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Information Provided by Accrual and Cash Flow Measures in Determining Firms' Performance: Malaysian Evidence

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Abstract: Accrual and cash flow measures have been argued to be able to evaluate firms' performance, although the results are inconclusive throughout countries and time. This study examined the accrual and cash flow measures independently and jointly among Malaysian firms. The study predicted that the low cash flow subgroups (high income to cash flow firms) would show better results in operating, investing and financing activities. Our descriptive analysis of the structural components of the firms seemed to confirm that low cash firms relatively had higher sales, total assets and shareholders' equity than the high cash firms, indicating that these firms showed better operating performance than other subgroups. With regard to the investing and financing activities, small firm group confirmed the expectations but big firms exhibit different results. Further analysis on the correlation among variables yielded evidence to suggest that there is a significant relationship between non-current assets and debt with investing and financing cash flows, in the expected direction of movement. Using income and cash flow measures, independently and jointly, the results show that none of the measures can be used to evaluate Malaysian firms' performance. The findings appear to be not supportive of previous research which argued that income and cash flow measures have incremental and joint information in assessing firms' performance.

Key words: Earnings, financial crisis, KLSE, MASB

INTRODUCTION

The cash flows of an enterprise provide information to users of financial statements with a basis to assess the ability of the enterprise to generate cash and cash equivalents and the needs of the enterprise to utilize those cash flows[1]. In Malaysia, the MASB 5-Cash Flow Statement became operative on 1 July 1999, which superseded MASB Approved Accounting Standard IAS 7 (revised)-Cash Flow Statements. Overall, the contents of MASB 5 are consistent in all material respects with IAS 7 (revised) - Cash Flow Statement.

A number of research studies on cash flow have been carried out in the developed markets to examine the usefulness of the cash flow information to various users[2], the choice of the methods used by the prepares[3] and the importance of the cash flow information in determining firms' performance[4-14]. The promulgation of revised standards on the cash flow statement by various accounting standard setting bodies all over the world indicate the growing importance of the information in a cash flow statement to the users of the financial statements in evaluating the operating, investing and financing activities of the firms. No similar studies have been carried in Malaysia.

Focusing on the Malaysian companies, this study reports evidence on the ability of cash flow and accrual measures, when considered jointly and separately, in explaining firms' performance in a developing market, in the early period of the new adopted standard on the cash flow statement. This study extended the study by[15] who found that dividend payment and cash available after investment were significant in explaining firms' performance, as measured by security prices.

Previous studies: Issues surrounding accrual and cash flow measures with cash flows have focused mainly on its usefulness to the various users[2, 3], the choice of methods to present the statement, comparative studies and its comparative role with the accrual measures in relation to the firms' performances, as reflected in the security prices [4-10]. The empirical evidence is, however, mixed.[5] For instance, investigates the incremental information content of accrual and funds components of earnings on share prices. The author found that the stock price reacted more favorably to cash flow than to the accrual components. This evidence is consistent with the one reported by[4]. However, in a subsequent study with the Wilson's test period being extended,[6] are unable to explain a significant fraction of the stock price behavior. In another related study,[11] confirms Wilson's findings by showing that the information content of the components of the cash flow is systematically different. Interestingly, the study finds that the security prices do

not reflect the information content in both the cash flow and accrual components until it impacts future earnings. Thus, this finding contradicts the traditional efficient market's view in that stock prices fully reflect all publicly available information.[7] examine the relationship between the cash flow components and annual security returns. They found that there is a significant association between the operating and financing components of the cash flow with the security returns. Similar study has been done by[8], who desegregated the cash flow components and their relation with firm's security returns. They demonstrate that, consistent with earlier studies, besides operating and financing, investing cash flow also shows a strong relationship with the security returns.

In another study,[9] shows that cash flows suffer measurement error to a greater extent than earnings. Similar results were also found by[10] where it is shown that, on average, disaggregated earnings are better able to reflect value relevant events than disaggregated cash flows over return intervals of one to ten years. While many studies report evidence on the superiority of the accrual over the cash flow basis and vice versa,[12] approached this issue by examining both accrual and cash flow measures jointly in determining firms' performance. They found that, for companies having a consistent pattern of income in excess of operating cash flow, with both measures appropriately adjusted and scaled, indicates superior company growth. They have also rejected the idea of income and operating cash flow converges over long periods of time, and that earnings provide a reliable basis for cash flow prediction.

In Malaysia, evidence of the cash flow statement is very limited.[16] for instance, discusses the disclosure the cash flow statements among Malaysian companies. Radziah, on the other hand, examines dividend payments and cash available after investment. She uses dividend as a proxy for ex-ante permanent earnings in relation to the security prices. She concludes that both dividend payments and cash available after investment are significant in explaining the market value of the Malaysian firms, as were reflected by the security prices.

The relationship between the working capital and the firm's operating growth can be explained as follows. In a normal business cycle, inventories are purchased or manufactured before sales can occur. The purchase or production of the inventories will generally involve payables and cash outflows. This is followed by sales, receivables and finally cash inflows. As the sales increases, the payables and receivables will also increase but with a different magnitude. The offset is seldom complete because receivables generally change more rapidly than payables (due to the difference between selling and cost price), making the current assets increment being greater than the current liabilities increment[12]. For firms with operating growth, this situation is expected to persist, resulting in the gap between the payables and receivables becoming wider throughout the growth period. Hence, a persistent increase in the working capital of the firms is reflective of the firm's growth. Because sales are made both on credit and cash, an increase in sales will typically result in an increase in receivables. This result in a lag to the operating cash flow and sales. An increase in sales will give the same effect to the operating cash flows. For the growing firms, especially those which grow very rapidly, sales typically increase faster than the operating cash flows do. This makes the difference between operating cash flows (cash collected from customers) and sales (cash and credit) become widen. Therefore, these firms would have their operating cash flow relatively smaller than the sales, as reflected in the net income. In view of this relationship, firms with lower operating cash flow than income exhibit better operating performance than the high cash flow firms. Hence, the first hypothesis is stated as follows:

H1: Firms having operating cash flows smaller than net income exhibit better operating performance Generally, the relationship between the accrual and cash flow measures can be explained as follows:

Asset (A)	= Liabilities (L) + Equities (E)
Cash (C) + Current Assets (CA) + Long term Assets (LA)	= (Current Liabilities (CL) + Long term Lialities (LL)) + (Contributed Capital (CC) + Retained Earnings (RE))
C + CA + LA - Accumulated	= CL + LL + (CC + RE - Dividends (D)) C
Depreciation and Amortization (DA)	= (Net Income (NI) + depreciation + amortization -ΔCA +ΔCL) + (- ΔLA) + (ΔLL + ΔCC -D)
	= Operating + Investing + Financing cash flow
To make net income compared to operating cash flow, the equation above is rearranged, which is as follows:	
Net Income	= Operating Cash Flow
NI+ depreciation + amortization	= (NI + depreciation + amortization - ΔCA+ ΔCL)
	= (ΔCA - ΔCL)

The difference between income and operating cash flows is due to the working capital changes. For periods in which income (plus depreciation and amortization) increases, the operating cash flow will be less than the income, due to the positive amount of the working capital changes (changes in current assets being greater than changes in current liabilities). This therefore leads us to predict that firms having operational cash flows smaller than net income exhibit better performance. To satisfy the need for the expanding operational activities, these firms will have to invest in non-current assets, as reflected in the investing activities. Therefore, the hypothesized relationship between the operational cash flows and investing activities is as follows:

H_2: Firms having operating cash flow smaller than net income exhibit higher investing activities.

Nevertheless, having less cash available means these firms will need outside financing to expand the business. Therefore, an increase in the financing cash inflows is expected for these firms. Our hypothesis for the financial activities is stated as:

H_3: Firms having operating cash flow smaller than net income exhibit higher financing activities.

MATERIALS AND METHODS

All the Kuala Lumpur Stock Exchange listed firms as at 31st December 1994 were included in this study and we collected the relevant data for a period 1995-98 inclusive from sample firms' annual reports. Unlike other studies that used the estimated cash flow data by adjusting the accounting numbers[7,6,9,15], this study used the reported cash flows from the published annual reports. The reason for using the reported data is mainly due to the inaccurate adjustments in determining the cash flow information[17]. Out of the total 478 firms, 260 firms were excluded for the following reasons: no cash flow statements found in the annual reports, change of financial year-ends and companies from the banking and finance sector. To test the factors that determine the performance of the firms, income and operating cash flow were considered, both independently and jointly. The firms' performance is based on their operational capability as well as the investing and financing. In determining the operational performance, proxies used are Sales, Total Assets and Shareholders' Equity, while Dividend Payout, Capital Intensity (Non Current Assets/Total Assets) and Investing Cash Flows for investing activities. Financial Leverage (Debt/Total Assets) and Financing Cash Flow are used for financing activities. Market prices of the shares will not be used in the study as previous studies on Initial Public Offerings (IPOs) find that Malaysian market is inefficient in conveying information to the public[18-21]. The following regression models were developed:

$Y = b_0 + b_1$ Income + e;
$Y = b_0 + b_1$ Operating Cash Flow + e; and
$Y = b_0 + b_1$ (Income/Operating Cash Flow) + e.

Proxies for the dependent variable (Y) were defined as follows:

Operating activities:
Sales: Previous twelve months' period sales,
TA: Total assets, and
SHE: Shareholders' equity.

Investing activities:
Div Payout: Dividend payout ratio, as measured by Dividend paid divided by Income,
NCA/TA: Capital intensity, as measured by Non-Current Assets divided by Total Assets, and
ICF: Investing Cash Flow.

Financing activities:
Debt/TA: Financial leverage, as measured by debt, including the current portion, divided by Total Assets and
FCF: Financing Cash Flow.

RESULTS

The firms that were included in the study were initially categorized into two groups, the big firms and smaller firms. The categorization was based on the firms' total assets, with the median being used as the cutoff point, which we found to be RM1.503 billion (USD395 million). These firms were further classified into two subgroups into firms with income in excess of the operating cash flow (high income firms) in a group, while another group firm with operating cash flow in excess of income (high cash flow firms). This categorization is based on the median for the differences between adjusted income and operating cash flows of the firms (of RM28 million). Firms are classified as low cash flow firms if the difference between adjusted income (after adding back the depreciation and amortization expense) and operating cash flow is smaller than the median.

Results suggest that low cash flow firms, regardless the size, have higher income than the high cash flow firms. A significant difference in the sales volume of the low cash flow and high cash flow firms is also noted. The results also show that larger firms have greater sales than the smaller firms, but low cash firms in both groups have higher sales than the high cash flow subgroups. The same pattern is also observed for total assets and shareholders' equity. This is consistent with the explanation provided in the earlier section. It is apparent that low cash flow firms' operator performance is better than the high cash flow firms of the same group. Evidence in Table 1 also shows that

high cash flow firms are highly financial levered than the low cash flow firms. This is not unexpected because these firms need more cash for repayment of debts (through interest and principal payments). The mean of the variable in Table 1 confirms this argument, with 0.11 in comparison with 0.09 for small firms and 0.15 to 0.12 for the big firms. Financial leverage is closely related to the capital intensity, as reflected by non-current asset divided by the total assets ratio. High cash flow firms are more capital intensive than the low cash firms in the same group. Dividend payout ratio (ordinary dividend/income) tends to be higher in the high cash flow firms in comparison with the low cash firms in the same group. This is supported by the argument that low cash flow firms are in need of cash for further investment, and therefore pays less dividends to the shareholders. The result is different for the big firms. One possible explanation of having a high dividend payout ratio in the low cash flow firms of the big group is due to the ability of those firms paying dividends from the retained profits. Most of the firms in the big group are matured firms and presumably have been accumulating a high amount of profits since their incorporation. For the small group firms, the high cash flow subgroup exhibits higher investing cash outflows than the other subgroup. This is closely related to the capital intensity where high cash firms spent more on capital expenditures and this is reflected in the investing cash outflows. Nonetheless, this is not the case for the big firms where the investing cash outflow is found to be higher for the low cash flow subgroup. Financing cash flows are relatively higher for low cash flow firms as they need outside financing to expand the business, whereas high cash flow firms use the excess cash generated from operating activities to support the debt repayment. For the big firms, the high cash flow firms exhibit higher financing activities. The age factor is possibly the reason, where both subgroups are in the second stage of their life cycle and therefore the pattern of financing, as well as investing activities are different.

As the results indicate in Table 2, the variables are not significantly correlated with each other. One exception is the correlation between noncurrent assets and investing cash outflow which is negative and it is at one percent significance level. This is consistent with the theory in which explains that the cash used for capital expenditure is reflected in the investing cash outflows. The noncurrent assets and financing cash flow are found to be negatively and significantly related, implying that firms used cash from financing to finance the capital expenditure. A negative and significant relation between debt and financing cash flow is also observed. This is expected since the increment in debt means that cash from outside sources has increased, and this is shown as an increment in the financing cash inflows. A negative relation is found between investing cash flow and debt can be explained in a situation whereby firms acquiring excess cash through financing which is subsequently used for investment purposes.

Table 1: Variable Means by Groups

Group	Big Firms (RM) N=436	Small Firms (RM) N=436
Income / Equity		
Low	0.06872	0.07689
High	0.01312	0.05636
Cash Flow/Equity		
Low	0.00681	-0.00092
Low	4,691,292,980	501,342,564
High	3,157,529,747	428,558,528
Total Asset		
Low	8,868,717,136	693,929,979
High	8,110,556,658	568,813,517
SHE		
Low	4,826,203,583	366,107,309
High	2,870,842,691	240,707,391
Debt / Assets		
Low	0.11588	0.08636
High	0.15361	0.11071
Dividend Payout		
Low	-8.79986	0.21081
High	0.79773	0.43056
NCA / TA		
Low	0.52983	0.50079
High	0.62819	0.54302
Investing Cash Flow		
Low	-764,458,940	-47,352,473
High	-699,969,987	-48,343,186
Financing Cash Flow		
Low	222,119,245	38,206,736
High	263,229,304	25,902,602

Note: Low and High refer to the low cash flow firms (income in excess of operating cash flow) and high cash flow firms (operating cash flow in excess of income). There were 54 firms in each low cash flow subgroup and 55 firms in the high cash flow subgroup. The number of observations was 436 (i.e. 109 firms for each year).

Table 2: Correlations Among Variables

	Operating Cash Flow	Income/Operating Cash Flow
Sales	-0.006 (0.935)	0.007 (0.919)
Total Assets	0.039 (0.572)	0.020 (0.768)
SHE	0.014 (0.836)	0.016 (0.819)
Debt / Total Assets	0.015 (0.831)	0.050 (0.462)
NCA / Total Assets	-0.074 (0.276)	0.115 (0.092)
Dividend Payout	0.013 (0.853)	-0.002 (0.976)
Investing Cash Flow	-0.040 (0.552)	-0.020 (0.772)
Financing Cash Flow	0.013 (0.848)	0.023 (0.736)
	NCA	Debt
Investing Cash Flow	-0.948 (0.000)**	-0.800 (0.000)**
Financing Cash Flow	0.561 (0.000)**	0.687 (0.000)**

Note: Income and Operating Cash Flows are adjusted by dividing with SHE; **: Significant at 1% level (2-tailed test); Figs. In parentheses indicate the significance level

Table 3: Panel A: Regression Analysis for the Accrual Model, Y= b0 +b1 Income

	Adj R^2	Intercept	B	Std Error	t	Sig
Sales	0.000	-6.0E+07	-0.008	5.3E+08	-0.114	0.909
Total Assets	0.000	-1.64E+08	-0.009	1.22E+09	-0.134	0.893
SHE	0.001	-2.03E+08	-0.027	5.11E+08	-0.397	0.692
Dividend Payout	0.000	0.457	0.009	3.535	0.129	0.897
Investing Cash Flow	0.019	38433297	0.019	1.39E+08	0.276	0.783
NCA/ Total Assets	0.016	-0.004	-0.125	0.026	-1.856	0.065
Debt/Assets	0.000	-0.003	-0.019	0.013	-0.287	0.775
Financing Cash Flow	0.000	-6446070	-0.011	41462717	-0.155	0.877

Note: Income and operating cash flow has been adjusted by dividing with SHE

Panel B: Regression Analysis of the Cash Flow Model, Y= b0+ b1

	Adj R^2	Intercept	B	Std Error	t	Sig
Sales	0.001	1.0E+09	0.033	2.1E+09	0.486	0.627
Total Assets	0.001	2.73E+09	0.039	4.81E+09	0.567	0.572
SHE	0.000	4.19E+08	0.014	2.02E+09	0.208	0.836
Dividend Payout	0.000	2.601	0.013	13.985	0.186	0.853
Investing Cash Flow	0.002	-3.28E+08	-0.040	5.50E+08	-0.595	0.552
NCA/ Total Assets	0.005	-0.112	-0.074	0.102	-1.092	0.276
Debt/Assets	0.000	0.010	0.015	0.050	0.214	0.831
Financing Cash Flow	0.000	31550238	0.013	1.64E+08	0.192	0.848

Note: Income and operating cash flow has been adjusted by dividing with SHE

Panel C: Regression Analysis for the Accrual and Cash Flow Model, Y= b0+b1 (Income/Operating Cash Flow

	Adj R^2	Intercept	B	Std Error	t	Sig
Sales	0.000	2882488	0.020	9761567	0.295	0.768
Total Assets	0.000	6650975	0.020	22531855	0.295	0.768
SHE	0.000	2164280	0.016	9448109	0.229	0.819
Dividend Payout	0.000	-0.001	-0.002	0.065	-0.030	0.976
Investing Cash Flow	0.000	-746363	-0.020	2575163	-0.290	0.772
NCA/ Total Assets	0.013	0.000	0.115	0.000	1.691	0.092
Debt/Assets	0.003	0.000	0.050	0.000	0.738	0.462
Financing Cash Flow	0.001	258242	0.023	765835	0.337	0.736

Note: Income and operating cash flow has been adjusted by dividing with SHE

Finally, regression analyses were carried out to test the hypotheses whose results are shown in Table 3. Panels A and B of Table 3 show the result of the analysis with income and operating cash flow considered independently. Panel C of Table 3, on the other hand, shows the results when income and operating cash flow were considered jointly.

Results in Table 3 suggest that accrual and cash flow measures either considered separately or jointly could not determine the performance of the Malaysian firms. Thus, the three hypotheses are not supported. Regression analyses using variables in their transformed forms (i.e. log, natural log and the inverse value) were also carried out. The results, however, remained. Further regression analyses were carried out by segregating firms into large and small groups followed by a further subdivision into low cash firm and high cash firm subgroups. The results, however, did not change significantly. Further, to test whether the economic downturn has any impact on the results, we split the time period into two categories, 1995-96 (pre-crisis) and 1997-98 (during crisis). The results,

nevertheless, remained the same. The financial crisis did not have any significant impacts on the results.

CONCLUSION

Accrual and cash flow measures are argued to be able to evaluate firms' performance, although the results are inconclusive throughout countries and time. Based on the theoretical arguments that income alone is unable to provide information regarding the operating, investing and financing activities of the firms, cash flow measures are claimed to be a supplemental source of information to determine firms' performance. Considering accrual and cash flow measures independently, as well as jointly, this study is carried out with the objective of providing evidence among Malaysian firms. We predicted that low cash flow subgroups (high income to cash flow firms) to have higher operating, investing and financing activities compared to high cash flow subgroups (low income to cash flow firms). The descriptive analysis of the structural components of the firms confirmed that low cash firms relatively showed higher sales, total assets and shareholders' equity than the high cash firms. This evidence indicated that low cash flow subgroups (high income to cash flow firms) firms showed better operating performance than the other subgroups. In relation to the investing and financing activities, the small firm group seemed to confirm the argument. The big firm group showed contradictory results. Our correlation analysis provided evidence which suggested that there was a significant relationship between non-current assets and debt with investing and financing cash flows, as expected. When we used income and cash flow measures, independently and jointly, the results showed that none of these measures were important to evaluate firm's performance. The findings appear inconsistent with the one reported in Ingram and Lee[15] that evidenced income and cash flow measures have incremental and joint information in assessing firms' performance.

One major limitation of this study is the utilization 4-year period (1995-1998) that may not be long enough to capture the relationship of the cash flow components and performance. The period have chosen due to the unavailability of the published cash flow data in Malaysia. As an extension to this research, a longer period of time can be considered either by using further published reports or reconstructing the cash flow information. Another limitation of this study is the inclusion of extraordinary items in the net income after taxation prior to the adoption of MASB 3-Net Profit or Loss for the Period, Fundamental Errors and Changes in Accounting Policies [22] in some of the annual reports. Certain items which have previously been classified as "extraordinary" prior to the adoption of MASB 3 are no longer permitted to be treated as extraordinary items following the implementation of MASB 3, beginning from January 1, 1997. MASB 3 have been taken into account, the reported income can be different.

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