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THE INFORMATIVENESS OF COMPREHENSIVE INCOME IN MALAYSIA: A TEST OF CSR AND DSR CONVENTIONS

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ABSTRACT*: This exploratory study is motivated by the continuing debate on the pre-eminence of the clean surplus relation (CSR) comprehensive accounting information over the firm earnings reported under the notion of dirty surplus relation (DSR). The level of informativeness of the accounting earnings reported in the income statement (based on DSR convention) of listed firms in Malaysia and the all-inclusive comprehensive income extrapolated from the same annual reports is analysed. The value relevance tests on the income performance metrics established from these two distinctive accounting conventions are conducted using 323 (317) sample firms with continuous market and accounting data of 15 (14) years reveal that stock prices are more responsive to accounting earnings measured on DSR income concept as compared to the CSR counterpart. These findings imply that comprehensive accounting information established under the notion of clean surplus relation is not as effective in conveying value-relevant information to stakeholders.*

KEYWORDS: accounting metrics, value relevance, informativeness, clean surplus relation, dirty surplus relation, comprehensive income

INTRODUCTION

In the past two decades, there is a declining trend in the relevance of accounting earnings to explain market prices and firm value (Collins et al., 1997; Francis and Schipper, 1999), though this seems to be offset by the increasing book value relevancy (Francis and Schipper, 1999). This declining relevance could be attributable to the methodological shortcomings or simply due to the availability of other firm value determinants[i]. Nonetheless, Collins et al. (1997) advocate that the diminishing value relevance of accounting earnings could be attributed to the existence of transitory elements in earnings, especially transitory losses (Hayn, 1995), the increasing importance of intangibles items reported in financial statement (Amir and Lev, 1996) and the occurrence of abnormal and extraordinary items due to changes in accounting standards (Elliott and Hanna, 1996). These findings indirectly imply that the adoption of dirty surplus relation (DSR) financial reporting in some jurisdictions (such as Malaysia) allows certain value-relevant information to bypass the income statement (e.g. assets revaluation reserves and goodwill amortisation). Arguably, this 'information leakage' will negatively impact the inferences drawn from the analysis.

Ashton et al. (2003) suggests that DSR accounting induces omission of 'uncomfortable' items (Ashton et al, 2003, p. 5) from reported earnings and subsequently reduces the transparency and value relevance of accounting metrics. This issue has indeed prompted several changes in

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accounting rules and regulation. For example, the arbitrary exclusion of value relevant capital transactions from firm's income statement has caused the standard setters to amend the accounting rules to incorporate the reporting of firm comprehensive income which reflects the aggregate of firm's net profit and other non-owner related transactions that bypass the income statement.

For instance, in Malaysia, the Malaysian Accounting Standard Board (MASB) has adopted the comprehensive income reporting approach via a revision to the Financial Reporting Standard no. 101 *Presentation of Financial Statements* (Revised FRS 101) beginning 2010. However, the debate on the pre-eminence of the Clean Surplus Relation or CSR accounting concept (or more commonly coined as comprehensive income) over the DSR accounting convention (or the operating performance income concept coined by the accounting profession) remains inconclusive. For instance, Wang et al. (2006) find no evidence that CSR accounting components are of higher level of informativeness than the DSR income reported in firms' financial statements in certain accounting jurisdictions. This finding is indeed consistent with Black's (1993) argument that accounting income measured on DSR concept reflects firm's persistent long-term cash flow prospects and current operating performance of firms without contamination by the nonrecurring and transitory extraordinary items.

This study assesses whether accounting earnings measured on all inclusive comprehensive approach is more informative than the accounting earnings prepared under the conventional DSR approach (available from firm's annual report). The information content of these two versions of earnings is tested against the stock market variables using the price model (adapted from Ohlson's (1995) conceptual work) and the return model (from Easton and Harris, 1991).

DEVELOPMENT AND VALUE RELEVANCE OF CSR ACCOUNTING

The concept of CSR reporting is indeed not a new idea. In 1980, this accounting concept has been discussed in the conceptual framework of the Financial Accounting Standards Board (FASB) in the US. The fundamental of this accounting convention is rooted in the all-inclusive income concept in which all realised and unrealised gains and losses are to be recognised in a firm's income statement promptly, regardless of the nature of these accounting items (i.e., capital and revenue gains and losses) but exclude events and transactions with owners (e.g., distribution to shareholders and seasoned offering). As early as in the 1960's, the Accounting Principles Board (APB) of the AICPA (successor of the Committee on Accounting Procedure) has largely adopted this all-inclusive concept in several opinions it has issued (Foster and Hall, 1996).

Before the full implementation of comprehensive income approach, the FASB has in principle followed the CSR concept but occasionally it has made exception and allowed certain comprehensive income items to be taken to the shareholders fund of the balance sheet; bypassing firms' income statement (Foster and Hall, 1996). These exceptions occurred in the accounting standards which governed future contracts, investments in debts and equity securities, pensions and foreign exchange translations, thus making the net profit reported in the income statement a subset of the all-inclusive comprehensive income. In their effort to push for a reform in the financial reporting environment in 1993, the US Association for Investment Management and Research (AIMR) has urged for the implementation of the concept of

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comprehensive income reporting and advocated for the disclosure of an all-inclusive income statement to better reflect the underlying firms' economic wealth and to eliminate the dirty surplus accounting discretions that will potentially induce managerial opportunism. The AIMR argued that '*financial statement users need, in one place, all the data reporting an enterprise's economic activity, which they then may sort out to suit their own purposes*' (foster and hall, 1996). Subsequently, efforts by numerous highly influential users and stakeholders in the financial reporting environment have prompted the release of an exposure draft on this accounting concept by the FASB in 1996. Following this exposure draft, the FASB has mandated the Statement of Financial Accounting Standards no. 130 (SFAS 30) in 1997 requiring enterprises to report their comprehensive income.

The concept of CSR reporting was also of the interest of the International Accounting Standards Board (IASB). The IASB has engaged into similar consultation process on the adoption of CSR reporting approach and worked on a project to, 1) reformat all existing financial statements and 2) incorporate the all-inclusive comprehensive income statement from 2001to 2004. Newberry (2003) states that "the IASB expects that its current project on reporting performance will lead to a conceptually robust accounting standard which addresses disclosure issues in the statement of comprehensive income" (p. 325). Subsequently, in the interest of converging all accounting standards in the future, the FASB and IASB has agreed to consolidate all their past works and useful resources with regard to CSR accounting and to carry out a joint project called 'Financial Statement Presentation' to further evaluate the potential of comprehensive income reporting in November 2004. In essence, this joint project has attempted to address the issues pertaining to the display and presentation of all recognised revenues, expenses, changes in assets and liabilities from transactions or other events in the course of business in respective conventional financial statements, i.e., balance sheet, cash flow statement, statement of changes in equity, and to consider the changes to the format of the income statement and the comprehensive income items to be presented on the revised income statement (i.e. comprehensive income statement).

In 2006, IASB has proposed to amend its accounting standard to introduce the comprehensive income statement via an exposure draft. After the lengthy public consultation process and several revisions, IASB has finally issued a revised International Accounting Standard no. 1 (IAS 1) *Presentation of Financial Statements*, with effect from the firm financial period beginning on or after 1st January, 2009. The revised version of the IAS 1, among other things, specifically requires all reporting entities to present accounting items, which in the past are permitted to bypass income statement as other comprehensive items either in a single statement of comprehensive income, or a separate statement of profit or loss immediately followed by another statement presenting the comprehensive income (paragraph 10A, IAS 1). Under this new requirement, effectively, total comprehensive income is '*the change in equity during a period resulting from transactions and other events, other than those changes resulting from transactions with owners in their capacity as owners*' (paragraph 7, IAS 1). In essence, total comprehensive income is indeed the all-inclusive net income of firms for a fiscal period in CSR term. However, this accounting metric is somehow yet to be fully used for measuring performances. For instance, for the purpose of calculating the earnings per share (EPS, basic and diluted), earnings are profits or losses arise from firms' continuing operations or in the normal course of business attributable to ordinary equity holders (IAS 33), instead of the all-inclusive total comprehensive income.

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As a member state converging to international accounting standards, the MASB has followed closely and constantly updated the practitioners and users of accounting information in Malaysia on the development of the CSR reporting initiated by the IASB. Following the revision to the IAS 1 in 2009, MASB has revised its FRS 101 *Presentation of Financial Statements* to converge fully to the comprehensive income reporting convention in Malaysia. This amendment takes effect on the 1 January 2010. Prior to the implementation of comprehensive income reporting, entities are required to present gains and losses arise from non-operating activities such as foreign investments and assets revaluation to be taken directly to the statement of changes in equity along with the capita transactions with and distributions to the owners of the reporting entities. This approach indeed resembles the DSR accounting method. Inherently, this old practice may potentially omit useful information from the income statement. For instance, in the spirit of prudence and conservatism, unrealised gain from the process of asset revaluation is not allowed to be recognised as income, whereas unrealised revaluation loss must be recognised as an expense and reflected in the income statement immediately (MASB 15, 2000). Unlike the unrealised foreign exchange losses, MASB 6 (1999) requires unrealised foreign exchange gains from the process of accounting translation to be presented as changes in the general reserves.

In addition, prior to the revision of FRS 101 and the effective of FRS 139 *Financial Instruments: Recognition and Measurement*, some accounting standards in Malaysia require reporting entities to deliberately recognise changes to certain accounting items which were not initially captured in the income statement, but some permit certain material information to skip income statement. For example, in the accounting for business combination under the DSR concept, '*the amount of goodwill recognised in the acquirer's consolidated financial statements should be treated in accordance with the generally accepted accounting principles on goodwill*' (paragraph 75, MASB 21, 2001), in which goodwill can be capitalised and subject to impairment at the discretion of the reporting entities. In other words, this approach allows the consumption of goodwill to bypass net income until impairment occurs. However, if the initial carrying amounts of the assets and liabilities are incorrectly estimated in the past, the amount of goodwill initially recognised must be adjusted and changes are to be recognised in the current period income statement. Due to the adjustment to goodwill, this requirement might understate/ overstate firm's current net income.

Likewise, impairment loss should be expensed immediately but in the event if the impaired asset is carried at revalued amount in balance sheet, '*any impairment loss of a revalued asset should be treated as a revaluation decrease*' (paragraph 61, MASB 23, 2002), thus reducing the amount of impairment loss to be recognised and overstating the net income figure. Whereas, MASB 29 (2003) requires reporting entities to recognise actuarial gains or losses arise from post-employment benefit plans in the net income only if the cumulative unrealised actuarial gains and losses of the preceding fiscal period exceed 10% of the present value of the post-employment benefit obligation and fair value of any plan assets held in the current period. This requirement is inconsistent with the accounting treatment for other non-current assets and potentially creates noises in the financial information. At the same time, it also causes leakage of material information and overstatement/ understatement of net income in a particular fiscal period.

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The inconsistent requirements in the previous accounting standards have somehow distorted the flow of the potentially value relevant information and dampened the usefulness of the income statement. Nonetheless, there has been an age-old debate on the usefulness of the CSR accounting concept over the DSR convention (e.g., Dhaliwal et al., 1999; O'Hanlon and Pope, 1999; Ashton et al., 2003; Wang et al., 2006; Chambers et al. 2007) for market pricing decisions. The literature is however (e.g. Hirst and Hopkins 1998a; O'Hanlon and Pope, 1999; Maines and McDaniel, 2000) in favour of the CSR measurement of earnings. Hirst and Hopkins (1998a) find that the signs of earnings management is more visible with clear reporting of comprehensive income components in a separate statement of firm's financial performance, and that the market values the transparency and adjusts firm prices accordingly. It was also documented that the perceived earnings quality is higher and more persistent by stock analysts when the CSR accounting components are reported separately.

Meanwhile, Maines and McDaniel (2000) argue that although the location of where the CSR accounting items are reported (i.e. separate statement of comprehensive income versus the existing statement of changes in equity) is unlikely to influence non-professional investors' acquisition decision, these items will impact investors' judgement on firm performances if they are displayed in "isolation"[ii]. Likewise, O'Hanlon and Pope (1999) conclude that DSR accounting has promoted undesirable 'creative accounting' in the UK and Graham and King (2000) argue that conservatism in the DSR concept practiced in Malaysia reduces earnings informativeness. The presumption is that earnings measured in CSR concept captures all dirty surplus flow of firms' net assets (e.g. unrealised revaluation gain, goodwill write-offs, non-recurring items) since the inception of a firm and thus, this performance metric articulates completely with firm's market value and stock returns (Wang et al., 2006). Elsewhere, the Accounting Standards Board (ASB) of the UK and the Council for Annual Reporting of the Netherlands has disallowed dirty surplus treatment of writing off goodwill in 1998 and 2000 respectively.

The proponents of the dirty surplus accounting concept (Black (1993)) argues that earnings measured on CSR are contaminated by the accounting items such as the non-recurring and extraordinary items, and thus unable to reflect firms' persistent long-term cash flow prospects. Vice versa, income measured on DSR convention reflects the current operating performance of firms without distortion from the other transitory components. Likewise, Dhaliwal et al. (1999) provide no significant evidence that the firms' market value/ return is better explained by the comprehensive income as opposed to the dirty surplus net income reported in the statutory income statement. Except for the financial sector, the correlation between return and comprehensive income does not differ significantly from the return-DSR earnings. Despite the inconclusive findings, the CSR all-inclusive accounting convention is apparently gaining more attention from the accounting regulators (Dhaliwal et al., 1999), perhaps due to the pressure by the users of accounting statements to resort for more transparent reporting practices and measures to curb creative accounting.

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RESEARCH METHOD – PRICE MODEL, RETURN MODEL AND CLEAN SURPLUS CONVENTION

This study uses a modified price model adapted parsimonious to Ohlson's (1995) conceptual work (equation [1]) and the Easton-Harris (1991) return model (equation [2]) to analyse the information content of accounting earnings measured in DSR and CSR convention. These regression-variation models are vastly used in the accounting metrics value relevance studies (e.g. Aboody and Lev, 1998; Lev and Zarowin, 1999; Francis and Schipper, 1999; Chen et al. 2001). The price model analyses and relates firms' market value to book values, contemporaneous and future earnings and dividends. Under the simplified assumption of residual income dynamism, firm's market price is expressed as a linear function of equity book value and current accounting earnings (equation [1]).

$$P_{j,t} = \beta_0 + \beta_1 E_{j,t} + \beta_2 BV_{j,t} + e_{j,t} \qquad [1]$$

In equation [1], $P_{j,t}$ denotes firm market price of firm j at year t + 6 months, $E_{j,t}$ defines firm j's earnings before extraordinary items in year t; whereas $BV_{j,t}$ represents the book value of firm j at the end of year t and $e_{j,t}$ is the error term of the model. Alternatively, the return model (equation [2]) measures how stock return responds to the level and change of firm earnings (i.e. return-earnings relationship). This model allows the test of information content of individual accounting item (or timeliness of such item) in isolation within shorter interval.

$$R_{j,t} = \delta_0 + \delta_1 \left(\frac{E_{j,t}}{P_{j,t-1}} \right) + \delta_2 \left(\frac{\Delta E_{j,t}}{P_{j,t-1}} \right) + e_{j,t} \qquad [2]$$

In this return-earnings regression model (equation [2]), $R_{j,t}$ ($P_{j,t-1}$) denotes firm j's stock return (price) at the sixth month after end of year t (year t-1). Whereas, $E_{j,t}$ ($\Delta E_{j,t}$) defines the level of (change in) the earnings before extraordinary items of firm j in year t. The operationalisation of the Ohlson's (1995) and Easton-Harris' (1991) regression-variation models requires adherence to the CSR convention. Ohlson (1995) defines price as a direct function of earnings and book value in the presence of a CSR. Easton and Harris (1991) argue that book value is a 'noisy proxy' of stock pricing, whereas accounting earnings determine market return, assuming that CSR is established. The empirical property of CSR convention restricts firms' book value to change only with earnings, capital transactions (e.g. issuance of new shares) and withdrawals (dividends). In other words, under the notion of CSR, balance sheet and income statement will articulate coherently. This essential relationship is expressed in equation [3] and [4] below:

$$BV_t - BV_{t-1} = CLE_t - Div_t + Inv_t \qquad [3]$$

$$\Delta BV_t = CLE_t - Div_t + Inv_t \qquad [4]$$

In equation [3], BV_{t-1} denotes firm book value at the beginning of the financial period (t-1), CLE_t denotes all-inclusive/ comprehensive income under the clean surplus relation and Div_t is

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the dividend distributed by firm in a fiscal period. Inv_t denotes the net increase in capital injection in the fiscal period of time t. This parameter is derived by subtracting any capital reduction programme (i.e. share buyback and cancellation) from the total increase in paid-up capital (e.g. issuance of ordinary shares through seasoned offering). Conversions of reserves and unappropriated profit to share capital (e.g. bonus issues) is not included in the tabulation of Inv_t as these transactions have no effect on the overall change in firm's book value. However, firms' CLE_t data is not available for value relevance testing as the accounting information published within the period of this study is presented in dirty surplus flow[iii]. Thus, to enable a meaningful comparison on the informativeness of these two accounting conventions, existing DSR accounting information is restated into CSR performance metrics accordingly (equation [5], [6] and [7]):

$$CLE_t = \Delta BV_t + Div_t - Inv_t \quad [5]$$

$$CLE_t = E_t + AdjEq_t \quad [6]$$

Equation [5] is restated from equation [4] to reflect the empirical relationship between the clean surplus accounting earnings (CLE_t), the changes in owners' equity, and the non-income statement accounting items (e.g. dividend distribution) reported in firms' statement of changes in equity and balance sheet. Nevertheless, CSR comprehensive income is also the aggregate of firms' reported DSR earnings and all the potentially value-relevant adjustments to firms' equity which bypass the income statement, excluding transactions with the owners in the fiscal period of time t as depicted in equation [6], equation [5] and [6] are combined and re-written into equation [7] as follow:

$$E_t + AdjEq_t = \Delta BV_t + Div_t - Inv_t \quad [7]$$

In equation [6] and [7], E_t is the DSR firms reported accounting earnings in a fiscal period, whereas $AdjEq_t$ denotes the net of all adjustments to firms' equity, reserves and accounting transactions which bypass E_t (e.g. gain on asset revaluation, write-off of purchased goodwill, changes in foreign exchange translation). Therefore, equation [7] provides a framework for the estimation of CSR al-inclusive income when this performance metric is not available. The arbitrary CLE_t explanatory variable use in the regression-variation models (equation [1] and [2]) can then be extrapolated from equation [7] together with the non-investing adjustments ($AdjEq_t$) to equity and reserves manually collected from firms' statement of changes in equity and balance sheet. In the absence of a mandatory full statement of comprehensive income, this conversion process requires tedious examination on the balance sheet and the statement of changes in equity. Subsequently, the following equations are constructed to test the price-CSR earnings and return-CSR earnings relationship:

$$P_{j,t} = \beta_0 + \beta_1 CLE_{j,t} + \beta_2 BV_{j,t} + e_{j,t} \quad [8]$$

$$R_{j,t} = \delta_0 + \delta_1 \left(\frac{CLE_{j,t}}{P_{j,t-1}} \right) + \delta_2 \left(\frac{\Delta CLE_{j,t}}{P_{j,t-1}} \right) + e_{j,t} \quad [9]$$

This study involves a balanced panel dataset with 4,845 (4,438) firm-year observations under the CSR and DSR convention, covering 323 (317[iv]) public listed firms with complete and

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continuous 15-year (14-year) stock market and accounting data beginning from 1993 (1994[v]) to 2007 (2007) for the value relevance testing under the price (return) specification. Firms in the financial, mining, high-tech and utilities industries are excluded from the sample due to their exclusive legal, structural and reporting requirements.

DIRTY VERSUS CLEAN SURPLUS ACCOUNTING – EXPLORATORY STATISTICS

A descriptive analysis was conducted to identify potential outliers in the data set. Jarque-Bera and Levene's test is conducted to test the normality and equality of variance of all the variables. Hausman's test was done to ensure that more efficient models (i.e. fixed versus random effect specification[vi]) are used in deriving consistent results and more significant p-values for this exploratory study (Wooldridge, 2002; Greene, 2003). The results are summarised in Tables 4-1, 4-2 and 4-3 below.

Table 4-1 Descriptive Statistics – Panel Data

	Mean	Median	Max	Min	Std Dev	Jarque-Bera, p-value
Price Model (mil)						
$P_{j,t}$	870.416	233.209	46 084.210	2.056	2 275.297	0.000***
$BV_{j,t}$	865.355	293.943	29 699.910	-754.251	1 932.369	0.000***
$E_{j,t}$	37.145	9.276	4 763.546	-2318.52	190.399	0.000***
$CLE_{j,t}$	43.941	9.464	7 047.674	-3491.20	257.507	0.000***
Return Model						
$R_{j,t}$	0.268	0.032	22.011	-0.985	1.247	0.000***
$E_{j,t}/P_{j,t-1}$	-0.046	0.046	14.329	-9.977	0.663	0.000***
$DE_{j,t}/P_{j,t-1}$	0.042	0.005	25.759	-7.516	0.91	0.000***
$CLE_{j,t}/P_{j,t-1}$	-0.014	0.046	32.402	-19.191	1.208	0.000***
$\Delta CLE_{j,t}/P_{j,t-1}$	0.044	0.003	40.551	-45.351	1.771	0.000***

Notes:
*** Significant at 1%
Observations, n: Price model = 4 845
Return model = 4 438
$P_{j,t}$ = market price of firm j at year t + 6 months
$R_{j,t}$ = stock return of firm j at year t + 6 months
$BV_{j,t}$ = book value of equity for firm j at end year t
$E_{j,t}$ = dirty surplus earnings before extraordinary items for firm j in year t
$\Delta E_{j,t}$ = change of dirty surplus earnings before extraordinary items
$CLE_{j,t}$ = clean surplus earnings before extraordinary items for firm j in year t
$\Delta CLE_{j,t}$ = change of clean surplus earnings before extraordinary items

The descriptive statistics in Table 4-1 reveal negligible outliers in the dataset the Jarque-Bera test results show that the market and accounting variables employed are indeed not normally

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distributed (p-values < 1%), rejecting the null hypothesis of normal distribution. The occurrence of variation and non-normal distribution in speculative prices, economic variables and financial data is tolerable as discussed in the prior finance and economic research works (e.g. Mandelbrot, 1963; Bartels, 1977; Bundt and Murphy, 2008).

Table 4-2 Levene's Test Results – Test for Equality of Variances

	Observation, n	F-stat	d.f.	p
Price model	4845	709.179	3	0.000***
Return model	4438	80.558	4	0.000***

Notes:
*** Significant at 1%

Table 4-2 above shows the summary of the Levene's test results for both price and return model under the DSR specification. The test statistics reject the null hypothesis of equal variance (at 1% significance level) in the stock market and accounting variables employed in the price model (F (3, n = 4845) = 709.179, p = 0.000) and return model (F (4, n = 4438) = 80.558, p = 0.000). These results indicate the presence of group-wise heteroskedasticity in the residuals of the multivariate regressions and are corrected using White's cross-section standard errors and covariance to avoid drawing bias and inconsistent covariance estimates (Hill et al., 2001). Besides, accounting and stock data are often mean-reverting, therefore first-order autoregressive (AR(1)) stochastic process is added into the regression-variation models to account for the possible serial correlation in the residuals (Hill et al. 2001).

Table 4-3 Hausman's Test Results – Correlated Random Effects

	Observation, n	Chi-Sq (χ2)	d.f.	p
Price model	4845	415.186	2	0.000***
Return model	4438	4.044	2	0.132

Notes:
*** Significant at 1%

Table 4-3 above shows the summary of the Hausman's test results for the regression-variation models under the DSR specification. These results reveal fixed effects regression is more efficient for the price model (χ^2 (2, n = 4845) = 415.186, p = 0.000). The Hausman's test results on the return model (χ^2 (2, n = 4438) = 4.044, p = 0.132) are rather inconclusive. The χ^2 is higher than p-value, which indicates that fixed effects regression is more appropriate, but it is insignificant and much higher than the benchmark of 0.05 which signifies that the random effects regression is indeed more appropriate. To maintain consistency with the price model, fixed effects regression model is also employed in this study. The same testing procedures are also applied to the regression-variation models under the CSR specification.

INFORMATIVENESS OF DSR VERSUS CSR ACCOUNTING – RESULTS INTERPRETATION AND DISCUSSION

The testing procedures continue with the value relevance regression of firms' market value and stock return on both DSR and CSR accounting earnings. The test results are summarised in Tables 5-1 and 5-2 below. Under the price model setting, the test statistics in Table 5-1 clearly

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reflect that earnings measured on DSR accounting convention outperforms the CSR version of earnings. The explanatory power of the DSR earnings ($E_{j,t}$, $\beta_1 = 0.438$, $p = 0.004$) is empirically more significant than the CSR counterpart ($CLEj_{,t}$, $\beta_1 = -0.005$, $p = 0.920$) in determining firms' market value. Ceteris paribus, the negative coefficient of $CLEj_{,t}$ is counter-intuitive as firm value correlates positively with earnings measured in DSR convention. The coefficients of book value, $BV_{j,t}$ in both specifications (DSR, $\beta_2 = 0.168$; CSR, $\beta_2 = 0.178$) are statistically significant at 1% level, providing evidence that book value is important determinants of firms' share prices.

This finding is consistent with the argument set forth in the archival value relevance studies (e.g. Francis and Schipper, 1999) that book value is gaining more importance due to increasing incidence of earnings manipulation. Also, the relative association test statistics reveal that stock prices are more reactive to accounting metrics measured on 'dirty' operating performance income concept (adjusted R^2 =0.796) as compared to 'all-inclusive' CSR concept (adjusted R^2 = 0.788) in overall. The Durbin-Watson statistics of 2.061 and 2.045 respectively are indicative of the absence of significant serial correlation in the residuals of the two AR(1) corrected regression-variation test models.

Table 5-1 Informativeness of DSR v CSR Accounting – Price Model

Equation:
$$P_{j,t} = \beta_0 + \beta_1 E_{j,t} + \beta_2 BV_{j,t} + e_{j,t}$$
$$P_{j,t} = \beta_0 + \beta_1 CLE_{j,t} + \beta_2 BV_{j,t} + e_{j,t}$$

	Dirty Surplus			Clean Surplus		
	Coeff.	**t-stat**	**p**	**Coeff.**	**t-stat**	**p**
$E_{j,t}$	0.438	2.918	0.004***			
$CLE_{j,t}$				-0.005	-0.101	0.92
$BV_{j,t}$	0.168	3.636	0.000***	0.178	3.453	0.001***
Intercept (mil)	768.491	9.288	0.000***	780.609	8.658	0.000***
Observations, n		4522			4522	
Adj R^2		0.796			0.788	
F-stat		55.341			52.556	
p		0.000***			0.000***	
Durbin-Watson		2.061			2.045	

Notes:
*, **, *** Significant at 10%, 5% and 1% respectively, 2-tailed

Similarly, the test statistics in Table 5-2 below show that the information content of the DSR accounting metrics is significantly higher in the return model regression. Although the explanatory power of the scaled DSR earnings ($E_{j,t}$, $\delta_1 = 0.082$, $p = 0.007$) is lower than the CSR earnings ($CLE_{j,t}$, $\delta_1 = 0.129$, $p = 0.000$), the informativeness of the change in DSR earnings ($\Delta E_{j,t}$, $\delta_2 = 0.106$, $p = 0.000$) outperformed the $\Delta CLE_{j,t}$. The coefficient of the $\Delta CLE_{j,t}$ ($\delta_2 = -0.024$, $p = 0.498$) is statistically insignificant, and the negative sign is inconsistent with the positive correlation between stock return and earnings performance documented in the prior literature (e.g. Easton and Harris, 1991). This observation indeed supports Kothari's (2001)

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argument that earnings response coefficient observed in most of the return-earnings studies is significantly different from its "predicted value of approximately the price-earnings multiple" (p. 129).

Table 5-2 Informativeness DSR v CSR Accounting – Return Model

Equation:

$$R_{j,t} = \delta_0 + \delta_1\left(\frac{E_{j,t}}{P_{j,t-1}}\right) + \delta_2\left(\frac{\Delta E_{j,t}}{P_{j,t-1}}\right) + e_{j,t}$$

$$R_{j,t} = \delta_0 + \delta_1\left(\frac{CLE_{j,t}}{P_{j,t-1}}\right) + \delta_2\left(\frac{\Delta CLE_{j,t}}{P_{j,t-1}}\right) + e_{j,t}$$

	Dirty Surplus			Clean Surplus		
	Coeff.	t-stat	p	Coeff.	t-stat	P
$E_{j,t}/P_{j,t-1}$	0.082	2.697	0.007***			
$\Delta E_{j,t}/P_{j,t-1}$	0.106	3.961	0.000***			
$CLE_{j,t}/P_{j,t-1}$				0.129	3.76	0.000***
$\Delta CLE_{j,t}/P_{j,t-1}$				-0.024	-0.678	0.498
Intercept	0.24	5.096	0.000***	0.243	5.136	0.000***
Observations, n		4121			4121	
Adj R^2		0.037			0.005	
F-stat		1.489			1.062	
p		0.000***			0.224	
Durbin-Watson		2.23			2.23	

Notes:

*, **, *** Significant at 10%, 5% and 1% respectively, 2-tailed

Similar to the results from the price model, the overall value relevance of DSR accounting metrics (adjusted R^2 = 0.037) is significantly (at 1%) higher than the CSR metrics (adjusted R^2 = 0.005). This signifies that DSR accounting metrics are better estimator of stock return. The test results from the value relevance regressions above are consistent with the literature on comprehensive income (e.g. Dhaliwal et al., 1998; Isidro et al., 2006; Wang et al., 2006). Isidro et al., 2006 find limited evidence on the relationship between valuation errors (variation in market-to-book ratio) and perfect-foresight forecast of accounting items that bypassed the income statement (e.g. goodwill-related items, prior-year adjustments, currency translation differences, unrealised gains and losses on asset revaluations). Except for the US, Isidro et al. (2006) find no significant evidence that valuation errors are associated with DSR accounting flows in France, Germany and the UK. This finding indirectly signifies that CSR accounting information might not be useful for firm market value determination. Elsewhere, Wang et al. (2006) conclude that "reported income appears to be a more relevant measure of firm value than clean surplus income in the period considered in The Netherlands, although both of them are associated with returns" (p 402) in both the incremental and relative association research specifications.

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Interestingly, Chambers et al. (2007) find that the location of where the CSR information is reported (in firms' annual report) is essential for firm market price determination, regardless of whether an official statement of comprehensive income is provided in firms' annual report. For instance, their value relevance analysis on other comprehensive income (OCI) reported in firm statement of financial performance and statement of changes in equity shows:

> "*... evidence consistent with investors pricing OCI when it is reported in the predominant location, the statement of shareholders equity, and limited evidence of pricing when it is reported in the* ***conceptually preferred [emphasis added]*** *statements of financial performance.*" (p. 590)

Chambers et al. (2007) findings are inconsistent with the presumption of the accounting standard setters who have promoted the statement of comprehensive income. The regulators presume that the transparency and informativeness of the comprehensive income components will improve relatively if these components are reported is reported in a standalone statement as opposed to the posting of this information into the existing statement of changes in equity. However, Chambers et al. (2007) findings indicate that the investors are able to price those accounting adjustments that bypassed the income statement accordingly. For instance, they find that unrealised gains and losses on the foreign currency and marketable securities are value-relevant although these transactions are posted to reserve accounts directly.

The results of this study show some evidence that DSR performance metric is more persistent than the CSR convention advocated in the literature (e.g. Ohlson, 1995, O'Hanlon and Pope, 1999) and by accounting regulators. The findings from the regression-variation models indicate that accounting metrics under the dirty surplus setting are comparatively more value relevant and thus are more preferred measures of firms' economic performances. However, further analysis is required before we could conclude that the all-inclusive comprehensive income method of reporting is irrelevant to firm market valuation. The insignificant results could be due to methodological shortcomings discussed below. In addition, inconsistent empirical evidence is documented in numerous prior archival studies. It is also possible that the users of the accounting statements built on DSR convention are not aware of the potentially value-relevant information that is hidden in the non-performance financial statements, i.e. firms' balance sheet and the statement of changes in equity, thus rendering the CSR all-inclusive accounting earnings irrelevant and could possibly induce mispricing of firm market value.

CONCLUSION

This exploratory study evaluates the informativeness of dirty surplus accounting earnings restated into all-inclusive comprehensive income under the notion of clean surplus relation. Using the well documented price and return models in the prior literature, the results are in favour of dirty surplus accounting consistent with the findings documented by Black (1993), Dhaliwal et al. (1998) and Wand et al. (2006). In this study, not only the information content of DSR accounting earnings is significantly higher than the CSR counterpart but it was also observed that the DSR performance metrics are more efficient estimator of firms' market value and stock return as opposed to the accounting information drawn on CSR. The implications of these findings are, firstly it provides evidence to the accounting regulators and preparers on the potential deficiencies of the all-inclusive performance metrics in determining firms' market

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value. Therefore, accounting information drafted under the notion of CSR might not be as effective in conveying value-relevant information as presumed by the standard setters. Secondly, from the user's perspective, this study implies that the practice of DSR accounting convention might conceal some of the value-relevant accounting components in the non-performance accounting statements such as the balance sheet and the statement of changes in equity, rendering mispricing of firms' market value by the investors.

However, the findings are subjected to two major methodological limitations. Firstly, prior to the adoption of the revised FRS 101 in 2010, clean surplus accounting information was not reported on the face of firms' financial statements. In the past, preparers of accounting information in Malaysia are required to record dirty surplus accounting flows directly as changes in equity and present them in the statement of changes in equity, or alternatively, firms may disclose these items as notes in tandem with the accounting statements bypassing the income statement. This requirement was first enacted in MASB 1 effective from 1999 and subsequently carried into FRS 101 in 2004 as a result of the efforts to converge the local standards with the international accounting regulations. As CSR information is excluded from firms' income performance measure and only disclosed in the supplementary footnotes (or record as changes in equity in a different statement), thus it is not surprising that its value relevance is not comparable to the reported income measured on dirty surplus. This presumption is indeed supported by Hirst and Hopkin's (1998b) findings that the market prices the accounting items more significantly if these items are reported at the locations (in firms' annual report) familiar to them.

Secondly, the clean surplus explanatory variable used in this study are extrapolated by adding firms' dividends in year t to firms' ending book value in year t and subtracting any owners' capital adjustments followed by firms' beginning book value in year t (or ending book value in year t-1). This estimation method might not be efficient due to the non-disclosure of certain accounting offsets (cancellation of debit entries with credit entries) in the owners' equity and reserves accounts. The undisclosed accounting treatments might distort the accuracy of the tabulation of CSR earnings and subsequently the informativeness of these variables. Similar argument is set forth in Chambers et al. (2007). In line with economic theory, Chambers et al. (2007) argue that investors would price the CSR accounting income items "dollar-for-dollar" if these items are transitory in nature. However, the contrary is observed in many past studies (Chambers et al., 2007). They state that;

> "*Prior archival research generally has shown that OCI is not consistently priced by investors. We find that this conclusion is most likely an* ***artifact of research design [emphasis added]****. Previous studies use an estimated* ***as-if measure of OCI that is subject to measurement error [emphasis added]***." (p. 590)

As the findings of this study are limited by the empirical inadequacies it is premature to conclude that the accounting earnings reported under the notion of DSR are of higher degree of value relevance as compared to their CSR comprehensive counterparts. Furthermore, mixed findings are documented in prior research on the informativeness of accounting information and the relevancy of the CSR accounting components for firm valuation. This predicament provides an opportunity for further research using more sophisticated empirical settings (e.g. CSR accounting components as proxies of earnings management and signalling devices) and

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using a more recent dataset. For instance, in Malaysia, the change in the accounting regulations requiring public listed firms to report full statement of comprehensive income beginning from the fiscal period of 2010 has been effected via the revised FRS 101. Therefore, a value relevance study on firms' overall CSR accounting earnings and its respective components reported in their latest statement of comprehensive income using the yearly cross-sectional market and accounting data of the financial year of 2010 and 2011 can be conducted under the parameters and research methods similar to this exploratory study.

Furthermore, it is believed that the empirical results and inferences drawn from the value relevance regression-variation tests conducted will be more robust if the CSR accounting components are directly collected from the sample firms' statement of comprehensive income as opposed to the CSR all-inclusive accounting earnings extrapolated from the reported DSR accounting earnings and other components which are posted to the statement of changes in equity for the purpose of this exploratory study. Collecting the CSR accounting components manually from the samples firms' full statement of comprehensive income will certainly reduce the measurement errors and enable a more meaningful findings on the level of informativeness of firms' comprehensive income performance.

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[i] Various prior studies (e.g. Bowen et al. 1987; Livnat and Zarowin 1990; Cheng et al 1996) support the latter explanation with empirical evidence showing that the level of informativeness of earnings would increase when the variable of cash flow is added into the research model.

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[ii] This is consistent with the presumption of the accounting regulators and preparers that placing the comprehensive income components in a performance statement carries more signalling effect as compared to presenting these components in the non-performance statement of accounting (i.e. statement of changes in equity) (Maines and McDaniel, 2000).
[iii] Prior to the revision to FRS 101, DSR approach is enforced in Malaysia, allowing certain changes in book value of equity to bypass the income statement. For example, MASB 15 (superseded by FRS 116) allows assets revaluation gains to be credited directly to revaluation reserve. This accounting practice is inconsistent with the revaluation losses which must be recognised in the income statement.
[iv] Six sample firms are excluded in the return models due to abnormal observations of annual stock returns induced by massive corporate restructuring exercises and amalgamation.
[v] Stock data of 1993 is omitted for the stock return computation.
[vi] Fixed effects regression gives consistent results in panel data analysis, but it may not be the most efficient estimator as compared to the random effects model (Princeton, 2007).

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