, can be going some way affect the exchange rate, but some are strong, some are weak. In my analysis, the author chooses the following three main factors that can be caused the changes of AUD exchange rate in Australia specific.

4.1 Relative raw materials prices changes

Australia is a major exporter of mining and agricultural commodities. The price of these raw materials prices are positive correlation with AUD exchange rate. The raw materials are the necessary commodities in generally, so they are inelastic demand. Theoretically, when the price of the inelastic demand commodities has increased, the total revenue has increased also. And the demand for AUD has increased following the raw materials' climbing price, suppose the Australian government not issued the new quantity of AUD, the demand curve of AUD has shift

to right, but the supply curve remain the same, the AUD has appreciate at last. This theoretic is representing in practice also, especially to the price of gold and copper. Other expert indicates that AUD/USD has a strong positive correlation with gold price due to the fact that Australia is the world's third largest exporter of the commodity (Blystone, 2006).

Figure 3 illustrates the trend of AUD/USD comparing the trend of gold price from March 2000 to March 2010. The total trend of these two indexes is both increased during long time. When the gold price decreased to the bottom to $255.95 in March 2001 and $395.80 in June 2004, the AUD depreciated to 0.4890 and 0.6889 respectively; the October 2008 also saw the low gold price of $730.75, and the exchange rate of AUD decreased into 0.6680. These were the lowest price in that three periods. Contrarily, when gold price began to increase to $415.64 after September 2004, the AUD began to appreciated to 0.7147; and since October 2009, the gold price continued increase in a new high level from $1040 to $1179.20, the exchange rate also saw the highest of 0.9161 to 0.9266. The evidence from graph 2 indicated the closely relationship between gold price and AUD.
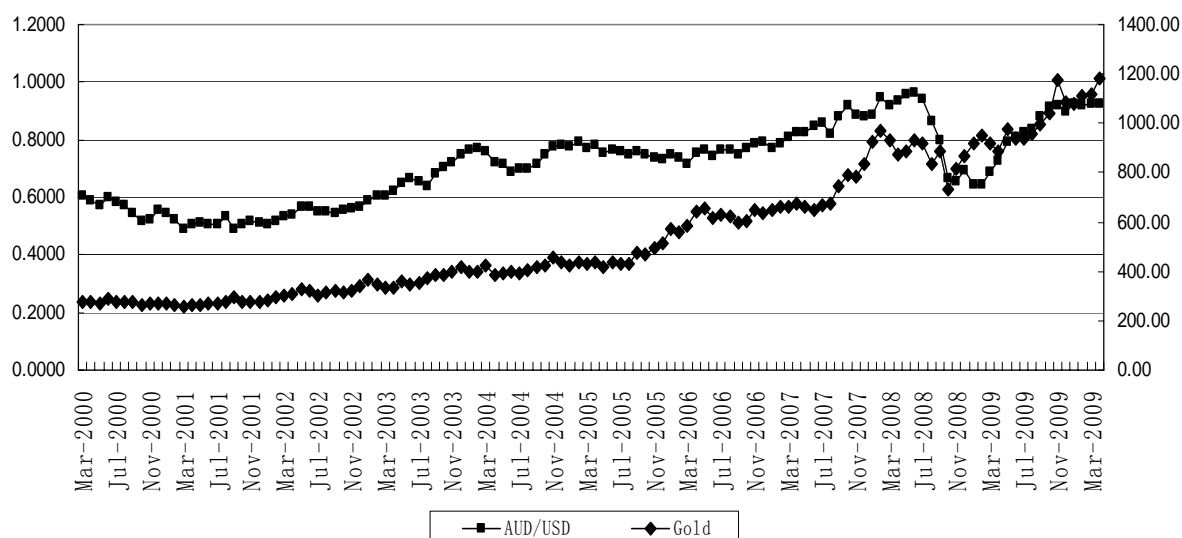

Figure 3   The trend of AUD/USD and the price of gold

4.2 Relative domestic price level and import-expert changes

The demand for Australian exports varies for a variety of reasons. One reason is changes in domestic prices; another is the terms of trade. These two variations tend to have an immediate impact on the AUD. When domestic price increase, or rise rapidly in Australian but remain constant or rise slowly in other countries, Australian consumers need more foreign consumptions because they are cheaper, these cause the imports in Australia have increase, and Australia need more foreign currencies; in the same time, foreign nations need less high-priced Australian goods, these cause the exports in Australia decrease, foreigner need less AUD. Based on the demand and supply principle, the value of AUD decrease, so AUD depreciate. Conversely, when domestic prices decreased than other nations, the imports decrease and exports increase, Australia need less foreign currencies but foreigner need more AUD, these cause AUD appreciate.

Simpson & Evans (2004) in their article used the Cranger causality method combined with error correction modeling and VAR analysis, and their results indicate that the evidence is stronger that "commodity price changes lead AUD exchange rate changes; (and) there is a significant negative short-term relationship between local

commodity price changes and exchange rate changes in Australia". Figure 4 and Figure 5 illustrate the relationship between the index number of Imports, Exports and the RER of Import Weighted Index, Export Weighted Index in Australia in ten years. When export increase from June 2000 to December 2002, the index of RER decrease in that time; and when the export number decreased from June 2008 to December 2009, the index of RER also rise.
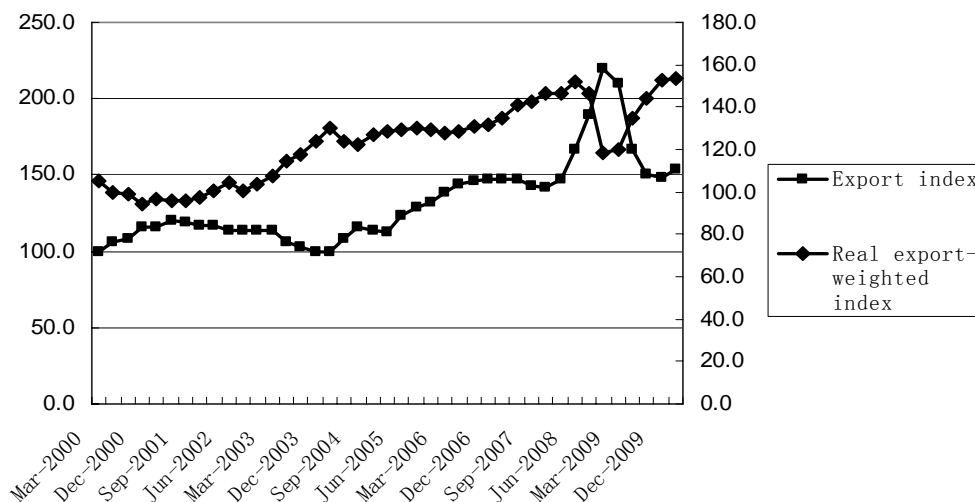

Figure 4   Real export weighted index and export index
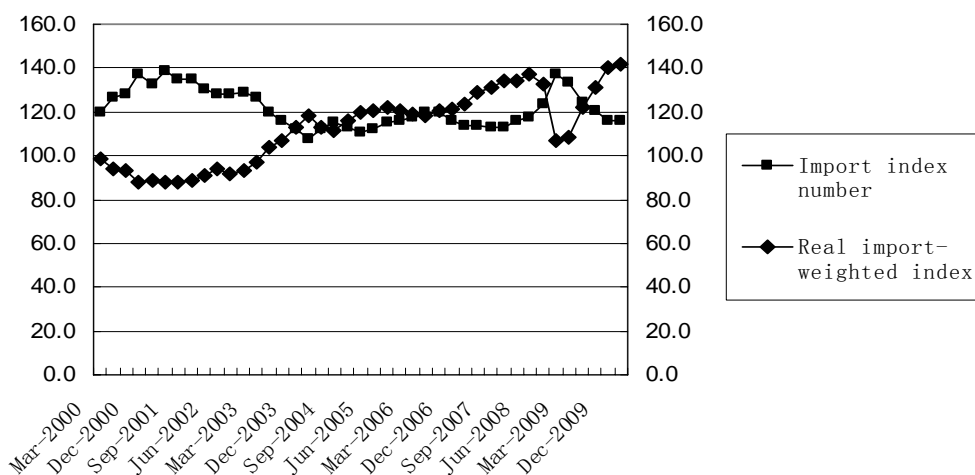
Figure 5   Real import weighted index and import index

4.3 Relative interest rate changes

Australian dollars always maintain the high interest rate. High interest rate attract for foreign capital to flow in. When the real exchange rate in Australia higher than other nations, foreign capital is interested to make financial investment, these caused the demand of AUD increase, so AUD appreciate. Conversely, when other mostly currencies' exchange rate rise higher than Australia, AUD depreciate. A research of Deustsche bundesbank (2005) also supports this view, "Exchange rate movements, after all, (and) are likely to be affected by financing and investment decisions taken by international investors. Shifting funds borrowed in a low-interest currency into a higher-interest currency should tend to cause the latter to appreciate".

From Figure 6, the interest rate in Australia increased all the times except the year 2000 to 2001. It can be seen that the exchange rate of AUD increased when the interest rate increase from 2002 to 2007.

In practice, the relationship between interest rate differentials and exchange rate movements are much more complex than is usually assumed in simple models. This can be representing in the Figure 6, in 2000 to 2001, the links between the two factors were not prominence. When the interest rate increased in 2000, the exchange rate of AUD decreased in that time. This caused by some other factors, in the year 2000, America adopted the high interest rate policy, and increased their rate dramatically; this induced the AUD depreciation when the interest rate increase (Finance Yahoo).
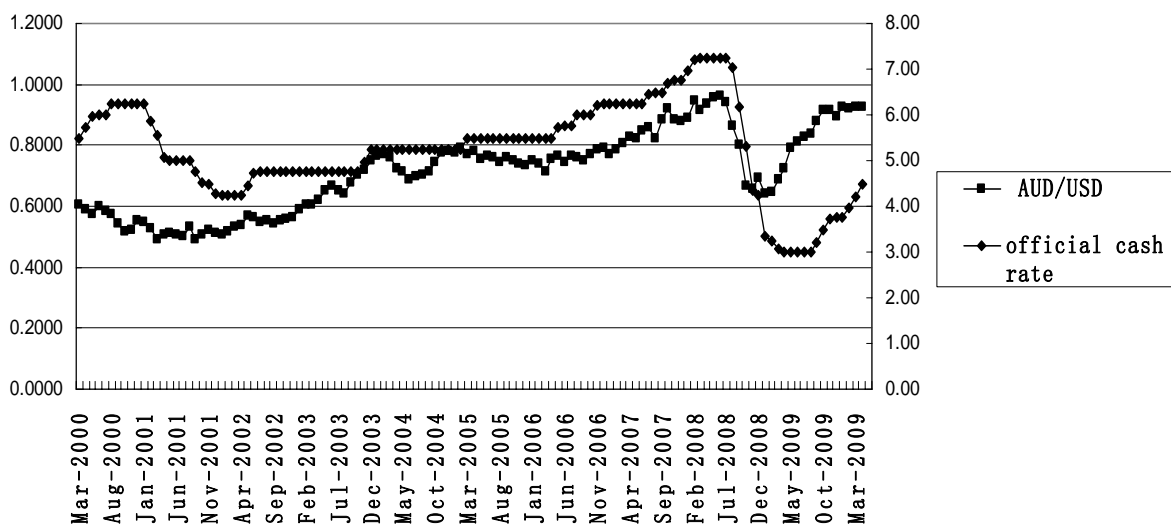

Figure 6　Interest rate and exchange rate in Australia

4.4 Other factors

There are also some other factors can influence the exchange rate of AUD. Based on the law of supply and demand curve, Australian tourists going overseas, Australian banks and firms lending or investing money overseas, Australians paying for various services from overseas such as repaying loans or paying interest on loans can influence the supply of Australian currency. And tourists going to Australia, foreigners investing money to Australia, consumer price index, the unemployment rate can influence the demand of Australian currency. The government role in the exchange rate, The Reserve Bank of Australia can intervene in the Foreign Exchange Market and can implement government policies designed to influence the value of the dollar according to the inflating level, and the economic stabilization in nation's macroeconomic. It can be seen that since the economic crisis has happened from America in recent two years, the exchange rate of AUD also continued decrease from October 2008 to June 2009, this indicated that the international economy also influence AUD exchange rate.

Actually, the influence of these factors is so complex and competitive in practical life.

5. Conclusion

Based on the above, a conclusion can be drawn that the exchange rate of AUD has fluctuated increase all the time except some specific period. Many reasons can be influenced these changes, and these factors are complex and competitive. The relative raw materials prices changes, relative domestic price level and Import-Expert

changes, relative interest rate changes are more specific in Australia. Therefore, forecast the exchange rate of AUD in future time should be considered as integrated factors, not only the specific reasons. According to the driving Australian economic growth, the high interest rate of Australian currency, the increased demand of raw materials worldwide, the lower rate of employment, and any other positive factors, the exchange rate of AUD will steadily but increased slowly.

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Modus operandi of transnational transfer pricing for window dressing

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Abstract: A goal of transfer pricing may be to maximize after tax revenue by setting transfer prices that reduce the total tax paid. "Transfer pricing" is the pricing of products or services provided by one division to other division of the same corporate entity. Most of the corporate entities are using the method of "Window dressing", which is a technique used in preparation of financial statements of corporate entities. A transnational corporation is any enterprise that undertakes Foreign Direct Investment (FDI), owns or controls income gathering assets in more than one country, produces goods or services outsides its country of origin, or engages in international production. Profitability of the transnational corporate entities is being manipulated by the technique of transfer pricing. Abuse of transfer prices is a key tool used by the corporate entities to think that they have virtually no profit; hence, they shouldn't pay any taxes. India needs to realize the fundamental need for co-operation among tax administrations in order to remove the obstacles that international double taxation presents to the free movement of goods, services and capital between various countries. In this context, one needs to consider that transactions among associated enterprises may take place under different conditions from those taking place among independent enterprises, while enforcing the act of transfer price mechanism. This paper focuses on transfer pricing and its implications in transnational transactions.

Key words: transfer pricing; taxation; transnational companies

1. Introduction

Transfer pricing generally being the first tax consideration of any cross border transaction between related parties, developed countries such as USA and UK have had transfer pricing law for decades (Kale, 2005). Transfer Pricing in common parlance, it is manipulation of data. Hence, it is called TPM (transfer pricing manipulation), which is fixing transfer price on non-market basis which generally results in saving total quantum of organization's tax by shifting accounting profits from high tax to low tax jurisdiction (Agarwal, 2009).

Transfer-pricing is a way of exploiting transnational and/or trans-corporate accounting loopholes to minimize tax liabilities. The increasing concern of international taxation, especially in terms of a transfer-pricing mechanism, is certain to become a part of the economic life of all developing countries as major international transactions are tossed into the world of global taxation. Since the achievement and maintenance of equitable economic growth is an integral part of the development strategies of these countries, the impact of transfer-pricing, both positive and negative, is a key policy issue. Developing countries need to understand, assess, assimilate and analyze critically

this issue, while protecting their basic interests.

In this context this paper is divided into two parts. First part focuses on conceptual approach and second part deals with the case study.

Objectives of the paper:

(1) To understand the process of transfer pricing technique used in corporate entities;

(2) To examine the impact of transfer pricing on tax policy;

(3) To make some suggestions for India's policy on transfer pricing.

The prices of transactions between associated enterprises, which are referred to as transfer-pricing, for tax purposes are in conformity with those which would be charged among independent enterprises. Ernst & Young (2003) found that 43% of parent transnational companies believed their transfer-pricing policies for administrative/managerial services were vulnerable to Government audit; 30% believed their pricing of technical services were also vulnerable. Ernst & Young argued that audits of services were increasing as a share of all transfer-pricing audits, partly because few transnational corporate entities documented transfer-pricing policies for administrative or managerial services. With no or minimal documentation, these transactions appear to be the "weakest link" in transfer pricing armor. The rapid growth in off shoring business services should therefore exacerbate already high tensions in this area of transfer-pricing regulation.

In terms of tax planning, Tang (2003) found that all five MNEs he has selected use a variety of methods to reduce their overall tax rates, including setting up holding companies in tax havens, taking full advantage of tax incentives such as the (soon-to-be-defunt) US foreign Sales Corporation export incentive programme, and shifting income to low-tax and expenses to high-tax locations. In the light of recent corporate tax scandals, these practices would be a useful spring board for a class discussion of the ethical aspects of tax planning.

Transfer pricing is the pricing of products traded among affiliated units of a TNC. Because the prices are set in-house, there are opportunities for corporate entities to manipulate them and avoid or evade Government regulations such as customs duties and corporate income taxes. In order to curtail these opportunities, most Governments have adopted transfer-pricing regulations based on the Organization for Economic Cooperation and Development (OECD) guidelines. These guidelines require corporate entities to follow the arm's length principle, (i.e., firms must price each intra-company transaction as if it had occurred between two unrelated parties negotiating for the same product under the same circumstances as the related party firms). Transfer pricing is, and has been for many years, the most contentious issue in international taxation due to the difficulties involved in setting arm's length prices acceptable to both tax authorities and transnational companies (Ernst & Young, 2007; UNCTAD, 1999). Comparable transactions between unrelated parties are often not available for intra-firm transactions in goods, much less for intangibles and services. Thus, transfer pricing is an area fraught with difficulties and pitfalls for the unwary.

2. Review of literature

Transfer Prices have been described as: "the net value per unit that records the transaction for the purposes of operating statements". While many studies have addressed transfer pricing in transnational corporations, none to date have addressed transfer pricing specifically in the context of Transnational Financial Institutions (TFI). The lack of studies is not an indicator of the issue's importance, but rather a function of the difficulty of getting

sensitive and confidential information from TFI executives. Yoon K. Choi (1998) examines the relation between transfer pricing and production incentives using a model of a vertically integrated firm with divisions located in different tax jurisdictions. His study shows that if divisional profits are taxed at the same marginal rate, the transfer price should be set to minimize the compensation risk faced by the manager of the buying division.

Nicole Bastian Johnson (2006) explains the divisional performance measurement and transfer pricing. He describes three methods of transfer pricing: (1) royalty based system; (2) negotiated transfer pricing; (3) renegotiated royalty based pricing. When multinational firms transfer intangible assets between decentralized divisions in different countries, transfer prices must play a vital role in both the determination of taxable income and in providing economic incentives for divisional managers. It was mentioned that, a royalty-based transfer price that can be re-negotiated provides better investment incentives than either a non-negotiable royalty based transfer price or a purely negotiated transfer price. A royalty-based system provides the developer of the intangible with some protection from a hold-up problem, but induces inefficiently low investment by the buyer. Negotiated transfer pricing provides efficient investment incentives for the buyer, but creates a hold-up problem for the seller, leading to underinvestment. The third method, royalty-based transfer pricing with renegotiation, combines features of both royalty-based and negotiated transfer pricing, protecting the developer of the intangible from a hold-up problem and providing efficient investment incentives for the buyer. This method improves efficiency relative to pure royalty- or negotiation-based transfer pricing and provides first-best investment incentives for some types of investments.

Baldenius, Reichestein & Sahay (1999) studied an incomplete contracting model to compare the effectiveness of alternative transfer pricing mechanisms. Transfer pricing serves the dual purpose of guiding intra-company transfers and providing incentives for upfront investments at the divisional level. When transfer prices are determined through negotiation, divisional managers will have insufficient investment incentives due to "hold-up" problems. While cost-based transfer pricing can avoid such "hold-ups", it does suffer from distortions in intra-company transfers. Their analysis shows that negotiation frequently performs better than a cost-based pricing system, though we identify circumstances under which cost-based transfer pricing emerges as the superior alternative. In their study a performance comparison of two commonly used schemes: negotiated and cost-based transfer pricing, is analyzed. These two alternatives seem particularly prevalent in practice when there is no established external market for the intermediate good in question. Transfer pricing serves two major purposes in their model: to guide intra-firm transfers of an intermediate product and to create incentives for divisional managers to make relationship specific investments. Such investments can take different forms (e.g., research and development (R&D), machinery and equipment, or personnel training). In one-period model, investments entail an upfront fixed cost and a subsequent reduction in the unit variable cost incurred by the supplying division. Alternatively, investments by the buying division may enhance net revenues obtained from internal transactions. The divisional incentive to invest will depend both on the transfer payments and the quantities that the divisions expect to trade.

Richard Sansing (1999) used a model in which differences in organization structure induce different investment choices, shows that transfer pricing methods based on the price charged by independent firms results in controlled foreign subsidiaries being allocated a greater amount of income (relative to its assets) than its domestic parent. The model implies that the current dispute between the Internal Revenue Service (IRS) and its

foreign counterparts regarding the acceptability of the comparable profit method of determining transfer prices is consistent with the desire of each tax authority to maximize its own tax revenues in transfer pricing disputes involving U.S. parents and foreign subsidiaries. Much international trade occurs between related parties. U.S. parent firms exported $86 billion of merchandise to foreign affiliates in 1989, which accounted for 24 percent of total U.S. exports for that year. These U.S. parent firms imported $72 billion from foreign affiliates in 1989, accounting for 15 percent of all U.S. imports. Trade between U.S. affiliates of foreign parents is also large, accounting for $40 billion of U.S. exports and $133 billion of U.S. imports for 1989. The allocation of income between a parent corporation and its subsidiary depends on the prices at which intermediate goods are transferred between the producer (the upstream firm) and the user (downstream firm) of the intermediate goods. When the entities operate in different countries, the transfer price determines how much of the income earned by the joint efforts of the two entities is taxed in each country.

3. Transfer pricing and multinational income taxes

When divisions transfer product across tax jurisdictions, transfer prices play a role in the calculation of the company's income tax liability. In this situation, the company's transfer pricing policy can become a tax planning tool. The United States has agreements with most other nations that determine how multinational companies are taxed. These agreements, called bilateral tax treaties, establish rules for apportioning multinational corporate income among the nations in which the companies conduct business. These rules attempt to tax all multinational corporate income once and only once (excluding the double-taxation that occurs at the Federal and state levels). In other words, the tax treaties attempt to avoid the double-taxation that would occur if two nations taxed the same income. Since transfer prices represent revenue to the upstream division and an expense to the downstream division, the transfer price affects the calculation of divisional profits that represent taxable income in the nations where the divisions are based.

For example, if a U.S.-based pharmaceutical company manufactures a drug in a factory that it operates in Ireland and transfers the drug to the U.S. for sale, a high transfer price increases divisional income to the Irish division of the company, and hence, increases the company's tax liability in Ireland. At the same time, the high transfer price increases the cost of product to the U.S. marketing division, lowers U.S. income, and lowers U.S. taxes. The company's incentives with regard to the transfer price depend on whether the marginal tax rate is higher in the U.S. or in Ireland. If the marginal tax rate is higher in the U.S., the company prefers a high transfer price, whereas if the marginal tax rate is higher in Ireland, the company prefers a low transfer price. The situation reverses if the drug is manufactured in the U.S. and sold in Ireland. The general rule is that the company wants to shift income from the high tax jurisdiction to the low tax jurisdiction. There are limits to the extent to which companies can shift income in this manner. When a market price is available for the goods transferred, the taxing authorities will usually impose the market-based transfer price. When a market-based transfer price is not feasible, U.S. tax law specifies detailed and complicated rules that limit the extent to which companies can shift income out of the United States.

4. Transfer pricing mechanism in corporate entities

Many multinational corporations essentially have two sets of bookkeeping. One set, with artificially inflated

transfer prices is what they use to prepare local tax returns, and show auditors in high-tax jurisdictions, and another set of books, in which management can see the true profit and lost statement, based on real cost of goods, are used for the executives to determine the actual performance of their various operations. Of course, no company should have to pay more tax than they are legally obligated to, and they are entitled to locate to any low-tax jurisdiction. The problem starts when they use fraudulent transfer pricing and other tricks to artificially shift their income from other countries to a tax-haven. According to OECD guidelines transfer prices should be the same as if the two companies involved were indeed two independents, not part of the same corporate structure.

As transnational companies move business services offshore, they must develop transfer-pricing policies for pricing these intra-company transactions. Transfer-pricing regulations for services are much less developed than for goods and raw materials (Feinschreiber, 2004). Transnational companies are expected to follow the benefit-cost principle, with little explicit guidance as to acceptable methodologies compared to the detailed guidelines available for goods transactions.

Over the last decade, major barriers to trade among countries have decreased due to the galloping growth in information technology. This increase of information has seen many companies significantly expanding their cross- border trade. A result of this "globalization" of world trade is that transactions can be executed effortlessly and at lowering marginal costs. Increasing technology and decreasing transaction costs have meant quicker clearing markets and hence profit opportunities in products, services and geographic areas that may have been unattainable earlier. With such comprehensive and timely data, international businesses are now able to take decisions more effectively and quicker than ever before. From the perspective of tax authorities around the world, transfer-pricing is fast gaining importance, necessitating change in legislation to protect tax revenue bases. In major industrial countries, such legislation has primarily been driven by developments in the US and other OECD member-states.

Microsoft Corp. recently shaved at least $500 million from its annual tax bill using a similar strategy to the one the drug industry has used for so many years. Microsoft has set up a subsidiary in Ireland, called Round Island One Ltd. This company pays more than $300 million in taxes to this small island country with only 4 million inhabitants, and most of this comes from licensing fees for copyrighted software, originally developed in the U.S. Interesting thing is, at the same time, Round Island paid a total of just under $17 million in taxes to about 20 other countries, with more than 300 million people. The result of this was that Microsoft's world-wide tax rate plunged to 26 percent in 2004, from 33 percent the year before. Almost half of the drop was due to "foreign earnings taxed at lower rates," according to a Microsoft financial filing. And this is how Microsoft has radically reduced its corporate taxes in much of Europe and been able to shield billions of dollars from U.S. taxation.

5. Purpose of transfer pricing

Transfer pricing serves the following purposes.

(1) When product is transferred between profit centers or investment centers within a decentralized firm, transfer prices are necessary to calculate divisional profits, which then affect divisional performance evaluation.

(2) When divisional managers have the authority to decide whether to buy or sell internally or on the external market, the transfer price can determine whether managers' incentives align with the incentives of the overall company and its owners. The objective is to achieve goal congruence, in which divisional managers will want to

transfer product when doing so maximizes consolidated corporate profits, and at least one manager will refuse the transfer when transferring product is not the profit-maximizing strategy for the company.

(3) When multinational firms transfer product across international borders, transfer prices are relevant in the calculation of income taxes, and are sometimes relevant in connection with other international trade and regulatory issues.

The following table provides examples.

Table 1   Examples of transfer pricing purpose

	An external market price is available	No external market price is available
The downstream division will sell "as is":	The West Coast Division of a supermarket chain transfers oranges to the Northwest Division, for retail sale.	A pharmaceutical company transfers a drug that is under patent protection, from its manufacturing division to its marketing division.
The downstream division will use the transferred product in its own production process:	An oil company transfers crude oil from the drilling division to the refinery, to be used in the production of gasoline.	The Parts Division of an appliance manufacturer transfers mechanical components to one of its assembly divisions.

The transfer generates journal entries on the books of both divisions, but usually no money changes hands. The transfer price becomes an expense for the downstream division and revenue for the upstream division. Following is a representative example of journal entries to record the transfer of product:

(1) Upstream division:

   a. Intercompany accounts receivable $9,000

           Revenue from intercompany sale $9,000

   b. Cost of goods sold–intercompany sales $8,000

           Finished goods inventory $8,000

(To record the transfer of 500 cases of *Clear Mountain Spring Water*, at $18 per case, to the Florida marketing division, and to remove the 500 cases from finished goods inventory at the production cost of $16 per case.)

(2) Downstream division:

   Finished goods inventory $9,000

           Intercompany accounts payable $9,000

(To record the receipt of 500 cases of *Clear Mountain Spring Water*, at $18 per case, from the bottling division in Nebraska)

6. Traditional transaction methods

6.1 The OECD Guidelines refer to the following methods as "traditional transaction method"

(1) Comparable uncontrolled price method (CUP);

(2) Resale price method (RPM); and

(3) Cost plus method (CP method or C+).

6.2 These are described below and are different from the transactional profit methods

(1) Profit split method; and

(2) Transactional Net Margin Method (TNMM).

The OECD Guidelines prefer the use of the traditional transaction methods, whereby the other methods

should be used as methods of last resort (for example when there is no data available or available data cannot be used reliably). However, the Guidelines stress there is no best-method rule: a taxpayer is only required to show that the method used delivers a reasonable (at arm's length) result and is not required to disprove the use of each other method than the method used.

6.3 Transfer pricing options

There are three general methods for establishing transfer prices.

(1) Market-based transfer price: In the presence of competitive and stable external markets for the transferred product, many firms use the external market price as the transfer price.

(2) Cost-based transfer price: The transfer price is based on the production cost of the upstream division. A cost-based transfer price requires that the following criteria be specified:

   a. Actual cost or budgeted (standard) cost.
   b. Full cost or variable cost.
   c. The amount of markup, if any, to allow the upstream division to earn a profit on the transferred product.

(3) Negotiated transfer price: Senior management does not specify the transfer price. Rather, divisional managers negotiate a mutually-agreeable price.

7. India's policy on transfer pricing

In the event of revenue contest, India needs to organize the authors' tax brains to formulate a comprehensive policy related to transfer-pricing mechanism. Bearing in mind the rising volume of trade, which India is expected to have with rest of the world, the potential for dispute between regulatory frameworks, and for double taxation of income, could become a major issue for taxpayers in the coming years. India should come out with a common strategy, share experiences and models of developed nations in order to reap a much higher dividend in the coming years. In the speech given by the finance minister during the debate on the finance bill 2001, he made it clear that the presence of multinational enterprises in India and their ability to allocate profits in different jurisdictions by controlling prices in intra-group transactions has made the issue of transfer- pricing a matter of serious concern. When banks, or other businesses, engage in cross-border activities, each of the foreign jurisdictions in which they conduct business must address the questions of when, to what extent, and how to tax the profits attributable to the activities relating to the taxing jurisdiction. Although international commerce has evolved in response to the globalization of financial products trading, the various countries' tax provisions that govern these trading activities have not. Consequently, cross-border financial products trading between related parties pose significant challenges to the multinational enterprise. The ability to determine and apply global trading regulations continues to perplex tax regulators globally, especially in Japan, the United Kingdom, and the United States, where most of the global financial transactions are generated.

When transnational corporations trade internationally with their own subsidiaries they use a mechanism called transfer pricing. Sales between parts of the same company are meant to take place at the open market price, at an "arm's length price". A whole accountancy industry has grown up around determining transfer prices and justifying them to tax authorities. In practice it can be very difficult to determine an open market price, particularly when trade in a particular sector is highly concentrated in a few companies.

8. Suggestions

(1) One recommendation to curtail transfer-pricing manipulations is to develop a standardized transfer-pricing policy and procedures to be implemented globally.

(2) A second suggestion is to mandate increased disclosures about the magnitude and effects of transfer-pricing on subsidiary income and tax liabilities in the financial reports of transnational corporations engaging in cross-border transactions.

(3) The third suggestion would be to institute an electronics-based transfer-pricing enforcement mechanism in accordance with its unique position as a global information technology superpower.

(4) Last, but not the least, gradual elimination of tax rate differentials that contribute to income-shifting and the inevitable misallocation of tax revenues.

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Fair value accounting under financial crisis

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Abstract: The recent financial crisis has led to a vigorous debate about the pros and cons of fair-value accounting (FVA). This debate presents a major challenge for FVA going forward and standard setters' push to extend FVA into other areas. In this article, we highlight three important issues as an attempt to make sense of the debate. First, much of the controversy results from confusion about what is new and different about FVA. Second, while there are legitimate concerns about marking to market (or pure FVA) in times of financial crisis, it is less clear that these problems apply to FVA as stipulated by the accounting standards, be it IFRS or U.S. GAAP. Third, historical cost accounting (HCA) is unlikely to be the remedy. There are a number of concerns about HCA as well and these problems could be larger than those with FVA.

Key words: fair value accounting; historical cost accounting; financial crisis

1. Introduction

The recent financial crisis has turned the spotlight on fair-value accounting (FVA) and led to a major policy debate involving among others the U.S. Congress, the European Commission as well banking and accounting regulators around the world. Critics argue that FVA, often are also called mark-to-market accounting (MTM), has significantly contributed to the financial crisis and exacerbated its severity for financial institutions in the U.S. and around the world. On the other extreme, proponents of FVA argue that it merely played the role of the proverbial messenger that is now being shot. In our view, there are problems with both positions. FVA is neither responsible for the crisis nor is it merely a measurement system that reports asset values without having economic effects of its own.

In this article, we attempt to make sense of the current fair-value debate and discuss whether fair value accounting contributes to financial crisis. We come to the following four conclusions. First, much of the controversy about FVA results from confusion about what is new and different about FVA as well as different views about the purpose of FVA. Second, there are legitimate concerns about marking asset values to market prices in times of financial crisis once we recognize that there are ties to contracts and regulation or that managers and investors may care about market reactions over the short term. However, it is not obvious that these problems are best addressed with changes to the accounting system. As our third conclusion highlights, there could be implementation problems in practice. It is important to recognize that accounting rules interact with other elements of the institutional framework, which could give rise to unintended consequences. At the same time, it is important to recognize that giving management more flexibility to deal with potential problems of FVA also opens the door for manipulation. Thus, standard setters and enforcement agencies face a delicate trade-off. Fourth, we emphasize that a return to historical cost accounting (HCA) is unlikely to be a remedy to the problems with FVA. HCA has a set of problems as

well and it is possible that for certain assets they are as severe, or even worse, than the problems with FVA.

Based on extant empirical evidence, it is difficult to evaluate the role of FVA in the current crisis. In particular, the authors need more work on the question of whether market prices significantly deviated from fundamental values during this crisis and more evidence that FVA did have an effect above and beyond the procyclicality of asset values and bank lending.

2. Fair value accounting

FVA is a way to measure assets and liabilities that appear on a company's balance sheet. So what is it and what are the key arguments?

2.1 Definition of fair value

FAS157 defines fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." When quoted prices in active markets for identical assets or liabilities are available, they have to be used as the measurement for fair value (Level 1 inputs). If not, Level 2 or Level 3 inputs should be used. Level 2 applies to cases for which there are observable inputs, which includes quoted prices for similar assets or liabilities in active markets, quoted prices from identical or similar assets in inactive markets, and other relevant market data. Level 3 inputs are unobservable inputs. They should be used to derive a fair value if observable inputs are not available, which is commonly referred to as a mark-to-model approach.

2.2 Arguments about fair value

Proponents argue that fair values for assets or liabilities reflect current market conditions and hence provide timely information, thereby increasing transparency and encouraging prompt corrective actions. Few dispute that transparency is important. But the controversy rests on whether FVA is indeed helpful in providing transparency and whether it leads undesirable actions on the part of banks and firms. Opponents claim that fair value is not relevant and potentially misleading for assets that are held for a long period and, in particular, to maturity; that prices could be distorted by market inefficiencies, investor irrationality or liquidity problems; that fair values based on models are not reliable; and that FVA contributes to the procyclicality of the financial system.

3. Historical cost accounting as an alternative

In discussing the potential problems of FVA, it is important to also consider the alternative.

3.1 Compare HCA with FVA

An analysis of the development of accounting standards reveals an interesting phenomenon. Along with new financial reporting innovations in sporadic areas, there is a steady process of change of a basic accounting paradigm. The old historical cost accounting is being replaced by the new fair value accounting paradigm. These changes reflect the needs of users of financial accounting and the efforts of accounting standards setting bodies to reverse the pattern of declining relevance of financial information.

3.1.1 Shortcomings of the HCA

Much of the criticism of HCA paradigm has been associated with its distortion of financial statements. This is due, among other issues, to changes in level and structure of prices and of interest rates that are not being considered and to application of conservative, though reliable, accounting principles that allow manipulation of accounting figures.

3.1.2 Development of the FVA

FVA, in contrast to HCA that hides the real financial position and income, is more value relevance. The relevance of financial reports should be measured, in addition to association between market and accounting returns, in terms of its contribution to the stewardship function, reduction of agency costs, enhancement of management efficiency, and providing relevant information to stakeholders and to workers in their social conflict. FVA based reports call the attention of shareholders to the value of their equity and enhance the function of stewardship. Managers will be asked to guard the value of shareholders' equity and to account for their efforts. This will causes a basic change in managers' perception of their duties. The FVA provides also a complete full disclosureand it is compatible with transparency.

3.2 Relevant alternative of the FVA

Naturally, the relevant alternative depends on the assets in question. Few would argue that historical cost accounting (HCA) is an alternative for liquid assets (e.g., stocks) in banks' trading books. But for many, HCA is an alternative for loans, in particular, if they are held to maturity. Similarly, if we were to suspend FVA for illiquid assets in times of crisis as many have suggested, what values would we use instead? Even if one is sympathetic to the arguments against FVA, it does not automatically follow that HCA would be better, although many opponents of FVA implicitly or explicitly assume so. At times, FVA may not provide relevant information, but in many cases, historical costs do not provide relevant information either.

The important question, however, is how to deal with this problem. Potential market inefficiencies can be addressed in a variety of ways and again HCA is not the only alternative. Historical costs do not reflect the current fundamental value of an asset either. Therefore, it might be better to use market values, even if the markets are illiquid, and to supplement them with additional disclosures.

4. Fair value accounting, illiquidity, and financial crisis

FVA and its application through the business cycle have been subject to considerable debate (e.g., ECB, 2004; Banque de France, 2008; IMF, 2008). The chief concern is that FVA is procyclical, (i.e., it exacerbates swings in the financial system), and that it may even cause a downward spiral in financial markets. There are essentially two arguments why FVA can contribute to procyclicality: one in booms and one in busts.

4.1 Procyclicality of FVA in booms

The argument is that FVA and asset write-ups allow banks to increase their leverage in booms, which in turn makes the financial system more vulnerable and financial crisis more severe (e.g., Persaud, 2008; Plantin, et al., 2008b). In contrast, HCA prohibits asset write-ups in booms and creates "hidden" reserves, which can be drawn upon in times of crisis. However, this argument ignores that FVA provides early warning signals for an impending crisis and hence may force banks to take appropriate measures earlier. Thereby, FVA may actually reduce the severity of a crisis. Moreover, a key question is why a bank would hold these hidden reserves under HCA and essentially choose a lower leverage (or why it would not be willing to hold higher reserves if they are not hidden under FVA). One possibility is that a bank's leverage is driven by its book equity rather than the market value of equity because of regulatory capital requirement. HCA and a fixed regulatory capital ratio based on book values indirectly result in dynamic prudential regulation where banks have a lower leverage ratio (measured in terms of market values) in booms when fair values exceed historical costs than in recessions. However, it is important to recognize that a bank can also increase its leverage in boom periods under HCA by selling an asset and retaining only a small claim in it (or guaranteeing its performance), as banks did when they securitized loans. Thus, we do not think that the tendency of banks to expand leverage in booms is an issue that merely arises under FVA.

Besides, it is not clear that procylical lending should be addressed by adjusting the accounting rules.

4.2 Procyclicality of FVA in busts

The argument is that FVA can provoke contagion in financial markets. The basic idea is that banks may (have to) sell assets at a price below the fundamental value and that the price from these (forced) sales becomes relevant to other institutions that are required by FVA to mark their assets to market (Allen & Carletti, 2008; Plantin, et al., 2008a). This argument requires that there are some direct or indirect ties to the accounting system, which trigger the sale of the assets.

The models by Allen, Carletti (2008) & Plantin, et al. (2008a) show that FVA in its pure form (i.e., marking to market prices under any circumstances, can create contagion effects). The next question is how (and where) to respond to these effects. One alternative is to use HCA. But as Plantin, et al. (2008a) point out, HCA may create incentives for banks to engage in inefficient asset sales to realize earnings early. Prior to the crisis, the market for securitized loans was reasonably liquid and gave banks an opportunity to recognize substantial gains from loan origination. Thus, those who criticize FVA and call for a return to HCA have to be careful: HCA for loans coupled with banks' short-term incentives may in fact have been an important factor in the recent surge of securitizations. Even if there are potential problems with FVA such as contagion effects, it is not clear that HCA is the solution to these problems.

In summary, Allen & Carletti (2008) and Plantin, et al. (2008a) provide important contributions to the FVA debate by illustrating potential contagion effects. However, they do not show that HCA would be preferable. In fact, Plantin, et al. (2008a) are quite explicit about the problems of HCA. Furthermore, they do not speak directly to the role of FVA in the current crisis because they do not model FVA as implemented in practice. As noted above, FVA as required by U.S. GAAP or IFRS as well as U.S. Regulatory capital requirements for banks have mechanisms in place that should alleviate potential contagion effects.

5. Conclusion

The preceding sections illustrate that the debate about FVA is full of arguments that do not hold up to further scrutiny and need more economic analysis. In the paper, we review the shortcomings of the HCA and survey the development of the paradigm of fair value. To determine whether Fair Value Accounting contributed to the current crisis in financial markets, economists must examine the explicit and implicit connections of reported accounting numbers to the actions of the players in the financial markets and then ask whether such connections can create or exacerbate the problems that occurred over the last year. In our opinion, fair value accounting is the wrong scapegoat for this crisis. In other words, markets do not appear to be blinded by "artificial" features of accounting data. The problems encountered are real and relate to dysfunction of the market itself, rather than to the way in which the market is reported through accounting.

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