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Robustness of Cash Flow Value: Investment in ASEAN*

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Abstract

This study examines the different roles of cash flow in assessing investment returns in the Association of Southeast Asian Nations (ASEAN). The analysis covers over 900 listed firms across Malaysia, Indonesia, Philippines, Singapore and Thailand for the period post the Asian financial crisis of 2001-2017. Firm-level panel data analysis shows that cash flow factors are important in all contexts of cash return on assets, earnings quality and market value multiple across the region even after controlling for typical measures of profitability. The results suggest that firms should manage cash flow prudently in considerations of firm value from the shareholder's perspective, measured directly using stock return. Cash profitability on assets should become an important firm performance indicator, whilst higher cash component over reported earnings is preferred. The market also tends to respond favourably to cash flow yield as a price multiple in valuation, outpacing the role of earnings yield. Such findings are robust across the pre and post subprime crisis periods, across estimation methods pertaining to finance panel standard errors, as well as across static and dynamic considerations of returns. It is hence sensible to consider cash flow factors in the research pertaining to asset pricing and factor investing in the ASEAN region.

Keywords: Cash Flow, Factor Investing, Shareholder Return, Firm-level Finance Panel, ASEAN.

JEL Classification Code: G1, G3.

1. Introduction

In corporate financial management, it is well rationalised that cash flow management is crucial in the survivability and as going concern of a business entity. However, it has been a consensus that markets seem to react preferably based on firms' reported earnings (see Fama & French, 2006, 2015; Hou, Xue, & Chang, 2015; Lewellen, 2015; Novy-Marx, 2013), even if the reliability and quality may be of concern especially when positive earnings can coexist with negative cash flows over a long period. The potential risk

could be disastrous such as the case in the renowned incidents of Enron and WorldCom, where the inconsistencies between earnings and cash flow were found and highlighted thereafter. Aiming to provide more possible insights to informational content of cash flow, this study attempts to look for panel data evidence of cash flow impacts in three basic considerations, i.e. return on firm assets, earnings quality and market value multiple.

Accrual basis is generally considered highly relevant in reporting firm performance and the income statements have long been important in financial statement analysis, as supported by Dechow (1994). It is thus reasonable to become an important gauge for market participants, including managers and investors. Nevertheless, in periodical earnings reports, it is not unusual to see firms reporting high profits with attractive return on equity even without having well-matched cash flow, due to the various possible reasons such as substantial capital expenditures, lengthy collection period or deteriorating inventory turnover. Such mismatches can be noticeable from the publicly available financial statements, though generally not perceived to have as high explanatory power as of accrual earnings in investment performance. We are sceptical that cash flow information could sometimes be overlooked by

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market participants which may also deepen the difficulties in assessing firm value. This is even crucial when the perceived to be positive cash flow value may not always realise, as found by Ni, Huang, Chiang, and Liao (2019).

In addition to complementing the existing findings in the US markets, such as by Ball, Gerakos, Linnainmaa, and Nikolaev (2016) and Foerster, Tsagarelis, and Wang (2017), this study attempts to search for supporting evidence of possible informational contents of cash flow in explaining investment return in the ASEAN region. This paper generally proposes that (1) Cash return on assets outperforms earnings return on assets from business performance return perspective; (2) Cash component exhibits significant effect on stock return from the earnings quality perspective; (3) Cash flow yield on stock price outperforms the earnings yield from the market valuation multiple perspective. These findings are robust under the control of typical profitability measures and across pre and post subprime crisis periods with both static and dynamic considerations.

For the remaining of this paper, Section 2 reviews the existing literature and proposes the research objectives, Section 3 explains the data and methodology, Section 4 discusses the empirical results and Section 5 provides concluding remarks.

2. Literature Review

Factor investing has long become a popular discussion and financial information is often considered to be important in estimating intrinsic firm value and predicting average returns. After claims of over-simplification of capital assets pricing model to sufficiently explain the performance of stock, size factor and value effects have been widely discussed since then (e.g., Banz, 1981; Cakici, Tang, & Yan, 2016; Fama & French, 1992, 1993; Kheradvar, Ibrahim, & Nor, 2011; Penman, Richardson, & Tuna, 2007). In recent years, there has been increasing acknowledgment of profitability as another significant contributor to stock predictability and contains effects on the value strategy of market participants, such as suggested by Fama and French (2006, 2015), Hou et al. (2015), Lewellen (2015) and Novy-Marx (2013). The importance of profitability is further supported by the claim of superiority of accrual-based earnings over cash flow in accounting standards (Subramanyam & Venkatachalam, 2007). Ball, Gerakos, Linnainmaa, and Nikolaev (2019) also argue that book-to-market value predicts return because it is a proxy for earnings.

While accrual-based profitability is generally considered to be relevant and significant in determining return, the consideration of cash measures has also received attention

mainly in the US markets. Desai, Rajgopal, and Venkatachalam (2004) and Lakonishok, Shleifer, and Vishny (1994) find that the return based on the cash flow criteria are better than those based on earnings in terms of market multiple. In contrast, Dechow (1994) concludes that earnings are generally better to predict returns than cash flow. While Novy-Marx (2013) proposes that profitability on capital has a stronger predictability power, the coefficient of free cash flow remains significant in the return regressions. Consistent with the finding by Sloan (1996), Ball et al. (2016) later propose that cash-based profitability on assets outperforms profitability with accruals in the predictions of cross-sectional returns. Foerster et al. (2017) find that the direct method cash flow measures of return have stronger predictability power than the indirect measures. For the Asian market, Chu (1997) suggests that both cash flows from operating and financing activities exhibit positive relationship with return between the years 1991-1994 in Taiwan. In the same market, Ni et al. (2019) later study the effect of cash flow statements on firm value for the period of years 2005-2014 and find mixed impacts based on different cash flow activities. It is worthwhile to point out that most of the existing studies look into the cash flow effect either in the context of asset return or market multiple, but rarely both.

Such cash flow studies lay heavily on the arguments that reported profitability may not reflect the true economics under various permitted accounting profit recognitions. The strength of a firm's cash flow depends on its management efficiency and various financial decisions. The various implications of cash flow have been extensively discussed in terms of agency problem (Jensen, 1986), future cash flow predictability (Krishnan & Largay, 2000), market valuation (Akbar, Shah, & Stark, 2011), earnings persistence and distributions (Artikis & Papanastasopoulos, 2016), management earnings forecast (Imhof & Seavey, 2018), and many more. Despite common agreements and valuation theories which have suggested the importance of cash flow in the determination of asset value, there is however insufficient evidence found across regions pertaining to the roles of cash flow in stock return expectations.

Additionally, such empirical studies on the possible superiority of cash-based analysis have thus far been found to be limited in the ASEAN markets. The influence of ASEAN, as one of the largest economic zones in the world, has become more significant over the last few decades. Having third largest labour force in the world after China and India, it has become a major centre of manufacturing and trade, as well as one of the fastest-growing consumer markets. It has a population of about 650 million in 2018 according to the International Monetary Fund, of which close to 500 million in the ASEAN 5, i.e. Indonesia, Malaysia, Philippines, Singapore and Thailand. They collectively

contribute about US\$2.5 trillion, or 87% of the GDP of the region. While the ASEAN market share in the global equity markets has increased, there are still far insufficient empirical evidence on its capital market investment behaviour. We hope to provide a better understanding to decision makers due to the likely integrating performance and interdependence among the five markets (Karim & Karim, 2012).

This paper attempts to contribute by incorporating several dimensions of cash flow to see if there are further observations of the likely inconsistent effects between profitability and cash flows in firm return explanations. We think that considering cash flow in the contexts of investment return, earnings quality and market multiple may provide some meaningful insights to better explain stock return. We also consider whether the stock may exhibit momentum or dynamic effect which could distort our research conclusion.

3. Research Methodology and Data

In this study, we employ panel models to analyse the data in both dimensions of firm and time. The required data are extracted from Thomson Reuters Datastream and the variables are estimated accordingly for the purpose of tentative regressions. A total of 917 active firms listed on the ASEAN 5 markets sharing the same financial year end with over 13000 firm-year unbalanced observations from years 2001 through 2017 are employed in this analysis. Annual stock returns are calculated assuming the audited reports are released to the public on an average of three months after the financial year end. Top and bottom 1% of the observations are trimmed. As commonly practiced in such type of research, financial firms and banks are excluded due to different reporting requirements and interpretations of financial statements.

While most of the previous studies applied Fama-MacBeth estimations (Fama & MacBeth, 1973), this study also considers the time or firm effects by clustering the standard errors accordingly (Petersen, 2009). This is to check whether our results are still robust if the residuals in our panel data sets are correlated across firms or across time, which is highly possible in finance data and asset pricing empirical work.

The research hypothesis of the significance of cash flow factors in firm-level stock return explanations can be tested by adopting the models in the general setups:

$$r_{it} = f(CF_{it}, controls_{it}) \quad (1)$$

where r_{it} is firm-level annual stock return, computed as a percentage change in stock price over a year starting three months after the financial year end. CF_{it} is the cash flow factors and $controls_{it}$ represents the other generally accepted control variables which are expected to be important based on the existing literature. Operating cash flow is usually referred to examine earnings quality, where high accruals are perceived to be of low-quality earnings (Chan, Chan, Jegadeesh, & Lakonishok, 2006). Operating cash flow also helps capture the non-cash and non-operating gains which may mislead investors through the income statements. We employ three types of cash flow measures in this study:

$$r_{it} = \beta_0 + \beta_1 CF1_{it} + \beta_2 CF2_{it} + \beta_3 CF3_{it} + controls_{it} + \lambda_{it} + \varepsilon_{it} \quad (2)$$

$CF1_{it}$ is the cash operating return (operating cash flow deflated by total assets) of firm i at year t such as adopted by Ball et al. (2016), Foerster et al. (2017) and Novy-Marx (2013). $CF2_{it}$ is the cash earnings component of profitability (to also serve as the proxy of earnings quality) following the rationales as by Chan et al. (2006) and Sloan (1996). In this study, we adopt the ratio of operating cash flow to reported earnings after tax but before depreciation, to capture the impact of accruals. A higher value indicates higher cash component in the reported operating earnings. $CF3_{it}$ is the cash flow yield (operating cash flow-to-price multiple, or the reciprocal of price-to-cash flow) following the rationales of Cheng and Thomas (2006), Desai (2004) and Lakonishok et al. (1994). λ_{it} is the firm-specific effect and ε_{it} represents the residuals of regressions.

In addition to the profitability measures of earnings yield and return on assets, we also consider the other control variables as suggested to be important in the literature: book-to-market ratio, which could proxy value strategy as well as growth opportunities (e.g., Cakici et al., 2016; Fama & French, 1992; Penman et al., 2007); size effect of firm (Banz, 1981; Fama & French, 1992; Shum & Tang, 2005); financial leverage (George & Hwang, 2010; Muradoglu & Sivaprasad, 2012); and dividend information (Dasilas & Leventis, 2011; Fama & French, 1988). Market risk premium is adopted to control the overall macro environment impact. The overall inclusion of variables are therefore as follows:

$$r_{it} = \beta_0 + \beta_1 CF1_{it} + \beta_2 CF2_{it} + \beta_3 CF3_{it} + \beta_4 prof_{it} + \beta_5 ey_{it} + \beta_6 bm_{it} + \beta_7 size_{it} + \beta_8 lev_{it} + \beta_9 dy_{it} + \beta_{10} mrp_{it} + \lambda_{it} + \varepsilon_{it} \quad (3)$$

where $prof_{it}$ is operating earnings return (ratio of operating earnings to total assets); ey_{it} is earnings yield proxied by the ratio of earnings per share to stock price; bm_{it} is the ratio of

book-to-market value of equity; $size_{it}$ is firm size proxied by the logarithm of market capitalisation; lev_{it} is financial leverage proxied by the ratio of debt to total assets; dy_{it} is dividend yield or the ratio of dividend per share to stock price; and mrp_{it} is the market risk premium over risk-free return, by using the market index return of the respective market in each country. It is also to control for the country-specific characteristics.

However, the stock return could also be dynamic in nature and we are interested to know if our conclusions hold even under such dynamic setups. This consideration is also consistent with some literature that the trailing returns are significant to the current return (Carhart, 1997; Jegadeesh & Titman, 1993; Liu & Zhang, 2008). To consider the possible

time-dependent changes with some level of multicollinearity in the system, the study also estimates the dynamic relationship by considering the lagged dependent variable for robustness check (Arellano & Bond, 1991).

$$r_{it} = \beta_0 + \beta_1 CF1_{it} + \beta_2 CF2_{it} + \beta_3 CF3_{it} + \beta_4 prof_{it} + \beta_5 ey_{it} + \beta_6 bm_{it} + \beta_7 size_{it} + \beta_8 lev_{it} + \beta_9 dy_{it} + \beta_{10} mrp_{it} + \beta_{11} r_{it-1} + \lambda_{it} + \varepsilon_{it} \quad (4)$$

where r_{it-1} is lagged one-period adjusted return. If the role of cash flow measures remain significant, we may then claim that our results are robust under both static and dynamic considerations. The descriptive statistics of the overall observations are shown in Table 1 below.

Table 1: Descriptive Statistics

Variable	Mean	Standard deviation	Minimum	Maximum
Stock return	0.1685	0.6137	-0.7284	4.0946
Cash operating return	0.0550	0.0942	-0.3098	0.4080
Cash earnings component	0.6697	1.2101	-7.0781	5.8258
Cash flow yield	0.1298	0.3454	-1.2937	2.8983
Operating earnings return	0.0605	0.0993	-0.5296	0.4097
Earnings yield	0.0893	0.1506	0.0000	1.8114
Book-to-market	1.2526	1.7504	-10.695	15.107
Firm size	14.772	3.3494	9.1151	23.934
Financial leverage	0.2433	0.2251	0.0000	1.4543
Dividend yield	0.0228	0.0373	0.0000	0.3929
Market risk premium	0.0869	0.2678	-0.5049	0.7103

Table 2: Test Results with Cash Return on Assets

Variable	Standard errors cluster by firm	Standard errors cluster by time	Fama-MacBeth regression	Standard errors cluster by firm	Standard errors cluster by firm
Cash operating return	0.4560*** (0.0684)	0.4560*** (0.0828)	0.4420*** (0.0720)	0.4000*** (0.0577)	
Operating earnings return	-0.1050 (0.0739)	-0.1050 (0.097)	-0.0640 (0.0806)		0.1110* (0.0625)
Book-to-market	0.0381*** (0.0048)	0.0381*** (0.0086)	0.0333*** (0.0067)	0.0384*** (0.0048)	0.0363*** (0.0047)
Firm size	0.0039** (0.0016)	0.0039 (0.0054)	0.0048 (0.0047)	0.0036** (0.0015)	0.0043*** (0.0016)
Financial leverage	0.0844*** (0.0260)	0.0844* (0.0448)	0.0930** (0.0401)	0.0794*** (0.0244)	0.0616** (0.0259)
Dividend yield	-0.1620 (0.1600)	-0.1620 (0.4020)	-0.2060 (0.2760)	-0.2240 (0.1560)	-0.0712 (0.1570)
Market risk premium	0.8950*** (0.0253)	0.8950*** (0.0439)	0.8720*** (0.202)	0.8950*** (0.0253)	0.8980*** (0.0253)
Constant	-0.0568** (0.0256)	-0.0568 (0.0739)	-0.0374 (0.0652)	-0.0521** (0.0254)	-0.0439* (0.0255)
Observations	12,341	12,341	12,341	12,531	12,459
R-squared	0.176	0.176	0.083	0.173	0.172

Robust standard errors in parentheses. ***, ** and * denote significance at 1%, 5% and 10% levels respectively.

4. Results and Discussion

4.1. The Role of Cash Return on Assets (Finding 1)

Our first inference is that the role of cash return on assets is more important than the usual earnings-based return on assets. The cash return on assets is significant and robust with or without the control of earnings-based return (operating earnings return). The panel regressions are robust across the estimations when the firm or time effect is assumed to exist, and also by comparing with the commonly used Fama-MacBeth regression (see Table 2). Thus, the overall results suggest that the effect of earnings-based return could be substituted or even outplayed by the role of cash-based return.

Without the existence of cash-based return, the earnings-based operating return is found to be positive on stock performance but significant at only 10% level. When the cash-based return is introduced to the relationship, its effect becomes insignificant. On the other hand, the coefficient of the cash-based return is positive at 1% significance level and stable across different estimations.

4.2. The Role of Cash Flow as a Proportion of Earnings (Finding 2)

The second main results show that the cash component is significant in affecting stock return, even after being

controlled by either the operating earnings return or the typical return on assets. The coefficient and significance remain consistent and stable across different estimations as shown in Table 3. Similar to our finding in Table 2 above, the effect of earnings-based return indicates weakly positive when the cash earnings component is not considered. Such effect vanishes when the cash component is included in the relationship. Based on the results indicated by Table 2 and Table 3, we propose that the ASEAN market behaviour is consistent with the findings by Ball et al. (2016) and Sloan (1996) where cash earnings is important in enhancing the effect of accrual reported earnings on shareholder's return. As suggested by Akbar et al. (2011), cash-flow component of return would provide useful information for firm valuation.

4.3. The Effect of Cash Flow Multiple (Finding 3)

Our next major finding is about the role of market multiple. While earnings yield is a common reference of stock valuation, we are also keen to know if cash flow multiple is an important valuation tool in ASEAN. As indicated in Table 4, earnings yield tends to be significant without the existence of cash flow yield. Nevertheless, its role is then outplayed when cash flow yield is included in the estimations. The coefficient and significance are robust and stable across various panel estimations pertaining to the treatments of standard errors. Such a conclusion is consistent with the proposals by Desai et al. (2004) and

Table 3: Test Results with Cash Earnings Component

Variable	Standard errors cluster by firm	Standard errors cluster by time	Fama-MacBeth regression	Standard errors cluster by firm	Standard errors cluster by firm
Cash earnings component	0.0194*** (0.0048)	0.0194*** (0.0058)	0.0181*** (0.0051)		0.0189*** (0.0048)
Operating earnings return	0.0671 (0.0906)	0.0671 (0.1000)	0.1490 (0.0858)	0.1110* (0.0625)	
Return on assets					0.1710** (0.0857)
Book-to-market	0.0434*** (0.0073)	0.0434*** (0.0102)	0.0429*** (0.0083)	0.0363*** (0.0047)	0.0451*** (0.0073)
Firm size	0.0083*** (0.0018)	0.00825 (0.0056)	0.0100** (0.0045)	0.0043*** (0.0016)	0.0077*** (0.0018)
Financial leverage	0.0838** (0.0328)	0.0838* (0.0452)	0.0963* (0.0456)	0.0616** (0.0259)	0.0735** (0.0298)
Dividend yield	-0.1340 (0.1690)	-0.1340 (0.3950)	-0.1680 (0.3020)	-0.0712 (0.1570)	-0.1760 (0.1700)
Market risk premium	0.9050*** (0.0275)	0.9050*** (0.0488)	0.8270*** (0.1830)	0.8980*** (0.0253)	0.9060*** (0.0275)
Constant	-0.1210*** (0.0326)	-0.1210 (0.0885)	-0.1110 (0.0749)	-0.0439* (0.0255)	-0.1200*** (0.0318)
Observations	9,504	9,497	9,497	12,459	9,504
R-squared	0.193	0.191	0.091	0.172	0.193

Robust standard errors in parentheses. ***, ** and * denote significance at 1%, 5% and 10% levels respectively.

Lakonishok et al. (1994) in the US markets for portfolio strategy purposes. This also suggests that in addition to the widely accepted factors of price-to-earnings and price-to-book (or their reciprocal) in the practice of value investing, cash flow component in market multiple should be another important factor to consider.

4.4. Our Proposals Are Robust in the Sub-period Observations

To examine where the roles have changed across periods, we divide our observations into the periods of before and after the subprime crisis, which could serve as a potential important structural break in the relationship. Nevertheless, we still find that the overall cash flow effect as discussed in

Table 2, 3 and 4 above remains stable and significant. As indicated in Table 5, it is found that except the cash earnings component which starts to show significance after the crisis period, both the cash-based operating return on assets and cash flow yield remain highly significant throughout the study periods at 1% level. Such results propose that the value of cash flow factors is robust to time over the years of observation. For the control variables in our static model estimations, it is also worth to note that book-to-market and market risk premium are the two most important factors which significantly affect stock returns of the region in a consistent manner. We only report the main cash flow variables to minimise the use of space for tables.

Table 4: Test Results on Cash Flow Multiple

Variable	Standard errors cluster by firm	Standard errors cluster by time	Fama-MacBeth regression	Standard errors cluster by firm	Standard errors cluster by firm
Cash flow yield	0.1270*** (0.0238)	0.1270*** (0.0293)	0.1200*** (0.0293)	0.1300*** (0.0241)	
Earnings yield	0.0843 (0.0672)	0.0843 (0.0606)	0.1120 (0.0705)		0.1510** (0.0645)
Return on assets	0.0837 (0.0669)	0.0837 (0.0817)	0.0572 (0.0666)	0.1210** (0.0593)	0.0927 (0.0654)
Book-to-market	0.0302*** (0.0049)	0.0302*** (0.0080)	0.0230*** (0.0064)	0.0299*** (0.0050)	0.0350*** (0.0047)
Firm size	0.0042*** (0.0016)	0.0042 (0.0053)	0.0053 (0.0045)	0.0039** (0.0015)	0.0041*** (0.0016)
Financial leverage	0.0217 (0.0250)	0.0217 (0.0417)	0.0213 (0.0370)	0.0274 (0.0247)	0.0441* (0.0244)
Dividend yield	-0.2000 (0.1680)	-0.2000 (0.3970)	-0.2330 (0.2720)	-0.1740 (0.1650)	-0.1840 (0.1600)
Market risk premium	0.8870*** (0.0255)	0.8870*** (0.0452)	0.8840*** (0.201)	0.8900*** (0.0254)	0.8940*** (0.0254)
Constant	-0.0436* (0.0255)	-0.0436 (0.0757)	-0.0195 (0.0685)	-0.0358 (0.0253)	-0.0447* (0.0251)
Observations	12,370	12,370	12,370	12,386	12,487
R-squared	0.176	0.176	0.085	0.175	0.173

Robust standard errors in parentheses. ***, ** and * denote significance at 1%, 5% and 10% levels respectively.

Table 5: Results of Sub-Period Observations

	Cash operating return	Cash earnings component	Cash flow yield
Before Subprime crisis	0.5880*** (0.1240)	0.0164 (0.0118)	0.1750*** (0.0383)
After Subprime crisis	0.4320*** (0.0918)	0.0166*** (0.0057)	0.1270*** (0.0334)

Robust standard errors in parentheses. *** denotes significance at 1% level.

4.5. Our Proposals Are Robust in Dynamic Specifications

We also test by assuming the returns are dynamic in nature where the past-period return affects the current return. This is considering if stock return may exhibit a momentum effect (as suggested by Carhart, 1997; Jegadeesh & Titman, 1993; Liu & Zhang, 2008). In this setup, we adopt the two-step system panel generalised method of moments (GMM) estimation check (see Arellano & Bond, 1991; Arellano & Bover, 1995). The approach eliminates firm-specific effects through first-differencing and handles endogeneity with instruments. Post-estimation Hansen test indicates that the instruments are valid, and the second-order serial correlation test (AR2 test) suggests no autocorrelation in first-differenced errors. The results in Table 6 indicate that the findings are largely robust with those from Table 2, Table 3, Table 4 and Table 5. Such consistency supports our conclusions on the significance of cash flow factors under both static and dynamic assumptions.

Besides market return on shareholders, we have also tested on the book return on equity (ROE) and found that the cash flow factors above are overall robust. Firm's ROE is positively correlated with all three dimensions of cash flow measures. We do not tabulate the results since our main interest in this study centres on firm's market return on stock, which is directly related to the investment performance of shareholders. The overall consistency of cash flow effect on stock return in our analysis could imply its useful role in performing stock valuation (Akbar et al., 2011) or as early signs of better firm performance in the future (Artikis & Papanastasopoulos, 2016).

Table 6: Results with Dynamic Panel Considerations (GMM Estimations)

Variable	Robustness check (for Finding 1)	Robustness check (for Finding 2)	Robustness check (for Finding 3)
Lagged return	-0.0213* (0.0114)	-0.0160 (0.0132)	-0.0086 (0.0158)
Cash operating return	0.4280*** (0.0928)		
Cash earnings component		0.0203*** (0.0068)	
Cash flow yield			0.1010*** (0.0359)
Operating earnings return	-0.4050*** (0.1030)	0.0780 (0.2900)	
Earnings yield			0.0710 (0.0792)

Book-to-market	0.0487*** (0.0162)	0.0025 (0.0189)	0.1470*** (0.0443)
Firm size	-0.0069** (0.0028)	-0.0085*** (0.0031)	0.0600* (0.0324)
Financial leverage	0.1340 (0.1790)	0.5790** (0.2400)	1.3620 (1.3060)
Dividend yield	0.8480** (0.3790)	0.7160* (0.3960)	1.2420** (0.5070)
Market risk premium	0.8020*** (0.0972)	1.1910*** (0.1050)	0.6870*** (0.0958)
Constant	0.0850 (0.0622)	0.0259 (0.0668)	-1.3330 (0.8240)
Observations	11,369	8,853	11,581
AR(2) test (p-value)	0.633	0.192	0.976
Hansen (p-value)	0.280	0.145	0.645
Robust standard errors in parentheses. ***, ** and * denote significance at 1%, 5% and 10% levels respectively.			

5. Conclusions and Limitation

This study attempts to capture the three major dimensions of cash flow in explaining stock return by using firm-level panel data analysis. The results suggest that the market performance of stock are consistent with the theoretical valuation principles that firm value should depend on the present value of cash flow. We propose that such claim is generally true in the ASEAN 5 markets and it is sensible to consider cash flow factors in asset pricing. The findings also suggest that firm managers should be aware that the market investors are now more sophisticated to make decisions by looking beyond normal reported earnings.

Cash return on assets, cash component of earnings as well as cash flow yield on stock price are all important determinants of stock return. This is further supported by our robustness tests that firms with a better cash flow management tend to perform better in terms of book investment return (ROE). Our results are stable even after considering the possibility of correlation of standard errors across firms and time, benchmarking against the commonly adopted Fama-MacBeth regressions. The significance of cash flow factors is also robust during the years before and after the subprime crisis. Based on the results, we would thus like to make a concluding remark that the cash flow value on stock return is generally robust in the ASEAN 5 markets.

The limitation of this study should be considered in future research. For example, understanding of cash flow could be more useful when we consider various business classifications. In addition, we think it is worthwhile to explore more measures of cash flow together with their interactions with various firm-level decisions for practical

decision purposes. One example of measures includes the consideration of volatility instead of the direct measures cash flow value (e.g., Narayan & Westerlund, 2014). We also think that such study should be extended to more developing markets across regions to have better comprehensive comparisons pertaining to the significance of cash flow management at firm level.

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