Dispelling the myth of a value premium: contrary evidence of Malaysian crony capitalism

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Abstract: This paper contradicts the existence of a universal value anomaly by studying Malaysia, a country with a unique institutional setting. We investigate this counter-example to attribute the anomaly to: 1) the leverage effect of value firms; 2) the investment pattern of growth firms; 3) the economic environment. We find that the value premium cannot be ascribed solely to risk as it is time varying and dependent on the attributes of the companies. Our results illustrate that small cap value firms perform relatively well during favourable economic conditions. In contrast, large cap growth firms perform better than their counterparts (i.e., large cap value firms) in economic upturns as they are preferentially awarded projects to revive the nation's growth.

Keywords: asset pricing; growth stocks; multifactor models; value premium; value stocks; Malaysia.

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1 Introduction

"The principle of empiricism (c) can be fully preserved, since the fate of a theory, its acceptance or rejection, is decided by observation and experiment – by the results of tests. So long as a theory stands up to the severest tests we can design, it is accepted; if it does not it is rejected. But it is never inferred in any sense, from the empirical evidence….Only the falsity of a theory can be

> inferred from empirical evidence, and this inference is a purely deductive one." [Popper, (1953), pp.33]

Over the last three decades, an extensive finance literature has documented the value premium anomaly. That is, portfolios of firms, often in the mature sectors of the economy, formed on the basis of high book-to-market (BE/ME), cash flow-to-price (C/P) and earnings-to-price (E/P) ratios have been found to earn significantly higher risk-adjusted returns than portfolios with the opposite characteristics. The evidence for this value premium is so evident across the globe that it is accepted as an empirical fact. This is described by Asness et al. (2015) as follows:

> "The existence of the value premium is a well-established empirical fact. It is evident in 87 years of U.S. equity data, in more than 30 years of out-of-sample evidence from original studies, in 40 countries, in more than a dozen other asset classes…and even dating back to Victorian England." [Asness et al., (2015), p.34]

Fama and French (1998) document the presence of a value premium in 12 of the 13 major markets they study[1, 2]. However, despite the compelling evidence of the presence of the value premium anomaly, its source remains undetermined.

In broad terms, the finance literature suggests four possible explanations for the value premium. First, the rational pricing perspective attributes the outperformance of high BE/ME portfolios to an additional risk factor, such as financial distress (Fama and French, 1995). Second, a behavioural perspective (see, for example, Lakonishok et al., 1994; Cronqvist et al., 2015) asserts that the cognitive/biological biases of investors may undervalue distress stocks and overvalue growth stocks leading to the premium in value stocks[3]. Third, the value premium is due to the characteristics of a firm that are not related to its risk levels (Daniel and Titman, 1997). Finally, Kothari et al. (1995) and MacKinlay (1995) contest the presence of the value premium and claim it is a 'false' result caused by methodological issues in the studies involved[4].

This study aims to dispel the myth of the value anomaly by employing the logic of the well-known Austrian-British philosopher Sir Karl Raimund Popper, who espoused that positive outcomes of empirical observation cannot confirm an anomaly, such as a value premium (see again Popper, 1953). However, a single contravening example can trounce it. A secondary goal is to advance an 'economic driver' of the value premium. The counter-example selected in our case is that of the crony capitalism of Malaysia (see Ebrahim et al., 2014b). This has attributes that are particularly helpful in gaining a different perspective on the value premium debate. The country is an emerging economy with a top-heavy, closely held and state-owned institutional setting described in detail in Section 2.2. Our investigation covers the period 1992–2012 and includes several distinct sub-periods, one with rapid economic growth (1990–1996), followed by one with a severe financial crisis (1997–1998) and one with a post-crisis recovery (1999–2007). We also include the sub-prime crisis period (2007–2009) and finally the post sub-prime crisis period (2010–2012). This variety of economically different sub-periods is very useful for our analysis.

Our results initially show that, unusually amongst world markets, a value premium generally does not exist in the Malaysian market over our investigation period. However, we do observe a value premium among small firms only during the period of rapid economic growth due to leverage effect of equity (Fama and French, 1993, 1995, 1996). Thus, we show that we cannot take a value premium for granted in all economic scenarios. The premium deteriorates to a value 'discount', implying a growth premium, in economic downturns due to the largess of politicians in awarding projects to government connected firms during economic downturns. These findings indicate interesting avenues for empirical analysis for developing hypotheses about the causes of the value premium.

Our empirical analysis of company characteristics provides much important evidence. The well-known Altman (1993) Z-score model in conjunction with the Shumway (2001) model, demonstrates that value firms are no more prone to distress than growth ones. However, value firms have more leverage than growth firms. We also observe that the coefficients of value and growth portfolios (HML) are sensitive to changes in GDP growth.

We put forward our hypothesis that our contrary results are attributed to the differing financial and investment characteristics of value and growth firms. The impact of leverage on value firms induces their share prices to behave in a volatile way plummeting very fast in economic downturns and skyrocketing on upturns. Pure value stocks constitute shares of firms in the mature (or declining) sectors of the economy, with limited (or no) access to growth options requiring investments. Such firms typically have tangible assets in place, which are collateralised by debt (see Choi, 2013). In contrast, pure growth firms operate in developing sectors of the economy. They are endowed with growth options (see Trigeorgis and Lambertides, 2014). Since they have relatively fewer tangible assets, they do not have much access to debt. They may be thus compelled to hoard cash and delay exercising growth options to mitigate their business risk (see McDonald and Siegel, 1986; Ingersoll and Ross, 1992). Thus, the relatively muted returns of growth stocks are attributed to their 'cash-drag' during normal times. However, during economic downturns growing companies especially the big ones (with political connections) are given projects to revive growth. This financial slack carried by growth firms translates into opportunity to undertake new projects and earn premiums during an economic resurgence. It is this political connection, which helps growth firms reap high payoffs for growth firms in the form of a premium over their value counterparts.

Our hypothesis is related to both those of Fama and French (1995) and Daniel and Titman (1997), henceforth denoted as FF and DT. FF demonstrates that growth stocks generate lower returns (coefficient of HML) due to their lower distress risk. However, Griffin and Lemmon (2002) claim that distress risk does not contribute to the value premium. We extend the latter view point, arguing that both the growth firm's cash-drag factor, the value firm's unique characteristics and the unique institutional structure of Malaysia needs to be taken into consideration. Our research is influenced by the studies of Chou et al. (2011) and Chen et al. (2011), who contrast the performance of the models of FF and DT. Chou et al. (2011) investigate the two models in the context of the Japanese market. They find the choice of the models depends on the duration of the sample, which is consistent with Davis et al. (2000). However, Chen et al. (2011) propose a new three-factor model incorporating characteristics similar to that of DT. They show that their new model goes a long way towards explaining many patterns in cross-sectional returns, which the FF model cannot. We extend this research by:

1 illustrating that it is not sample specific (in contrast to Chou et al., 2011)

2 employing the rationale of real options, where the investment perspective based on net present value, for example, in Chen et al. (2011) fails to hold[5].

Furthermore, DT's observation of the unique characteristics of firms can be attributed to the growth options endowed to growth firms, while FF implies that hoarding of cash by the growth firms drags down their returns and considers it as an evidence of distress risk. Our result harmonises FF with DT in that they both observe the outperformance of value stocks, but attribute it to different causes. The over-reaction hypothesis of De Bondt and Thaler (1985, 1987) can be reconciled with the volatile nature of the leveraged equity of value firms which resembles a financial option (see Merton, 1974). This financial option aspect of leveraged equity is aggravated in a poor economic environment, leading to a rebound in prices with an improving economic environment (see also Choi, 2013; Lioui and Maio, 2014).

In summary, our study contributes to the extant literature as follows. Firstly, we demonstrate that investing in value firms is not a sure-fire approach of 'beating the market' especially in an institutional setting where the government has stakes in local firms. Secondly, we rationalise the differential payoffs of the two types of firms, i.e., value and growth by applying firm characteristics and economic fundamentals.

The rest of the paper is structured as follows: Section 2 reviews the relevant literature and institutional setting in Malaysia; Section 3 presents our research questions and outlines the methodology used. Section 4 presents the results and analysis, while Section 5 concludes.

2 Literature review and institutional setting

2.1 Literature review

Sharpe (1964), Lintner (1965a, 1965b) and Mossin (1966) shaped the notion of the capital asset pricing model (CAPM) by demonstrating that the risk of an asset in terms of beta can sufficiently describe the cross-section of expected stock returns. Since then, a number of studies have empirically tested this model using beta as the sole explanatory variable with a positive and linear relationship to asset returns. The results, however, remain inconclusive. Early empirical studies (see, for example, Blume and Friend, 1973) offer reasonable support for CAPM. However, later studies questioned the validity of CAPM based on its assumptions and the existence of various anomalies associated with its use (see Basu, 1977, 1983; De Bondt and Thaler, 1985; Jegadeesh and Titman, 1993).

The findings of these latter studies led Fama and French (1992) to conclude that CAPM with a single beta does not adequately explain cross sectional differences in stock returns. They show that beta has, at best, only a weak relationship with stock returns and that CAPM does not price all the risks. This, in turn, led to the development of their three factor model, hereafter the FF model, that consists of:

1. an overall market factor (Rm – Rf)
2. a size premium (SMB), i.e., the return on a portfolio of small stocks minus the return on a portfolio of large stocks
3. a value premium (HML), i.e., the return on a portfolio of value stocks (high BE/ME) minus the return on a portfolio of growth stocks (low BE/ME);

to explain the cross-section of returns on US stocks.

Their model is in accord with Merton's (1973) inter-temporal CAPM and Ross's (1976) arbitrage pricing theory (APT), which states that risks must be multidimensional if stocks are to be priced rationally. Fama and French (1993, 1996) illustrate that there is covariance between SMB and HML and common risk factors in returns and that these risk factors contribute significantly in explaining the variation in stock returns.

The FF model has attracted a great deal of attention in academia, which mostly focuses on the source of value premium. Fama and French (1993) and Chen and Zhang (1998) argue that value firms are riskier, as they are more likely to be subject to financial distress than growth firms, complying with the hypothesis of rational pricing. In a later paper, Fama and French (1995) demonstrate that value [growth] stocks are normally associated with firms that have persistently low [strong] earnings growth. In the light of this evidence, they suggest that value [growth] firms have a positive [negative] loading on HML, implying higher [lower] distress risk. Zhang (2005), however, claims that value firms are riskier because they have more assets than growth firms. He conjectures that assets in place are much riskier than growth options because in poor economic environments value firms are burdened with more unproductive capital and face higher costs in cutting this down. Much of the recent work on the value premium empirically explores how differing states of the world affect the strength of the premium. Stivers and Sun (2010) show that the value premium is countercyclical (higher during weaker economic times). Gulen et al. (2011) show that in times of high market volatility the expected excess returns of value stocks are more sensitive than those of growth stocks to worsening aggregate economic conditions. Guo et al. (2009) support the view that value is riskier than growth in bad times. Li et al. (2009) find a positive relation between the value premium and its conditional volatility. In broad terms, the consensus of the recent literature is that the value premium is time varying and that value stocks perform badly in poor and risky economic environments.

Daniel and Titman (1997) provide an alternative explanation for the value premium. In contrast to Fama and French (1995), they claim that it is firms' characteristics, rather than their covariance of risk factors, that offers an explanation for the value premium. That is, the presence of high covariance between the value stocks is not due to a distress factor but rather to their common characteristics. For instance, value stocks may be characterised by similar lines of business or be in comparable industries. To further corroborate their claim, they show that the presence of high covariance between value stocks has no significant relationship with the distress factor, i.e., high covariance exists even before the value firms become distressed. Similarly, Lee et al. (2007) find that stock characteristics better explain the UK value premium.

Yet another explanation of the value premium revolves around investor sentiment and trading strategies. Lakonishok et al. (1994) demonstrate that value (i.e., unspectacular) firms produce superior returns because of the investors' overreaction to the past performance of firms. That is, investors extrapolate the past strong (weak) performance of growth (value) firms too far into future. Investors then irrationally overbuy (oversell) growth (value) firms' stocks. However, when the market realises that the actual performance for growth (value) firms is lower (higher) than initially expected, the growth (value) firm's stocks end up with low (high) returns[6]. This finding is similar to the observation of De Bondt and Thaler (1985, 1987) that poorly performing stocks over the past three-to-five years (i.e., losers) outperform prior-period winners during the subsequent three-to-five years. The above issues are reconciled by Lioui and Maio (2014), who attribute the return reversals of stocks to their interest rate sensitivity.

Finally, there is one more potential explanation for the value premium, that is, the prevalence of the value premium is due to methodological issues. Kothari et al. (1995) suggest that a selected sample is more likely to include firms that have survived a period of distress compared to those that got delisted. This is commonly known as survivorship bias. However, some later studies have refuted these claims (see Chan et al., 1995). Another view put forward by Lo and MacKinlay (1988), MacKinlay (1995) and Conrad et al. (2003) is that the value premium is due to data snooping. That is, continuously testing the same dataset generally depicts spurious patterns in average returns. Barber and Lyon (1997) propose that using samples from different time periods or different countries alleviate this data-snooping hypothesis.

A number of studies have documented the presence of a value premium in emerging markets (see, for example, Geert, 1999; Dewandaru et al., 2015), however very few investigate its source. Yen et al. (2004) find that the presence of the value premium in Singapore is due to the one-way overreaction of value firms. Ding et al. (2005) examine value and growth portfolios in seven East Asian countries. They find a positive value premium for Hong Kong, Japan, Malaysia and Singapore, a negative value premium in Thailand and an insignificant effect in Indonesia and Taiwan. They find that risk and liquidity effects are weak in all the countries. However, firm size and firm growth potential effects are significant in most of the countries but the nature of the effects varies considerably across countries. In the case of Malaysia, they find that small value stocks with low growth potential have higher returns. Unfortunately, the dataset employed in Ding et al. (2005) dates back to pre-1997 (i.e. prior to the 1997 Asian financial crisis) and so does not cover the period of poor economic conditions. This is a major issue as most of the recent work on the value premium proposes that it changes in an economic downturn. Given the limited number of studies rationalising the value premium especially in the context of emerging markets, it is obvious that many questions surrounding it remain unanswered.

2.2 The unique institutional setting of Malaysia

A number of studies have documented the value premium in both developed as well as developing markets as discussed above. This has led to its acceptance as an empirical fact or truth. This study adopts the Popperian stance by endeavouring to illustrate via the principle of falsification that any contradictory instance to a 'theory' (or empirical 'fact') is sufficient to falsify it, regardless of how many positive examples appear to support it. We hope to illustrate the falsification of the value premium by studying an emerging economy (i.e., Malaysia) whose unique institutional framework inhibits it (as described below).

We chose Malaysia for a number of reasons. First, as a newly industrialised market economy, it has experienced a growth pattern that is very different from those of the developed economies, especially in our sample period, allowing us to investigate a number of economic regimes. For instance, there was a period of remarkable growth around the early 1990s followed by a severe financial crisis, from mid-1997 to the end of 1998. In addition, as an open economy and trade reliant nation, it is usually highly exposed to the economic health of its major trading partners. This is demonstrated by the impact of the recession in the USA (in early 2000), which caused Malaysia to go through a period of sluggish economic growth. The recent subprime crisis emanating from the developed economies impacted on Malaysia in the real sector (through trade, i.e., exports) as well as the financial sector (through linkages of stock exchanges) (Abidin and Rasiah, 2009)[7].

Secondly, Malaysia presents an interesting case study because of its interesting institutional features and its interest to foreign investors. The institutional setting of the Malaysian market differs from that of the developed markets like the USA, UK, or Japan. Historically, Malaysian stock market has been top-heavy. The largest 50 to 60 stocks by market capitalisation account for most of the traded volume and index movement on any given day. Most of these are also components of the 100 stock composite index (KLSE CI). It is these stocks that are considered 'investible' by foreign fund managers. In addition, Malaysian stocks that are components of international stock indices such as the MSCI are also from this category. Since these are the stocks that receive research coverage and analysts' attention, they typically form the bulk of institutional holdings – both foreign and local. Given this dichotomous market structure, one could argue that all the smart money and institutional holdings are in a small pool of large market capitalisation stocks while the retail players are mostly in the smaller/lower priced stocks. Given that our definition of size is based on market capitalisation, our sample of big stocks would simply constitute this pool of 50–60 stocks. When seen in the light of this market microstructure and behavioural considerations, like the incentive for professional fund managers to hold index linked stocks, our finding that the big stocks outperform, makes eminent sense.

Furthermore, most of the stocks in the above category are also state owned and closely held. This is because the Malaysian economic system is established on a relationship based elitist system (see Gomez and Jomo, 1997). That is, a system that exhibits political patronage, cronyism and low levels of transparency (Johnson and Mitton, 2003). Fraser et al. (2006) find that larger and more profitable Malaysian firms with political patronage carry more leverage than firms with less political patronage. Ebrahim et al. (2014b) investigate this issue further to illustrate that the government support of connected firms has waned after the Asian crisis. This has led to a convergence between politically connected firms and unconnected firms. We go beyond Ebrahim et al. (2014b), segregate the growth firms from their value counterparts to illustrate the preferential treatment of politically connected growth firms over that of value ones especially during economic downturns in Section 3.

Our dataset illustrates the number of sample firms growing gradually from 24 firms in 1992 to 676 firms in 2011. We also use equal-weighted portfolios in our analysis, which helps in mitigating the impact of firms with high market capitalisation.

Malaysia is the only country amongst regional emerging markets to have had capital controls for a significant amount of time during our study period. The volatility of the market is low, as compared to other regional markets. Malaysia is also one of the rising emerging markets with gross domestic product (GDP) per capita higher than both China and India.

An explanation for the underperformance (outperformance) of value (growth) stocks is deduced from the breakdown of the perfect capital market assumptions inherent in Miller and Modigliani (1961) dividend irrelevance theory[8]. In the MM framework, a value firm (with high BE/ME – book equity to market equity) facing lower growth opportunity is deemed to have higher dividend yield. In contrast, a growth firm has low (or zero) dividend yield. In this ideal world, both types of firms should yield similar total returns with value stocks bearing *lower* capital gains whilst growth stocks generating *higher* capital gains.

Market imperfections, however, breach the MM theory, shedding light on how this leads to outperformance of growth stocks. First, unlike developed markets, dividend yields on value stocks in developing markets like Malaysia have traditionally been very low. This is because they are generally politically unconnected firms, depending on their cash flows (stemming from their underlying equity capital) to fund their ongoing projects, working capital outlays and asset obsolescence. This is illustrated in note 13 (Section 3) and is in contrast to growth firms, which are predominately politically connected with an easier access to government contracts and inexpensive debt capital. Thus, political connection leads to preferential treatment in the awarding of contracts and to a subsidised cost of capital. This endows growth companies a comparative advantage over their value counterparts. This preferential status of politically connected growth firms leads investors to prefer them over value firms. The second reason is tax incidence. In Malaysia, capital gains on stocks are not taxed whilst dividends are penalised at an effective rate equivalent to the investors' tax bracket. This, ceteris-paribus, results in higher after-tax payoffs for growth stocks in contrast to value stocks. Malaysian institutional factors therefore favour growth firms over value ones.

Thus, in a rapidly developing emerging market such as Malaysia, it is the politically connected companies that will be able to piggy-back on rapid economic growth. While value stocks would be good 'defensive' stocks given their high asset backing, institutional investors, particularly foreign ones, would not opt for its defensive stocks, but for growth opportunity. Since the foreign institutional investors are the trend setters for local ones, it should not be surprising that growth outperforms value as illustrated in Section 4.

3 Data and methodology

Our sample consists of all non-financial firms listed on the three main boards of Bursa Malaysia (KLSE) from 1992 to 2011. We examine the returns from July 1992 to June 2012 for these firms by employing the relevant data from Datastream[9]. The firms included in the data fulfil the standard criteria employed in the literature i.e. they all have Datastream stock prices for December of year $t - 1$ and June of year t and Datastream book value for year $t - 1$. In addition, each sample firm has at least two years data on Datastream[10]. Table 1 illustrates the number of firms belonging to each portfolio by year and the number of firms that are politically connected (shown in parentheses).

Table 2 reports various characteristics of sample firms (sorted into different portfolios) in terms of their political connections. It shows that politically connected firms, on average, are significantly larger (Panel A), have higher capital expenditure (Panel B), and rely heavily on external financing (Panel C) than their unconnected counterparts, over the full sample and two sub-periods (for most of the portfolios). Similarly, firms with political connections have higher trading volumes during the full and post-crisis periods. These figures affirm that Bursa Malaysia is unique and dominated by top-heavy, closely held, and politically connected firms[11]. Therefore, it is important to investigate the implications of value versus growth anomaly in such a market that, potentially, challenges the premise that value always outperforms growth.

Table 1 Portfolio composition – number of firms by year and political patronage

Year	*SL*	*SM*	*SH*	*BL*	*BM*	*BH*	*Total*
1992	5 (1)	6 (0)	3 (3)	4 (0)	2 (0)	4 (2)	24 (6)
1993	5 (1)	3 (1)	7 (4)	8 (1)	5 (2)	3 (1)	31 (10)
1994	3 (1)	6 (2)	7 (4)	11 (1)	6 (3)	5 (2)	38 (13)
1995	8 (1)	9 (1)	7 (2)	12 (3)	7 (4)	12 (4)	55 (15)
1996	8 (1)	17 (1)	7 (0)	13 (3)	11 (7)	13 (5)	69 (17)
1997	7 (0)	17 (2)	8 (1)	16 (6)	18 (6)	11 (5)	77 (20)
1998	14 (0)	14 (2)	9 (2)	17 (5)	19 (7)	14 (6)	87 (22)
1999	8 (0)	24 (0)	18 (4)	28 (10)	19 (5)	9 (5)	106 (24)
2000	30 (2)	43 (0)	24 (2)	27 (8)	27 (6)	27 (10)	178 (28)
2001	29 (2)	48 (1)	40 (0)	40 (12)	31 (8)	25 (9)	213 (32)
2002	34 (2)	62 (0)	34 (1)	43 (14)	45 (5)	26 (10)	244 (32)
2003	38 (1)	72 (1)	41 (6)	57 (13)	50 (13)	35 (8)	293 (42)
2004	42 (1)	81 (2)	57 (7)	70 (15)	59 (10)	31 (12)	340 (47)
2005	58 (1)	92 (4)	69 (5)	81 (19)	69 (10)	39 (14)	408 (53)
2006	65 (2)	104 (4)	82 (3)	91 (18)	95 (14)	39 (16)	476 (57)
2007	68 (1)	117 (5)	97 (8)	110 (20)	107 (12)	46 (13)	545 (59)
2008	68 (0)	114 (3)	118 (8)	119 (24)	118 (18)	41 (10)	578 (63)
2009	60 (1)	121 (0)	147 (9)	139 (35)	109 (13)	35 (6)	611 (64)
2010	70 (1)	137 (1)	140 (9)	140 (26)	123 (19)	42 (11)	652 (67)
2011	65 (2)	151 (1)	145 (7)	155 (32)	119 (16)	41 (9)	676 (67)

Notes: The table reports the number of firms in each portfolio by year. The numbers in parentheses show the firms that have politically connection too. Stocks with ME (‘market equity’ or size) below the median are deemed ‘small’ whilst stocks with ME above the median are ‘big’. The breakpoints for BE/ME (‘book equity divided by market equity’ or value) are the 30th and 70th percentiles. The intersection of two size-sorted and three value-sorted groups produces six portfolios, named as: SL = small-low value (i.e., small-growth); SM = small-middle value; SH = small-high value; BL = big-low value (i.e., big growth); BM = big-middle value, BH = big-high value. The last column reports the total number of firms in each year.

In order to address our research questions, we employ the standard methodology proposed in Fama and French (1993). First, we form six portfolios by intersecting two groups sorted by the size of the firm (ME, stock price times shares outstanding or market equity) and three groups sorted by BE/ME (BE, net tangible assets – equity capital plus reserves minus intangibles – divided by ME). This intersection produces following six portfolios: SL = small-low value (i.e., small growth); SM = small-middle value; SH = small-high value; BL = big-low value (i.e., big growth); BM = big-middle value, BH = big-high value. We use median KLSE size for each year as the threshold point for creating two size (ME) groups. Stocks with ME higher than the median are assigned as Big (B) stocks and stocks with lower than median ME are assigned as small (S) stocks. For BE/ME, we split the stocks into three groups based on the breakpoints of bottom 30% (low), middle 40% (medium), and top 30% (high) of the ranked values of BE/ME for

KLSE stocks[12]. Second, we compute the value-weighted monthly returns on the six portfolios from July of year *t* to June of year *t* + 1, and re-form the portfolios in June of year *t* + 1.

To discriminate between value and growth stocks, we employ the above standard definition to designate firms with high BE/ME ratio as value stocks and low BE/ME as growth stocks. A low BE/ME implies that the market is pricing the firms' assets (book value) at a premium. This price premium reflects the higher growth opportunity that these assets offer.

Table 2 Firm characteristics of politically connected and unconnected firms

Portfolio	*July 1992–June 2012*		*July 1992–June 1997*		*July 1999–June 2012*	
	Politically unconnected	*Politically connected*	*Politically unconnected*	*Politically connected*	*Politically unconnected*	*Politically connected*
Panel A: average monthly market capitalisation						
BH	*598,463*	*990,348*	*1,475,408*	*2,361,969*	*496,793*	*777,446*
BM	*652,181*	*3,589,859*	*1,388,960*	*4,581,481*	*609,516*	*2,997,936*
BL	*1,923,539*	*7,025,574*	*3,477,054*	*1,690,458*	*1,851,004*	*7,177,151*
SH	*79,634*	*290,743*	*535,309*	*762,831*	*63,642*	*195,452*
SM	*70,054*	*153,521*	*240,656*	*305,046*	56,043	55,149
SL	62,241	57,672	*284,601*	*82,727*	46,685	49,590
Panel B: average yearly capital expenditure						
BH	*44,715*	*156,950*	*90,192*	*645,021*	*39,973*	*83,298*
BM	*46,382*	*424,003*	*49,255*	*696,900*	*45,266*	*321,445*
BL	*89,357*	*637,096*	89,915	73,020	*88,071*	*665,136*
SH	9,194	11,963	19,439	16,953	7,870	10,357
SM	*5,582*	*24,619*	14,848	23,903	4,838	6,964
SL	3,840	7,113	7,345	2,042	*3,513*	*8,698*

Notes: The table provides average monthly market capitalisation (Panel A), average annual capital expenditure (Panel B), average annual external financing (Panel C), and average monthly trading volume (Panel D), for politically connected and unconnected sample firms over three periods: July 1992–June 2012 (full sample period), July 1992–June 1997 (pre-crisis period), and July 1999–June 2012 (post-crisis period). Capital expenditure represents the funds used to acquire fixed assets other than those associated with acquisitions. It includes but is not restricted to: additions to property, plant and equipment; investments in machinery and equipment. External financing represents financing from outside sources. It includes the issuance and retirement of stock and debt. Firms with ME ('market equity/capitalisation' or size) below the median are deemed 'small' whilst stocks with ME above the median are 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection of two size-sorted and three value-sorted groups produces six portfolios, named as: BH = big-high value; BM = big-middle value; BL = big-low value; SH = small-high value; SM = small-middle value; SL = small-low value. All figures are in thousands. Figures in italics show that politically connected firms are statistically different (within period) from unconnected firms at less than 10% level.

Table 2 Firm characteristics of politically connected and unconnected firms (continued)

Portfolio	*July 1992–June 2012*		*July 1992–June 1997*		*July 1999–June 2012*	
	Politically unconnected	*Politically connected*	*Politically unconnected*	*Politically connected*	*Politically unconnected*	*Politically connected*
Panel C: average yearly net external financing (adjusted for debt and stocks retirement)						
BH	*24,705*	*73,881*	*110,595*	*471,179*	15,235	7,181
BM	*23,947*	*162,756*	*42,318*	*361,169*	*22,096*	*84,015*
BL	*48,937*	*134,788*	*6,836*	*89,018*	*51,865*	*132,741*
SH	*5,865*	*20,010*	59,808	109,976	*4,082*	*57*
SM	*2,205*	*14,436*	*13,812*	*45,664*	1,259	876
SL	1,569	–303	14,079	2,139	886	–1,066
Panel D: average monthly trading volume						
All portfolios	96,527	131,982	295,222	86,783	86,778	132,037

Notes: The table provides average monthly market capitalisation (Panel A), average annual capital expenditure (Panel B), average annual external financing (Panel C), and average monthly trading volume (Panel D), for politically connected and unconnected sample firms over three periods: July 1992–June 2012 (full sample period), July 1992–June 1997 (pre-crisis period), and July 1999–June 2012 (post-crisis period). Capital expenditure represents the funds used to acquire fixed assets other than those associated with acquisitions. It includes but is not restricted to: additions to property, plant and equipment; investments in machinery and equipment. External financing represents financing from outside sources. It includes the issuance and retirement of stock and debt. Firms with ME ('market equity/capitalisation' or size) below the median are deemed 'small' whilst stocks with ME above the median are 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection of two size-sorted and three value-sorted groups produces six portfolios, named as: BH = big-high value; BM = big-middle value; BL = big-low value; SH = small-high value; SM = small-middle value; SL = small-low value. All figures are in thousands. Figures in italics show that politically connected firms are statistically different (within period) from unconnected firms at less than 10% level.

We also compute the return in five sub-periods to assess the relationship between economic cycle and value premium: from July 1992 to June 1997 (high growth period), July 1997 to June 1999 (Asian financial crisis), July 1999 to June 2007 (post crisis period), July 2007 to June 2009 (sub-prime crisis) and July 2009 to June 2012 (post sub-prime crisis)[13]. We repeat the same process, but this time with 25 portfolios based on size (ME) intersecting with BE/ME. This is to check the robustness of the results and to deal with any in-sample portfolio issues inherent in the six size-BE/ME portfolios. The 25 size-BE/ME portfolios are constructed using equally-weighted quintile breakpoints for ME and BE/ME.

Table 3a Value weighted monthly excess returns – July 1992 to June 2012

Portfolio	*Method*	α	*b*	*s*	*h*	*m*
SL	CAPM	0.706	1.157^{x}			
	F-F	0.220	0.456^{x}	0.400^{x}	-0.571^{x}	
	F-F-C	0.263	0.421^{x}	0.397^{x}	-0.568^{x}	-0.323^{z}
SM	CAPM	0.654	1.342^{x}			
	F-F	0.003	0.603^{x}	0.624^{x}	-0.617^{x}	
	F-F-C	0.068	0.551^{x}	0.619^{x}	-0.613^{x}	-0.480^{x}
SH	CAPM	0.722	1.202^{x}			
	F-F	–0.321	0.008^{x}	0.996^{x}	-0.996^{x}	
	F-F-C	–0.321	0.008^{x}	0.996^{x}	-0.996^{x}	0.001
BL	CAPM	1.267	1.289^{x}			
	F-F	0.641	0.557^{x}	0.592^{x}	-0.609^{x}	
	F-F-C	0.683	0.523^{x}	0.589^{x}	-0.607^{x}	–0.313
BM	CAPM	1.362	1.058^{x}			
	F-F	0.220	0.456^{x}	1.400^{x}	-0.571^{x}	
	F-F-C	0.263	0.421^{x}	1.397^{x}	-0.568^{x}	-0.323^{z}
BH	CAPM	0.511	1.094^{x}			
	F-F	0.104	0.606^{x}	0.378^{x}	-0.404^{x}	
	F-F-C	0.155	0.566^{x}	0.375^{x}	-0.401^{x}	-0.379^{y}

Notes: The table reports coefficients of CAPM, Fama and French (1993) three-factor model (F-F), and Carhart (1997) four-factor model (F-F-C) returns using monthly excess returns, in percent, for portfolios sorted on size and value over the period July 1992 to June 2012 (240 monthly returns). Stocks with ME ('market equity' or size) below the median are deemed 'small' whilst stocks with ME above the median are 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection of two size-sorted and three value-sorted groups produces six portfolios: SL = small-low value; SM = small-middle value; SH = small-high value; BL = big-low value; BM = big-middle value, BH = big-high value. We estimate coefficients for six portfolios using CAPM, Fama and French (1993) three factor, and Carhart (1997) four factor models, as follows:

$$\text{CAPM}: \quad R_{pt} - R_{ft} = \alpha + b(RMRF) + \varepsilon$$

$$\text{F-F}: \quad R_{pt} - R_{ft} = \alpha + b(RMRF) + s(SMB) + h(HML) + \varepsilon$$

$$\text{F-F-C}: \quad R_{pt} - R_{ft} = \alpha + b(RMRF) + s(SMB) + h(HML) + m(PR1YR) + \varepsilon$$

Here, R_{pt} and R_{ft} are the returns on a market portfolio and risk free asset. *RMRF*, *SMB*, and *HML* are constructed as in Fama and French (1993) and *PR*1*YR* as in Carhart (1997). We use three month Malaysian Treasury Bills (adjusted monthly) rate as a proxy for risk-free rate and Kuala Lumpur Composite Index (KLCI) return as proxy for market return. Superscripts x, y, and z show that the coefficients are significant at the 1%, 5%, or 10% levels.

Table 3b Equal-weighted monthly excess returns – July 1992 to June 2012

	CAPM					*F-F*				
	Value (BE/ME)					*Value (BE/ME)*				
	L1	*L2*	*L3*	*L4*	*L5*	*L1*	*L2*	*L3*	*L4*	*L5*
Size (ME)			α					α		
S1	1.504	0.808	0.371	0.447	1.074	1.334	0.087	–0.074	0.497	0.033
S2	0.793	–0.043	0.321	1.100	0.727	–0.031	–0.414	–0.296	0.245	0.450
S3	0.679	0.935	0.816	1.448	0.314	0.497	0.370	0.332	0.747	–0.084
S4	0.066	1.288	0.500	0.362	0.548	–0.515	1.013	–0.064	–0.025	0.183
S5	0.595	0.239	0.348	0.010	0.994	0.017	–0.168	0.147	–0.285	0.568
			B					*B*		
S1	1.162^{x}	1.211^{x}	1.299^{x}	1.230^{x}	1.425^{x}	0.475^{y}	0.323^{y}	0.423^{x}	0.234^{z}	0.174
S2	1.531^{x}	1.380^{x}	1.439^{x}	1.278^{x}	1.244^{x}	0.511^{z}	0.520^{x}	0.731^{x}	0.373^{x}	0.031
S3	0.932^{x}	0.928^{x}	1.237^{x}	1.221^{x}	0.897^{x}	0.203	0.267	0.545^{x}	0.425^{y}	0.317^{y}
S4	1.360^{x}	1.241^{x}	1.057^{x}	0.968^{x}	0.943^{x}	0.687^{x}	0.304^{z}	0.446^{x}	0.490^{x}	0.519^{x}
S5	1.291^{x}	1.018^{x}	1.162^{x}	1.123^{x}	0.980^{x}	0.612^{x}	0.596^{x}	0.433^{x}	0.690^{x}	0.320^{y}
								S		
S1						0.441^{x}	0.660^{x}	0.761^{x}	0.894^{x}	0.968^{x}
S2						0.694^{x}	0.640^{x}	0.589^{x}	0.753^{x}	1.118^{x}
S3						0.572^{x}	0.534^{x}	0.578^{x}	0.672^{x}	0.470^{x}
S4						0.551^{x}	0.828^{x}	0.554^{x}	0.355^{x}	0.347^{x}
S5						0.544^{x}	0.362^{x}	0.714^{x}	0.349^{x}	0.662^{x}
								H		
S1						$–0.610^{x}$	$–0.735^{x}$	$–0.802^{x}$	$–0.924^{x}$	$–1.037^{x}$
S2						$–0.765^{x}$	$–0.711^{x}$	$–0.590^{x}$	$–0.754^{x}$	$–1.129^{x}$
S3						$–0.660^{x}$	$–0.551^{x}$	$–0.575^{x}$	$–0.665^{x}$	$–0.481^{x}$
S4						$–0.560^{x}$	$–0.857^{x}$	$–0.513^{x}$	$–0.395^{x}$	$–0.353^{x}$
S5						$–0.565^{x}$	$–0.353^{x}$	$–0.682^{x}$	$–0.358^{x}$	$–0.687^{x}$

Notes: The table reports coefficients of CAPM and FF three-factor model for 25 equally-weighted portfolios by intersecting ME ('market equity' or size) and BE/ME ('book equity divided by market equity' or value) using quintile breakpoints. For example, S1L1 refers to the smallest quintiles (bottom 20%) in size (ME) and value (BE/ME) and so on. The coefficients are generated using CAPM and Fama and French (1993) three-factor models, as noted in Table 2a. We also estimate coefficients using Carhart (1997) four-factor model but do not report to conserve space, as the results stay qualitatively similar to those reported using F-F three-factor model. Superscripts x, y, and z show that the coefficients are significant at the 1%, 5%, or 10% levels.

To address our second research question on 'economic drivers' of the two types of firms, our analysis is divided into two phases. In the first phase, we use measures of bankruptcy risk proposed by Altman (1993) to investigate whether firms with a high likelihood of distress are also firms with a high book to market ratio (i.e. value firms)[14]. The purpose of this analysis is to examine the relationship between Z-score and BE/ME ratio. If the relationship is negative, both BE/ME and Z-score capture information related to a priced distress risk factor. However, if the relation is positive, then we can conclude that Z-score and BE/ME ratio contain different information and that both variables are potentially related to differences in relative risk across firms (see Griffin and Lemmon, 2002). In the context of this paper, we argue that the relative risk results from each firm's unique characteristics. In addition to Altman model, we also measure bankruptcy risk using Shumway (2001) model[15].

We form portfolios based on three independent rankings of BE/ME, five rankings on Z-score, and two rankings of ME (size)[16]. We only report size-adjusted data, which are the simple average of the means of the small and large firm groups. Firms in the lowest quintile of Z-scores are firms with the highest probability of bankruptcy and the probability of bankruptcy decreases as we move to the higher quintiles.

In the second phase, our main interest is in the coefficient of HML, as our objective is to show that its value is determined by the risk of a firm's characteristics rather than distress risk. In pursuit of this objective, we undertake a two-step approach. First, we employ the Fama and French three-factor model ($R_{pt} - R_{ft} = \alpha + b(R_{mt} - R_{ft}) + s\ SMB + h\ HML + \varepsilon$) to determine the coefficient of HML[17]. Our preliminary analysis shows that this model is adequate to capture portfolio returns in the Malaysian market[18]. Tables 3a and 3b show that the alphas for all portfolios are insignificant.

However, unlike Fama and French (1995), we argue that HML is a proxy for the firm's characteristics and the changes in loading reflect the constant changes in business and financial risks. Therefore, to capture this dynamic attribute, we use rolling beta regressions to estimate the time varying coefficient of HML (conditioning beta) rather than conventional static analysis. We regress excess returns of the value and growth portfolios' using the three factor model with a 36-month rolling window[19].

Next, we regress the coefficient of HML (Y_{it}^{*}) for the i^{th} portfolio on the conditioning variable at time *t*. We use the mean as the central tendency measure to convert the value of coefficients from monthly to annual observations. This model is described in equation (1) as follows:

$$Y_{it}^{*} = \alpha_o + \sum_{j=1}^{J} \beta_j X_{jit} + \eta_i + \eta_t + \varepsilon_{it} \tag{1}$$

where $i = 1,\ldots,N$; $t = 1,\ldots,T$; $j = 1,\ldots,J$.

The model isolates *J* portfolio specific variables, capturing characteristics, which vary with time and across firms (panel data). The term ε_{it} signifies the error term assumed to be independently and identically normally distributed with zero mean and constant variance. That is, $\varepsilon_{it} \approx iidN(0, \sigma_{\varepsilon}^{2})$. The conditioning variables are the current and two lagged values of the change in natural logarithms of total assets and total debt. The change in natural logarithm of total assets measures the sensitivity of undertaking the growth option, while the natural logarithm of total debt measures the sensitivity of changing leverage. In addition, we include GDP and its two lagged values along with the interaction variables to reflect economic conditions at time *t*. We also consider a dummy to differentiate the coefficients of value and growth firms and interact this dummy with all the variables in the panel regression. Finally, we include interaction of change in natural logarithm of total assets with GDP and their interaction with the above dummy (along with their lagged values). This would allow us to examine if growth firms delay investments.

We estimate equation (1) using the static panel data estimation technique. This is partly to address the need for a larger number of data points, as the number of portfolios in our sample is quite small. Static panel data estimation, however, has several other advantages. First, it increases the degrees of freedom and reduces the collinearity problem (see Hsiao, 2003). Second, panel data has the ability to control for the problem of endogeneity without the need for an external instrument.

4 Empirical results

Table 4, Panel A reports average excess returns on six size-BE/ME sorted portfolios for the full sample[20]. The results show that for the overall period (1992–2012), growth portfolios produce higher returns than value portfolios. The BL portfolio generates returns almost twice as large as the BH portfolio. Overall, these results are opposite to those observed for the developed markets where premiums for value firms are generally reported. Contrarily, we find a premium for growth firms and some indication of a premium for large companies. Our findings also illustrate that the value premium is present mainly in stocks of small firms.

Further analysis shows that the return pattern varies with the economic cycle. In the high growth period (June 1992–June 1997), when the Malaysian economy grew at between 7% and 9% p.a., small value stocks outperformed small growth stocks mainly due to the superior performance of the SH portfolio (see Table 4, Panel B). In each of the subsequent sub-periods reported in Panels C to E of Table 4, growth stocks outperformed value stocks. Another observation that stands out over both the whole period and the sub-periods outlined in Panels B and C of Table 4 is the relatively good performance of BL portfolios. We also report value premium (VMG) for the portfolio of all small and big firms separately in Panel G, across different sub-periods and find that a significant value premium indeed exist *only* among small firms and the growth premium in big firms during high growth (1992–97) period.

Table 4, Panel H reports average excess returns on 25 equally-weighted monthly excess returns for portfolios sorted on size and value for the full sample. In broad terms, it confirms similar return patterns to those exhibited in Panels A to G (Table 4) with no evidence of a significance value premium in portfolios of any size.

We offer two possible explanations for our findings. First, the relatively good performance of value stocks during high growth periods may be due to leverage effects (Fama and French, 1993, 1995, 1996). This is simply because leverage increases the sensitivity of firm's net income to any increase in sales. Referring to Table 5, we find that value portfolios have relatively higher leverage than growth portfolios. This can be seen by comparing the H (value) and L (growth) columns in the D/ME (debt-to-market equity) section. Although not reported to conserve space, the differences between the numbers in columns are statistically significant. Second, to understand our findings of the relatively good performance of the BL portfolio, one needs to understand the unique institutional structure of the Malaysian market. As discussed earlier, the Malaysian stock market is heavily top weighted. The top 50 or 60 stocks by market capitalisation account for most of the traded volume and index movement on any given day and are considered 'investible' by foreign fund managers. Malaysian stocks that are components of international stock indices such as the MSCI are also from this category. Since these are the stocks that receive research and media coverage and analysts' attention, they typically form the bulk of institutional holdings – both foreign and local. In addition, as discussed earlier, one might conjecture that the benefits of political patronage are particularly important for larger companies especially during the high growth period[21].

Table 4 Summary statistics of monthly excess returns

Portfolio	*RPTRFT*	*Portfolio*	*RPTRFT*
	Panel A: full sample period July 1992–June 2012		
SL	1.061^{z} (1.363)	BL	1.663^{y} (1.788)
SM	1.065 (1.378)	BM	1.686^{z} (1.475)
SH	1.091^{z} (1.476)	BH	0.846^{y} (1.334)
VMG	–0.393 (–0.925)		
	Panel B: high growth sub-period – July 1992 to June 1997		
Portfolio	*RPTRFT*	*Portfolio*	*RPTRFT*
SL	1.827^{z} (1.535)	BL	4.534^{y} (2.259)
SM	3.441^{y} (2.348)	BM	1.979^{z} (1.545)
SH	5.030^{x} (2.778)	BH	2.122^{y} (2.007)
VMG	0.395 (0.337)		

Notes: Panel A of the table reports actual mean return values and *t*-statistics (in parentheses) of value-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). Stocks with ME ('market equity' or size) below the median are deemed 'small' whilst stocks with ME above the median are 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection produces six portfolios: SL = small-low value; SM = small-middle value; SH = small-high value; BL = big-low value; BM = big-middle value, BH = big-high value; VMG = value minus growth and is given by [{(S/H+B/H)/2} – {(S/L+B/L)/2}]; and RPTRFT = return on portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$ in parentheses. Panels B to F report these values for value-weighted monthly excess returns for the following sub-periods: Panel B high growth from July 1992 to June 1997; Panel C Asian financial crisis from July 1997 to June 1999; Panel D post-Asian financial crisis from July 1999 to June 2007; Panel E sub-prime crisis from July 2007 to June 2009; and Panel F post-subprime crisis from July 2009 to June 2012. Panel G reports value-minus-growth statistics (mean and significance) for portfolios of small and big firms for full sample period and different sub-periods.

Panel H reports actual mean return values and *t*-statistics of equally-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). We construct 25 equally-weighted portfolios by intersecting ME ('market equity' or size) and BE/ME ('book equity divided by market equity' or value) using quintile breakpoints. For example, S1L1 refers to the smallest quintiles (bottom 20%) in size (ME) and value (BE/ME) and so on. RPTRFT is return on equally-weighted portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$. The last column reports difference in mean values of two extreme quintiles (L1 and L5) by BE/ME.

Superscripts x, y, and z show that the coefficients are significant at the 1%, 5%, or 10% levels.

Table 4 Summary statistics of monthly excess returns (continued)

Portfolio	*RPTRFT*	*Portfolio*	*RPTRFT*
Panel C: Asian financial crisis sub-period – July 1997 to June 1999			
SL	–2.019 (–0.494)	BL	2.285 (0.344)
SM	–1.254 (–0.216)	BM	0.036 (0.007)
SH	–2.539 (–0.604)	BH	–1.40 (–0.350)
VMG	–0.210 (–1.037)		
Panel D: post Asian financial crisis sub-period – July 1999 to June 2007			
Portfolio	*RPTRFT*	*Portfolio*	*RPTRFT*
SL	1.144 (0.886)	BL	0.566 (0.604)
SM	0.598 (0.756)	BM	0.415 (0.332)
SH	–0.172 (–0.200)	BH	0.925 (0.145)
VMG	–0.479 (–0.979)		

Notes: Panel A of the table reports actual mean return values and *t*-statistics (in parentheses) of value-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). Stocks with ME ('market equity' or size) below the median are deemed 'small' whilst stocks with ME above the median are 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection produces six portfolios: SL = small-low value; SM = small-middle value; SH = small-high value; BL = big-low value; BM = big-middle value, BH = big-high value; VMG = value minus growth and is given by [{(S/H+B/H)/2} – {(S/L+B/L)/2}]; and RPTRFT = return on portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$ in parentheses. Panels B to F report these values for value-weighted monthly excess returns for the following sub-periods: Panel B high growth from July 1992 to June 1997; Panel C Asian financial crisis from July 1997 to June 1999; Panel D post-Asian financial crisis from July 1999 to June 2007; Panel E sub-prime crisis from July 2007 to June 2009; and Panel F post-subprime crisis from July 2009 to June 2012. Panel G reports value-minus-growth statistics (mean and significance) for portfolios of small and big firms for full sample period and different sub-periods.

Panel H reports actual mean return values and *t*-statistics of equally-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). We construct 25 equally-weighted portfolios by intersecting ME ('market equity' or size) and BE/ME ('book equity divided by market equity' or value) using quintile breakpoints. For example, S1L1 refers to the smallest quintiles (bottom 20%) in size (ME) and value (BE/ME) and so on. RPTRFT is return on equally-weighted portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$. The last column reports difference in mean values of two extreme quintiles (L1 and L5) by BE/ME.

Superscripts x, y, and z show that the coefficients are significant at the 1%, 5%, or 10% levels.

Table 4 Summary statistics of monthly excess returns (continued)

Portfolio	*RPTRFT*	*Portfolio*	*RPTRFT*
Panel E: sub-prime crisis sub-period – July 2007 to June 2009			
SL	–0.386 (–0.242)	BL	–0.758 (–0.504)
SM	–0.561 (–0.394)	BM	8.131 (0.895)
SH	–0.690 (–0.607)	BH	–0.983 (–0.532)
VMG	–0.265 (–0.523)		
Panel F: post sub-prime crisis sub-period – July 2009 to June 2012			
Portfolio	*RPTRFT*	*Portfolio*	*RPTRFT*
SL	2.576^{x} (1.551)	BL	1.001 (1.194)
SM	0.983 (0.109)	BM	1.393^{z} (1.562)
SH	1.498^{x} (1.658)	BH	1.226 (1.229)
VMG	–0.426 (–0.538)		

Notes: Panel A of the table reports actual mean return values and *t*-statistics (in parentheses) of value-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). Stocks with ME ('market equity' or size) below the median are deemed 'small' whilst stocks with ME above the median are 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection produces six portfolios: SL = small-low value; SM = small-middle value; SH = small-high value; BL = big-low value; BM = big-middle value, BH = big-high value; VMG = value minus growth and is given by [{(S/H+B/H)/2} – {(S/L+B/L)/2}]; and RPTRFT = return on portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$ in parentheses. Panels B to F report these values for value-weighted monthly excess returns for the following sub-periods: Panel B high growth from July 1992 to June 1997; Panel C Asian financial crisis from July 1997 to June 1999; Panel D post-Asian financial crisis from July 1999 to June 2007; Panel E sub-prime crisis from July 2007 to June 2009; and Panel F post-subprime crisis from July 2009 to June 2012. Panel G reports value-minus-growth statistics (mean and significance) for portfolios of small and big firms for full sample period and different sub-periods.

Panel H reports actual mean return values and *t*-statistics of equally-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). We construct 25 equally-weighted portfolios by intersecting ME ('market equity' or size) and BE/ME ('book equity divided by market equity' or value) using quintile breakpoints. For example, S1L1 refers to the smallest quintiles (bottom 20%) in size (ME) and value (BE/ME) and so on. RPTRFT is return on equally-weighted portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$. The last column reports difference in mean values of two extreme quintiles (L1 and L5) by BE/ME.

Superscripts x, y, and z show that the coefficients are significant at the 1%, 5%, or 10% levels.

Table 4 Summary statistics of monthly excess returns (continued)

Panel G: value-minus-growth (VMG) statistics for portfolios of small and big firms		
	Portfolio of small firms	*Portfolio of big firms*
	Mean values	*Mean values*
Full sample period 92–12	0.0301	–0.8165^{z}
High growth period 92–97	3.2025^{y}	–2.4113^{z}
Asian financial crisis 97–99	–0.5198	–3.6835
Post Asian crisis 99–07	–1.3165	0.3588
Sub-prime crisis 07–09	–0.3049	–0.2252
Post sub-prime crisis 09–12	–1.0764	0.2248

Panel H: Equal-weighted monthly excess returns for full sample period – July 1992 to June 2012						
	Value (BE/ME)					
	L1	*L2*	*L3*	*L4*	*L5*	*Difference in mean L5 and L1*
Size (ME)	*RPTRFT*					
S1	1.659^{z}	1.179^{z}	0.612	0.604	1.511^{z}	–0.148
S2	0.790	0.341	0.763	1.510^{y}	0.961	0.171
S3	0.799	1.220^{z}	1.136^{z}	1.823^{z}	0.546	–0.253
S4	0.483	1.447^{z}	0.825	0.659	0.838^{z}	0.354
S5	0.991	0.565	0.567	0.301	1.551^{z}	0.559

Notes: Panel A of the table reports actual mean return values and *t*-statistics (in parentheses) of value-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). Stocks with ME (‘market equity’ or size) below the median are deemed ‘small’ whilst stocks with ME above the median are ‘big’. The breakpoints for BE/ME (‘book equity divided by market equity’ or value) are the 30th and 70th percentiles. The intersection produces six portfolios: SL = small-low value; SM = small-middle value; SH = small-high value; BL = big-low value; BM = big-middle value, BH = big-high value; VMG = value minus growth and is given by [{(S/H+B/H)/2} – {(S/L+B/L)/2}]; and RPTRFT = return on portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$ in parentheses. Panels B to F report these values for value-weighted monthly excess returns for the following sub-periods: Panel B high growth from July 1992 to June 1997; Panel C Asian financial crisis from July 1997 to June 1999; Panel D post-Asian financial crisis from July 1999 to June 2007; Panel E sub-prime crisis from July 2007 to June 2009; and Panel F post-subprime crisis from July 2009 to June 2012. Panel G reports value-minus-growth statistics (mean and significance) for portfolios of small and big firms for full sample period and different sub-periods.

Panel H reports actual mean return values and *t*-statistics of equally-weighted monthly excess returns (RPTRFT) in percent for portfolios sorted on size and value over the period July 1992 to June 2012 (i.e. 240 monthly returns). We construct 25 equally-weighted portfolios by intersecting ME (‘market equity’ or size) and BE/ME (‘book equity divided by market equity’ or value) using quintile breakpoints. For example, S1L1 refers to the smallest quintiles (bottom 20%) in size (ME) and value (BE/ME) and so on. RPTRFT is return on equally-weighted portfolio minus the risk free rate. We report one sided *t*-statistics: $H_0 = 0$ and $H_1 > 0$. The last column reports difference in mean values of two extreme quintiles (L1 and L5) by BE/ME.

Superscripts x, y, and z show that the coefficients are significant at the 1%, 5%, or 10% levels.

Table 5 presents summary statistics of the characteristics of the stocks sorted into groups by BE/ME and the probability of distress measured by Altman's Z-score. Looking at all the five quintiles of Z-score, there seems to be no apparent difference between low BE/ME and high BE/ME stocks. For instance, the Z-score in the lowest quintile is 0.476 for low BE/ME stocks and 0.586 for high BE/ME stocks. Moreover, both types of stocks exhibit similar scores as we move to the higher quintiles, with the exception of the highest quintile[22]. These findings contradict the hypothesis of Fama and French (1995) that the presence of the value premium is due to distress risk. Furthermore, Table 5 shows that within the high BE/ME group, the average return ratio is higher for firms with a higher Z-score than firms with a lower Z-score.

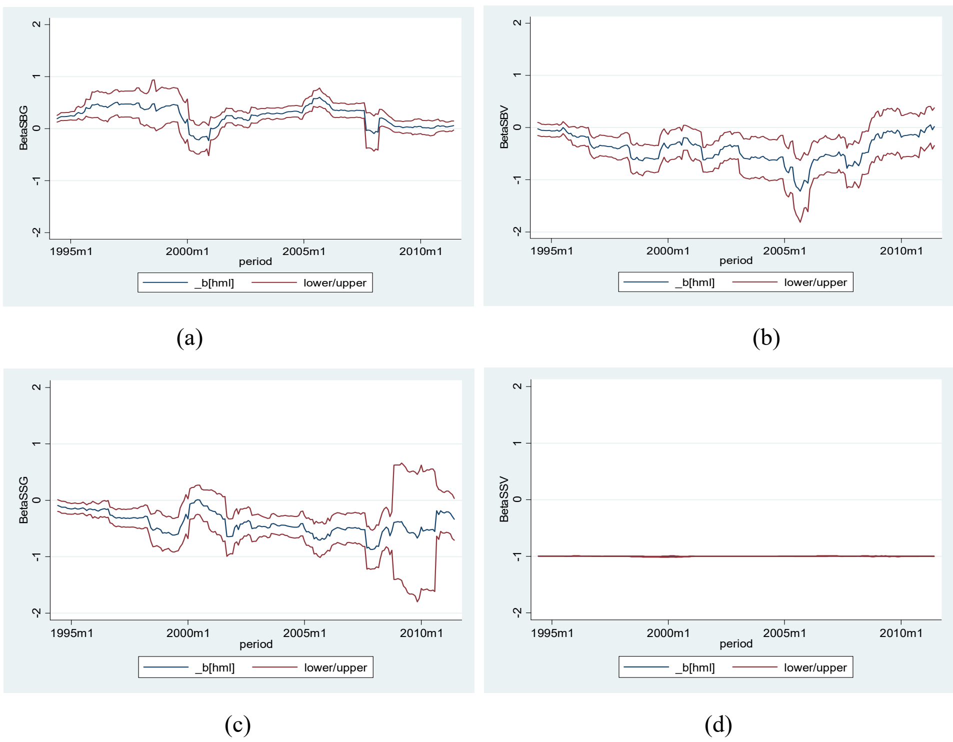
Table 5 Firm characteristics for portfolios sorted on distress probability and value

Z-score quintiles	*Portfolios*			*Z-score quintiles*	*Portfolios*		
	L	*M*	*H*		*L*	*M*	*H*
	Z-score				*ROA (return on assets)*		
1	0.476	0.683	0.586	1	–0.114	–0.050	–0.032
2	1.476	1.498	1.460	2	–0.019	0.006	0.022
3	2.179	2.266	2.197	3	0.004	0.034	0.046
4	3.321	3.280	3.199	4	0.025	0.058	0.061
5	6.599	5.896	5.736	5	0.090	0.089	0.091
	ME (market value of equity)				*D/ME (debt/market equity)*		
1	1,661,590	636,197	301,589	1	3.271	3.187	4.456
2	1,560,913	361,006	261,784	2	1.440	1.689	2.106
3	2,291,833	590,521	248,664	3	0.793	1.043	1.358
4	2,486,692	544,191	256,738	4	0.446	0.567	0.806
5	2,909,061	678,844	513,712	5	0.174	0.213	0.279
	RTN (average yearly return)				*TA (total assets)*		
1	1.083	1.185	1.175	1	4026,075	2,063,065	1,709,924
2	1.332	1.198	0.914	2	2,487,058	784,488	787,148
3	1.381	1.059	1.335	3	2,621,014	795,312	484,779
4	1.295	1.217	1.558	4	1,975,051	654,470	451,933
5	1.530	1.189	0.873	5	1,429,766	620,821	589,885

Notes: The table reports different firm characteristics of 15 portfolios. These portfolios are formed by intersecting three breakpoints (bottom 30%, L; middle 40%, M; and highest 30%, H) for BE/ME ('book equity divided by market equity' or value) and five quintiles of bankruptcy risk (z-score). Bankruptcy risk (Z-score) is estimated using Altman (1993) model. Firms in the lowest quintile of Z-scores are firms with the highest probability of bankruptcy risk i.e. quintile 1 has the highest risk of default and quintile 5 has the lowest such risk. Firm characteristics reported here are: *ROA* (return on assets); *ME* (market equity); *D/ME* (debt-to-market equity); *RTN* (average yearly return); and *TA* (total assets). Portfolios are formed in June of every year from July 1992 to 2011.

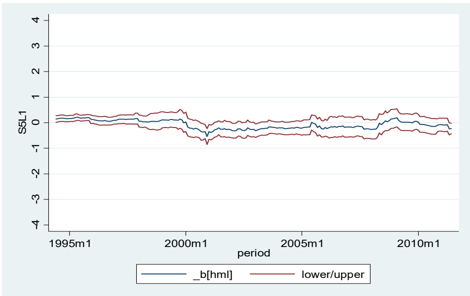
Table 5 also reports summary statistics of market value, total asset, market leverage, and profitability for the firms in each portfolio. This is to further examine our hypothesis that Z-score and BE/ME are both related to characteristics that are considered to reflect distress risk. We find a firm's size to be positively related with BE/ME and Z-score. Our results make sense in the context of Malaysia's economic structure, where most of the big and successful firms are either state owned or politically connected. This is due to the fact that these firms have special privileges to capture government-created rents through privatisation, licences or contracts (see Ebrahim et al., 2014b). For instance, Renong Bhd, a company with a direct link to the ruling party, emerged as one of Malaysia's largest conglomerates (see Gomez, 1994). Meanwhile, market leverage is negatively related to Z-score and positively related to BE/ME. High BE/ME firms have higher leverage than low BE/ME in all Z-score quintiles[23]. Return on Assets (ROA) is positively related to Z-score but there is no relationship between BE/ME and ROA. For example, firms with low BE/ME have similar ROA to those with high BE/ME in the fifth quintile of Z-score but lower ROA than those with high BE/ME in the second and third quartiles.

Figure 1 Patterns of HML for value-weighted portfolios, (a) large and growth portfolios (b) large and value portfolios (c) small and growth portfolios (d) small and value portfolios (see online version for colours)

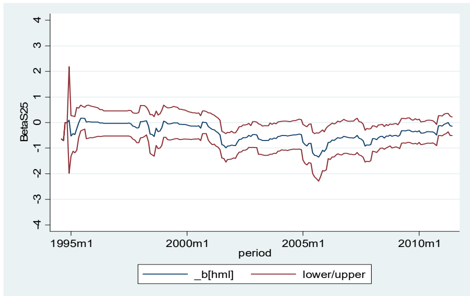


Notes: The figure plots the pattern of time varying coefficients of HML for four portfolios out of six value-weighted portfolios, which are constructed using two ME ('market equity' or size) and three BE/ME ('book equity divided by market equity' or value) intersection points. The figures are for large ME-low BE/ME (large growth) and large ME-high BE/ME (large value); small ME-low BE/ME (small growth) and small ME-high BE/ME (small value) portfolios.

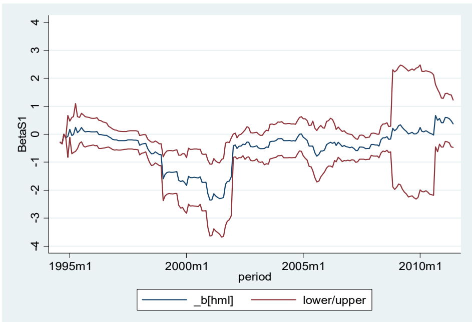
Figure 2 Patterns of HML for equal-weighted portfolios, (a) equally weighted S5L1 largest firms, highest growth (b) equally weighted portfolio S5L5 largest firms, highest value (c) equally weighted portfolio-S1L1 smallest firms, highest growth (d) equally weighted portfolio-S1L5 smallest firms, highest value (see online version for colours)



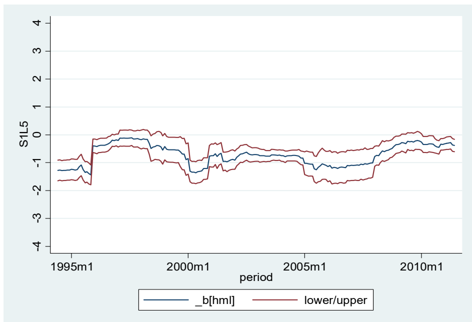
(a)



(b)



(c)



(d)

Notes: The figure plots the pattern of time varying coefficients of HML for four extreme portfolios out of 25 equal-weighted portfolios, which are constructed using five ME (‘market equity’ or size) and five BE/ME (‘book equity divided by market equity’ or value) quintile intersection points. The figures are for the largest ME-lowest BE/ME (largest-highest growth) and the largest ME-highest BE/ME (largest-highest value); the smallest ME-lowest BE/ME (smallest-highest growth) and the smallest ME-highest BE/ME (smallest-highest value) portfolios.

To provide further insights into our argument, we graph the coefficients of HML estimated from rolling regressions for four value-weighted portfolios (out of six) and four extreme equal-weighted portfolios (from out of 25)[24]. Figures 1 and 2, for value-weighted and equal-weighted portfolios respectively, exhibit the pattern of time varying coefficients of HML for the growth and value portfolios. We find that the coefficients of HML for value portfolios tend to be more stable over time, except during the financial crisis period. To support our graphical illustrations, we provide some simple statistics (mean, standard deviation, and *t*-statistics for difference in mean values) of the HML coefficients of four extreme portfolios across five sub-periods in Table 6. We find the coefficients of HML for growth portfolios to be generally higher than value portfolios particularly during crisis period and more pronounced for big firms. We conjecture that the loading of HML for big value firms decrease significantly during crisis period due to sensitivity of leverage to economic conditions. They also suffer from the underinvestment issue due to the high agency cost of debt. In contrast, big growth firms, especially those with political connections, have the opportunity to undertake projects during crisis period due to their healthy balance sheet ensuing from their lack of financial constraints (i.e., debt obligations). The combination of both factors translates into growth premium in the post crisis period. This is consistent with our hypothesis that growth firms mitigate their business risk by exercising their growth options in conjunction with the policy makers. This result, confirming economically sensitive HML coefficients, is consistent with Guo et al. (2009), Li et al. (2009) and Gulen et al. (2011).

Our results support the argument that the leverage undertaken by value firms causes a drag on their performance in poor economic environments (see again Choi, 2013). This is especially true as leveraged equity displays the type of volatility associated with financial options (see Merton, 1974; Lioui and Maio, 2014). Improvements in the economic outlook cause a bounce-back effect on value stocks. This outcome, confirming the characteristics of value versus growth firms, is in harmony with Daniel and Titman (1997), Zhang (2005), Choi (2013) and Lioui and Maio (2014)[25].

We further test this argument by estimating equation (1) using the panel data estimation technique. In this context a number of studies support the use of measures related to value as proxies for future growth options[26]. We hypothesise that the value portfolios should be more sensitive to the natural logarithm of leverage (Fama and French, 1993, 1995, 1996), while growth firms should react to the natural logarithm of total assets. Table 7 reports the estimation output for equation (1). We find that GDP has a significant positive effect on the coefficient of HML. Moreover, we notice a substantial difference between the sensitivity of growth and value portfolios to changes in GDP as shown by the negative values of the coefficient of GDP*Dummy (*GDP*D*). In the case of growth portfolios, we find that the coefficient of HML is sensitive to the GDP growth both at current and lagged levels. In contrast, the coefficient of value portfolios is not sensitive to the changes in GDP. This finding further substantiates our intuition that the investment pattern of growth firms depends on the GDP growth leading to the changes in coefficient of HML for growth portfolios. We can see that the size of HML is negatively associated at a 10% level of significance with the change in assets multiplied by GDP for value companies and hence positively associated with the change in assets multiplied by GDP for growth companies as shown by the coefficients of ΔTotal assets*GDP (Δ*TA*GDP*) and ΔTotal assets*GDP*Dummy (Δ*TA*GDP*D*). This is consistent with the argument in the paper that the growth premium is sensitive to the economic environment and the investment pattern of these firms.

Table 6 Selective descriptive statistics of HML loadings across different sub-periods

		Value-weighted portfolios				*Equal-weighted portfolios*			
		BL	*BH*	*SL*	*SH*	*S1L1*	*S1L5*	*S5L1*	*S5L5*
High growth period (1992–1997)	Mean	0.350	–0.131	–0.167	–0.998	0.087	–0.755	–0.239	–0.128
	St dev	0.100	0.108	0.052	0.001	0.307	0.325	0.202	0.434
	D.i.M. value	*0.4810*		*0.8307*		*0.8424*		–0.1107	
Asian financial crisis (1997–1999)	Mean	0.437	–0.436	–0.375	–1.001	–0.479	–0.784	–0.901	–0.428
	St dev	0.051	0.114	0.099	0.002	0.219	0.204	0.268	0.346
	D.i.M. value	*0.8728*		*0.6880*		*0.3044*		*–0.4728*	
Post Asian crisis (1999–2007)	Mean	0.255	–0.555	–0.437	–1.002	–0.657	–1.109	–0.928	–0.963
	St dev	0.200	0.219	0.177	0.003	0.312	0.108	0.166	0.286
	D.i.M. value	*0.8103*		*0.7193*		*0.4525*		0.0346	
Sub-prime crisis (2007–2009)	Mean	0.150	–0.533	–0.611	–0.999	–1.282	–1.043	–1.036	–1.201
	St dev	0.166	0.169	0.166	0.002	0.201	0.103	0.078	0.262
	D.i.M. value	*0.6832*		*0.8051*		*–0.2392*		*0.1646*	
Post sub-prime crisis (2009–2012)	Mean	0.033	–0.098	–0.427	–1.001	–1.392	–0.977	–0.912	–0.542
	St dev	0.014	0.066	0.155	0.001	0.615	0.088	0.084	0.134
	D.i.M. value	*0.1319*		*0.7139*		*–0.4144*		*–0.3699*	

Notes: The table reports mean, standard deviation, and different in mean (D.i.M) values of HML loadings for four value-weighted and four equally-weighted portfolios, across five sub-periods namely high growth period from July 1992 to June 1997; Asian financial crisis period from July 1997 to June 1999; post-Asian financial crisis from July 1999 to June 2007; sub-prime crisis from July 2007 to June 2009; and post-subprime crisis from July 2009 to June 2012. Initially, six value-weighted portfolios are created as follows: stocks with ME ('market equity' or size) below the median are deemed 'small' whilst stocks with ME above the median are termed 'big'. The breakpoints for BE/ME ('book equity divided by market equity' or value) are the 30th and 70th percentiles. The intersection of two size-sorted and three value-sorted groups produces six value-weighted portfolios, named as: BH = big-high value; BM = big-middle value; BL = big-low value; SH = small-high value; SM = small-middle value; SL = small-low value. The descriptive statistics are report only for BL, BH, SL and SH portfolios. In addition, 25 equally-weighted portfolios are created by intersecting ME ('market equity' or size) and BE/ME ('book equity divided by market equity' or value) using quintile breakpoints. For example, S1L1 refers to the smallest quintile (bottom 20%) in size (ME) and value (BE/ME) and so on. The descriptive statistics are reported only for four portfolios: S1L1 (small-lowest value); S1L5 (small-highest value); S5L1 (big-lowest value); and S5L5 (big-highest value) portfolios. D.i.M values in italics show that they are statistically significant at less than 1% level.

Table 7 Random effects regression of the sensitivity of HML portfolio

Dependent variable: HML			
Independent variables	*Coefficient*	*t-statistic*	*p-value*
Constant	–0.7711	–2.06	0.039
ΔTotal assets (Δ*TA*)	–0.0388	–0.39	0.698
ΔTotal assets$_{t-1}$	–0.1174	–1.22	0.222
ΔTotal assets$_{t-2}$	0.0161	0.51	0.607
ΔTotal assets*Dummy (Δ*TA**D*)	0.0429	0.28	0.778
ΔTotal assets*Dummy$_{t-1}$	0.1557	1.03	0.303
ΔTotal assets*Dummy$_{t-2}$	0.0096	0.14	0.887
Total leverage (*TL*)	0.0399	0.44	0.663
Total leverage$_{t-1}$	0.0780	0.90	0.369
Total leverage$_{t-2}$	–0.1389	–1.57	0.116
Total leverage*Dummy (*TL**D*)	0.0268	0.21	0.832
Total leverage*Dummy$_{t-1}$	–0.1595	–1.28	0.202
Total leverage*Dummy$_{t-2}$	0.1417	1.16	0.245
GDP (*GDP*)	0.0162	2.29	0.022
GDP$_{t-1}$	0.0101	1.66	0.097
GDP$_{t-2}$	0.0123	1.72	0.085
GDP*Dummy (*GDP**D*)	–0.0147	–1.49	0.136
GDP*Dummy$_{t-1}$	–0.0010	–0.12	0.904
GDP*Dummy$_{t-2}$	–0.0015	–0.15	0.880
ΔTotal assets*GDP (Δ*TA**GDP*)	0.0019	0.42	0.672
ΔTotal assets*GDP$_{t-1}$	–0.0006	–0.16	0.875
ΔTotal assets*GDP$_{t-2}$	–0.0018	–0.46	0.647
ΔTotal assets*GDP*D (Δ*TA**GDP*D*)	–0.0165	–1.88	0.060
ΔTotal assets*GDP*D$_{t-1}$	–0.0014	–0.17	0.867
ΔTotal assets*GDP*D$_{t-2}$	–0.0017	–0.20	0.843

Notes: *HML* (high minus low) is the difference between the simple average of returns on two high value portfolios (S/H, B/H) and returns on two low value portfolios (S/L, B/L), as in Fama and French (1993). We calculated *HML* for 20[27] portfolios sorted on ME ('market equity' or size) and BE/ME ('book equity divided by market equity' or value) using quintile breakpoints, and is recalculated when the portfolios are rebalanced every year in June. We use a random-effects regression to estimate the following model:

$$\begin{aligned} HML_t = {} & c + \beta_0 \Delta TA_{it} + \beta_1 \Delta TA_{it-1} + \beta_2 \Delta TA_{it-2} + \beta_3 \Delta TA * D_{it} + \beta_4 \Delta TA * D_{it-1} \\ & + \beta_5 \Delta TA * D_{it-2} + \beta_6 TL_{it} + \beta_7 TL_{it-1} + \beta_8 TL_{it-2} + \beta_9 TL * D_{it} + \beta_{10} TL * D_{it-1} \\ & + \beta_{11} TL * D_{it-2} + \beta_{12} GDP_{it} + \beta_{13} GDP_{it-1} + \beta_{14} GDP_{it-2} + \beta_{15} GDP * D_{it} \\ & + \beta_{16} GDP * D_{it-1} + \beta_{17} GDP * D_{it-2} + \beta_{18} \Delta TA * GDP_{it} + \beta_{19} \Delta TA * GDP_{it-1} \\ & + \beta_{20} \Delta TA * GDP_{it-2} + \beta_{21} \Delta TA * GDP * D_{it} + \beta_{22} \Delta TA * GDP * D_{it-1} \\ & + \beta_{23} \Delta TA * GDP * D_{it-2} + \eta_i + \eta_t + \varepsilon_{it} \end{aligned}$$

where Δ*TA* is change in natural logarithm of total assets; *TL* is natural logarithm of total leverage; *GDP* is gross domestic product; *D* is a dummy variable taking the value of unity if the portfolio is 'value' and 0 otherwise and is interacted with Δ*TA*, *TL, GDP*, and Δ*TA**GDP*, respectively; subscripts *i* and *t* represent i^{th} portfolio at time *t*; and *t* – 1 and *t* – 2 represent the lagged value of the variables; η_i is an unobserved portfolio-specific effect and η_t captures common period-specific effects; ε_{it} is an error term, which represents measurement errors and other explanatory variables that have been omitted and is assumed to be independently identical normally distributed with zero mean and constant variance. The columns report coefficients, *t*-statistics, and *p*-values.

5 Conclusions

The value anomaly has been accepted as an empirical 'truth' as it has been observed in different markets. A number of explanations have been put forward to rationalise the source of the premium, but the issue still remains controversial. In this paper, we reject this anomaly by adopting the Popperian philosophy espousing the importance of contradictory examples, i.e. of Malaysia, an emerging economy with a top heavy, closely held, state-owned institutional setting and a history of economic volatility. The initial contribution of this paper is to trounce the very idea of a universal value anomaly. Furthermore, given the nature of the Malaysian market we are able to undertake substantial additional empirical analysis to gain insights into the nature and causes of the value anomaly.

First, our analysis shows that large growth portfolios outperform large value ones only during the high growth (1992–1997) period. In contrast, small value portfolios outperform small growth ones during the same period. Second, by using the Altman (1993) Z-score and the Shumway (2001) model, we find no evidence that value stocks have a greater distress risk than growth stocks. Nevertheless, we find evidence that value firms employ more leverage (Fama and French, 1993, 1995, 1996) than growth ones. This is consistent with Choi (2013). Third, we observe that growth portfolios have lower risk, particularly during the crisis and early recovery period. Our observation is based on the pattern of coefficients (HML) generated from rolling regression analyses. Finally, using panel data analysis, we find that the coefficients of HML are sensitive to changes in GDP, reaffirming our intuition that the risk and return structure of growth firms are determined by their investment pattern which mainly depends on the economic cycle.

These findings lead to the initial contribution of this paper which is to contradict the value premium by the interaction between company characteristics, which may be influenced by institutional factors, and economic fundamentals. In particular, we demonstrate that the discrepancy of returns occurs for large cap stocks because of the investment pattern of growth firms and the leverage of value firms (Fama and French 1993, 1995, 1996). That is, leverage undertaken by value firms magnifies their return in good economic environments but retards their performance in poor ones. Furthermore, growth firms have a tendency to hoard cash and delay exercising their growth options, resulting to a more conservative balance sheet. This mitigates their business risk, but lowers their market valuation, driving down their returns in normal times. However, in the context of Malaysian crony capitalism, the financial slack endows them the agility to undertake new projects or investment during the crisis period when they coordinate their activities in the real sector of the economy in conjunction with the objectives of the policy makers.

Our paper explains that distress risk is *not* the main cause for the wide spread in expected returns between value and growth stocks, rather it arises due to the risk of the firm's unique characteristics. To do so, we show that growth firms have the unique characteristic of being endowed with growth options, which entail capital outlay resulting in business risk. In contrast, value firms have assets in place which are used as collateral to lever-up and boost their earnings, resulting in financial risk. Our explanation is consistent with the views of Chen et al. (2011), Choi (2013) and Trigeorgis and Lambertides (2014). This suggests that the interpretation of Daniel and Titman (1997), that risk does not determine expected return, is too strong. Our results are also consistent with Guo et al. (2009), Li et al. (2009), Stivers and Sun (2010), Gulen et al. (2011), and

Lioui and Maio (2014) in that value premium is time varying and deteriorates to a value discount (leading to a growth premium) especially for large companies in economic upturns.

Overall, our paper provides further insights into understanding the source of the value premium, particularly in the context of emerging markets using Malaysia as a counter example. Testing hypotheses gained from these insights on data from developed markets is an issue worthy of further investigation.

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Notes

1 In addition to Fama and French (1998), studies such as Brailsford et al. (2012), Asness et al. (2013), and Ebrahim et al. (2014a) also find the value premium in developed markets (such as the Australia, Continental Europe, Japan, UK and USA) and various developing ones (such as Brazil, China, India, and Turkey).

2 Robust empirical findings of the value premium has resulted in a trillion dollar financial services industry:

   a segregating exchange traded funds based on this style

   b creating fundamental indices with weights based on the different value attributes of firms (see Arnott et al., 2005).

3 The words 'growth' and 'glamour' have been used interchangeably in the relevant literature.

4 Kothari et al. (1995) argue that value premium is due to survivorship bias, while MacKinlay (1995) claims that it is due to data-snooping.

5 Ingersoll and Ross explain this as follows:

   "If in making the investment today we lose the opportunity to take on the same project in the future, then the project competes with itself delayed in time. In deciding to take an investment by looking at only its NPV, the standard textbook solution tacitly assumes that doing so will in no way affect other investment opportunities. Since a project generally competes with itself when delayed, the textbook assumption is generally false. Notice, too, that the usual intuition concerning the "time value of money" can be quite misleading in such situations. While it is true NPV postponing the project delays the receipt of its positive NPV, it is not true that we are better off taking the project now rather than delaying it since delaying postpones the investment commitment as well."

   "Of course, with a flat, non-stochastic yield curve we would indeed be better off taking the project now, and this sort of paradox could not occur. But that brings up the even more interesting phenomenon that is central focus of this article, the effect of interest-rate uncertainty on the timing of investment." [Ingersoll and Ross, (1992), p.2]

6 La Porta et al. (1997) find that value firms have systematically positive earnings surprises and a converse effect for glamour firms.

7 Overall, the Kuala Lumpur Stock Exchange (KLSE) Composite Index dropped steadily from December 2007 to October 2008 and by July 2009, the Index bounced back to its January 2007 position [Abidin and Rasiah, (2009), Table 15, p.27].

8 Perfect capital market assumptions entail the following:

a perfect competition (i.e., economic agents have no market power over prices)

b frictionless markets (i.e., there are no transaction costs or restrictions on trade. Furthermore, all assets are perfectly divisible.)

c homogenous beliefs (i.e., all economic agents have homogeneous prior beliefs and receive the same information)

d individual rationality (i.e., all economic agents are rational expectations utility maximisers).

9 We use common sample to extract data for all variables. The sample however is only restricted to non-financial firms. Note also that the formation of a portfolio according to FF requires us to form it using the June BE (t) and December ME (t – 1). Thus, the final year of the formation of the portfolio is 2011, while the dataset ends in June 2012.

10 This criterion is required to address the issue of survival bias documented in Kothari et al. (1995).

11 We use three criteria to classify firms with political patronage. First, we use the work of Johnson and Mitton (2003) and Mitchell and Joseph (2010), which are based on Gomez and Jomo (1997), to identify firms with informal political connections. Second, we include firms which are under the control of *Khazanah Nasional*. Finally, we incorporate firms under the institutional investors sponsored by the Malaysian government (such as *Permodalan Nasional Berhad*, *Tabung Haji* and *Employee Provident Fund*). We use dummy variables to categorise firms with and without political patronage.

12 We do not use negative BE firms when forming the size-BE/ME portfolios, as they do not have any meaningful interpretation.

13 In the overall sample (July 1992 to June 2012), politically connected big growth (BL) firms predominate over big value (BH) firms on all three metrics (such as market capitalisation, average yearly capital expenditure, and average yearly net external financing) as indicated in Table 2 (Panels A–C). The politically connected firms likewise predominate over unconnected firms in terms of average monthly trading volumes Table 2 (Panel D). The situation is reversed in the high growth period (July 1992–June 1997) on all metrics (Panels A–D), while reverting to the post-crisis period up to 2012.

14 The finance literature illustrates that the Altman (1993) Z-score model, as described below, can be employed to test for countries outside the USA (see again Ebrahim et al., 2014a).

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

X_1 = Working capital / total assets

X_2 = Retained earnings / total assets

X_3 = Earnings before taxes + interest / total assets

X_4 = Market value of equity / total liabilities

X_5= Net sales / total assets.

15 The Shumway (2001) study develops a discrete hazard model or a multi-period dynamic logic model. The basic idea behind it stems from survival models employed in the fields of biology and medicine. Shumway (2001) improves upon the traditional approaches of bankruptcy forecasting (such as the Altman model) that have generally used accounting ratios. Shumway (2001) integrates not only financial ratios but also market variables, such as market size, ex-post stock returns and idiosyncratic return variability, to derive bankruptcy predictors.

16 The break points for BE/ME and size are similar to the formation of six size-BE/ME portfolios.

17 We use three month Malaysian Treasury Bills (adjusted monthly) rate as a proxy for risk-free rate and KLCI return as proxy for market return.

18 Our estimation illustrates that Fama and French (1993) three-factor models have better explanatory power than the standard CAPM model. We also estimate coefficients using the Carhart (1997) four-factor model. The results, however, are qualitatively similar to those reported using FF three factor model. These results are available on request.

19 We use 25 intersecting portfolios rather than six to have a larger number of portfolios.

20 It should be noted that our six portfolios are defined as follows: SL = small-low value (i.e., small-growth); SM = small-middle value; SH = small-high value; BL = big-low value (i.e., big-growth); BM = big-middle value, BH = big-high value.

21 Our results from Table 4 basically illustrate that the growth premium exists only during the post crisis sub-periods. We attribute this result to the time lag between an investment and its payoffs. Growth firms basically initiate their projects at the instigation of the government stakeholders during a downturn and reap their gains at the upturn of the real economy. This is consistent with fundamentals as the driver for stock returns is the expected state of the economy. In a recession, the future looks bleak as the bulk of stock market investors are uncertain on the length of the downturn. This is why they are always sceptical about buying stocks in a recession. However, an economic upturn is highly rewarding to large growth companies in contrast to large value companies as they are preferentially granted projects by their benefactor-stakeholder, i.e. the government to revive the underlying real economy.

22 Our results with the Shumway (2001) model of bankruptcy risk are similar to that of the Altman's (1993) one. The figures with the Shumway model are not reported for brevity and are available on request.

23 It should be noted that in the period 1999–2012 small value stocks do have a somewhat higher leverage ratio as a proportion of market capitalisation than small growth stocks. However, in monetary terms and in comparison to the situation in previous time periods the difference between them is relatively very small. In fact in this period, leverage for small companies has been reduced to very low levels compared to the preceding periods. Nonetheless, this discrepancy does not contradict the critical role leverage plays in the payoffs of value stocks.

24 The results of these regressions are not reported here. They are available on request.

25 In other words, pure value firms comprise of shares of firms in the mature (or declining) sectors of the economy, with limited (or no) access to growth options requiring investments. Pure value firms have assets in place which are collateralised by debt. This makes their shares behave like volatile financial options. In the real world, firms may exhibit hybrid (i.e., value-growth) characteristics, which allow them to exhibit cross-sectional variation in their capital structure. Thus, shares of some value-growth firms may undertake lower leverage and illustrate lower swings in their earnings and lower share prices (in contrast to pure value firms). Nonetheless, they do display sensitivity to economic regimes.

26 A number of studies support the use of market-to-book equity (MBE) as a proxy for future growth options, for example, Smith and Watts (1992) and Adam and Goyal (2008). Although Adam and Goyal (2008) suggest that market-to-book assets (MBA) measure is relatively better than other proxies, however they find MBE and MBA to be highly correlated.

27 We have removed five portfolios from our regression analysis as they cannot be categorized as either value or growth. The portfolios are S1L3, S2L3, S3L3, S4L3 and S5L3.