Inconsistencies and Composition, and the Value Relevance of Non-GAAP Earnings of Red Chip Companies

ABSTRACT

We examine the relevance of non-GAAP earnings (NGE) reporting in annual reports in a less regulated and less intense information environment, the environment of Red Chip companies of the Hong Kong Stock Exchange (HKSE). It also examines the relevance of reporting and measurement inconsistencies, and composition. Red Chip companies are mainland China companies that are controlled directly or indirectly by the Chinese government and listed in the HKSE. NGE are additional disclosures, and Red Chip companies are primarily listed in the HKSE to seek foreign investment. We find that adjusted results and EBITDA are common forms of NGE reporting, and tax, interest/financial cost, and gain/loss on investment are the main adjustment items used to derive NGE, not all firms make identical adjustments across years and there are variations in reporting across firms. GAAP earnings (GE) rather than NGE are value relevant. Adjustment inconsistencies influence the value relevance of reported NGE.

Key Words: non-GAAP earnings (NGE), GAAP earnings (GE), relevance, reporting inconsistencies, adjustments inconsistencies

1. INTRODUCTION

Non-GAAP earnings (NGE) disclosures are increasing around the world, and the controversy surrounding its relevance continues to grow (Alpert 2001; Bradshaw & Sloan 2002; Cameron, Percy, & Stevenson-Clarke, 2012). Advocates of NGE argue that NGE reporting reduces information asymmetry and helps investors to better understand a firm's financial results because NGE disclosures remove the effects of non-recurring items (Bhattacharya et al.2003; Johnson et al. 2005; Lougee & Marquardt 2004). Harvey Pitt, the 26th chairman of the US Securities and Exchange Commission (SEC), stated that "investors anxious for current, simplified and comprehensible financial reporting are today more likely to rely on a company's 'non-GAAP' disclosures than its meticulously prepared, mandated GAAP financial disclosures" (Pitt, 2001). As some items become too complex for the investors, by making adjustments, investors may compare and contrast more easily a company's financial performance.

However, the critics of NGE argue that NGE are not well-defined and inconsistencies in its characteristics mislead investors. Companies have considerable large latitude in how to calculate NGE, as there is no authoritative guidance on excluded items (Alpert 2000; Robison 2001). The concern is that companies use NGE primarily to focus investor attention on earnings numbers that exclude relevant expenses (Burns 2001; Henry 2001). Several highly publicized accounting scandals such as the fall of WorldCom and the collapse of Enron have further added investors' skepticism about the unaudited, nonstandard NGE figures (Alpert 2000; Elstein, 2001). Furthermore, critics are concerned that NGE reporting in a firm's current period may not be comparable and consistent to its NGE reporting in prior years (Jaffe, 2002).

There are mixed findings for relevance of NGE in prior studies. Some studies show that NGE have more relevant information than GE (Bradshaw & Sloan, 2002; Lougee & Marquardt, 2004; Bowen et al., 2005; Aubert, 2009). However, Brown & Sivakumar

(2003) argue that if markets are not efficient then investors could be erroneously focusing on lower quality earnings numbers, i.e., NGE. This is suggested by the results of Bhattacharya et al., (2003) who find that naïve investors tend to be influenced more than the sophisticated investors by NGE. Such concerns were also raised by Biddle et al. (1997), who found that GAAP earnings (GE) explain share returns better than NGE.

In addition to market efficiency, there are other matters worthy of consideration. Most prior studies were conducted in the US, which has many competing sources of information and more stringent disclosure requirements than most other capital markets in the world. Most of these studies also study only those firms that have analyst following. Such firms are mostly large firms. Many studies use only indicators of NGE collected from databases and do not actually check whether the firms are disclosing NGE or not. Bhattacharya et al. (2003) support this contention by adding "research that employs I/B/E/S actual earnings figures …, or standard Compustat data items … based on all or part of the I/B/E/S-Compustat population—as a proxy for manager-disclosed pro forma earnings, may not adequately capture the characteristics of the relatively small subset of firms whose managers voluntarily select to report these numbers in select quarterly earnings press releases."

Lastly, many prior studies assume that a variety of reporting practices and measurement methods are being adopted by the firms, but they do not examine the actual reporting and measurement practices used by the firms. The components of NGE most studies use are from databases and not from actual financial reports of the firms. Bhattacharya et al. (2003) raise the following concern about databases as a source of NGE: "… we feel that the use of commercial database populations to proxy for management-issued adjusted-GAAP figures can largely obscure the unique characteristics of this select group of firms that voluntarily discloses pro forma earnings figures."

This study examines the relevance of NGE measures reported by Red Chip companies in a setting and with procedures that address the shortcomings of earlier research. To

deal with the issues of competing sources of information we conduct our study using companies that are in an environment with lower levels of competing information and lower requirements for regulated disclosures. These companies are the Red Chip companies listed in Hong Kong Stock Exchange (HKSE). Red Chip companies are mainland China companies that are controlled directly or indirectly by the Chinese government but listed in the HKSE. Red Chip stocks are expected to maintain the reporting requirements of the HKSE, which makes them a major outlet for foreign investors who wish to participate in the rapid growth of the Chinese economy.[1] Firstly, Hong Kong stock exchange has lower levels of regulation than the US capital market. Secondly, the Red Chip companies have much lower levels of analyst following than the US capital market firms covered in the US studies. An added benefit of using Red Chip companies is their strong desire to seek investment from overseas and to expand rapidly. Likewise, overseas investors see Red Chip companies as a conduit for investments in mainland Chinese companies. Paul Chan, the former President of the Hong Kong Institute of Certified Public Accountants, said "looking at it from the perspective of mainland companies, if you want to raise capital from international investors, in particular institutional investors, you don't have much choice in terms of a listing location" (http://app1.hkicpa.org.hk/APLUS/06_oct/22.pdf, 23). Therefore, to attract foreign capital, Red Chip companies are likely to use NGE and, at the same time, investors are likely to seek additional information some of which can be derived from the reported NGE.

To deal with the issue of actual disclosures, we collect all our NGE data from the annual reports of Red Chip companies. Finally, to address the shortcoming of not covering actual reporting practices and measurement methods, we cover issues such as composition, reporting inconsistencies and adjustment or measurement inconsistencies between years by identifying the level of inconsistencies in the reporting of NGE and inconsistencies between years in the types of adjustments made to compute NGE.

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[1] http://www.investopedia.com/terms/r/redchip.asp#axzz2JW21bugZ

We analyze the annual reports of 92 Red Chip companies in 2010 and 2011, and find that 79 firms (78 firms) reported NGE metrics in 2010 and 2011. Results show that adjusted results and EBITDA are common forms of NGE reporting, and tax, interest/financial cost, and gain/loss on investment are the three main adjustment items used to derive NGE, not all firms make identical adjustments across years and there are variations in reporting across firms. We also find that GAAP earnings (GE) rather than NGE are relevant to the capital market. While the form of reporting has no significant association with market returns, adjustment inconsistencies impact the relevance of NGE.

The rest of this paper is structured as follows. Section 2 reviews the applicable literature. Section 3 develops hypotheses. Section 4 discusses the research design. Section 5 presents the empirical results. Section 6 summaries the research findings, identifies the limitations of this study and provides recommendations for future research.

2. LITERATURE REVIEW AND HYPOTHESES

In this literature review we first examine the research that deals with what comprises NGE, i.e., the composition of NGE. Then we review the research pertaining to consistency of NGE reporting and measurement. Finally, we review studies that deal with value relevance of NGE.

2.1 Composition

Two types of items, recurring and non-recurring items, are used for adjusting GE to NGE. The Securities and Exchange Commission (SEC) of the USA encourages only the use of non-recurring items. It addresses NGE in Reg. § 210.11-02(b)5 of Regulation S-X[2] in the following manner: "The pro forma condensed income statement shall

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[2]Regulation S-X, the Securities and Exchange Commission, 1982.

disclose income (loss) from continuing operations before nonrecurring charges or credits ..." However, managers in recent years have altered the definition of NGE to a firm's GAAP earnings (GE) adjusted to provide a number that reflects the directors' assessment of the results of the ongoing business activities of the firm.

In order to identify the composition of NGE disclosures, Bhattacharya et al. (2003) link manager's motives to different types of earnings adjustments. Choi et al. (2007) investigate the specific adjustments over which analysts disagree and suggest that managers tend to correctly include or exclude transitory earnings components. Most people agree that the exclusion of one-time items allows managers to better reflect recurring earnings. However, many managers also exclude recurring items to arrive at their NGE results (Christensen, 2007). Black & Christensen (2009) argue that the most likely place to find aggressive reporting is when managers exclude items that are generally believed to be recurring in nature. In accordance with these studies, a simple way to class the composition of NGE disclosure is to examine the types of adjustments that managers make.

2.2 Consistency

Regarding consistency of NGE disclosures, Weil (2001) argues that NGE figures are not comparable across firms. Levisohn (2002) supports Weil's argument by showing that no standard, agreed-upon definition of NGE exists. Jaffe (2002) find that even individual firms do not use a consistent definition of NGE across years. Likewise, inconsistencies can arise in three ways. First, different firms may report different NGE measures, as for example, report earnings before interest and taxes (EBIT) or earnings before interest, taxes, depreciation and amortization (EBITDA). Second, firms can inconsistently report NGE measures across years. For example, in one year they may report just EBIT and in the following year they may report EBITDA or both. Third, the items of adjustments firms leave out from GE or add to GE to arrive at their NGE can vary between years. While the variations in adjustments can occur for both recurring

and non-recurring items, the variations in recurring items are visible in the reporting terms of the NGE used (e.g., EBIT suggests exclusion of recurring items such as interest and taxes), but the variation in non-recurring items are generally less visible (e.g., exclusion of one-off gain or loss on disposal of assets, which is not stated in the name of the metric used for reporting NGE).

2.3 Relevance

NGE reporting is a form of voluntary disclosure over and above the regulated disclosures. The consequence of NGE reporting is either to offer a clearer picture of the firm's performance, or to mislead the investors. Managers who support NGE reporting claim NGE provide additional useful relevant information and help investors to better evaluate the firm's performance. By excluding unusual items, the NGE information enables managers to reveal the firm's true economic performance to the market. Bhattacharya et al. (2003) and Frederickson & Miller (2004) find that reported NGE are more informative than GAAP earnings for small investors. Analyst tracking services from other empirical studies also find the NGE measures are more closely associated with the stock price and more predictive of future earnings (Bradshaw & Sloan 2002; Brown & Sivakumar 2003). In addition, Entwistle et al (2010) suggest that NGE disclosures provide investors with a better quality measure of the firm's performance when GE is not informative.

However, other causes for disclosing NGE is that managers attempt to have the firm viewed as being more profitable and meeting or exceeding analysts' forecasts. Some argue investors are misled when they believe that NGE is GAAP-based (Elliot, 2004; Frederickson & Miller, 2004). Neither Elliot nor Frederickson & Miller find evidence to prove sophisticated investors are influenced by NGE.

Sender (2002) finds some firms use NGE reporting to obscure the negative earnings surprise. Bowen et al. (2004) suggest that firms tend to emphasize NGE when GE is

negative. Lougee & Marquardt (2004) provide evidence that NGE figure were disclosed by Enron. In general, managers tend to avoid reporting losses, and disappointments (Degeorge et al. 1999; Matsunaga & Park, 2001). This behavior often draws the attention of the critics and the regulators.

2.4 Hypotheses

To sum up, prior studies on the consequence of NGE reporting provide mixed results. Some show NGE provide additional information to investors, and others show NGE provide misleading information to investors or are of limited informativeness. If NGE provide better information then it should be related to the firms' market returns, the change in the economic value of during the year (Bradshaw & Sloan 2002; Brown & Sivakumar 2003). However, if NGE are misleading then the reported NGE would have a negative association with market returns. Looking at both sides of the debate, we construe that reported NGE can either be positively or negatively related to market returns or, in other words, it could be relevant or irrelevant.

Likewise, we leave the direction the association between NGE and market returns for an empirical assessment and establish a null hypothesis in the following form:

H1: NGE measures have no association with market returns.

As mentioned in the literature review, inconsistencies can occur in three different ways (1) between firms, (2) between years reporting in the same firm, and (3) between years measurement in the same firm (differing adjustment items). All of these inconsistencies can be detrimental to the reliability of the NGE and reduce the relevance of the NGE reported.

Doyle, Lundholm and Soliman (2003) find that NGE adjustments, broadly, are value relevant, but lament that NGE adjustments "do not sort neatly into particular line item

categories or accrual categories" (p. 148). While research has identified the value relevance of NGE as a whole, the issue of different types of NGE reported and their inconsistencies between years remains unresolved. In this regard, it can be argued that changes in reporting and adjusting inconsistencies could act as signals to the investors about the changing operational activities and strategies of the firm. However, the inconsistencies could also be reporting manipulations, and therefore be of little direct benefit to the investors or even be of negative consequence. If inconsistencies are reporting signals then these consistencies should enhance the association of market returns with NGE. However, if they are manipulations then there would be no association or in bad years a negative association between market returns and NGE. Given these opposing arguments, we leave the evaluation of the effects to an empirical assessment and draw the following null hypotheses:

H2: The form of the reported NGE does not affect the association of market returns with NGE.

H3: The level of the between year inconsistencies in the form of the reported NGE does not affect the association of market returns with NGE.

H4: The level of the between year inconsistencies in the items of adjustments used to compute the NGE does not affect the association of market returns with NGE.

One way to better relate NGE with firm performance would be to provide reconciliation between GE and NGE (Elliott, 2006). Likewise, we hypothesize

H5: Reconciliation between GE and NGE enhances the association of market returns with NGE.

Composition of NGE in terms of recurring and non-recurring items is also an important concern of the researchers and regulators. Prior studies argue that the exclusion of non-

recurring items allows managers to better reflect recurring earnings (Bhattacharya et al.2003; Johnson et al. 2005; Lougee & Marquardt 2004). However, managers also exclude recurring items to arrive at their NGE results (Christensen, 2007). Black & Christensen (2009) regard this as aggressive accounting because it can mislead the investors.

Based on the view that recurring items are misleading, we hypothesize:

H6: Recurring items adjustments are negatively associated with market returns.

Based on the view that non-recurring items are informative, we hypothesize:

H7: Non-recurring items adjustments are positively associated with market returns.

3. RESEARCH DESIGN

3.1 Sample Selection

Our sample comprises of Red Chip companies listed on the HKSE Statistics and Research website (www.hkex.com.hk/eng/stat/smstat/chidimen/cd_rcmb.htm) as at 31/12/11. The initial sample had 107 Red Chip companies. Firms in the financial sector are excluded because of their separate regulatory regimes for disclosures. Annual reports of sample firms are collected from *morningstar.com*. Market related data (market capitalization) are collected from *sina.com.cn*. After eliminating firms with missing information, the final sample has 92 firms covering fiscal years 2010 and 2011. Details of the sample selection are shown in Table 1 Panel A.

Panel B of Table 1 details the breakdown of the sample by industry sector and identifies the number of observations with valid data. The dominant industry sector in this study is the Consumer sector followed by Property and Industrial sectors. To arrive at the valid observations we exclude all outliers that are found after computing

the variables with continuous data. The outlier removal criteria were *NGE* < 1, *GE* < 1, *MKTRETURN* < 1, and *SURPRISE* < 0.20. As observed in Panel B, the industry sector distribution is not altered significantly after the removal of the outliers.

Table 1:

Panel A: Sample Selection

Panel A: Sample selection process	
1. Total firms	107
2. Less firms in the financial sector	9
3. Less firm listed in 2011	1
3. Less firms listed in 2010	2
4. Less firms with missing data	3
5. Total firms used in study	**92**

Panel B: Sample firms reporting NGE by sectors

	Sample Companies				Observations With Valid Data**			
	2010		2011		2010		2011	
	NGE Firms	Total	NGE Firms	Total	NGE Firms	Total	NGE Firms	Total
Basic Material	5	5	5	5	4	4	4	4
Communication	5	8	5	8	5	7	5	8
Consumer	23	24	22	24	17	18	18	20
Diversified	4	5	4	5	4	5	4	5
Energy	5	5	5	5	5	5	5	5
Industrial	12	16	12	16	11	15	11	15
Property	15	17	15	17	13	14	13	15
Technology	2	4	2	4	2	4	2	4
Utilities	8	8	8	8	7	7	8	8
Total*	**79**	**92**	**78**	**92**	**68**	**79**	**70**	**84**
Percentage	**86%**	**100%**	**85%**	**100%**	**86%**	**100%**	**83%**	**100%**

* 13 sample firms did not disclose NGE metrics in 2010, 14 sample firms did not disclose NGE metrics in 2011. The sample firm which disclosed NGE metrics in 2010, but not in 2011 could not do so because of changing audit firms.

**Because of high skewness and kurtosis, we removed all outliers using the following criteria *NGE* < 1, *GE* < 1, *MKTRETURN* < 1, *SURPRISE* < 0.20.

3.2 Research Models

This study primarily examines the value relevance of reported NGE by empirically testing the association of reported NGE with a firm's market returns (H1). This test of relevance is in accordance with those of Bradshaw & Sloan (2002), Chen (2010) and Entwistle et al. (2010). In addition, we also examine the intervening effects of the form of NGE reported to assess the between firm NGE reporting inconsistencies (H2), the inconsistencies across years in the form of reported NGE (H3), the inconsistencies across years in the adjustments made to compute NGE (H4), and GE and NGE reconciliation (H5). These tests are specified in Model 1.

$$MKTRETURN = \beta_0 + \beta_1 NGE + \beta_2 GE + \beta_3 INCONSISTENCIES +$$
$$\beta_4 NGE*INCONSISTENCIES + \beta_5 RECON + \beta_6 NGE*RECON + \beta_7 CONTROLS$$
$$+ \varepsilon \qquad \text{(Model 1)}$$

We also examine the effects of composition of NGE in terms of recurring (H6) and non-recurring (H7) items removed from GE to arrive at NGE. The tests involved are stipulated in Model 2.

$$MKTRETURN = \beta_0 + \beta_1 RECURRING + \beta_2 NON\text{-}RECURRING +$$
$$\beta_3 INCONSISTENCIES + \beta_4 RECURRING* INCONSISTENCIES + \beta_5 NON\text{-}$$
$$RECURRING*INCONSISTENCIES + \beta_6 RECON + \beta_7 RECURRING*RECON +$$
$$\beta_8 NON\text{-}RECURRING*RECON + \beta_9 CONTROLS + \varepsilon$$
$$\text{(Model 2)}$$

Where,

$INCONSISTENCIES$ = (1) Between firm form of NGE reporting inconsistencies, (2) Between year within firm form of reporting inconsistencies, and (3) Between year within firm GE to NGE adjustment inconsistencies.

$RECON$ = Reconciliation of GE and NGE.

RECURRING = Total amount of usual items added back to or deducted from GE to arrive at the reported NGE.

NON-RECURRING = Total amount of unusual items added back to or deducted from GE to arrive at the reported NGE.

CONTROLS = Other variables that are also known to be associated with stock returns (Rahman & Debreceny, 2010).

3.2.1 Dependent and Independent Variables Measurement

The variables were measured as follows. The dependent variable is a simple measure of value relevance, annual market return (*MKTRETURN*). Annual market return is current year closing market capitalization minus closing market capitalization of the prior year divided by the closing market capitalization of prior year. A significant positive association of annual market return and reported NGE would suggest that NGE are value relevant for the investors. A significant negative association would suggest that NGE are of adverse consequence for the investors, and a no association would mean that NGE are not relevant to the investors.

NGE is computed as the years reported NGE measure divided by the end of year total assets. Where a company has more than one reported NGE, the NGE with the largest magnitude is used in the multivariate regression analyses.

GE is an essential control variable for this study. It is assumed that investors would be observing GE alongside NGE while making investment decisions. It is the statutory profit (GE) divided by total assets.

Our three *INCONSISTENCIES* variables are measure as follows:

(1) For the between firm form of NGE reporting inconsistencies, we use dichotomous (scores of 1, 0) variables for each of the forms listed below. We use both the main effects and the interaction effects of these dichotomous variables to see how the use of these forms affects the market returns and the association between market returns and NGE.

1. Adjusted results

2. EBIT

3. EBITDA

4. Adjusted pre-tax income

5. Profit/loss from operation before items

6. Core operating profit/loss

(2) For the between year within firm form of reporting inconsistencies, we compare the use of all the forms of reporting NGE shown above. If s firm switches between these forms or drops or adds a form from 2010 to 2011 then we score a 1. We sum all the scores for all the switches between the forms to arrive at a reporting consistencies score (*REPORTING-INCONSISTENCIES*).

(3) For the between year within firm GE to NGE adjustment inconsistencies, we compare the use of all the main adjustments shown below. If a firm switches between these adjustments or drops or adds an adjustment from 2010 to 2011 then we score a 1. We sum all the scores for all the switches between the adjustments to arrive at a adjustments inconsistencies score (*ADJUSTMENT- INCONSISTENCIES*).

1. Tax

2. Interest finance costs

3. Depreciation and amortization

4. Fair value adjustments

5. Gain loss on investment

6. Gain loss on share of Profit or Loss of Associate

7. Impairment of goodwill

8. Acquisitions disposals

9. Gain loss on exchange

10. Profit loss from disposal of assets

11. Unallocated income expenses

12. General and Undisclosed expenses

Our reconciliation variable, *RECON*, is a dichotomous variable coded as 1 if there is a reconciliation between GE and NGE, otherwise coded as 0.

For *RECURRING* and *NON-RECURRING* we divide the total amount of usual and unusual items, respectively, added back to or deducted from GE to arrive at the reported NGE and divide it by total assets.

We regard the following adjustments to be usual (recurring) items:

1. Tax
2. Interest finance costs
3. Depreciation and amortization

We regard the following adjustments to be unusual (non-recurring) items:

4. Fair value adjustments
5. Gain loss on investment
6. Gain loss on share of Profit or Loss of Associate
7. Impairment of goodwill
8. Acquisitions disposals
9. Gain loss on exchange
10. Profit loss from disposal of assets
11. Unallocated income expenses
12. General and Undisclosed expenses

The control variables we use and their measurement are as follows:

SURPRISE is the difference between profit in the current year and the profit in prior year, divided by total assets. A positive or negative difference would indicate an improving or deteriorating condition for the company, which is likely to affect annual market returns positively or negatively, respectively.

Corporate governance variables such as board independence and independent audit committees are important for ensuring better firm performance, particularly for companies of developing markets seeking international investments (Cheng, Courtenay, and Rahman, 2011). We control for these variables. Board independence (BI) is measured as the proportion of independent directors to the total number of board of directors. Independent audit committees (IAC) are the proportion of independent audit committee members to the total number of audit committee members.

We also control for ownership concentration (*OC*). High ownership concentration companies are known to have lower share floats, which in turn leads to weaker associations between market returns and accounting other disclosures (Rahman & Debreceny, 2010). *OC* in this study is the proportion of shares owned by block holders with shareholdings greater than 5%.

High leverage (*LEV*) firms tend to have lower market returns. From a stock holder perspective high leverage is a source of financial risk (Rahman & Debreceny, 2010). Likewise, we control for leverage in our multivariate analyses. *LEV* in this study is the total liabilities at the end of the year divided by total assets.

Company size (*SIZE*) is known to affect market returns, with small firms having higher returns than mid-level and large firms (Banz, 1981). We control for size effects. *SIZE* in this study is the natural log of total assets.

It is likely that loss making firms would provide additional information to reduce investor disappointment and shore up market returns (Degeorge et al. 1999; Matsunaga & Park, 2001). We control for the effects of loss (*LOSS*) by using a dummy variable coded 1 if the current year has a net loss, otherwise coded 0.

Auditors provide credibility to corporate information. Accordingly, companies audited by large audit firms tend to have higher market returns (Teoh and Wong, 1993). We control for auditor quality by using a dichotomous variable (*BIG4*) coded as 1 if the firm is audited by a Big 4 auditor, otherwise coded 0.

Institutional ownership of companies adds additional scrutiny to the governance arrangements, which reduces firm level risks. Accordingly, companies with institutional ownership are likely to have higher market returns. We control for institutional ownership by using a dichotomous variable (*INSTITUTIONAL*) coded as 1 if the firm has institutional ownership, otherwise coded 0.

We also control for year. This allows for control of serial correlation and any between year macro-economic and regulatory changes. Year is coded as 1 for the 2011 observations and 0 for 2010.

Close followed firms such as firms belonging to market indices tend to be better performers. Hang Seng China-Affiliated Corporations index companies are controlled by having a dichotomous variable, *HSCCI25*, which is coded as 1 if the firm is one of the 25 indexed firms and 0 otherwise.

The effects of firms listing in markets other than the HKSE are controlled by introducing a dichotomous variable, *GLOBAL*, which is coded as 1 if the firm is also listed in other countries, otherwise 0 for listing only in HKSE.

We also control for industry effects by including one dichotomous variable for each industry. If a firm belongs to an industry this variable is scored as 1 and 0 otherwise, in the following manner.

Basic = 1 if the firm is classified into "Basic Materials", otherwise 0

Communication = 1 if the firm is classified into "Communications", otherwise 0

Consumer   = 1 if the firm is classified into "Consumer", otherwise 0

Diversified = 1 if the firm is classified into "Diversified Operations", otherwise 0

Energy =   if the firm is classified into "Energy", otherwise 0

Industrial   = 1 if the firm is classified into "Industrial", otherwise 0

Property   = 1 if the firm is classified into "Property", otherwise 0

Technology = 1 if the firm is classified into "Technology", otherwise 0

Utilities = 1 if the firm is classified into "Utilities", otherwise 0

Table 2 provides a summary of the variable measurement criteria.

Table 2: Variables Measurement Summary

Variable	Measurement Criteria
MKTRETURN	annual market return
NGE	reported NGE measure divided by the end of year total assets. Where a company has more than one reported NGE, the NGE measure with the largest magnitude (positive or negative) is used
GE	reported GE divided by total assets.
AR	1 if the firm reports adjusted results, otherwise 0
EBIT	1 if the firm reports EBIT, otherwise 0
EBITDA	1 if the firm reports EBITDA, otherwise 0
API	1 if the firm reports Adjusted pre-tax income, otherwise 0
PFO	1 if the firm reports Profit/loss from operation before items, otherwise 0
CP	1 if the firm reports Core operating profit/loss before items, otherwise 0
RECURRING	usual items added back to or deducted from GE to arrive at the reported NGE and divide it by total assets
NON-RECURRING	unusual items added back to or deducted from GE to arrive at the reported NGE and divide it by total assets
REPORTING INCONSISTENCIES	number of switches between forms of NGE reporting or dropping or adding a form between 2010 and 2011
ADJUSTMENT-INCONSISTENCIES	number of switches between adjustments or dropping or adding adjustments between 2010 and 2011
RECON	1 if there is a reconciliation between GE and NGE, otherwise 0.
SURPRISE	difference between profit in current year and profit in prior year, divided by total assets
BI	proportion of independent board members to the total number of board members
IAC	proportion of independent audit committee members to the total number of audit committee members

OC	proportion of shares owned by block holders with shareholdings greater than 5%.
LEV	total liabilities at the end of the year divided by total assets.
SIZE	natural log of total assets.
LOSS	1 if the current year has a net loss, otherwise 0
BIG4	1 if the firm is audited by a Big 4 auditor, otherwise 0
INSTITUTIONAL	1 if the firm has institutional ownership, otherwise 0
YEAR	1 for the 2011 observations and 0 for 2010
HSCCI25	1 if the firm is a Hang Seng China-Affiliated Corporations index company, otherwise 0
GLOBAL	1 if the firm is also listed in other countries, otherwise 0
Basic	1 if the firm is classified into "Basic Materials", otherwise 0
Communication	1 if the firm is classified into "Communications", otherwise 0
Consumer	1 if the firm is classified into "Consumer", otherwise 0
Diversified	1 if the firm is classified into "Diversified Operations", otherwise 0
Energy	1 if the firm is classified into "Energy", otherwise 0
Industrial	1 if the firm is classified into "Industrial", otherwise 0
Property	1 if the firm is classified into "Property", otherwise 0
Technology	1 if the firm is classified into "Technology", otherwise 0
Utilities	1 if the firm is classified into "Utilities", otherwise 0

4. EMPIRICAL EVIDENCE

The descriptive statistics, and the results of the bivariate and multivariate analyses are discussed in this section.

4.1. Descriptive Statistics

The descriptive statistics are shown in Table 3. These statistics are based on our earlier stated measurement criteria. We have a mix of continuous and dichotomous variables. Most continuous variables were scaled and some were even converted to natural logs due to their high skewness or kurtosis or both. For signed variables, especially when they are control variables, we did not use natural logs for normalizing the variables because it would distort the basic characteristic of the variable or would not deal with normality issues. Several of our dichotomous variables (with 1, 0 measures) were

skewed or had high kurtosis, or both. Normalization procedures are not appropriate or helpful for these variables.

Interesting variables to note from the Table 3 statistics are *MKTRETURN. NGE, GE,* the forms of NGE reporting, *RECURRING, NON-RECURRING, ADJUSTMENT-INCONSISTENCIES*, and *RECON. MKTRETURN* is reasonably normally distributed and ranges from a very low -0.747 to high 0.954. This is based on observations after excluding the outliers. It seems that Red Chip companies had major fluctuations in market value in the years 2009, 2010 and 2011. *NGE* and *GE* are reasonably normally distributed, and *NGE* are generally higher than *GE.* The forms of NGE reporting have a variety of distributions. *AR* (adjusted results) is the most popular of the forms of NGE with 61% of the companies using it as a form of reported NGE. This is followed by *EBITDA* and *PFO* which are reported by 23% of the companies. *RECURRING* (usual items of adjustment) on the whole exceed *NON-RECURRING* (unusual items of adjustment). Its mean is 0.026 and the mean of *NON-RECURRING* is -0.006. However, *NON-RECURRING* has a wide variation in terms of spread, with a minimum of -0.230 and a maximum of 0.230. Both *REPORTING INCONSISTENCIES* and *ADJUSTMENT-INCONSISTENCIES* range between 1 and 3, with means of 0.740 and 0.472, and are generally normally distributed. Note that mean of inconsistencies are less than 1, suggesting that it is not as numerous as normally argued by the critics of NGE. The mean of *RECON* is leaning towards a maximum of 1 (Mean of 0.790).

The range of the proportion of independent directors (*BI*) is from 0.180 to 0.500. The minimum proportion of independent directors suggest that some companies do not satisfy the "one third" independent directors required by Chinese Corporate Law. However, the mean of the proportion of independent directors is 0.335, which suggests that on average firms satisfy the criteria. The mean of the proportion of independent audit committee members is 0.924, which indicates a very high number of independent audit committee firms in the sample firms. The average of ownership concentration is 0.635, with a range of 0.216 to 0.992, indicates that the sample firms have a wide span

of ownership concentration, and that most firms have concentrated ownership. Note that Red Chip companies are controlled directly or indirectly by the Chinese government. Ownership is one of the means of control.

The high means of *BIG4, INSTITUTIONAL* and *GLOBAL* indicate that most sample firms are audited by the big four auditing firms, have institutional ownership, and listed not only in Hong Kong. The low mean values of *LOSS*, and *HSCCI25* suggest that very few firms had poor performance in 2010 and 2011 and a majority were not HSCCI firms.

Table 3: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Dev.	Skewness	Kurtosis
MKTRETURN	-0.747	0.954	-0.183	0.313	0.900	1.263
NGE	-0.027	0.324	0.056	0.056	1.513	3.683
GE	-0.198	0.183	0.042	0.046	-0.455	5.209
AR	0.000	1.000	0.610	0.488	-0.470	-1.801
EBIT	0.000	1.000	0.060	0.229	3.931	13.62
EBITDA	0.000	1.000	0.230	0.424	1.274	-0.382
API	0.000	1.000	0.010	0.110	8.943	78.95
PFO	0.000	1.000	0.230	0.420	1.316	-0.273
CP	0.000	1.000	0.010	0.078	12.767	163
RECURRING	0.000	0.180	0.026	0.029	2.325	8.018
NON-RECURRING	-0.230	0.230	-0.006	0.034	-0.405	25.755
REPORTING INCONSISTENCIES	0.000	3.000	0.740	0.935	0.872	-0.564
ADJUSTMENT-INCONSISTENCIES	0.000	3.000	0.472	0.756	1.396	0.832
RECON	0.000	1.000	0.790	0.408	-1.448	0.097
SURPRISE	-0.265	0.197	0.011	0.045	-0.436	11.662
BI	0.180	0.500	0.334	0.077	0.39	-0.538
IAC	0.600	1.000	0.924	0.134	-1.326	0.072
OC	0.216	0.992	0.635	0.151	-0.145	0.093
LEV	0.000	0.935	0.463	0.214	-0.126	-0.730
SIZE	9.856	18.846	14.216	1.793	0.121	-0.368
LOSS	0.000	1.000	0.070	0.262	3.296	8.972
BIG4	0.000	1.000	0.930	0.252	-3.48	10.239
INSTITUTIONAL	0.000	1.000	0.950	0.217	-4.213	15.948
YEAR	0.000	1.000	0.520	0.501	-0.062	-2.021

HSCCI25	0.000	1.000	0.230	0.424	1.274	-0.382
GLOBAL	0.000	1.000	0.850	0.361	-1.942	1.792
Valid N	163					

4.1.1. Reporting of NGE and the use of Adjustments

Firms tend to report one or more measures of NGE in a single year. Table 4 shows these various combinations. The middle diagonal cells shaded in gray show the frequency of each form of reported NGE. The other cells in the same column show the other forms used in conjunction with the form stated in the column and row headers. So, with *AR,* which is reported in 100 firm-years, *EBITDA* is reported 23 times *PFO* is reported 9 times and *EBIT* is reported 6 times. It is evident from the table that except for *API* and *CP*, all other forms are used concurrently with other forms.

Table 4: Combinations of NGE

	AR	*EBIT*	*EBITDA*	*API*	*PFO*	*CP*
AR	100	6	23	0	9	0
EBIT	6	9	7	0	0	0
EBITDA	23	7	38	0	13	0
API	0	0	0	2	0	0
PFO	9	0	13	0	37	0
CP	0	0	0	0	0	1

4.1.2. Use of Adjustments

As described in the variable measurement section, there are thirteen different adjustments commonly used by Red Chip companies to modify their GE into NGE. Three of these are usual items (*RECURRING*) others are unusual items (*NON-RECURRING*). The descriptive statistics of these items are in Table 5. Two out of the three recurring items had a median greater than zero, and all of the non-recurring ones had a median of zero, which suggests that the partitioning between the two types of items is reasonably clear. It is noticeable that Depreciation and Amortization is by far the largest item of adjustment made by any one firm. Also, noticeable is that some

adjustments can have a negative effect on NGE (items with negative signs). One such item with a large amount is Gain or loss on investment.   Additionally, usual items are mostly larger than unusual items. Gain or Loss on share of Profit or Loss of Associate and Impairment of Goodwill are the only two adjustments where 2010 amounts were statistically different from those of 2011 amounts ($p < 0.05$).

Companies often use more than one adjustment to compute NGE. Table 6 shows these various combinations of adjustments. The middle diagonal cells shaded in gray provide the frequency of each form of adjustment used. The other cells in the same column show the other adjustments used in conjunction with the adjustments stated in the column headers. So, with the 131 uses of Tax, Interest on Finance is used 127 times. For recurring items, Tax (131) and Interest on Finance (127) are common items of adjustment; and for nonrecurring items Gain or Loss on share of Profit or Loss of Associate (88), Gain or loss on investment (78), and Unallocated income or expense are the frequently used adjustments (61).

4.1.3. Association between Form of Reported NGE and Adjustments

Table 7 shows that certain adjustments are more associated with particular forms of reported NGE. There were 50 companies each year that reported adjusted results and most of these companies adjusted the results for tax,Interest on Finance, Gain or Loss on share of Profit or Loss of Associate, Gain or loss on investment, and Unallocated income or expenses. Tax, Interest on Finance, and Gain or Loss on share of Profit or Loss of Associate were also popular adjustments for EBITDA and PFO reporting. It is quite clear from Table 7 results that while many non-recurring items of profit and loss were used for adjusting GE to compute NGE, the two most popular items of adjustment were recurring items Tax and Interest on Finance.

Table 5: Amounts of Adjustments (US$ '000)

	2010					2011				
	Minimum	Mean	Median	Maximum	Count	Minimum	Mean	Median	Maximum	Count
Tax	-52,331	171,174	8,852	6,270,948	79	-525	197,146	9,781	6,520,842	84
Interest on Finance	-5,343	48,989	6,837	436,633	79	-1,367	57,145	5,802	604,284	84
Depreciation and Amortization	0	119,145	0	8,777,432	79	0	119,276	0	9,318,173	84
Overall Recurring*	**-1,054**	**339,307**	**16,188**	**9,200,132**	**79**	**-525**	**373,566**	**20,311**	**9,775,080**	**84**
Fair value adjustments	-380,202	-7,647	0	1,859	79	-417,972	-7,552	0	1,347	84
Gain or loss on investment	-1,393,847	-30,861	0	11,491	79	-1,853,806	-35,176	0	0	84
Gain or Loss on share of Profit or Loss of Associate	-344,817	-18,868	0	12,987	79	-654,606	-32,185	0	4,512	84
Impairment of goodwill	-13,240	5,608	0	324,314	79	-5,223	1,983	0	123,389	84
Acquisitions or disposals	-116,000	-5,726	0	0	79	-523,336	-8,193	0	888	84
Gain or loss on exchange	-159,797	-2,224	0	21,681	79	-102,302	-2,019	0	49,947	84
Profit or loss from disposal	-17,445	111	0	26,045	79	-867	208	0	17,932	84
Unallocated income or exp.	-160,734	1,508	0	59,904	79	-159,960	1,495	0	120,446	84
General expenses	-85,334	4,112	0	203,475	79	-726	5,464	0	230,810	84
Others and Undisclosed	-24,572	663	0	61,727	79	-27,099	471	0	59,872	84
Overall Non-Recurring**	**-1,458,890**	**-45,678**	**0**	**162,337**	**79**	**-2,458,465**	**-67,952**	**-916**	**155,628**	**84**
Overall	**-117,725**	**293,629**	**10,767**	**8,956,501**	**79**	**-259,694**	**305,614**	**12,259**	**9,504,790**	**84**

* The variable *RECURRING* is derived from this item after scaling by total assets.

** The variable *NON-RECURRING* is derived from this item after scaling by total assets.

Table 6: Combinations of Adjustments

	Tax	Interest on Finance	Depr or amort	Fair value adjustments	Gain or loss on investment	Gain or Loss on share of Profit or Loss of Associate	Impairment or goodwill	Acquisitions or disposals	Gain or loss on exchange	Profit or loss from disposal	Unallocated income or expense	General expenses	Others and Undisclosed
Tax	131	127	8	25	77	87	14	27	13	7	59	29	19
Interest on Finance	127	130	8	24	76	85	13	27	12	5	57	28	20
Depreciation and Amortization	8	8	8	0	3	0	0	1	0	0	4	0	2
Fair value adjustments	25	24	0	29	13	17	5	12	3	3	14	13	9
Gain or loss on investment	77	76	3	13	78	57	7	18	12	5	28	23	15
Gain or Loss on share of Profit or Loss of Associate	87	85	0	17	57	88	12	15	9	5	41	21	10
Impairment or goodwill	14	13	0	5	7	12	16	9	1	0	8	9	3
Acquisitions or disposals	27	27	1	12	18	15	9	28	4	1	11	13	8
Gain or loss on exchange	13	12	0	3	12	9	1	4	13	0	3	5	2
Profit or loss from disposal	7	5	0	3	5	5	0	1	0	7	0	5	0
Unallocated income or exp	59	57	4	14	28	41	8	11	3	0	61	7	9
General expenses	29	28	0	13	23	21	9	13	5	5	7	35	9
Others and Undisclosed	19	20	2	9	15	10	3	8	2	0	9	9	21

Table 7: NGE and Adjustments

(Some firms use multiple measures and most firms use more than one adjustment)

NGE	Year	No. of Cos.	Tax	Interest on Finance	Depr or Amort	Fair value adjustments	Gain or loss on investment	Gain or Loss on share of Profit or Loss of Associate	Impairment or goodwill	Acquisitions or disposals	Gain or loss on exchange	Profit or loss from Disposal	Unallocated income or expenses	General expenses	Others and Undisclosed
AR	2010	50	48	47	1	13	33	35	5	12	4	3	28	16	9
	2011	50	47	47	1	11	33	36	7	10	5	2	29	15	8
EBITDA	2010	20	19	20	4	3	13	13	1	3	1	2	8	3	1
	2011	18	18	18	4	2	11	11	3	4	1	0	8	1	1
PFO	2010	18	18	18	0	2	7	11	2	3	2	1	3	1	0
	2011	19	17	18	0	4	6	11	2	2	2	1	3	2	0
EBIT	2010	4	4	4	1	0	3	3	1	1	0	0	1	2	0
	2011	5	5	5	1	0	3	3	1	2	0	0	2	1	0
API	2010	1	1	1	0	0	1	1	1	1	0	0	0	1	1
	2011	1	1	1	0	0	1	1	0	1	0	0	0	1	1
CP	2010	1	0	0	0	1	0	0	0	0	0	0	0	1	0
	2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: AR = Adjusted Results; EBITDA = Earnings before interest, taxes, depreciation and amortization; PFO =Profit from operations; EBIT = Earnings before interest and taxes; API = Adjusted pre-tax income; CP = Core profit

4.1.4. Outcome of reporting NGE metrics

An analysis of the effects of reported NGE adjustments is conducted in Table 8. The results of this analysis shows that the adjustments made to GE result in an increase in profit leading to NGE that are greater than GE (74.7% of the companies in 2010 and 75.6% of the companies in 2011). Interestingly, there are companies that make adjustments that lead to decreases in profits, i.e., NGE lower than GE 16.5% in 2010 and 12.8% in 2011). In all, Table 8 results clearly show that most reported NGE are higher than GE.

Table 8: The outcome of reporting NGE metrics*

		Decrease a loss	Increase a loss	Decrease a profit	Increase a profit	Make a loss a profit	Make a profit a loss	Total
2010	Frequency	5		13	59		2	79
	Percentage	6.3%		16.5%	74.7%		2.5%	100%
2011	Frequency	3	1	10	59	2	3	78
	Percentage	3.8%	1.3%	12.8%	75.6%	2.6%	3.8%	100%

Note:

* The outcome of reporting the largest NGE metric.

** The percentage of firms reporting NGE metrics with a particular outcome as a percentage of the total number of firms reporting NGE metrics in the year (79 firms in 2010; 78 firms in 2011).

4.2 Correlations

Pearson correlation coefficients are computed for correlations between the variables (Table 9). Several correlations are greater than 0.5 and significant at the *p<0.05* and *p<0.01* levels. Important correlations to note are those between *MKTRETURN* and *AR, PFO, CP* and *RECURRING*. All of these correlations are positive and significant (*p<0.01*). This suggests that certain forms of NGE are value relevant and the usual items of income used for adjusting GE to NGE are also value relevant.

Among the control variables *SURPRISE, SIZE* and *HSCCI25* are associated positively and significantly (at *p<0.05* or *p<0.01*), all of which is logical. *SURPRISE* represents

improvement over last year's performance, *SIZE* is an indicator of relative strength in the market and *HSCCI25* companies are the most actively traded Red Chip companies in HKSE). *LOSS* and *YEAR* have significant negative associations (at $p<0.05$ and $p<0.01$, respectively). The negative association for *LOSS* indicates that, as expected, it is value relevant signal for the market. The negative association for *YEAR* simply suggests that in 2011 the market had lower returns than in 2010.

Table 9 also shows that many of the independent variables are correlated, which raises multicollinearity concerns. Therefore, variance inflation factors (VIF) are computed when analyzing the multivariate regressions. Hair et al (1995) suggest multicollinearity do not affect the multivariate results when the VIFs are well below the threshold of 10. All our VIFs are well below the threshold.

Table 9: Pearson Correlation

	MKTRETURN	NGE	GE	AR	EBIT	EBITDA	API	PFO	CP	RECURRING	NON-RECURRING	REPORTING INCONSISTENCIES	ADJUSTMENT-INCONSISTENCIES
MKTRETURN	1.000	-0.078	0.049	0.275**	0.075	0.103	-0.053	0.269**	0.313**	0.224**	-0.149	0.107	-0.156*
NGE	-0.078	1.000	0.026	-0.009	-0.140	-0.412**	-0.099	-0.008	-0.116	0.031	-0.034	0.073	0.163*
GE	0.049	0.026	1.000	0.311**	-0.027	-0.131	-0.019	0.223**	0.111	0.281**	-0.069	0.097	0.134
AR	0.275**	-0.009	0.311**	1.000	-0.061	0.152	-0.043	0.395**	0.216**	0.395**	-0.088	0.249**	-0.076
EBIT	0.075	-0.140	-0.027	-0.061	1.000	-0.060	-0.009	-0.031	-0.054	-0.052	0.044	0.151	0.078
EBITDA	0.103	-.412**	-0.131	0.152	-0.060	1.000	-0.043	.214**	.190*	0.033	-0.035	.200*	0.030
API	-0.053	-0.099	-0.019	-0.043	-0.009	-0.043	1.000	-0.062	-0.046	-0.071	0.015	0.107	0.055
PFO	0.269**	-0.008	0.223**	0.395**	-0.031	0.214**	-0.062	1.000	0.549**	0.809**	0.062	0.183*	0.008
CP	0.313**	-0.116	0.111	0.216**	-0.054	0.190*	-0.046	0.549**	1.000	0.347**	-0.531**	0.157*	-0.002
RECURRING	0.224**	0.031	0.281**	0.395**	-0.052	0.033	-0.071	0.809**	0.347**	1.000	-0.130	0.111	0.108
NON-RECURRING	-0.149	-0.034	-0.069	-0.088	0.044	-0.035	0.015	0.062	-.531**	-0.130	1.000	-0.106	-0.135
REPORTING INCONSISTENCIES	0.107	0.073	0.097	0.249**	0.151	0.200*	0.107	0.183*	0.157*	0.111	-0.106	1.000	0.020
ADJUSTMENT-INCONSISTENCIES	-0.156*	0.163*	0.134	-0.076	0.078	0.030	0.055	0.008	-0.002	0.108	-0.135	0.020	1.000
RECON	0.054	0.430**	0.124	0.140	0.057	0.134	0.040	0.350**	0.125	0.257**	-0.074	0.341**	0.121
SURPRISE	.222**	-0.106	0.077	0.063	0.039	0.040	0.004	0.153	.414**	.176*	-.518**	0.063	0.008
BI	0.000	0.033	-0.086	-0.110	0.037	-0.126	-0.035	-0.089	-0.126	0.030	0.038	0.047	-0.015
IAC	0.058	-0.039	-0.307**	-0.102	-0.020	0.043	0.045	0.017	-0.022	0.029	-0.085	0.025	0.070
OC	0.104	-0.239**	0.082	0.177*	-0.155*	0.094	0.147	0.092	0.027	0.112	0.139	-0.024	-0.272**
LEV	-0.070	0.146	0.201*	-0.001	0.189*	-0.110	-0.068	0.014	-0.112	0.159*	-0.003	-0.068	-0.031
SIZE	0.179*	-0.110	0.113	0.308**	0.117	0.152	0.045	0.426**	0.291**	0.435**	-0.096	0.201**	-0.294**
LOSS	-.191*	-0.017	-0.068	-.155*	-0.031	-0.097	-0.022	-.275**	-.569**	-.190*	.253**	-.223**	0.041

BIG4	-0.021	-0.063	0.065	0.033	0.030	-0.088	0.021	-0.094	-0.105	-0.086	0.045	0.081	-0.286**
INSTITUTIONAL	0.096	0.053	0.055	-0.009	0.025	-0.012	0.018	0.078	0.010	0.104	-0.013	0.088	-0.008
YEAR	-0.458**	-0.039	0.019	-0.046	-0.003	-0.002	-0.081	0.002	-0.020	0.047	-0.011	-0.037	0.021
HSCCI25	0.251**	-0.039	0.121	0.314**	0.202**	0.048	-0.043	0.308**	0.219**	0.298**	-0.094	0.249**	-0.269**
GLOBAL	0.132	0.117	0.028	0.194*	0.047	-0.013	0.033	0.197*	0.309**	0.134	-0.168*	0.208**	-0.230**

	RECON	SURPRISE	BI	IAC	OC	LEV	SIZE	LOSS	BIG4	INSTITUTIONAL	YEAR	HSCCI25	GLOBAL
MKTRETURN	0.054	0.222**	0.000	0.058	0.104	-0.070	0.179*	-0.191*	-0.021	0.096	-0.458**	0.251**	0.132
NGE	0.430**	-0.106	0.033	-0.039	-0.239**	0.146	-0.110	-0.017	-0.063	0.053	-0.039	-0.039	0.117
GE	0.124	0.077	-0.086	-0.307**	0.082	0.201*	0.113	-0.068	0.065	0.055	0.019	0.121	0.028
AR	0.140	0.063	-0.110	-0.102	0.177*	-0.001	0.308**	-0.155*	0.033	-0.009	-0.046	0.314**	0.194*
EBIT	0.057	0.039	0.037	-0.020	-0.155*	0.189*	0.117	-0.031	0.030	0.025	-0.003	0.202**	0.047
EBITDA	0.134	0.040	-0.126	0.043	0.094	-0.110	0.152	-0.097	-0.088	-0.012	-0.002	0.048	-0.013
API	0.040	0.004	-0.035	0.045	0.147	-0.068	0.045	-0.022	0.021	0.018	-0.081	-0.043	0.033
PFO	0.350**	0.153	-0.089	0.017	0.092	0.014	0.426**	-0.275**	-0.094	0.078	0.002	0.308**	0.197*
CP	0.125	0.414**	-0.126	-0.022	0.027	-0.112	0.291**	-0.569**	-0.105	0.010	-0.020	0.219**	0.309**
RECURRING	0.257**	0.176*	0.030	0.029	0.112	0.159*	0.435**	-0.190*	-0.086	0.104	0.047	0.298**	0.134
NON-RECURRING	-0.074	-0.518**	0.038	-0.085	0.139	-0.003	-0.096	0.253**	0.045	-0.013	-0.011	-0.094	-0.168*
REPORTING INCONSISTENCIES	0.341**	0.063	0.047	0.025	-0.024	-0.068	0.201**	-0.223**	0.081	0.088	-0.037	0.249**	0.208**
ADJUSTMENT-INCONSISTENCIES	0.121	0.008	-0.015	0.070	-0.272**	-0.031	-0.294**	0.041	-0.286**	-0.008	0.021	-0.269**	-0.230**
RECON	1.000	-0.102	-0.165*	0.104	0.099	0.078	0.170*	-0.318**	0.042	0.093	-0.014	0.140	0.201*
SURPRISE	-0.102	1.000	0.043	0.105	-0.132	0.027	0.061	-0.120	-0.129	0.084	-0.156*	0.085	-0.096
BI	-0.165*	0.043	1.000	0.101	-0.031	0.115	-0.083	0.101	-0.081	0.016	0.021	0.115	-0.132
IAC	0.104	0.105	0.101	1.000	-0.083	0.079	-0.057	0.029	-0.154*	0.026	0.005	-0.106	-0.148
OC	0.099	-0.132	-0.031	-0.083	1.000	-0.017	0.223**	-0.196*	0.202**	-0.063	0.011	0.110	0.076
LEV	0.078	0.027	0.115	0.079	-0.017	1.000	.259**	-0.006	0.048	-0.029	0.075	0.133	-0.006
SIZE	0.170*	0.061	-0.083	-0.057	.223**	0.259**	1.000	-0.283**	0.189*	-0.190*	0.034	0.676**	0.433**
LOSS	-0.318**	-0.120	0.101	0.029	-0.196*	-0.006	-0.283**	1.000	-0.018	0.064	0.038	-0.155*	-0.336**
BIG4	0.042	-0.129	-0.081	-0.154*	0.202**	0.048	0.189*	-0.018	1.000	-0.061	-0.016	0.090	0.225**
INSTITUTIONAL	0.093	0.084	0.016	0.026	-0.063	-0.029	-0.190*	0.064	-0.061	1.000	0.007	-0.143	-0.097
YEAR	-0.014	-0.156*	0.021	0.005	0.011	0.075	0.034	0.038	-0.016	0.007	1.000	0.012	-0.038

HSCCI25	0.140	0.085	0.115	-0.106	0.110	0.133	.676**	-0.155*	0.090		-0.143	0.012	1.000	0.235**
GLOBAL	0.201*	-0.096	-0.132	-0.148	0.076	-0.006	0.433**	-0.336**	0.225**		-0.097	-0.038	0.235**	1.000

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

4.3 Regression results

Tables 10 and 11 report regression results for NGE market relevance (Models 1 and 2). The regression procedure used is General Linear Model (GLM). GLM allows for the estimation of the effects of interactions between variables.

Model 1 tests hypotheses 1 to 5. We estimate a full version and a parsimonious version[3] of the model (Table 10). The F-statistics of both versions are significant ($p<0.01$), and the adjusted R^2 are 0.314 and 0.324, which are quite high for the small size of the sample. Therefore, Model 1 is robust in terms of explaining the variations in *MKTRETURN*. For the variables of concern, we find that *NGE* is not value relevant, but *GE* is ($p<0.05$ and $p<0.01$), which supports H1. Of all the forms of reported NGE only *EBITDA* seems to have a positive association with *MKTRETURN* ($p<0.05$). Also, none of the forms of reporting have any associations with *MKTRETURN*, which supports H2. *REPORTING-INCONSISTENCIES* have no association with *MKTRETURN*, which supports H3. *ADJUSTMENT-INCONSISTENCIES* has a negative association with *MKTRETURN* ($p<0.05$), which rejects H4, and suggests that firms with low returns are likely to have between year inconsistencies in items used to adjust *GE* to *NGE*. *RECON* has no association with *MKTRETURN*, which does not support H5.

In short, neither *NGE* nor its various forms and its reconciliation with *GE* have any consistent significant associations with *MKTRETURN*. However, GE does have significant value relevance. Inconsistencies in adjustments to GE to arrive at NGE have an adverse association with *MKTRETURN*.

The independence of the audit committees and *HSCCI25* also has significant positive relations with market return, which suggest that better audit quality firms and large well-traded firms have higher market returns ($p<0.05$).

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[3] We estimated the model in several ways. The results do not vary significantly across the different ways.

Table 10: The Model 1 Results

$MKTRETURN = \beta_0 + \beta_1 NGE + \beta_2 GE + \beta_3 INCONSISTENCIES + \beta_4 NGE*INCONSISTENCIES + \beta_5 RECON + \beta_6 NGE*RECON + \beta_7 CONTROLS + \varepsilon$

Variable	Full Model with all variables t values	Parsimonious version with reduced control variables t values
Intercept	-1.171	-1.185
NGE	1.604	1.842*
GE	2.556*	2.837**
AR	0.278	0.468
EBIT	-0.529	-0.834
EBITDA	2.005*	2.252*
API	-0.123	-0.209
PFO	0.682	0.696
CP	-0.326	-0.089
*NGE * AR*	-0.599	-0.861
*NGE * EBIT*	0.512	0.647
*NGE * EBITDA*	-1.483	-1.712*
*NGE * API*	0.466	0.511
*NGE * PFO*	-0.953	-1.078
*NGE * CP* (This variable is redundant)	.	.
REPORTING-INCONSISTENCIES	-0.819	-0.695
ADJUSTMENT-INCONSISTENCIES	-2.092*	-1.952*
RECON	0.300	0.064
SURPRISE	0.530	0.481
*NGE * REPORTING INCONSISTENCIES*	0.362	0.071
*NGE * RECON*	-1.224	-0.981
*NGE * SURPRISE*	-0.892	-0.650
*NGE * ADJUSTMENT- INCONSISTENCIES*	1.030	0.661
BI	0.099	
IAC	1.840*	1.588
OC	0.620	
LEV	-1.120	
SIZE	0.156	
LOSS	0.620	
BIG4	-0.771	
INSTITUTIONAL	1.430	
HSCCI25	1.708*	1.825*
GLOBAL	-0.458	
YEAR and *Industry Controlled*		
Adj_R_Sq	0.314	0.324

| F | 2.857** | 3.351** |

Model 2 tests hypotheses 6 and 7. We estimate a full version and a parsimonious version[4] of the model (Table 11). The F-statistic of Model 1 is significant ($p<0.01$) for both versions, and the adjusted R^2 are 0.346 and 0.336, respectively, which is reasonably high. Therefore, the model is robust in terms of explaining the variations in *MKTRETURN*.

Results for Model 2 in Table 11 show that contrary to the predictions of H6, *RECURRING* has a positive association with *MKTRETURN* (p<0.05). Also, *NON-RECURRING* has no significant association with *MKT-RETURN*, which does not support H7. *ADJUSTMENT-INCONSISTENCIES,* once again, has a negative association with *MKTRETURN* ($p<0.05$), which supports H4. However, when interacted with *RECURRING* and *NON-RECURRING*, *ADJUSTMENT-INCONSISTENCIES* provides a positive association for those two variables with *MKTRETURN* (*p<0.01* and *p<0.05*, respectively). This result suggests that changes in adjustment items to derive *NGE* have value relevant information.

The interaction of *NON-RECURRING* and *RECON* has a significant negative association with *MKTRETURN* (*p<0.05*), which is contrary to the prediction of H5. It means that reconciliation of unusual components of earnings provides less value relevant information.

In short, the usual items of earnings, when used for *NGE* computation, are value relevant contrary to the common belief that unusual items adjustments lead to value relevant information. It seems that it is the unusual items that are less value relevant. Also, changes in items used for computing *NGE* across years seem to make the recurring and non-recurring components of *NGE* value relevant.

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[4] We estimated the model in several ways. The results do not vary significantly across the different ways.

IAC and *HSCCI25* are once again positively and significantly associated with market returns ($p<0.05$). The significant and negative relation ($p<0.05$) between *LOSS* and *MKTRETURN* indicates that loss has an adverse economic consequence for a company.

Table 11: Model 2 Results

$MKTRETURN = \beta_0 + \beta_1 RECURRING + \beta_2 NON\text{-}RECURRING + \beta_3 INCONSISTENCIES +$
$\quad \beta_4 RECURRING*INCONSISTENCIES + \beta_5 NON\text{-}RECURRING*INCONSISTENCIES + \beta_6 RECON$
$\quad + \beta_7 RECURRING*RECON + \beta_8 NON\text{-}RECURRING*RECON + \beta_9 CONTROLS + \varepsilon$

Variable	Full Model with all variables t values	Parsimonious version with reduced control variables t values
Intercept	-0.571	-1.767*
RECURRING	1.877*	1.868*
NON-RECURRING	1.279	0.702
REPORTING-INCONSISTENCIES	-0.730	-0.136
ADJUSTMENT-INCONSISTENCIES	-2.083*	-2.304*
RECON	0.790	1.037
SURPRISE	2.083*	1.868*
*RECURRING * REPORTING-INCONSISTENCIES*	0.797	0.247
*RECURRING * ADJUSTMENT-INCONSISTENCIES*	2.840**	2.408*
*RECURRING * RECON*	-2.148*	-1.682*
*RECURRING * SURPRISE*	-0.637	-0.468
*NON-RECURRING * REPORTING-INCONSISTENCIES*	0.176	0.194
*NON-RECURRING * ADJUSTMENT-INCONSISTENCIES*	2.076*	1.953*
*NON-RECURRING * RECON*	-1.664*	-1.142
*NON-RECURRING * SURPRISE*	-1.448	-1.303
BI	-0.883	
IAC	2.391*	1.930*
OC	0.497	
LEV	-1.274	
SIZE	-0.287	
LOSS	-2.064*	
BIG4	-0.500	
INSTITUTIONAL	0.571	
HSCCI25	2.472*	
GLOBAL	0.421	
YEAR and *Industry Controlled*		
Adj_R_Sq	0.346	0.336
F	3.593**	4.277**

4.4 Sensitivity Tests

We re-estimate our models using an income increasing NGE sub-sample and an income reducing NGE and no NGE sub-sample. The income increasing sub-sample has 128 observations and the results are similar to the full-sample tests. The income decreasing an income reducing NGE and no NGE sub-sample is too small to provide meaningful results.

We also use the actual NGE and GE difference (income increasing and income decreasing) to see if the magnitude of the difference would affect our results. We interact this magnitude with our various NGE related test variables of Model 1, NGE, NGE reporting and adjustment inconsistencies. We find no significant change in the results (Results not reported).

The inference we can derive from these tests is that our results are mainly driven by income increasing NGE.

5. CONCLUSION

This study examines the relevance of NGE reporting in a less regulated and less intense information environment, the environment of Red Chip companies of the HKSE. We also examine the relevance of reporting and measurement inconsistencies. We find that the companies disclose NGE metrics in a variety of ways. The most commonly used terms used for reported NGE are "adjusted results" and "EBITDA".

We find that tax, interest/financial cost, and gain/loss on investment are the three main adjustment items used for deriving NGE, not all firms make identical adjustments across years and there are variations in adjustments used across firms.

Our results contradict the argument that NGE are more informative and more closely associated with the stock price and more predictive of future earnings. We note that NGE and its various forms and the reconciliation with GE have no consistent significant value relevance. The usual items of earnings used for NGE computation seem to be value relevant contrary to the idea that unusual items adjustments lead to value relevant NGE. Finally, changes in items used for computing NGE across years make the components of NGE value relevant. Therefore, the so-called inconsistencies in reporting may have informational value for investors.

Another notable finding is that most firms disclose the reconciliation between GE and NGE profit, but some either do not disclose their reconciliations or disclosed their reconciliations but with undisclosed adjusting items.

This research has its share of limitations. Firstly, being a two-year study; the consistency tests do not provide sufficiently rigorous evidence for consistency. Second, the research has a small sample size compared to prior studies, which may contribute to econometric weaknesses in the results. Therefore, the paper is an exploratory study based on the Hong Kong Red Chip firms' NGE disclosures. Further studies are needed to have stronger evidence on the relevance of NGE disclosures using larger and more diverse samples to derive more generalizable results. Finally, issues such as emphasis placed on NGE metrics by the firm and the news media could also be tested. As an initial paper in the area, this paper opens up avenues for further research on the various aspects of actual reported NGE and also NGE reporting in rapidly growing markets such as China.

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