Behavioural Asset Pricing Determinants in a Factor and Style Investing Framework

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Abstract: This paper offers an alternative perspective on determinants of equity risk using behavioural asset pricing ideology in a factor and style investing framework. First, a quasi-rational multifactor asset pricing determinants model with fundamental and behavioural risk factors is introduced. Then, the risk and return analysis is performed in a factors and style investing framework. The empirical tests are performed on a sample of 238 Malaysian firm stock returns and multifactor risk proxies with monthly frequency using the panel regression method. The baseline and robustness analyses provide evidence to support the dynamic of risk and returns relationships due to quasi-rational risk determinants and given different characteristics of sub-samples analysed. As a potential industry application, this research suggested the behavioural style quadrant as a diversification strategy. In specific, the risk and return analysis is organized in the multi-style sub-samples (i.e. firm, industry, and market states) to examine equity groups that are resilient on the influence of behavioural risks. Briefly, this paper offers valuable applications in investment practice on how to measure and manage behavioural risks.

Keywords: Behavioural finance, behavioural portfolio management, multifactor asset pricing determinants, factor investing, style investing.
JEL classification: G02, G11, G12, G14, G15

1. Introduction

"The last 15 years have seen a revolution in the way financial economists understand the investment world. We once thought that stock and bond returns were essentially unpredictable. Now we recognize that [their] returns have a substantial predictable component at long horizons. We once thought that…CAPM provided a good description of…average returns. Now, we recognize that the average returns of many investment opportunities cannot be explained by the CAPM, and "multifactor models" are used in its place" (Cochrane, 2010, p. 36).

Asset pricing theory stands as an important foundation for financial theory, practice and policy. The asset pricing model originated in 1960s evolves and improves over time but the current progress is still debatable in theory and practice. Although the factor model (Fama and French, 1992, 2015) has been popularly used now, it is still incomplete. In the recent years, asset pricing research and investment practice continues to explore the possibility of prices predictability using multi factors, characteristics and style investing framework. In line of this inquiry, the existing research and practice are mostly guided by modern finance

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ideology which postulate that characteristic factors are counted as fundamental risk in asset pricing. Meanwhile the style investing is rationally justified. However, this perspective is questionable on pure rational asset pricing based.

On the other hand, behavioural asset pricing focuses on the role of behavioural forces on investor, asset prices, and market behaviours. Theoretically, behavioural finance views investors as not fully rational in their investment decisions. This characteristic will cause systematic deviations of asset prices and market efficiency from rational point of view. In this regards, many evidence point to the ideas that the pricing in the stock market is complex, and relies not only on the fundamental forces, but also on human emotion and mistakes (Shiller, 1981; Shefrin and Statman, 1985; De Long *et al.*, 1990; De Bondt, 1998; Shleifer, 2000; Baker and Nofsinger, 2002; Shiller, 2003; Shiller *et al.*, 1984; Statman, 2008).

Based on the above theoretical perspectives, the behavioural asset pricing theory provides theoretical foundation on the roles of both fundamental and behavioural risk factors in asset pricing determinants modelling. Theoretically, there are multiple sources of behavioural risks that can be categorized as cognitive heuristics (cognitive shortcut) and affective biases (sentiment, emotion, and mood) (Acket *et al.*, 2003; Lucey and Dowling, 2005; Statman *et al.*, 2008). However, in practice, there are issue related to the choice of behavioural factors; how to measure them, how to understand the variations in investor behaviour over time, and how to determine which stocks have limited arbitrage potential (Baker and Wurgler, 2007). In addition, empirical evidence highlighted that risk and returns relationships are heterogeneous due to many reasons.

In asset pricing testing strategy, the factor and style investing framework has been employed to capture the heterogeneous risk-return relationships. Recently, the behavioural finance paradigm is offering an alternative views on the roles of factor and style investing in asset pricing behaviour. In factor investing, it has been noted that the firms' equity risk and returns profile are heterogeneous given different firm and industry characteristics (Baker and Wurgler, 2006, 2007; Kaplanski and Levy, 2010; Kurov, 2010). In style investing, behavioural finance interest is to capture specific stocks that are prone to behavioural risks influence (Graff, 2014). In Malaysia, little evidence is available on style investing with some exceptions to Lau (2007), Lau and Lee (2015), Shaharuddin *et al.* (2017a, b), and Shaharuddin *et al.* (2017) on modern and Islamic finance style ideas.

Motivated by the above gaps, this paper provides alternative perspective on behavioural multifactor stock pricing model that incorporates both fundamental and behavioural factors. The tests are performed in factor and style investing framework to acknowledge heterogeneous risk-return relationships. Empirical analysis is conducted in Malaysian equity market with the following rational. Malaysian market represents a more developed emerging financial market in Asia and unique to behavioural finance study. In particular, being a collectivist society, Asians suffer more from cognitive biases and retail investors in Asian countries are mere gamblers (Kim and Nofsinger, 2008; Statman, 2008; Yates *et al.*, 1997). Generally, all investors are influenced by biases in their decision making, but it has been noted that the impact is higher for retail and lower for institutional investors (Slovic, 1972; Kourtidis *et al.*, 2011). Evidence of the presence of behavioural biases in Malaysian market have been documented by previous researchers (Lai *et al.*, 2010; Tuyon and Ahmad, 2016, 2017; Tuyon *et al.*, 2016).

Collectively, the results are theoretically appealing and practically useful. Theoretically, the validity of multifactor quasi rational asset pricing model is empirically supported. Practically, this research discusses ways to disentangle the impact of behavioural risks that could be used as a behavioural portfolio management strategy.

2. Theory and Evidence

2.1 Behavioural Perspectives on Investor, Asset, and Market Behaviours

Investor behavior - The foundations for investor behaviours are theoretically based on *bounded rational theory*, *adaptive expectation theory*, and *theory of mind*. The bounded rational theory asserts that a normal human being is not entirely rational in his/her decision making due to various behavioural heuristics and biases (Simon, 1955). This theory is complemented with the adaptive expectation hypothesis that postulates adaptive rationality of human preference and expectation given that individual decisions are under time-inconsistent preferences, incomplete information, and different learning environment (Brocas and Carrillo, 2000; Hey, 1994). Meanwhile, the *theory of mind* provides a cognitive neuroscience perspective to justify the dual process (i.e. cognitive and affective) on the human neural basis that rationalizes the rational (i.e. cognitive logic) and irrational (i.e. cognitive heuristics and affective bias) influence human decision making (Camerer *et al.*, 2005; Shimp *et al.*, 2015).

Asset behavior - The *behavioural asset pricing theory* (Shefrin and Statman, 1994) provides theoretical foundation on the roles of both fundamental and behavioural risk factors in asset pricing modelling. The behavioural finance asset pricing models (BAPM) assume that (i) investors are normal, (ii) markets are not efficient, (iii) investors design portfolios according to the rules of behavioural portfolio theory, and (iv) expected returns follow behavioural asset pricing theory (Statman, 2008). The *behavioural portfolio theory* (Shefrin and Statman, 2000) suggested an optimal portfolio construction that is segregated into multiple mental accounts that resemble both bonds and lottery like features. Shefrin and Statman (1994) outlined the behavioural asset pricing theory which focuses on firm features or characteristics that are possibly describe what normal investors want namely utilitarian, expressive, and emotional benefits (Shefrin and Statman, 1994; Statman, 2008).

$$BAPM = f\,(\text{market factor, book-to-market factor, market cap factor, momentum, affect factor, social responsibility factor, status factor, and more}) \quad (1)$$

Alternatively the behavioural asset pricing determinants can be complemented to take into account both the cognitive and affective parts of human decisions as informed in the theory of mind. To recap, investor decision will be influenced by cognitive logic as well as cognitive and affective biases. This investor decision function is represented in equation 2. Following Huffman and Moll (2013) and Baker and Wurgler (2006), the model function of stock returns and risk measures are as in equations 3 and 4. Based on this framework, the risk measures can be extended to incorporate both fundamental factor (FF) and behavioural factors (BF). FF represents cognitive logic thinking factors, while BF accounts for cognitive and affective biases factors.

$$Investors' Decision = f\,(Cognitive_{Logic} + Cognitive_{Biases} + Affective_{Biases}) \quad (2)$$

$$R_{it} = f(Risk\ Measure_{it}) \quad (3)$$

$$R_{it} = f\,(\beta_{it} FF_{it} + \beta_{it} BF_{it}) \quad (4)$$

Market behavior - The financial market behavior is explained by the *theory of bounded rational market* and *adaptive market hypothesis*. The theory of bounded efficient market (Bounded-EMH) has been suggested in Miller (1987) as a result of bounded rational human behavior. The adaptive market hypothesis (AMH) is introduced by Lo (2004, 2005, 2012). Taken together, these theories provide theoretical foundation for the dynamic behaviour of financial markets due to a complex combination of investor behaviour that are adapting to time, information and technological changes (Nawrocki and Viole, 2014).

2.2 Behavioural Perspectives on Asset Pricing

In line with behavioural finance ideology, the stock price determinants are categorized into both fundamental (rational) factors and behavioural (irrational) factors which take into account the duel human decision process.

Fundamental factors - The fundamental factors take into account firm fundamental and macroeconomic fundamentals. *Firm fundamental factors* – The role of accounting variables on stock returns is informed in Ohlson (1995) equity valuation model. In fact, the use of accounting information in stock valuation has been used in practice since Graham and Dodd (1934). The choice for firm fundamentals is limited to dividend yield (DY), earning per shares (EPS) and price earnings ratio (PER). These variables are the only information reported in newspapers and are available to all investors. Recent empirical evidences on PE are provided by Lee and Lee (2008), Ong *et al.* (2010), Tee *et al.* (2009), and Thim *et al.* (2012). The significant importance of EPS in influencing stock return in Malaysia is supported by Pirie and Smith (2008) and Thim *et al.* (2012). Meanwhile, supports for DY as one of determinants of stock returns in Malaysia are provided by Pirie and Smith (2008), Dehghani and Chun (2011), Kheradyar *et al.* (2011) and Lee and Lee (2008), *Macroeconomic fundamental factors* **–** Economic factors influence firm's business and hence the stock returns as postulated in arbitrage pricing theory (Ross, 1976). However, evidence of the macroeconomic factors that are significant in explaining stock prices in Malaysia are not conclusive (Clare and Priestley, 1998; Ch'ng and Gupta, 2001). This research proposes an alternative proxy for macroeconomic factors in the multifactor determinants model. Taking into account broader macroeconomic variables influence on stock prices formation, this research uses three aggregate macroeconomic index indicators namely coincident index (CI), leading index (LEI) and lagging index (LAI). These variables have been tested to be significantly correlated with the aggregate Malaysia stock returns (Izani and Raflis, 2004).

H_1: Firm fundamentals (i.e. proxied by PER, DY and EPS) influence stock returns.
H_2: Macroeconomic fundamentals (i.e. proxied by CI, LEI and LAI) influence stock returns.

Behavioural factors – BAPM explains the role of behavioural factors on stock returns (Shefrin and Statman, 1994) and popular behavioural factors investigated are the investor sentiment and investor emotion. For sentiment, this research proposes consumer sentiment index (CSI), business condition index (BCI) and stock index futures (FKLI) as the sentiment proxies. These sentiment indexes represent the opinion from consumer, business and institutional investor. These variables have been used as sentiment proxies in Malaysia (Mat Nor *et al.*, 2013; Tuyon *et al.*, 2016). The lead-lag relationship between futures and stock index has been well established in finance literature (Ahmad and Rahim, 2009; Chan, 1992; Cornell, 1985; Garbade and Silber, 1983; Stoll and Whaley, 1990). Stock futures index is a useful investor sentiment proxy since institutional normally use this as a hedging mechanism (Tuyon *et al.*, 2016). As for emotion, this research proposes an emotion index proxy by stock market volatility, which represents the investor emotion on stock market prospects. In psychology, Taylor (1991) stated that negative events evoke strong and rapid psychological, cognitive and emotional, and social responses than positive ones. Furthermore, Lo and Repin (2002) found that less experienced traders showed stronger arousal in response to short-term market fluctuations than more experienced traders.

H_3: Investor sentiment (i.e. proxied by BCI, CSI, and FKLI) influence share stock returns.
H_4: Investor emotion (i.e. proxied by VOL) influence stock returns.

2.3 Behavioural Perspectives on Factor and Style Investing

Evidence suggests that characteristics can explain the risk–return pattern of a given asset. This gives rise to the emergence of factor and style investing.

A *factor* is a quantifiable characteristic of a stock and factor investing is investing in groups of stocks with similar characteristics. The grouping together of stocks with, for example, low P/E ratios, low volatility, high dividend yields or low market capitalisation constitutes factor investing. Empirical research findings highlighted that there is a difference in the degree of influence of investor sentiment on stock returns in different firm size. For firm size, Baker and Wurgler (2006, 2007) suggested that sentiment risk is more vulnerable to stock that are speculative and difficult to value and arbitrage (i.e. newer, smaller, more volatile, distressed, extreme growth) compared to safe and easy to arbitrage stocks (i.e. firm with long earning history, stable dividend). Another opinion, Statman *et al.* (2008) noted that investor gives higher attention to popular companies might influence the demand for these stocks. In this regard, sentiment could also influence big size firms (Akhtar *et al.* 2012). The compensation for risk should also apply to other characteristics that investors do not like. It also needs to reflect the characteristics that investors like (Ibbotson and Idzorek, 2014). Similarly, different industry groups have also been empirically reported to determine the heterogeneous of risk-return relationships (Kaplanski and Levy, 2010; Kurov, 2010).

Style investing refers to construction of factor portfolios, which are typically built by sorting an investment universe on a specific characteristic, and then calculating the return difference between the highest-ranked securities and the lowest-ranked securities. The interest in factors stems from two dimensions: providing diversification through factors, which may lead to greater risk control; and harnessing relatively uncorrelated factor returns to enhance expected performance. *Style* investing aims to capture a specific risk premium, behavioural anomaly, or structural market impediment. Examples include; Value: grouping stocks with attractive valuations – Momentum: reflecting price and/or earnings dynamics – Quality: profitability and/or management quality and/or balance sheet strength – Growth: sales, earnings and cash flow growth amongst others. Factors such as size, value, momentum, quality, and low volatility are at the core of smart or strategic beta strategies, and are investment characteristics that can enhance portfolios over time. The ability of multi-style equity investing to improve portfolio performance has been argued in empirical research by Graff (2014). Of great concern and debate to researcher and practitioner, is the the exact cause of factor premiums. In particular, Black (1993) noted that there is no theory underlying the return differentials between different factors of assets. Modern finance rational justification on the role of factor on asset returns. Whereas behavioural finance argued that asset premiums can be attributed to behavioural forces.

Different from existing research where the theoretical reasoning is based on modern finance views, this research investigates the roles of factor investing in behavioural finance views. Apart from firm factor which has been well acknowledged in literature, the present research considers other important factors namely firm, industry, and market states factors. Accordingly, the following hypotheses are examined.

H_5. The behavioural risks influence on the stock returns is heterogeneous on the condition of firm characteristic (i.e. size, value, and price).
H_6. The behavioural risks influence on the stock returns is heterogeneous on the condition of industry characteristic (i.e. defensive and cyclical).
H_7. The behavioural risks influence on the stock returns is heterogeneous on the condition of market states (i.e. normal and crisis market states).

3. Research Methodology

3.1 Empirical Model

This research models the multifactor asset pricing determinants based on the theoretical framework of the multifactor model where the risk factors are determined on the basis of the theory of general factors that explain pricing in the stock market. This follows the approach employed by Booth *et al.* (1993) and Chen *et al.* (1986). In addition to macroeconomic factors, the firm fundamental and behavioural factors are incorporated in the model. This idea is supported by empirical evidences on the significance of firm-specific fundamentals and behavioural factors in influencing stock prices formation. The proposed multifactor asset pricing determinants model comprises of fundamental factor (FF) and behavioural factors (BF). The fundamental factors comprise of firm (CF_{it}) and also economics (EF_{it}) fundamental. The CF_{it} is represented by three firm fundamentals namely dividend yield (DY_{it}), earning per shares (EPS_{it}) and price earnings ratio (PER_{it}). Whereas, the EF_{it} comprises of coincident index (CI_{it}), leading index (LEI_{it}) and lagging index (LAI_{it}). The behavioural factors are comprised of sentiment (SI_{it}), and emotion (EI_{it}). The final basic panel model is as in equation 5. The research uses the general model of returns used in asset pricing test (Karavias *et al.*, 2016; Rjoub *et al.*, 2009).

$$R_{it} = \alpha_0 + \beta_1 DY_{it} + \beta_2 EPS_{it} + \beta_3 PER_{it} + \beta_4 CI_{it} + \beta_5 LEI_{it} + \beta_6 LAI_{it} + \beta_7 SI_{it} + \beta_8 EI_{it} + \varepsilon_{it} \quad (5)$$

where, R_{it} = firm *i*'s return in each study month, *t*; α_0 = constant term; DY_{it} = firm *i*'s dividend yield in each study month, *t*; EPS_{it} = firm *i*'s earning per shares in each study month, *t*; PER_{it} = firm *i*'s price earnings ratio in each study month, *t*; CI_{it} = coincident index in each study month, *t*; LEI_{it} = leading index in each study month, *t*; LAI_{it} = lagging index in each study month, *t*; SI_{it} = investors' sentiment index (proxied by CSI, BCI, FKLI) in each study month, *t*. EI_{it} = investors' emotion index (proxied by VOL) in each study month, *t*. Note that dummy variable equal *1* (crisis) and *0* (non-crisis) are used to split the sample into non-crisis and crisis periods that will be estimated separately.

Test of the multifactor model follows Brennan *et al.* (1998) to test the asset pricing based on individual data not on average portfolio value. In the analysis, the panel panel regression method is employed. This model is used to test the risk-return relationships taking into account the possible variations in the firm (*i*) and time (*t*) elements. Asset pricing test using panel regression model has been undertaken by some researchers but still very limited (Ariff and Marisetty, 2012; Baghdadabad and Glabadanidis, 2014; Chang *et al.*, 2016; Hjalmarsson, 2010; Hunter and Wu, 2014; Petersen, 2009; Serlenga *et al.*, 2002). These researches highlighted that panel regression method is more efficient than the existing cross-section and time-series regression methods.

In the analysis, the quasi-rational asset pricing determinants model is tested in a factor and style investing framework. In factor investing strategy, the model is tested on different firm and industry groups sub-samples. In style investing strategy, the firm and industry sub-groups that are exposed to high and low to behavioral risks are identified.

In the sub-groups samples, the 238 stocks are sorted according to their respective industry group as per Bursa Malaysia classification. The industry groups are further divided into defensive and cyclical industry groups (Becher *et al.*, 2008; Dirks, 1958; Held, 2009; Nagy and Ruban, 2011). In another sub-sample, the stocks are sorted according to the firm groups (Baker and Wurgler, 2007) under consideration, namely; size, value, and price. The firm group classifications are based on FTSE Bursa Malaysia index series portfolio characteristics.

3.2 Data and Descriptive Statistics

The data comprises of monthly 238 firm stock data which are continuously listed in Kuala Lumpur Stock Exchange from 1996:01 to 2014:12. Table 2 provides the summary of the 238 stocks sorted according to their respective industry and firm sub-groups as explained in methodology section. The firm fundamental variables (DY, EPS, and PE) are obtained from Bursa Malaysia and the original data are in quarterly data but placed in monthly frequency (i.e. the quarter one data has been placed in month 1, month 2, and month 3). We believe these data is sourced from the firm quarterly management accounts. The economics indices (CI, LAI, and LEI) are obtained from Malaysia Statistics Department. As for the behavioural variables, the investor sentiments proxies (CSI, BCS, and FKLI) are obtained from MIER and Bursa Malaysia respectively. Meanwhile, investor emotion is proxied by Bursa Malaysia composite index volatility (VOL) obtained from Bursa Malaysia. The original data for CSI and BCS are in quarterly data and transformed to monthly data frequency using interpolation method[1].The individual stock price returns are calculcated as $R_t^i = \log\left(\frac{P_t}{P_{t-1}}\right) * 100$.

Table 1: Summary of stock samples

Industry and Firm Sub-groups		Size			Value			Price		
		Big	Medium	Small	High	Medium	Low	Blue Chips	Medium	Penny Stocks
Defensive	T&S	7	13	21	15	13	13	4	30	7
	CONS	4	13	16	11	14	8	10	16	7
	PLAN	4	10	8	13	2	7	4	14	4
Cyclical	PROP	1	21	18	6	19	15	0	21	19
	INDP	1	20	39	15	26	19	3	42	15
	CON	0	5	9	0	6	8	0	8	6
	FIN	7	12	5	9	10	5	4	16	4
	TECH	0	1	3	0	2	2	1	2	1
Total		24	95	119	69	92	77	26	149	63
Cut-off points		MC <12M	MC 0.971M-12M	MC 0 - 0.97M	BV < 2	BV 1 - 2	BV > 1	Price <RM5	<RM1 - >RM5	>RM1

Notes: This sample (i.e. 238) represents 26% from the total population (i.e. 919) of firms listed in Malaysia stock exchange (Bursa Malaysia). Defensive: trade and services (T&S), construction (CONS), plantation (PLAN). Cyclical; properties (PROP), industrial production (INDP), construction (CON), finance (FIN), and technology (TECH).

The descriptive statistics based on overall sample are self-explanatory and summarized in Table 3. The correlation analysis based on overall sample is presented in Table 4. Estimations based on overall sample provide a general perspective of the average association of fundamental and behavioural risk factors to stock returns. In the analysis, note that all of the risk proxies' variables are highly significant in association with the stock returns. This provides support to the statistical validity of these theoretically derived risk proxies. Equally important, the cross correlations checking confirmed that the data employed is free from higher correlations among the independent variables and thus the regressions estimation to be performed would be free from multicollinearity problem.

[1] There are various alternatives available for statistical data disaggregation procedures. This research use the interpolation method because of its advantages of having a lower mean absolute error and root mean squared error compared to other methods as summarized in Chan (1993) comparative study.

Table 2: Descriptive statistics

Statistics	Fundamental Risks							Behavioural Risks			
	Firm Fundamental				Economic Fundamental			Sentiment			Emotion
	R	DY	EPS	PE	CI	LEI	LAI	BCI	CSI	FKLI	VOL
Mean	-0.0036	0.0086	0.0004	-0.0036	0.0017	0.0016	0.0029	0.0020	-0.0032	-0.0002	0.0028
Median	0.0000	0.0000	0.0000	-0.0014	0.0016	0.0018	0.0029	0.0018	0.0010	0.0063	-0.0223
Maximum	1.2238	5.0337	8.7963	9.3208	0.0363	0.0379	0.0859	0.2190	0.1214	0.2938	0.9621
Minimum	-2.5744	-4.8106	-9.3806	-8.7940	-0.0361	-0.1825	-0.0452	-0.2274	-0.2025	-0.2808	-1.3843
Std. Dev.	0.1302	0.2091	0.2823	0.3082	0.0094	0.0171	0.0168	0.0543	0.0396	0.0695	0.3604
Skewness	-0.5033	0.7129	-1.7981	1.1692	-0.2165	-4.7023	0.5974	0.2479	-0.7857	-0.2641	-0.0247
Kurtosis	18.704	65.492	144.46	101.28	5.4975	50.609	6.0597	8.0265	7.4874	7.3452	3.7823
Jarque-Bera	329529	519942	266453	128619	8550	313379	14357	33947	30081	25496	818
Probability	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sum	-113.93	275.74	12.379	-115.47	53.644	51.871	92.739	62.319	-101.88	-6.1740	90.251
Sum Sq. Dev.	541.03	1396.0	2544.2	3032.7	2.8489	9.3696	9.0306	94.170	50.030	154.41	4148.6
Observation	31936	31936	31936	31936	31936	31936	31936	31936	31936	31936	31936

Table 3: Summary of correlation analysis

Variables	Fundamental Risks							Behavioural Risks			
	Firm Fundamental				Economic Fundamental			Sentiment			Emotion
	R	DY	EPS	PE	CI	LEI	LAI	BCI	CSI	FKLI	VOL
R	1.0000										
DY	-0.4961	1.0000									
EPS	0.0326	-0.0099	1.0000								
PE	0.5755	-0.5207	-0.4811	1.0000							
CI	0.0269	-0.0754	0.0409	0.0347	1.0000						
LEI	0.1614	-0.1689	0.0206	0.1379	0.4026	1.0000					
LAI	0.0381	-0.0705	0.0108	0.0409	0.0834	0.0859	1.0000				
BCI	0.1244	-0.1304	0.0008	0.1012	0.1490	0.1267	0.0413	1.0000			
CSI	0.1000	-0.0957	0.0087	0.0745	0.1643	0.2735	0.0060	0.2392	1.0000		
FKLI	0.5142	-0.3264	0.0220	0.3139	0.0986	0.3280	-0.0339	0.1898	0.1342	1.0000	
VOL	-0.1411	0.1888	0.0232	-0.1606	0.0009	-0.0793	-0.0937	-0.1151	0.0322	-0.1877	1.0000

4. Risk and Return Analysis

4.1 Baseline Analysis

The baseline analyses are performed on overall sample and sub-samples based on industry groups (8 industry groups) and firm groups (9 firm groups) samples. The baseline analysis is performed to examine the contemporaneous effects of the determinants on stock returns.

The result for *overall sample* is provided in Table 4 where four models have been estimated namely firm fundamental (model 1), economic fundamental (model 2), behavioural factors (model 3), and combined factors (model 4). In model 1 and 2, all firm and economic fundamentals are significantly determining the stock returns except for CI. Meanwhile all behavioural factors are significant. In the combined factors (model 4), all firm fundamental factors remain as significant risk determinants. However, only two economics and three behavioural risks are significant. Based on the R^2 statistics, behavioural factors are highly influential in determining stock returns, followed by firm fundamental, and finally the economic factors with minimal influence on stock returns.

The next firm and industry sub-groups analyses are mean to disentangle the behavioural factors effects on different industry and firm groups. Disentangling industry and firm effects to purify real stock returns have been introduced by Jacobs and Levy (1988). They have recently re-emphasized the relevancy of this idea (Jacobs and Levy, 2014). This research applies and extends this idea in the perspective of behavioural finance. Motivated from Jacobs and Levy's disentangling ideas, in this section, the analysis is extended to provide discussion on disentangling behavioural effects on different group of stocks to detect and manage the degree of behavioural risks influence on equity-based portfolio.

In the *industry group sub-sample* (reported in Table 5), the asset-pricing model is tested on different groups of firms in eight-industry groups. The industry group is further divided into defensive and cyclical industry groups. All fundamental risks proxies are significantly priced in the defensive industry stocks. As for the behavioural risks, only two behavioural risks out of the four proxies are significant as priced risk factors. This is in line with the theoretical prediction as discussed in theoretical section that defensive stocks are expected to be less vulnerable to behavioural risks. In the cyclical industry groups, the results also indicated that all fundamental variables are significant in determining stock returns. These cyclical industry firms are expected to be more affected by behavioural risks. In the analysis, three behavioural risks proxies (i.e. BCI, FKLI and VOL) are significantly priced in the suggested FE model for all cyclical industry groups except for Technology industry. This finding highlighted new source of behavioural risks heterogeneity. In the existing finance literature, different degree of behavioural risks impact on stock returns in different industry has been highlighted. In this study, we extend this perspective by grouping the industry into either defensive or cyclical and postulate that the latter will be more affected by the behavioural risks compared to the former.

In the *firm group sub-sample* (reported in Table 6), fundamental risks are highly influential for big size firms, high value firms, and blue chips stocks. Meanwhile, behavioural risks are affecting more the medium and small size firms, high value firms, medium and lower priced stocks. In existing empirical, behavioural risks has been proven to affect the small size firm more than the big size firms. The results confirmed this evidence in Malaysia market context (based on coefficient of variables comparisons). We further extended the investigation to understand the behavioural risks influences on different value characteristics and different price characteristics. The analysis provides evidence that high value firms are more vulnerable to behavioural risks compared to medium and small value firms. Based on price characteristics, the result seems to suggest that medium and small priced stocks are more sensitive to the influence of behavioural risks compared to the expensive blue chips stocks. Big and high value stocks might be held more by institutional

investors and the small stocks with cheaper prices are more attractive and affordable to retail investors. The findings from this analysis provide general perspectives that both professional (institutional investors) and street investors (retail investors) are subjected to behavioural risks influence in their investment decisions. However, institutional investors are less influenced by behavioural biases as indicated by lower coefficient of behavioural risks on big firm stocks which are normally hold by institutional investors. On the other hand, retail investors are highly prone to behavioural biases as indicated by higher coefficient of behavioural risks on small and medium firm stocks which are majority hold by retail investors.

Table 4: Overall analysis - Contemporaneous effect

Sample	Fundamental		Behavioural	Overall
	(Model 1) Firm fundamental	(Model 2) Economics fundamental	(Model 3) Sentiment and Emotion	(Model 4) Fundamental and Behavioural
Variable / Models	FE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*	FE *(Robust SE)*
C	-0.0007	-0.0051***	-0.0061***	-0.0019***
DY	-0.1629***			-0.0108***
EPS	0.1878***			0.1389***
PE	0.2242***			0.1644***
CI		-0.0987		-0.5563***
LEI		0.6179***		0.0502
LAI		0.3264***		0.2630***
BCI			0.0517***	0.0554***
CSI			0.0668***	0.0269*
FKLI			1.1409***	0.8514***
VOL			-0.0028***	0.0017
Adjusted R^2	0.2686	0.0068	0.2957	0.4591
Model Selection				
F test [POLS Vs FE]	191.2100	125.4663	179.0933	178.7487
LM Test [POLS vs RE]	17.3345***	26.8151***	7.4072***	16.2450***
Hausman test [RE vs FE]	82.1231***	1.0482	5.3197	83.9796***

Notes: This table tabulated the estimation asset pricing determinants model based on overall sample. Model 1 estimated only the firm fundamental factors. Model 2 estimated the economic factors. Model 3 estimated the behavioural factors. Model 4 estimated the combined fundamental and behavioural factors. The final selected model is selected as suggested by model selection tests reported in the bottom part of this table. The final model is estimated with robust standard estimators (Robust SE) to mitigate the issues of possible heteroscedasticity and multicollinearity issues in panel data. The asterisk; *, **, and *** denotes 10%, 5%, and 1% level of significant respectively based on *p*-value. Selected regression statistics are also reported for references.

Table 5: Industry sub-group analysis

Sample	Defensive Industry				Cyclical Industry			
	Trade-Services	Consumer	Plantation	Properties	Industrial	Construction	Finance	Technology
Variable / Models	RE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*	FE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*
C	-0.0021*	-0.0001	0.0020	-0.0017	-0.0041***	-0.0029	-0.0005	-0.0004
DY	-0.0954***	-0.1359***	-0.0770***	-0.1067***	-0.0834***	-0.1062***	-0.0219***	-0.0264
EPS	0.1239***	0.0853***	0.1710***	0.1873***	0.2112***	0.2289***	0.4350***	0.3959***
PE	0.1482***	0.0987***	0.1673***	0.2212***	0.1763***	0.2616***	0.4213***	0.3974***
CI	-0.3788**	-0.2997	-0.7214***	-0.7391***	-0.6494***	-0.4606*	-0.6477***	-0.0373
LEI	-0.0154	-0.0777	0.4002***	-0.1074	0.1688**	-0.1323	0.1609**	-0.7659**
LAI	0.2320***	0.1673	0.2796***	0.2294**	0.2590***	0.3471***	-0.0807	-0.1224
BCI	0.0229	-0.0112	-0.0325	0.0836***	0.1009***	0.1471***	0.0483*	0.0514
CSI	0.0078	0.0463	-0.0434***	0.0746*	0.0082	0.0334	-0.0005	0.0565
FKLI	0.8489***	0.6883***	0.6819	0.8881***	0.8161***	0.9008***	0.8448***	0.7112***
VOL	0.0045	-0.0032	-0.0039	0.0038	-0.0060**	0.0144**	0.0136***	-0.0042
Adjusted R^2	0.4052	0.2274	0.4109	0.5236	0.4856	0.5438	0.6462	0.3821
Model Selection F test [POLS Vs FE]	0.4840	0.6733	0.8866	0.4546	1.0391	0.4367	0.7460	0.4501
LM Test [POLS vs RE]	4.4878**	370.152***	547.13***	2427.6***	4765.03***	478.8053***	736.550***	62.086***
Hausman test [RE vs FE]	11.5150	15.8460	16.3980	9.304	33.500***	4.9596	13.307	3.3961

Notes: This table tabulated the estimation asset pricing model based on different industry and firm characteristics. The stocks are grouped into 8 industry groups to make their industry characteristics homogeneous. Later these industries are grouped into either defensive or speculative. The final selected model is selected as suggested by model selection tests reported in the bottom part of this table. The final model is estimated with robust standard estimators (Robust SE) to mitigate the possibility of heteroscedasticity and multicollinearity issues in panel data. The asterisk; *, **, and *** denotes 10%, 5%, and 1% level of significant respectively based on *p*-value.

Table 6: Firm sub-group analysis

Sample	Size			Value			Price		
	Big	Medium	Small	High	Medium	Low	Blue Chips	Medium	Penny Stocks
Variable / Models	RE *(Robust SE)*	FE *(Robust SE)*	FE *(Robust SE)*	FE *(Robust SE)*	FE *(Robust SE)*	FE *(Robust SE)*	RE *(Robust SE)*	FE *(Robust SE)*	FE *(Robust SE)*
C	0.0009	-0.0007	-0.0023***	-0.0002	-0.0023***	-0.0033***	0.0013	-0.0025***	-0.0024*
DY	0.0011	-0.0371***	-0.0920***	-0.0548***	-0.0920***	-0.1018***	0.0008	-0.0805***	-0.1141***
EPS	0.6143***	0.4370***	0.1891***	0.2638***	0.1891***	0.2076***	0.4978***	0.2149***	0.1432***
PE	0.6103***	0.4469***	0.2117***	0.2778***	0.2117***	0.2430***	0.5001***	0.2327***	0.1791***
CI	-0.3098***	-0.4970***	-0.6135***	-0.4393***	-0.6135***	-0.5528***	-0.2821***	-0.5990***	-0.7114***
LEI	0.1593***	0.1104***	0.0627	0.1013***	0.0627	-0.0423	0.1112**	0.1003***	-0.0429
LAI	-0.0902**	0.0798**	0.1803***	0.0548	0.1803***	0.3361***	0.0073	0.1694***	0.3832***
BCI	0.0022	0.0518***	0.0657***	0.0306**	0.0657***	0.0796***	-0.0264	0.0635***	0.1011***
CSI	-0.0442**	-0.0562***	0.0229	-0.0451***	0.0229	-0.0168	-0.0261	-0.0126	0.0298
FKLI	0.4821***	0.5723***	0.7925***	0.6424***	0.7925***	0.8930***	0.4399***	0.7982***	0.9400***
VOL	0.0077***	0.0023	0.0035	-0.0024	0.0035	0.0076**	0.0026	0.0019	0.0029
Adjusted R^2	0.6986	0.5766	0.4914	0.5290	0.4914	0.5062	0.5123	0.5118	0.5060
Model Selection F test [POLS Vs FE]	0.1904	0.7229	0.7201	0.7547	0.7201	0.6365	0.3290	0.7331	0.6223
LM Test [POLS vs RE]	537.587***	6163.70***	7.5344***	3.8854**	7.5344***	5.7831***	8.0518***	12.5520***	7.0674***
Hausman test [RE vs FE]	3.1269	18.8319***	39.9340***	29.515***	39.934***	20.3164**	7.1914	55.1314***	16.7926*

Notes: This table tabulated the estimation asset pricing model based on different firm characteristics to make their firm characteristics homogeneous based on (i.e. Size, Value, and Price) groups. The stocks are grouped into 3 size groups, 3 value groups, and 3 prices groups to make their firm characteristics homogeneous The final selected model is selected as suggested by model selection tests reported in the bottom part of this table. The final model is estimated with robust standard estimators (Robust SE) to mitigate the possibility of heteroscedasticity and multicollinearity issues in panel data. The asterisk; *, **, and *** denotes 10%, 5%, and 1% level of significant respectively based on *p*-value.

4.2 Robustness Analysis

Behavioural biases are expected to have higher impacts in negative situations (i.e. market crisis states). As such, the first robustness analysis aims to disentangle the behavioural factors influence during non-crisis and crisis market states. As reported in Table 7, the results indicate that the influences of fundamental and behavioural risks are stronger in crisis market states compared to non-crisis. This conclusion is supported by higher individual coefficient for the respective risk factors during the crisis state. Note that all risk proxies are strongly significant during crisis sub-sample but the same variables not all significant in non-crisis market states. This is also in line with higher percentage of model explanatory power (R^2) during the crisis state. This evidence can be corroborated with the psychology based negativity hypothesis which states that people are more attentive and sensitive to negative news and in negative conditions. Given this psychological explanation, investors are generally panic in the event of market crisis.

A further robustness analysis is performed considering the lag effect of the fundamental and behavioural factors on stock returns. The accounting lagged variables are performed to mitigate the concern on lagged effect of accounting reports on stock returns. The economics and behavioural lagged effects are performed to check the feedback effects of past information on stock returns. As reported in Table 8, all fundamental and behavioural variables remain significant determining factors for stock returns in Malaysia.

In the final robustness analysis, the qualitative summary of dynamic risk-return relationships (based on sign of coefficients) is presented in Table 9. Noted that only three variables have a consistent sign of coefficients throughout different sub-samples namely; EPS, PE, and FKLI. The rest are portraying a heterogeneous impact to returns given different sub-samples considered.

Table 7: Market states analysis

Samples/Variables/Models	Market conditions sub-samples	
	Non-Crisis	Crisis
	FE	FE
	(Robust SE)	*(Robust SE)*
C	-0.0111***	0.0047***
DY	-0.0680***	-0.1033***
EPS	0.1762***	0.2425***
PE	0.1969***	0.2655***
CI	0.1153	-0.9382***
LEI	0.1191***	-0.4578***
LAI	0.2312***	0.3482***
BCI	0.0279	0.0479***
CSI	-0.016	0.0451**
FKLI	0.7296***	0.7498***
VOL	-0.0031	0.0057**
Regression Statistics		
Adjusted R^2	0.1939	0.3232
Model Selection		
F test [POLS Vs FE]	1.4903***	0.8559
LM Test [POLS vs RE]	2.9696*	12.7331***
Hausman test [RE vs FE]	143.0659***	41.5650***

Notes: This table summarizes the estimation results for non-crisis and crisis sub samples. The crisis periods are Asian financial crisis (02/97-09/98), 911 attacks and technology slump (04/01-04/02), SARS (04/02-03/03), Subprime crisis (01/08-10/08), and the US crisis (10/08-12/09) (Chong, 2011; Tuyon and Ahmad, 2016). The asterisk; *, **, and *** denotes 10%, 5%, and 1% level of significant respectively based on *p*-value.

Table 8: Overall analysis - Lagged effects

Samples/Variables/ Models	Fundamental		Behavioural	Overall
	(Model 1) Firm fundamental	(Model 2) Economics fundamental	(Model 3) Sentiment and Emotion	(Model 4) Fundamental and Behavioural
	RE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*	RE *(Robust SE)*
C	-0.0032***	-0.0025***	-0.0051***	-0.0030***
DY(-1)	-0.0281***			-0.0133***
EPS(-1)	0.0103***			-0.0020
PE(-1)	0.0117***			-0.0040
CI(-1)		0.5362***		0.1906***
LEI(-1)		-0.3775***		-0.6767***
LAI(-1)		-0.5658***		-0.2653***
BCI(-1)			0.2762***	0.2711***
CSI(-1)			0.1500***	0.1869***
FKLI(-1)			0.1663***	0.1788***
VOL(-1)			0.0083***	0.0060***
Adjusted R^2	0.0029	0.0053	0.0253	0.0402
Model Selection F test [POLS Vs FE]	291.7989***	125.2112	130.2812	348.8868***
Hausman test [RE vs FE]	3.0000	0.0309	0.0267	0.0000

Notes: This table tabulated the estimation asset pricing determinants model based on overall sample with lagged fundamental and behavioural factors to acknowledge the feedback effects. Model 1 estimated only the firm fundamental factors. Model 2 estimated the economic factors. Model 3 estimated the behavioural factors. Model 4 estimated the combined fundamental and behavioural factors. The final model is estimated with robust standard estimators (Robust SE) to mitigate the possibility of heteroscedasticity and multicollinearity issues in panel data. The asterisk; *, **, and *** denotes 10%, 5%, and 1% level of significant respectively based on *p*-value.

Table 9: Dynamic risk-return relationships (sign of coefficients)

Risk Factors	Overall Sample	Sub-Groups		Market States		Consistency of coefficient's signs
		Industry Groups	Firm Groups	Crisis	Non-crisis	
DY	-	-	+/-	-	-	No
EPS	+	+	+	+	+	Yes
PE	+	+	+	+	+	Yes
CI	-	-	-	-	+	No
LEI	+	+/-	+/-	-	+	No
LAI	+	+/-	+/-	+	+	No
BCI	+	+/-	+/-	+	+	No
CSI	+	+/-	+/-	+	-	No
FKLI	+	+	+	+	+	Yes
VOL	+	+/-	+/-	+	-	No

Notes: This table qualitatively summarized the heterogeneity of the risk factor coefficients' sign (contemporaneous effects only) based on different sub-samples estimations provided in baseline and robustness analyses namely; overall sample, different industry groups, different firm groups, and different market states.

5. Discussions

5.1 Syntheses of Findings to the Existing Theory, Evidence, and Practice

This research discusses the following insights which are important to behavioral asset pricing research.

Quasi-rational risk factors – The research argued and identified that both fundamental and behavioural risk should influence the asset returns. *Fundamental risks* – In existing multifactor asset pricing model, both economic and firm fundamental have been acknowledged as a source of risks in equity investment. However, they have been mostly investigated separately. The economic factors are motivated from Ross (1976)'s APT framework and the firm fundamental have been investigated following Graham and Dodd (1934)'s equity valuation model or Ohlson (1995)'s equity valuation model. This research combined these two factors under the multifactor asset pricing determinants framework. For macroeconomic factors, instead of using individual economic variables as popularly used, this research use three macroeconomic indexes (coincident index, leading index, lagging index) that represents wide economic variables. For firm fundamental, this research use three firm fundamental (price earnings ratio, dividend yield, earnings per share) that are popularly used by industry practitioners in equity valuation. Briefly, all of these fundamental factors are highly significant in influencing stock returns. *Behavioural risks* - In existing behavioural asset pricing research, the popular behavioural risk used is sentiment and emotion. Generally, these behavioural variables are significant in influencing stock returns in Malaysia and provide confirming evidence to the validity of BAPM's framework (Shefrin and Statman, 1994).

Heterogeneity of risk-return relationships - Given the bounded rationality of investor, the predictability of risk-return relationships are also expected to be heterogeneous due to various reasons. Empirically established conditions that determine the heterogeneous of risk-return relationships are industry characteristics (Kaplanski and Levy, 2010; Kurov, 2010), firm characteristics (Baker and Wurgler, 2006, 2007), market states in losses and gains domains (Bassett and Chen, 2001; Lee and Li, 2012; Ni *et al.*, 2015; Pohlman and Ma, 2010). Accordingly, in asset pricing test, grouping stocks into similar industry and firm characteristic groups ensure companies to have a homogeneous characteristic that will correct the possible source of misspecification (Barber and Lyon, 1997; Filbeck *et al.*, 2013). This research examines the possible differences of behavioural risks impacts on defensive vs. speculative industry stock groups with the idea that the latter is subjected to behavioural biases. While the firm-based sub-groups portfolios are segmented based on size, value, and prices due to differences of stock returns in different firm characteristics documented in existing literature (Banz, 1981; Rosenberg *et al.*, 1985; Shefrin, 2000; Drew and Veeraraghavan, 2002). This research classifies penny stock based on stock price of 1 ringgit or lower in line with De Moor and Sercu (2013). Behavioural finance scholars argued that the relationships between stock characteristics and trading behavior are due to various psychological pitfalls (Chang *et al.*, 2015). In particular, investor use firm characteristics to distinguish which group has a greater relative value or more popular. In investment practice, popular stocks are in the news and highly traded by retail investors. As such, popular stocks may be associated with mispricing of firm characteristics influence not due to fundamental (Ibbotson and Idzorek, 2014; Shefrin, 2015). With regards to small firm effect, they are recommended by many analysts despite having higher risk and they are highly speculative stocks due to the fact that these stocks attracts, affordable and popular among retail investors which have a strong presence in the stock markets (Bhootra, 2011; Chandra and Reinsten, 2011; Chou *et al.*, 2012; Wood and Zaichkowsky, 2004).

5.2 Theoretical and Practical Implications

In theory, assuming investors as bounded-adaptive rational human beings, demand for stocks would be influenced by both rational (fundamental) and irrational (behavioural) forces. This can be reconciled with interrelated behavioural based theories of decision, namely bounded rational theory (Simon, 1955), prospect theory (Kahneman and Tversky, 1979) and adaptive expectation of human behavior (Tinbergen, 1939). Claims on investor bounded rationality is consistent with growing evidence of investor irrationality among both retail and institutional investors (Akerlof and Shiller, 2010; Garling *et al.*, 2009). Due to the bounded-adaptive trait of investor behavior, stock prices will show a dynamic behavior. Dynamic means stock prices trend in non-linear fashion and the risk-return relationships are heterogeneous across specific conditions. This is in line with suggestions by some earlier scholars (Baur *et al.*, 2012; Blume and Easley, 1992; Fiegenbaum, 1990). Collectively, the bounded-adaptive trait of investor and dynamic of asset prices behaviors will form bounded-adaptive market efficiency as postulated in bounded-EMH (Miller, 1987) and in AMH (Lo, 2004, 2005, 2012). The current research provides the theoretical complements to the empirical evidence of predictability and adaptive nature of stock market efficiency/inefficiency (Kim *et al.*, 2011).

In practice, findings from this research highlight useful practical implications. In particular, behavioural risks that distort fair fundamental valuation need to be managed both in risk modelling and fund portfolio management. In portfolio management, Shefrin and Statman (2000) develop a behavioural portfolio theory and suggested an optimal portfolio construction that is segregated into multiple mental accounts that resemble both bonds and lottery like features. In investment strategy, an adaptive investment strategy is argued to be more efficient in a complex market system that is changing over time due to constant information and technological changes (Mauboussin, 2002). In line with this intuition, several authors proposed a behavioural investment approaches as follows. Livanas (2007) suggests that the value of portfolio gains should be higher than the value of portfolio losses to hedge on the risk of investors asymmetric risk tolerance. Ma (2015), a practitioner, introduces three different ways to develop investment strategies with the ability of adapting to economic regimes, market returns, or market volatility changes. In reference to Jacobs and Levy (2014), dynamic portfolio selection and diversification need to take into account the multi-dimensional source affecting stock returns. The need to have portfolio construction and behavioural risk diversification strategies are stressed in Montier (2007). This research suggested the behavioural investment style quadrant as a behavioural portfolio diversification strategy. Based on the analyses, the risk and return dynamic characteristics can be organized in the following risk-return quadrants (Figure 1) that summarize the exposure to fundamental and behavioural risks quadrant. In addition, behavioural risks have a higher influence during market crisis states.

Fundamental Risk Exposure					
	High	Industry - *Defensive* Size - *Big* Value - *High* Price - *Blue chips*	Industry - *Cyclical* Size – *Small/Medium* Value - *High* Price – *Penny stocks*	High	Behavioural Risk Exposure
	Low	Industry - *Cyclical* Size – *Small/Medium* Value – *Low/Medium* Price – *Penny stocks*	Industry - *Defensive* Size - *Big* Value – *Low/Medium* Price - *Blue chips*	Low	

Notes: This figure provides summary of possible diversification strategy based on the psychological segmentations (i.e. *firms that are exposed to higher/lower behavioural risks*) based on firm and industry factors.

Figure 1: Exposure to fundamental and behavioural risks quadrant.

6. Conclusion

This research provides new insights to behavioural asset pricing theory and practice. Theoretically, this research suggested the asset pricing model that incorporates both fundamental (i.e. firm and macroeconomic fundamentals) and behavioural variables (i.e. investors' sentiment and emotion) as risk factors, which reflect both rational and irrational elements of investors' decision making. The asset pricing test is conducted in factor and style investing framework to provide the behavioural justifications on the role of characteristics and style investing. Collectively, the empirical analysis provides support to the bounded rational, instability, and heterogeneity nature of risk factors (collectively termed as 'dynamic' behavior). This is not only in line with the referred behavioural theories and earlier empirical evidence reflected in behavioural finance literature but also provides new insights. In practice, the research findings provide valuable insights to practitioners to capture the risk-returns relationship dynamic and manage the excessive exposure to behavioural risks using the suggested behavioural risk quadrant. In finance research, there are still many possible sources of behavioural risks, characteristics, style and possibly new elements that may cause heterogeneity of risk-return relationships in impacting asset pricing formation. This needs to be explored in future behavioural asset pricing research globally, for all types of investment instruments, and for all categories of investors.

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