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Civil war, Stock Return, and Intellectual capital disclosure in Sri Lanka

by

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Civil war, Stock Return, and Intellectual capital disclosure in Sri Lanka

ABSTRACT

This study examines the effect of current-period intellectual capital disclosure on earnings and current annual stock return during a civil-war period. Using the top 30 firms by market capitalization listed on Colombo Stock Exchange over six years (from 1998 to 2003), this study finds that firms do not include the current-period intellectual capital disclosure in the current stock return, and the increase in the current-period intellectual capital disclosure activity has no influence on earnings included in the current stock return. Accounting-based future earnings, if stated in the current period, by contrast are included in the current stock return. The findings provide insights into the intellectual capital disclosure practice and its influence on stock return in a civil-war environment.

Keywords: Earnings; Intellectual capital; Sri Lanka; Stock return

INTRODUCTION

This study examines the effect of intellectual capital disclosure (ICD) activity on the current stock return of the top 30 listed firms by market capitalization from 1998 to 2003 in Sri Lanka, a developing country beset at that time by civil war. Intellectual capital takes a broad view of intangibles to include any non-physical asset that has an economic value to the firm (Skinner, 2008). There are several ways of conceptualizing intellectual capital, and one of them is to conceptualize intellectual capital as the intellectual material unaccounted for on the balance sheet and that has been formalized, captured, and leveraged to produce a higher economic value of firms (CMA, 1998; Edvinsson & Sullivan, 1996; Klein, 1998, p. 1). Since intellectual capital is a collection of resources that has the potential to create economic value, many studies have suggested that their disclosure can inform investors about firms' future earnings (Ashton, 2005; Beattie, 1999; Lev, 2001).

The future earnings of intellectual capital resources are more uncertain than assets shown on the financial statement. The rights to ownership of future earnings are less well defined for investments in intellectual capital resources than for assets shown on the financial statement (Lev, 2001). Inasmuch as intellectual capital resources are considered to entail variability in future earnings, policymakers consider that the level of uncertainty is greater for these resources than for assets shown on the financial statement. This view is reflected in the differential treatment, whereby intellectual capital resources are generally expensed (Barron, Byard, Kile, & Riedl, 2002). The level of uncertainty associated with intellectual capital resources can be mitigated with greater disclosure about their future earnings potential.

Future earnings potential from intellectual capital resources is affected by factors within and outside firms, and one outside factor is political stability in the business environment where firms conduct their economic activities. Browning (2005, p. C1) provided evidence that one effect of political instability such as war is that it weakens investor confidence in firms. In the context of Sri Lanka, which was beset by a civil war, the destruction of civilian life and public infrastructure led to a decrease in investor confidence in firms conducting their economic activities in that country, and reduced export income earned and foreign investment into firms. During the civil-war period in which this study was conducted, foreign portfolio investors on the Colombo Stock Exchange (CSE) became net sellers, resigning their long-term outlook on the stock returns of listed firms (EIU ViewsWire, 2008; Rao, 1998). The short-term view taken by investors on firm performance during this period became an ideal subject for investigation of investor response to determine whether ICD, which is considered as future earnings news by investors, was included in the stock return of firms.

The civil war was waged between the government of Sri Lanka and a separatist guerrilla group, with the guerrillas attempting to break off the north and east regions of the country as a separate sovereign state. The terror attacks were directed towards destroying government-owned infrastructure such as roads, rail, airports, and seaports, and were seldom aimed at privately owned property. This is a characteristic of civil war that sets it apart from a fully fledged war: in a fully fledged war, property is destroyed indiscriminately rather than selectively. Contrary to expectations in a fully fledged war, during the civil-war period in which private-sector property remained largely intact, the listed firms on Colombo Stock Exchange reported increases in profits (CSE, 2000, p. 10). The effect of terror

activities was also felt outside the north and east regions of the country, with separatist guerrillas detonating bombs in other regions of the country to destroy government-owned property and human life. Such destruction heightened the uncertainty during the civil-war period, and was felt in the capital market with a decrease in listed firms' market capitalization due to fall in investor confidence rather than due to economic activities, which in fact increased firms' profits (CSE, 2000, pp. 10–27).

During this civil-war period, the Sri Lankan government also took several steps to drive its economy towards a private-sector-led, knowledge-based economy, and to heighten the role of intellectual capital resources in firms. These steps included amendments to the *Code of Intellectual Property Act 1979* (Wickremaratne, 2000), providing greater protection and speedier dispute resolutions on intellectual property rights (BOI, 2000).

Despite the proactive policy framework that provided increasing protection to firms to safeguard their intellectual property, this study expected to find that investors disregarded firms current period ICD (such as intellectual property, brands, and know-how) as future earnings news and did not include them in current stock return. This is because investors would become risk-averse during a civil-war period due to an uncertain long-term economic outlook, and would doubt that ICD news as future earnings would be realized as actual earnings in future periods (Ashton, 2005; Brown, Lo, & Lys, 1999; Lev & Zarowin, 1999; Ryan & Zarowin, 2003). Since the tangible assets of privately held firms were not adversely affected by the civil war conflict, investors would have more certainty about future earnings from assets on the financial statements being realized, if that information was

available as earnings forecasts. They would more likely include in the current stock return accounting-based future earnings information provided in the current period.

Section 2 of this article discusses prior literature. Section 3 describes the Colombo Stock Market. Section 4 outlines the research propositions and the tests conducted. Section 5 describes the research methods used in data collection and Section 6 outlines the research findings, and presents concluding remarks.

LITERATURE

The two approaches to conceptualizing firms' intellectual capital are input-based and output-based. The output-based approach, which is a measurement approach, uses the difference between market value and net book value as an overall measure of firms' unaccounted intellectual capital value (Brennan, 2001; Sveiby, 1997), perceiving the difference as indicating the importance of intangible assets over tangible assets for generating future earnings. However, the ratio between the market value and the book value indicator has come under criticism, as changes in accounting rules can change the net book value, and therefore the value of firms' intellectual capital. Additionally, environmental factors (such as interest rates and inflation) can influence the market value of a firm (Mouritsen, 1998). The input-based approach, which is process-based views intellectual capital as comprising a collection of intangible resources that contribute to firms' unique capabilities and competencies, and that are embedded within firms' products and services to generate higher economic value (Mouritsen, 1998).

In relation to the input-based approach, authors have analyzed intellectual capital by clustering intellectual capital resources into several categories. Sveiby (1997) collated intellectual capital resources with regard to how these resources are created

and nurtured, while Edvinsson and Sullivan (1996) clustered resources based on the level of stability. Sveiby analyzed intellectual capital resources by separating them into three categories: internal structure (created and nurtured within the firm), external structure (created and nurtured with outside relations to the firm), and employee competence (created and nurtured by renting resources from outside the firm) (pp. 10–11); the contemporary literature refers to these categories as internal capital, external capital, and human capital (Bozzolan, Favoto, & Ricceri, 2003; Guthrie & Petty, 2000). Internal capital is the intangible resources embedded in the corporate structure, external capital is the intangibles generated by firms through their interaction with external environment and stakeholders, and human capital is the intangibles generated for the firm by its staff. Edvinsson and Sullivan, however, clustered intellectual capital resources into two categories: structural capital and human capital. Structural capital is the 'stable' aspect of intellectual capital that is bankable, and human capital is the 'volatile' aspect of intellectual capital, over which firms have little control. The divergence in classification among authors demonstrates that intellectual capital could be visualized in more than one way to understand its contribution to firms' future earnings.

Lundholm and Myers (2002) pointed out that discretionary disclosure about future earnings is a response to the lost value relevance of firms' current earnings and is generally applicable across industry sectors. As the relevance of firms' current earnings to current stock return decreases, Lundholm and Myers noted there has been a corresponding increase in the relevance of firms' future earnings to current stock return (Collins, Kothari, Shanken, & Sloan, 1994). The ICD as future earnings news can give rise to revisions to current stock return, in the hope that such disclosure will lead to realized accounting-based future earnings.

Several studies that examined the relation between firms' earnings and current stock return have included future earnings as a variable (Collins et al., 1994; Warfield & Wild, 1992). Collins et al. (1994) found that the explanatory power of the current stock return regression model increased many times when future earnings was included as a variable, instead of only current earnings. Healy, Hutton, and Palepu (1999) extended the relation between the earnings–current stock return model by including discretionary disclosure as an additional predictor of future earnings, and found that an increase in disclosure increased the current stock return, in their earnings–stock return regression model.

Miller (2002) examined the relationship between discretionary disclosure and earnings announcements, and found a positive association between discretionary disclosure and current earnings. Lundholm and Myers (2002), measuring firms' disclosure activity by the ratings published in the report of the Association for Investment Management Research (AIMR), extended this relation by demonstrating that firms' disclosure informed future market expectations as future earnings to investors. The AIMR ratings, however, represented a multidimensional discretionary disclosure construct (that included intellectual capital, environmental accountability, and several other disclosures), which might have reduced the validity of conclusions about each specific type of disclosure activity.

Several authors have pointed out that the relation between earnings and the current stock return are influenced by the industry membership, since the length of the product cycle differs among industry sectors (Lundholm & Myers, 2002; Warfield & Wild, 1992). The relationship between the current earnings and the current stock return becomes greater with a shorter operating cycle as there is a greater chance of earnings becoming realized in the current reporting period. The

future earnings of firms with product cycles longer than one year are more informative than current earnings in the current stock return, as current period activities would lead to fewer earnings becoming realized in the same reporting period and more earnings would be realized in future reporting periods. Additionally, researchers of intellectual capital have proposed that firms with higher growth rates can inform investors about future earning capabilities to be included in the current stock return through greater ICD activity (Edvinsson, 1997; Jenkins, 1994, p. 1; Swinson, 1998, p. 4). An additional factor, firm size, can increase firms' visibility and can influence discretionary disclosure activity comprising future earnings news, and therefore can have a bearing on the amount of future earnings information included in the current stock return (Ballas & Hevas, 2005; Walker, 2005).

Much of the research on discretionary disclosure news as future earnings has investigated firms in industrialized countries functioning in stable political environments. Lev (2004) found that disclosing intangible investments not recognized on financial statements helped investors to make better investment decisions and more accurate valuations of firms. Case-study research conducted by Holland (2003) revealed that a firm's central role in ICD was to inform investors about the firm's future earnings-generating capabilities, and an opinion survey conducted with CPAs confirmed that ICD informed future earnings, and that such disclosure in the current period should lead to increase in firms' current stock return (Petty, Ricceri, & Guthrie, 2008). These assertions and findings, however, emanated from firms operating in stable political settings. The present study, by contrast, aims to deepen the understanding of investor behavior in

relation to firms' ICD activity in an unstable political setting—a civil-war environment.

THE COLOMBO STOCK MARKET

The Colombo Stock Exchange (CSE) in Sri Lanka exhibits many differences from stock exchanges in the developed world, in terms of market capitalization, foreign investment flows, and interest rates. The CSE is Sri Lanka's only stock exchange; it is relatively small in terms of market capitalization, and it relies on foreign investors to maintain its liquidity and bridge the gap between investments and savings (CSE, 1997). The two indicators of market liquidity—market capitalization as a percentage of GDP (6.59% in 2002) and trade value as a percentage of market capitalization—reveal that the CSE has a low liquidity level in the Asian region (CSE, 1998, p. 10; World Bank, 2002). The market capitalization of the CSE in 2006 was around USD 8 billion (De Silva, 2006; Lanka Newspapers, 2005) for the 237 listed firms on the stock exchange (De Silva, 2006). Although developing economies seek comparisons and advice from stock markets in developed economies (International Finance Corporation, 2000), the progressive development of the capital market in Sri Lanka has become unique, due to its developing-country setting (Cooray & Wickramasinghe, 2007; Worthington & Higgs, 2006), and the civil war conflict the country has borne for several decades (Brown, 2001). A unique feature characterizing the Colombo Stock Market was that foreign investment and civil war caused a paradoxical situation, with listed firms reporting current-earnings growth of 43% during 1999 (CSE, 2000, p. 10), while during the same period reporting a decline in market capitalization (CSE, 2000, pp. 10–27). During the 1997–2000 civil-war period the market capitalization and the

market price to net book value of the top 30 firms showed a gradual decline because of increased cost of capital due to higher political risk in the business environment (CSE, 1998, p. 33; CSE, 1999, p. 50; CSE, 2000, pp. 34, 67).

RESEARCH PROPOSITIONS AND TESTS

Research propositions

Both Lundholm and Myers (2002) and Ettredge, Kwon, Smith, and Zarowin (2005) included the past year's earnings and future earnings as variables in determining firms' current stock return. The inclusion of the past year's earnings allowed these authors to segregate the earnings information into past earnings and current earnings, and to find the best expectation of earnings included in the current stock return. This study does not expect past earnings and current earnings to associate with current stock return, as they are realized earnings and the current stock return has responded to such information.

This study used ICD as a one-dimensional discretionary disclosure activity. Although Ashton (2005) claimed that ICD informs investors about future earnings, this study expected that during the civil-war period, investors would not include ICD news in annual reports as future earnings in the current stock return. Since a limited literature guided the current stock return analysis in a wartime situation, this study proposed propositions rather than hypotheses, and the first research proposition is as follows.

Research Proposition One: *Investors disregarded the current period ICD in annual reports as future earnings news that led to not including the current period ICD in firms' current stock return*.

Collins et al. (1994) and Lundholm and Myers (2002) found that accounting-based earnings beyond three years have little explanatory power; hence, this study regarded accounting-based future earnings as sum total of three years of accounting-based future earnings for each current year (investigation year) of the sample. The future earnings from ICD news in the current year (investigation year) were obtained from firms' annual reports. The inclusion of the past year's earnings, current year, and future three years' accounting-based earnings, as three separate variables in the model separately identified their relationship with firms' current stock return, using the past earnings, current earnings, and accounting-based future earnings coefficients.

Although Lundholm and Myers (2002) found that investors included discretionary disclosure news as future earnings in the current stock return in a stable political environment, this study predicted that such a relationship would not exist between ICD news as future earnings and the current stock return during a politically unstable environment. The current stock return was expected to have a positive relation with accounting-based future earnings as investors tend to perceive that future earnings based on assets recognized on the balance sheet are likely to be realized as actual earnings due to their lower perceived risk. By contrast, future earnings based on intangible assets not recognized on financial statements are perceived by investors to carry higher risk, and the risk is heightened due to greater political instability (i.e., civil war) in the business environment. The second research proposition was therefore stated as follows.

Research Proposition Two: *Investors included accounting-based future earnings information in firms' current stock return.*

Main Model

A firm's characteristics can influence both discretionary ICD practices and stock returns. Warfield and Wild (1992) classified firms based on the length of their product cycle. However, intellectual capital researchers suggest that stock returns are more informative if firms are classified as knowledge-based firms and others, because knowledge-based firms rely more on intangibles to generate earnings than do other firms. These knowledge-based firms generally have a relatively short product cycle and high expected growth in earnings. Market-to-book ratio (M/B) is a widely used measure of earnings growth (Brennan, 2001; Daley, 2001; Dzinkowski, 2000; Knight, 1999; Lundholm & Myers, 2002; Roos, Roos, Dragonetti, & Edvinsson, 1997, p. 2; Sveiby, 1997, pp. 3–18). This study, however, expects that during the civil-war period, firms' growth rate would have no impact on the current stock return, as investors place a low probability on future earnings from ICD news being realized due to greater uncertainty in the political environment. As noted earlier in this paper, the M/B dropped despite the growth in firms' accounting-based earnings. Firm size, an additional firm characteristic, can also influence ICD. There are several ways to measure firm size; this study used market capitalization as a proxy for size (Ethredge et al., 2005; Lundholm & Myers, 2002). Due to greater visibility, larger firms can boost investor confidence during a politically unstable (e.g., civil-war) period, as investors might consider these firms to have greater certainty of transforming future earnings into realized earnings.

The regression model used in this study was as follows. It comprised past earnings, and current earnings, accounting-based future earnings, and future earnings from ICD as variables. Additionally, it examined the influence future earnings from ICD news have on past earnings, present earnings, and accounting-

based future earnings. In this study, future earnings that were actual earnings were the proxy for earnings forecasts, as these firms did not publish earnings forecasts during the investigation period, and the study was conducted retrospectively. The model is controlled for firms' growth rate and firm size. The model controlled for past earnings and current earnings as two separate variables in the model. These are realized earnings and are included in the current stock return. The model examined whether introducing future earnings information as ICD news in the current period and accounting-based future earnings to investors in the current period would lead them to include such information in the current stock return. The model examined six reporting periods (from 1998 to 2003), each year being considered as the current (investigation) year, for pooling data for all reporting periods.

$$R_t = a_0 + b_0 E_{t-1} + b_1 E_t + b_2 E_{t+1to3} + b_3 R_{t+1to3} ++ c_0 ICD_t d_1 + c_1 E_{t-1} * ICD_t + c_2 E_t * ICD_t + c_3 E_{t+1to3} * ICD_t + c_4 E_{t+3} * ICD_t + c_5 R_{t+1to3} * ICD_t + d_0 MktCap_t + d_1 PtoB_t + e$$

Et-1 – earnings per share for year t-1, deflated by the stock price at the beginning of year t (returns measurement period)

Et – earnings per share for year t, deflated by the stock price at the beginning of year t

Et+1to3 – the sum of earnings per share for years t+1, t+2, and t+3, deflated by the stock price at the beginning of year t

Rt – the annual stock return for the current year t, over the twelve-month period beginning on the first day of the third month of the given year and ending on the last day of the second month of the subsequent year (returns measurement period)

Rt1to3 – the sum of annual stock returns for years t+1, t+2, and t+3, over the twelve-month period beginning on the first day of the third month of the given year and ending on the last day of the second month of the subsequent year

ICD,t – frequency count of ICD in annual reports of firms in year t

$PtoB_t$ – market value over net book value of the firm, measured as a logarithm at the beginning of year t (returns measurement period)

$MktCap_t$ – size of the firm, measured as a logarithm of market capitalization of the firm at the beginning of year t (returns measurement period)

t – 1998, 1999, 2000, 2001, 2002, and 2003

DATA COLLECTION

Sample Size

This study obtained data for the top 30 listed firms, including their earnings, stock returns, $MktCap_t$, and $PtoB_t$ data from the CSE (HLC, 1998, 2000, 2003, 2006). It used the top 30 listed firms by $MktCap_t$, from 1998 to 2003 (six years), for two reasons. First, previous research on discretionary disclosure revealed that more reputable firms were more forthcoming with discretionary disclosures (Andrew, Gul, Guthrie, & Teoh, 1989; Gray, Kouhy, & Lavers, 1995; Mitchell, Chia, & Loh, 1995; Smith & Taffler, 2000). The trends found in discretionary disclosures are applicable to this study, as ICD_t is not mandated by accounting standards or legislation. Second, larger firms were more likely to make ICD_t because of their visibility and the resources at their disposal to sponsor new initiatives. This study's entire sample included 167 firms, representing the top 30 firms of each sample year, as shown in Table 1. Since the analysis of the sample included several firms appearing in more than one year, this study used panel data with fixed effects for the

regression model. The appropriateness of fixed effect over random effect was further confirmed using the Hausman test.

Table 1

Sample composition

Total sample considered (30 firms * 6 years)	180
(Less firms subsequently delisted before the end of three future earning years)	
1998	(3)
1999	(4)
2000	(2)
2001	(3)
2002	(1)
2003	(0)
Sample considered for the study	167

1998: Pure Beverages Company was acquired by Coca-Cola and traded as Coca-Cola Beverages Sri Lanka in 2000, and then delisted in 2002. Forbes Ceylon was delisted in 1999. Asian Hotels Corporation went into voluntary liquidation in 2002.

1999: Coca-Cola Beverages Sri Lanka, Asian Hotels Corporation, Upali Investment, and Reckitt and Colman were removed from the sample. Upali Investment and Reckitt and Colman were delisted in 2000.

2000: Coca-Cola Beverages Sri Lanka and Asian Hotels Corporation were removed from the sample.

2001: Coca-Cola Beverages Sri Lanka and Asian Hotels Corporation were removed from the sample. Ceylon Theatres shares were suspended from trading due to pending litigation on environmental pollution.

2002: Asian Hotels Corporation was removed from the sample.

Source Documents

Annual reports were the source documents of choice in this study because annual reports are produced regularly and they present an account of a firm's concerns. Annual reports are the preferred method of communicating with investors (Neu, Warsame, & Pedwell, 1998; Zeghal & Ahmad, 1990). Annual reports outline management's thoughts in a comprehensive and compact manner (Niemark, 1995, pp. 100–101), and investors rely on them for both financial and non-financial information (Gamble, Hsu, Kite, & Radtke, 1995, p. 34; Patten, 1992, p. 472).

Content Analysis

Content analysis is a data-gathering technique that involves codifying qualitative information in literary form into a quantitative scale (Abbott & Monsen, 1979). Content analysis of annual reports is a well-established technique in studies of discretionary disclosure (Newson & Deegan, 2002). To analyze the role of ICD_t activity in the stock return, this study used content analysis to identify ICD_t in annual reports that reported "good news" having capacity to generate future earnings. The content of annual reports for the years 1998 to 2003 was analyzed by coding predefined intellectual capital items (45 items) using latent content analysis. Frequency refers to the number of times an intellectual capital resource item is

mentioned in an annual report. Another approach is manifest content analysis, which identifies the presence of an intellectual capital item on annual reports by searching for words, sentences, or phrases describing the item. Manifest content analysis has a greater likelihood of leaving behind ICD_t that does not fall within the set of pre-defined words, sentences, or phrases (Neuman, 2006). This study used latent content analysis, which looks for the deeper rather than the direct meaning embedded in each intellectual capital resource item, based on pre-operational definitions, identifying these resource items from annual reports, and coding them as intellectual capital.

This study recorded the frequency of disclosure of all 45 intellectual capital resource items, and used it as the ICD_t activity for each given firm. The 45 resource items included know-how, vocational qualifications, career development, training programs, union activity, employee thanked, employee featured, executive compensation plans, other employee compensation plans, employee benefits, employee share ownership plans, employee share option ownership plans, expert seniority, employee numbers, professional experience, education levels, expert seniority, age of employees, entrepreneurship of staff, workplace safety, equity issues (gender, race, and religion), equity issues (disability), value-added per expert staff, value added per non-expert staff, staff involvement with the community, patents, copyrights, trademarks, management processes, technological processes, information systems, network systems, management philosophy, corporate culture, favorable relations with financiers, brands, customer satisfaction, quality standards, firm name, favorable contracts, business collaborations, licensing agreements, franchising agreements, distribution channels, and market share. These resource

items were identified from the literature researching intellectual capital disclosure (Abeysekera, 2007, pp. 79–88; Abeysekera & Guthrie, 2005).

A limitation of content analysis is that the person coding the intellectual capital resource items by reading the annual reports uses personal judgment, which may differ from that of another coder. This study used two features to reduce such anomalies and to increase objectivity in recording and analyzing data. First, prior to commencing coding, each intellectual capital resource item was pre-defined. Second, in this study, the coders re-examined their coding after a two-week time interval. To ascertain inter-coder reliability, this study used two people who were experienced in using latent content analysis to code intellectual capital, and they coded intellectual capital resource items from annual reports separately. The coding results of these two people were compared for level of agreement (inter-coder reliability) and reproducibility using Scott's π (Scott, 1955), which was greater than 90%.

RESULTS AND DISCUSSION

Main Model

In response to the Research Propositions, Table 2 presents Pearson correlations for ICD_t, earnings variables, and the stock return for the sample; the variables had low correlations. E_{t-1}, E_{t+1}, E_{t+2}, and E_{t+3} had positive correlations with each other, indicating that past accounting-based earnings guided present and accounting-based future earnings. R_{t+1to3}, which played the role of a proxy to correct measurement errors in accounting-based future earnings, was not significantly correlated with the current stock return, indicating that the future returns did not influence the regression results of current stock return

.Table 2: Pearson correlations (*p-values)*

Variable	Rt	E_{t-1}	E_t	E_{t+1+3}	R_{t+1to3}	ICD_t	E_{t-1} *	E_t * ICD_t	E_{t+1to3} * ICD_t	R_{t+1to3} * ICD_t	$PtoB_t$	$MktCap_t$
Rt	1											
E_{t-1}	**0.17**	1										
	(0.03)											
E_t	**0.14**	**0.14**	1									
	(0.07)	*(0.06)*										
E_{t+1to3}	**0.31**	**0.37**	**0.35**	1								
	(0.01)	*(0.01)*	*(0.01)*									
R_{t+1to3}	-0.06	0.10	0.14	**0.39**	1							
	(0.41)	*(0.18)*	*(0.07)*	*(0.01)*								
ICD_t	-0.07	0.04	0.06	0.01	0.01	1						
	(0.40)	*(0.59)*	*(0.42)*	*(0.86)*	*(0.90)*							
E_{t-1} * ICD_t	**0.17**	**1.00**	0.15	**0.37**	0.11	0.11	1					
	(0.03)	*(0.01)*	*(0.06)*	*(0.01)*	*(0.16)*	*(0.14)*						
E_t * ICD_t	0.11	0.14	**0.99**	**0.33**	0.14	0.14	0.15	1				
	(0.15)	*(0.07)*	*(0.01)*	*(0.01)*	*(0.06)*	*(0.07)*	*(0.05)*					
E_{t+1to3} * ICD_t	**0.29**	**0.40**	**0.39**	**0.97**	**0.42**	**0.18**	**0.41**	**0.38**	1			
	(0.01)	*(0.01)*	*(0.01)*	*(0.01)*	*(0.01)*	*(0.02)*	*(0.01)*	*(0.01)*				
R_{t+1to3} * ICD_t	-0.04	0.13	**0.17**	**0.41**	**0.92**	0.08	0.14	**0.18**	**0.47**	1		
	(0.65)	*(0.10)*	*(0.03)*	*(0.01)*	*(0.01)*	*(0.31)*	*(0.08)*	*(0.02)*	*(0.01)*			
$PtoB_t$	**-0.19**	-0.15	**-0.17**	**-0.31**	**-0.27**	-0.02	**-0.14**	**-0.16**	**-0.30**	**-0.28**	1	
	(0.02)	*(0.05)*	*(0.03)*	*(0.01)*	*(0.01)*	*(0.77)*	*(0.07)*	*(0.04)*	*(0.01)*	*(0.01)*		
$MktCap_t$	-0.13	-0.05	-0.15	**-0.20**	**-0.23**	**0.39**	-0.03	-0.12	**-0.16**	**-0.25**	**0.25**	1
	(0.10)	*(0.49)*	*(0.05)*	*(0.01)*	*(0.01)*	*(0.01)*	*(0.74)*	*(0.13)*	*(0.04)*	*(0.01)*	*(0.01)*	

Significance level measured at 5%.

Table 3 presents descriptive statistics. The median accounting-based future earnings and median future stock return were greater than the median current earnings and the median current stock return respectively, indicating there were no structural changes in these variables over the sample time period. The ICD_t had considerable variation in this sample of firms, with minimum 1.1 and maximum 6.61, and thus findings were based on firms with a wide range of ICD_t activity. The $PtoB_t$ also varied considerably among firms, with minimum 0.32 and maximum 60.32.

- Table 3: Descriptive statistics

Variable	Mean	Std. Dev.	Median	Min	Max
R_t	0.16	0.03	0.57	-0.72	4.15
E_{t-1}	0.19	0.15	0.41	0.00	5.27
E_t	0.21	0.15	0.38	0.00	4.65
E_{t+1to3}	0.68	0.43	0.79	0.01	6.13
R_{t+1to3}	0.52	0.38	1.19	-3.87	7.23
ICD_t	4.29	4.45	0.94	1.10	6.61
$E_{t-1} * ICD_t$	0.84	0.63	1.92	0.00	24.51
$E_t * ICD_t$	0.91	0.61	1.85	0.00	22.79
$E_{t+1to3} * ICD_t$	2.93	1.89	3.43	0.03	24.59
$R_{t+1to3} * ICD_t$	2.07	1.58	5.54	-17.96	39.49
$PtoB_t$	12.48	9.21	10.47	0.32	60.36
$MktCap_t$	21.41	21.33	0.76	19.06	24.20

As shown in Table 4, ICD_t news had no significant correlation with the current stock return and was consistent with Research Proposition One. Consistent with Research Proposition Two, accounting-based future earnings was a predictor of the current stock return, confirming that investors included accounting-based future earnings in the current stock return. The increasing ICD_t activity had no effect on accounting-based earnings included in the current stock return, indicating that investors disregarded their interaction impact. The larger firms measured as $MktCap_t$ had a positive association with the current stock return. Firms with higher growth rates measured as $PtoB_t$ had a negative association with the current stock return, although the coefficient was close to zero. This could be due to the civil-war environment, as the Colombo Stock Exchange has documented that the ratio between the market value and the book value decreased during that period in spite of profit growth in firms. Firms with higher growth rates are more likely to contribute towards firms' future earnings from their intellectual capital resources. Investors appeared to have perceived that the political risks due to the civil war heightened the uncertainty associated with future earnings from intellectual capital resources being transformed into actual earnings in the future.

Table 4

Results for the main model with ICD_t as a predictor

Variable	Coefficient	Probability	Std Error
E_{t-1}	4.31	0.141	2.90
E_t	0.57	0.785	2.09
E_{t+1to3}	**0.81**	0.044	0.40
R_{t+1to3}	-0.09	0.265	0.08
ICD_t	0.12	0.301	0.12
E_{t-1} * ICD_t	-0.86	0.170	0.62
E_t * ICD_t	-0.04	0.926	0.43
E_{t+1to3}* ICD_t	-0.05	0.575	0.09
R_{t+1to3} * ICD_t	-0.02	0.203	0.02
$PtoB_t$	**-0.02**	0.001	0.01
$MktCap_t$	**0.31**	0.014	0.12

Constant	-7.15	0.008	2.63
Within R^2	0.478		
F (probability)	9.24 (0.001)		

Significance level measured at 5%.

Number of observations = 167, Number of groups = 45, Average observations per group = 3.7.

Additional Analysis

Guided by the literature, the 45 ICD_t resource items were categorized into internal capital disclosure ($IntCD_t$) representing 10 resource items; external capital disclosure ($ExtCD_t$) representing 10 resource items; and human capital disclosure ($ExtCD_t$) representing 25 resource items (Abeysekera, 2007, pp. 79–88; Abeysekera & Guthrie, 2005). Three separate models were run for $IntCD_t$, $ExtCD_t$, and $HumCD_t$, replacing ICD_t in the main model. As shown in Table 5, the results indicated that in each of the three models, accounting-based future earnings were included in the current stock return in all three models. The firm-specific factors ($MktCap_t$ and $PtoB_t$) were also significantly associated with the current stock return. The $HumCD_t$ coefficient was positive but close to zero with a weak significance level (0.04, probability=0.071) with the stock return. The increasing $HumCD_t$ activity had a decreasing influence

on the accounting-based future earnings being included in the current stock return, as shown by the negative coefficient of the interaction between $HumCD_t$ activity and the three years of accounting-based future earnings. The human capital is volatile compared with internal capital or external capital, as firms' staff-related intangibles could change more quickly; in the context of the civil war, which poses an uncertain future economic outlook, investors appeared to have related the greater uncertainty associated with $HumCD_t$ with a decrease in confidence in accounting-based future earnings being realized as actual earnings.

Table 5

Results for the additional analysis models with intellectual capital category as a predictor

Variable	$IntCD_t$		$ExtCD_t$		$StrCD_t$		$HumCD_t$	
	Coef.	Pr	Coef.	Pr	Coef.	Pr	Coef.	Pr
E_{t-1}	0.52	0.179	0.35	0.069	0.40	0.106	0.38	0.558
E_t	0.04	0.878	-0.10	0.776	-0.08	0.812	0.23	0.711
E_{t+1to3}	**0.57**	0.000	**0.55**	0.000	**0.55**	0.000	**1.04**	0.000
R_{t+1to3}	**-0.22**	0.000	**-0.21**	0.001	**-0.21**	0.001	**-0.28**	0.000

XXD_t	-0.02	0.580	-0.01	0.502	-0.01	0.510	0.04	0.071
E_{t-1} * XXD_t	-0.12	0.478	-0.03	0.602	-0.03	0.525	-0.03	0.849
E_t * XXD_t	0.11	0.258	0.06	0.259	0.04	0.240	0.03	0.768
E_{t+1to3}* XXD_t	0.00	1.000	0.01	0.702	0.00	0.778	**-0.07**	0.001
R_{t+1to3} * XXD_t	0.01	0.593	0.00	0.772	0.00	0.703	0.02	0.059
$PtoB_t$	**-0.02**	0.001	**-0.02**	0.001	**-0.02**	0.000	**-0.02**	0.002
$MktCap_t$	**0.30**	0.017	**0.31**	0.019	**0.31**	0.018	**0.27**	0.029
Constant	-6.36	0.018	-6.47	0.019	-6.52	0.018	-6.01	0.021
Within R^2	0.46		0.46		0.46		0.52	
F (probability)	8.7		8.6		8.6		10.85	

Significance level measured at 5%.

Number of observations = 167, Number of groups = 45, Average observations per group = 3.7.

XXD_t is either $IntCD_t$, $ExtCD_t$, $StrCD_t$, or $HumCD_t$ activity.

As a further analysis, this study aggregated $IntCD_t$ and $ExtCD_t$ as $StrCD_t$., with $StrCD_t$ being the stable capital dimension of intellectual capital. ICD_t in the main model was replaced with $StrCD_t$ and the regression model was run. The results (not reported here) were similar to those obtained from running $IntCD_t$ and $ExtCD_t$ models. As found in the main model, accounting-based future earnings and firm-specific factors significantly associated with current stock return.

Limitations and Future Research

It is also necessary to acknowledge several limitations of this study. First, the sample comprised the top 30 firms only, although the top 30 of the 196 listed firms represented 62% of the market capitalization of the Colombo Stock Market. Small sample sizes are typical of a stock market in a small developing country, but the explanatory power of the model might have been overstated due to the small sample size and pooling of data. Also, the findings of this study must be generalized in the context of the unique political setting (i.e., civil war) of Sri Lanka during the period of investigation. These limitations however do not undermine the major finding that in the context of Sri Lanka, ICD_t had no significant association with the current stock return in the civil-war period. In this civil-war setting, investors are likely to respond favorably to accounting-based future earnings forecasts, subject to forecast accuracy, rather than ICD_t.

Future research can investigate whether investors include ICD_t news in a stable political environment after a civil war. Sri Lanka regained peace in May 2009 subsequent to 26 years of civil war, and a comparative research during the peace period with the civil-war period can provide clarification. Future research could investigate similar phenomena in countries with different political (e.g., fully fledged war-ridden countries) and economic settings. Further, this study treated intellectual capital as a single construct to examine the relationship between aggregated ICD_t news and the current stock return. However, each of the 45 intellectual capital resource items can have different

levels of influence on the current stock return. Additionally, Mouritsen (2003) noted that disclosing intellectual capital is a process of discovery and development, for both the firm and investors, and firms are concerned with producing new resource items of intellectual capital to share and stabilize their knowledge. This study quantified ICD_t with 45 intellectual capital resource items; however, there may have been new intellectual capital resource items that firms shared in annual reports, but that this study did not capture. It is likely that the civil war might have had an impact on the creation, suppression, or resignation of intellectual capital resource items for firms' disclosure. These are a few propositions that could become investigations in future research.

REFERENCES

Abbott, W. F., & Monsen, R. J. (1979). On the measurement of corporate social responsibility: Self-reported disclosures as a method of measuring corporate social involvement. *Academy of Management Journal*, *22*(3), 501–515.

Abeysekera, I. (2007). *Intellectual capital accounting. Practices in a developing country.* New York: Routledge.

Abeysekera, I., & Guthrie, J. (2005). An empirical investigation of annual reporting trends of intellectual capital in Sri Lanka. *Critical Perspectives on Accounting*, *16*, 151–163.

Andrew, B. H., Gul, F. A., Guthrie, J. E., & Teoh, H. Y. (1989). A note on corporate social disclosure practices in developing countries: The case of Malaysia and Singapore. *British Accounting Review*, *21*, 371–376.

Ashton, R. H. (2005). Intellectual capital and value creation: A review. *Journal of Accounting Literature*, *24*, 53–134.

Ballas, A. A., & Hevas, D. L. (2005). Differences in the valuation of earnings and book value: Regulation effects or industry effects? *The International Journal of Accounting*, *40*, 363–389.

Barron, O. E., Byard, D., Kyle, C., & Riedl, E. J. (2002). High-technology intangibles and analysts' forecasts. *Journal of Accounting Research, 40*(2), 289–312.

Beattie, V. (Ed.). (1999). *Business Reporting: The Inevitable Change?* Edinburgh: The Institute of Chartered Accountants of Scotland.

BOI (Board of Investment). (2000). (Statutory agency responsible for promoting and facilitating foreign investments in Sri Lanka, online). Retrieved from http://www.boisrilanka.org.

Bozzolan, S., Favotto, F., & Ricceri, F. (2003). Italian annual intellectual capital disclosure: An empirical analysis. *Journal of Intellectual Capital*, *4*(4), 543–558.

Brennan, N. (2001). Reporting intellectual capital in annual reports: Evidence from Ireland. *Accounting, Auditing and Accountability Journal*, *14*, 423–436.

Brown, K. (2001). Closing the divide – Issues when developing a bond market: The case of Sri Lanka. Working paper 2001_06, School of Accounting and Finance, Deakin University, Melbourne. Retrieved from http://www.deakin.edu.au/buslaw/aef/publications/workingpapers/wpa01_6.pdf

Brown, S., Lo, K., & Lys, T. (1999). Use of R^2 in accounting research: Measuring changes in value relevance over the last four decades. *Journal of Accounting and Economics*, *28*, 83–115.

Browning, E. S. (2005). Aging bull stumbles: Waning investor confidence and rising interest rates pose challenges to stocks. *Wall Street Journal* (Eastern ed.), 20 April, C1.

CMA (The Society of Management Accountants of Canada). (1998). The management of intellectual capital: The issues and the practice, Management accounting issues paper 16. Hamilton, Ontario: Author.

Collins, D. W., Kothari, S. P., Shanken, J., & Sloan, R. (1994). Lack of timeliness and noise as explanations for the low contemporaneous return-earnings association. *Journal of Accounting and Economics*, 18, 289–324.

Cooray, A. V., & Wickramasighe, G. (2007). The efficiency of emerging stock markets: Empirical evidence from the South Asian Region. *Journal of Developing Areas*, *41*(1), 171–183.

CSE (Colombo Stock Exchange). (1997). Annual Report 1997, Colombo.

CSE (Colombo Stock Exchange). (1998). Annual Report 1998, Colombo.

CSE (Colombo Stock Exchange). (1999). Annual Report 1999, Colombo.

CSE (Colombo Stock Exchange). (2000). Annual Report 2000, Colombo.

Daley, J. (2001). The intangible economy and Australia. *Australian Journal of Management*, *26*, 3–20.

De Silva, C. (2006). Sri Lankan stock market today and future. Public lecture by Director General, Securities and Exchange Commission of Sri Lanka. Retrieved from http://www.cbsl.gov.lk/pics_n_docs/02_prs/_docs/lecture/publec_20070125.pdf

Dzinkowski, R. (2000). The measurement and management of intellectual capital: An introduction. *Management Accounting* (UK), *78*, 32–36.

Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long Range Planning*, *30*, 366–373.

Edvinsson, L., & Sullivan, P. (1996). Developing a model for managing intellectual capital. *European Management Journal*, *14*(4), 356–364.

EIU ViewsWire. (2008). Sri Lanka: Country risk summary. *EIU ViewsWire*, 17 March.

Ettredge, M. L., Kwon, S. Y., Smith, D. B., & Zarowin, P. A. (2005). The impact of SFAS No. 131 business segment data on the market's ability to anticipate future earnings. *The Accounting Review*, *80*, 773–804.

Gamble, G. O., Hsu, K., Kite, D., & Radtke, R. R. (1995). Environmental disclosures in annual reports and 10Ks: An examination. *Accounting Horizons*, *9*, 34–54.

Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing and Accountability Journal*, *8*, 47–77.

Guthrie, J., & Petty, R. (2000). Intellectual capital: Australian annual reporting practices. *Journal of Intellectual Capital*, *1*(3), 241–51.

Healy, P., Hutton, A., & Palepu, K. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research*, *16*(3), 485–520.

HLC (Handbook of Listed Companies). (1988). Colombo Stock Exchange, Colombo.

HLC (Handbook of Listed Companies). (2000). Colombo Stock Exchange, Colombo.

HLC (Handbook of Listed Companies). (2003). Colombo Stock Exchange, Colombo.

HLC (Handbook of Listed Companies). (2006). Colombo Stock Exchange, Colombo.

Holland, J. (2003). Intellectual capital and the capital market: Organization and competence. *Accounting, Auditing and Accountability Journal*, *16*(1), 39–48.

International Finance Corporation; Harwood, A. (Ed.). (2000). *Building local bond markets: An Asian perspective*. Washington, DC: The World Bank.

Jenkins, E. (1994). An information highway in need of capital improvements. *Journal of Accountancy*, *177*, 77–82.

Klein, D. A. (Ed.). (1998). The strategic management of intellectual capital. Woburn, MA: Butterworth-Heinemann.

Knight, D. J. (1999). Performance measures for increasing intellectual capital. *Planning Review*, *27*, 22–27.

Lanka Newspapers. (2005). Dialog IPO to raise CSE's market capitalization by 20%. Retrieved from http:///www.lankanewspapers.com/news/2005/6/2425.html

Lev, B. (2001). Intangibles: Management, measurement, and reporting. Washington, DC: Brookings Institution Press.

Lev, B. (2004). Sharpening the intangibles edge. *Harvard Business Review*, June, 109–116.

Lev, B., & Zarowin, P. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research*, *37*, 353–383.

Lundholm, R., & Myers, L. (2002). Bringing the future forward: The effect of disclosure on the returns-earnings relation. *Journal of Accounting Research*, *40*, 809–839.

Miller, G. S. (2002). Earnings performance and discretionary disclosure. *Journal of Accounting Research*, *40*, 173–204.

Mitchell, J. D., Chia, C. W. L., & Loh, A. S. (1995). Voluntary disclosure of segment information: Further Australian evidence. *Accounting and Finance*, *35*, 1–13.

Mouritsen, J. (1998). Driving growth: Economic value added versus intellectual capital. *Management Accounting Research*, *9*, 461–482.

Mouritsen, J. (2003). Intellectual capital and the market: Circularity of intellectual capital. *Accounting, Auditing and Accountability Journal*, *16*(1), 18–30.

Neu, D., Warsame, H., & Pedwell, K. (1998). Managing public impressions: Environmental disclosures in annual reports. *Accounting, Organizations and Society*, *23*, 265–282.

Neuman, W. L. (2006). *Social research methods: Quantitative and qualitative approaches* (8th ed.). Boston: Alvin and Bacon.

Newson, M., & Deegan, C. (2002). Global expectations and their association with corporate social disclosure practices in Australia, Singapore and South Korea. *The International Journal of Accounting*, *37*, 183–213.

Niemark, M. K. (1995). *The hidden dimensions of annual reports: Sixty years of social conflict at General Motors*. Princeton: Markus Wiener.

Patten, D. M. (1992). Intra-industry environmental disclosures in response to the Alaskan oil spill: A note on legitimacy theory. *Accounting, Organizations and Society*, *17*, 471–475.

Petty, R., Ricceri, F., & Guthrie, J. (2008). Intellectual capital: A user's perspective. *Management Research News*, *31*(6), 434–447.

Rao, K. (1998). Setbacks stifle market. *The Banker*, *148*(871), 79–82.

Roos, J., Roos, G., Dragonetti, N. C., & Edvinsson, L. (1997). Intellectual capital: Navigating the new business landscape. London: Macmillan Business.

Ryan, S. G., & Zarowin, P. A. (2003). Why has the contemporaneous linear return-earnings relation declined? *The Accounting Review*, *78*, 523–553.

Scott, W. A. (1955). Reliability of content analysis: The case of nominal scale coding. *The Public Opinion Quarterly*, *19*, 321–325.

Skinner, D. J. (2008). Accounting for intangibles: A critical review of policy recommendations. *Accounting and Business Research*, *38*, 191–204.

Smith, M., & Taffler, R. J. (2000). The chairman's statement: A content analysis of discretionary narrative disclosures. *Accounting, Auditing and Accountability Journal*, *13*, 624–647.

Sveiby, K. E. (1997). *The new organizational wealth: managing and measuring knowledge based assets* (5th ed.). San Francisco: Barrett-Koehler.

Swinson, C. (1998). Address by the President of the institute. The 21st century annual report, corporate governance. London: Institute of Chartered Accountants of England and Wales.

Walker, M. (2005). Commentary on differences in the valuation of earnings and book value: Regulation effects or industry effects? *The International Journal of Accounting*, *40*, 391–393.

Warfield, T. D., & Wild, J. J. (1992). Accounting recognition and the relevance of earnings as explanatory variables for returns. *The Accounting Review*, *67*, 821–842.

Wickremaratne, K. T. (2000). Intellectual property plays a vital role in the overall economic development of any country. *Ceylon Daily News*, 21 June. Colombo: Lakehouse Publication.

World Bank. (2002). Market capitalization of listed companies (%GDP): World development indicators on CD-ROM. New York: World Bank.

Worthington, A., & Higgs, H. (2006). Weak-form market efficiency in Asian emerging and developed equity markets: Comparative tests of random walk behavior. *Journal of Accounting Research*, *19*, 54–63.

Zeghal, D., & Ahmed, S. A. (1990) Comparison of social responsibility information disclosure media used by Canadian firms. *Accounting, Auditing and Accountability Journal*, *3*, 38–53.