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SUSTAINABILITY PERSPECTIVES OF MARKET-PULLED AND CRISIS-PUSHED CORPORATE SPIN-OFFS

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ABSTRACT

Are there different wealth effects for Corporate Spin-offs (CSOs) during economic crisis viz non-crisis and do their performance matter? The answer is crucial for market players investment decisions and CSOs research underpinning impact on sustainability. Reviewing predominantly three papers on Malaysian CSOs, inter-alia, other papers globally, there was an explanation gap on the magnitude, speed, significance, and sustainability of CSO wealth in terms of financial market conditions at the timing of CSOs and CSOs' performance. After remedying event-induced volatility and cross-sectional correlations, wealth effects were analysed using ninety Malaysian CSOs from 1987 to 2019. We found Crisis-pushed CSOs during weak market conditions had dwindling short-term gains implying weak sustainability contrary to Market-pulled CSOs that demonstrated strong sustainable long-term gains. Pushed CSOs achieved adversely -0.81%, and, Positive performance CSOs have earning potential 14.12% compared to Negative performance CSOs with losing potential -16.08%. CSOs' determinants changed when subjected to market-based criteria and performance-based criteria suggested CSOs' wealth effect oblivious to market conditions and performance were not reliable for gauging CSO expectations. Performance-based criteria subsampling revealed that the composition of generalized CSOs return is not positively dominant and have equal potential to gain and risk of loss.

Keywords: Pulled and pushed corporate spin-offs, wealth effects, spin-offs determinants, economic conditions, sustainability perspectives.

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1. INTRODUCTION

1.1. Paper Introduction

Are there different wealth effects for Corporate Spin-offs (CSOs) during an economic crisis viz non-crisis? Are there sustainability implications of the CSOs at different economic conditions? Do CSOs performance matter in wealth effect analysis? CSOs studies gained popularity across US and Europe due to high chances of shareholders' value creation and tax benefits. Current literature, irrespective of motivations, are more inclined to personalized observation on characteristics distinctive to the US and EU. CSOs in Malaysia are different as they are diverse, occurred

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popularly, and remained popular. In 1997-1998 alone, nine cases of CSOs were observed. CSOs are focal to investor expecting wealth creation and creditors carefully reconsider their risk exposure.

We utilised market-based criteria and performance-based criteria sub-sampling measures apperceived for:

(i) Pushed and Pulled CSOs on different fundamental motivations, profit and stakeholders' impact on sustainability,
(ii) Market sentiment affecting fundamental motivations of CSOs, and
(iii) Different CSOs performances presenting different CSOs' antecedents.

CSOs present an opportunity for market players to readjust their stakes, causing share prices to move according to the perceived net effect of CSOs. This mechanism with market sentiment varied CSOs announcement effects on different market optimism and conditions. During the non-crisis period, market players are optimistic about market potential. Market players are more willing to pay premiums on market pulled CSOs acquisitions. Comparatively, crisis pushed CSOs announced when there is low investor optimism may result in a lower abnormal gain or worse, negative abnormal returns.

Market players and practitioners cannot rely on generalised measurements which are averaged values if the inductive reasoning fail to cater for segmentation differences, be it the amount or pattern exclusive to certain segment of CSOs. Misinterpretation will lead users to risk of understating or overstating expectations of CSOs and lead to less-than-ideal decisions. Examination on these generalised measures will lead to inaccuracies, especially when the variables are sensitive to the segmentations.

Generalized average values also mislead users to the impression that CSOs always create value. Users must latch on to the fact composition of average values may be positive or negative dominant and have even or uneven probability in performance. We argue that the composition of values in reaching the average is essential and that CSOs have equivalence potential in creating wealth and destroying wealth.

In terms of interpreting the determinants of CSO's profit impact sustainability, it is often linked to the perspective of debt risk reallocations, focus led efficiencies, capitalising tax benefits and other characteristics unique to the market studied. Finding out whether determinants developed under these themes can equally be applied to Crisis-pushed CSOs and Negative CSOs is crucial to avoid outfitting inappropriate determinants to CSOs expectations.

Crisis-pushed CSOs had dwindling very short-term gains implying weak sustainability and in comparison. Market-pulled CSOs have higher than average value gain and demonstrated strong sustainability. Performance-based criteria subsampling also revealed that CSOs return is not positively dominant and potential to gain and the risk of loss differs from generalized values. Finally, CSOs' determinants change when CSOs were subjected to market-based criteria and performance-based criteria segmentation.

1.2. Theoretical Framework

CSO announcement sends out mixed signals to the market and it presents an opportunity for market players to readjust their stakes in the company, causing share prices to move according to the perceived net effect (*nf*) of the signals. If CSO increases optimism (*opt*), then it would result in positive return (AR_{pos}); if CSO reduces optimism, then it would result in negative return *(AR_{neg})*. If optimism is indifferent to CSO, then there will be no wealth effect (AR_{null}). There exists regardless a fixed signal for friction cost, a.k.a. Transaction Costs(*tc*) in carrying out CSO.

$$CAAR\begin{cases} 1, & opt^*: opt'' - opt' = 0;\ nf: AR_{null} - tc < 0 \\ 2, & opt^*: opt'' - opt' < 0;\ nf: AR_{neg} - tc < 0 \\ 3, & opt^*: opt'' - opt' > 0;\ nf: AR_{pos} - tc > 0 \\ 4, & opt^*: opt'' - opt' > 0;\ nf: AR_{pos} - tc < 0 \end{cases}$$

Market players realigning stakes to maximize expected profit based on the new information will demand or dispose of CSO shares where their information signals merits or defects relative to their existing expectations.

Differences in market players' sentiment leading towards initial public offerings (IPO) executed on two extremes of market conditions, namely "hot" and "cold" IPO markets - for IPOs, refer Helwege and Liang (2004) and Lowry (2003), for CSOs specifically, refer Prezas and Simonyan (2015). Optimistic market players about the outcome of market potential are more willing to pay premiums on their stake acquisitions. The announcement effect of Market-pulled CSOs during periods of high market optimism should result in higher abnormal returns compared to Crisis-pushed CSOs announced during periods of low market optimism. It is possible Crisis-pushed CSOs may even result in negative abnormal returns.

$H1_{null}$: CSOs announcement wealth effect is the same regardless of market conditions, generalized value reliable.
$H1_a$: CSOs announcement wealth effect is higher during normal market conditions and is lower during a financial crisis, both return positives.
$H1_b$: CSOs' announcement wealth effect is higher during normal market conditions and is lower during a financial crisis. Crisis-pushed CSOs' return negatives.
$H2_{null}$: CSOs share price reacts similarly in timing across different market conditions.
$H2_a$: CSOs' share price reacts faster during the financial crisis period.

A generalized positive CSO wealth effect, compounded with positive CSO wealth effect theories that were built on the rationale CSOs benefits future profitability gives market players the plausible impression that CSOs almost always stand to gain or have minimal risk of losses. The composition of the spin-off average returns, in terms of potential to gain and the potential to lose, should consist of very little or insignificant negative returns. There should also be a narrow spread between average losses and average gains, vice versa.

$H3_{null}$: CSOs always stand to gain and have minimal risk of losses in wealth effect, generalized value reliable.
$H3_a$: CSOs have equal potential to gain and to lose in wealth effect.

$H3_b$: CSOs' wealth effect is positive dominant, consist of high occurrences of low-value positives.
$H3_c$: CSOs' wealth effect is positive dominant, consist of high occurrences of low-value negatives.
$H4_{null}$: CSOs' share price reacts similarly in timing across Positive CSOs and Negative CSOs.
$H4_a$: CSOs' share price reaction timing is different across Positive CSOs and Negative CSOs.

If generalized determinants are compatible with Negative CSOs, then these benefits should manifest as loss cutting consequences for CSOs that have negative performance and resulted in "negative-negative equals positive" outcome. The magnitude and significance of determinants for CSO wealth effect should the same regardless of CSOs performance, and generalized model will have equal explanatory power to explain all CSOs, including Negative CSOs.

$H5_{null}$: Determinants of CSOs announcement wealth effect is the same regardless of market conditions, generalized model reliable.
$H5_a$: Determinants of CSOs announcement wealth effect in Market-pulled CSOs and Crisis-pushed CSOs is different.
$H6_{null}$: Determinants of CSOs announcement wealth effect is the same regardless of CSOs performance, generalized model reliable.
$H6_a$: Determinants of CSOs announcement wealth effect for Positive CSOs do not explain Negative CSOs

2. LITERATURE REVIEW

CSO short term wealth effect was predominantly consistent for CSOs in the US and Europe. The statistics for one to three days CSO wealth effect reported by Hite and Owers (1983) and Schipper and Smith (1983) were the earliest CSO study to promulgate average abnormal gains of 2.8% and 3.3% respectively. Subsequent chronicles of CSOs literature even abnormal gains in the range of 1.8% to 4.8% (Miles & Rosenfeld, 1983; Seifert & Rubin, 1989; Vijh, 1994; Johnson & Klein, 1996; Kirchmaier, 2003; Murray, 2008; Chai et al., 2017).

For Malaysia, Yoon and Ariff (2007) found 1.80% cumulative abnormal gain two days up to the on-event period. Nadisah and Arnold (2012) reported the presence of a CSOs effect for parent firms over a short three-day period at 4.99% but non-statistically significant long-term abnormal gains. While these studies reported similar positive trends of abnormal gain from CSOs, findings from the multivariate analysis showed that CSOs inherited unique attributes of emerging markets and faced an entirely different subset of statistical inference on determinants.

Table 1: Chronology Summary of Selected CSOs studies World Wide

Paper	Market	Period	Conditions/ Motivations studied
Hite & Owers (1983)	US	1963 – 1981	Focus[1], Merger[2], Tax[1], Size[4]
Schipper & Smith (1983)	US	1963 – 1981	Efficiency[1], Tax[1], Size[4]
Miles & Rosenfeld (1983)	US	1963 – 1980	Voluntary[1], Involuntary[2]
Copeland et al. (1987)	US	1962 – 1981	Success[3], Unsuccessful[3], Tax[1], Size[4]
Kudla & Mclnish (1988)	US	1972 – 1981	Pure play[3], Size[4]
Cusatis et al. (1993)	US	1965 – 1988	Merger[2]
Seward & Walsh (1996)	US	1972 – 1987	Governance[2]
Johnson & Klein (1996)	US	1975 – 1988	Investment[3]
Desai & Jain (1999)	US	1975 – 1991	Focus[1], Size[4]
Krishnaswami & Subramaniam, (1999)	US	1978 – 1993	Merger[2], Pure play[3], Size[4]
McConnell et al. (2001)	US	1989 – 1995	Size[4]
Veld & Merkoulova (2003)	Europe	1987 – 2000	Focus[1], Governance[2], Size[4]
Kirchmaier (2003)	Europe	1989 – 1999	Size[4]
Yoon & Ariff (2007)	Malaysia	1986 – 2002	Focus[1], Tax[1], Age[3] & Size[4]
Murray (2008)	EU	1992 – 2004	Leverage[2]
Chemmanur et. al. (2010)	US	1990 – 2000	Takeovers[2]
Andersson & Klepper (2012)	Europe	1993 – 2005	Inheritance[3]
Nadisah & Arnold (2012)	Malaysia	1980 – 2008	Focus[1], Size[4] & Government link[2]
Feldman (2015)	US	1985 – 2001	Information asymmetries[3]
Feng et al. (2015)	US	1993 – 2006	Efficiency[1]
Mazur (2015)	US	1992 – 2005	Merger[2], Acquisitions[2]
Prezas & Simonyan (2015)	US	1980 – 2011	Market optimism[3]
Rocha et al. (2015)	US	1992 – 2007	Pushed[2]& pulled spin-offs[1], efficiency[1]
Zenner et. al. (2015)	US	2009 – 2015	Merger[2] and acquisitions[2]
Chemmanur & He (2016)	US	1999 – 2004	Information asymmetries[3]
Feldman (2016)	US	1995 – 2009	Capital allocation[3]
Curran et al. (2016)	Europe	2000 – 2010	Pushed spin-offs[2]
Chai et al., (2017)	Australia	2000 – 2013	Focus[1], Debt[2], Information asymmetry[3]
Penela et al. (2019)	US	2009 – 2013	Antecedences[3]

Notes: [1]Factors inclined to Pulled CSOs [2]Factors inclined to Pushed CSOs [3]Neutral/unsure/unrelated [4]Control factors.

Yoon and Ariff (2007) examined four conventional determinants, namely, Focus, Tax, Age, and Market Capitalisation and found sustainability of CSO's Profit impact arises from the perspective of firm maturity, that is, age and size. The phenomenon of focus-increasing to CSOs gain in Veld and Merkoulova (2003), Desai and Jain (1999) and tax advantages in Hite and Owers (1983), Copeland et al. (1987) were concluded not present in Malaysian CSOs. Nadisah and Arnold (2012) reported statistically significant positive CSOs gains to Government Linked Corporation status dummy variables, a phenomenon unique to emerging markets.

Positive CSOs theories have been developed beyond motivations to include a multitude of market dimensions or pre-conditions to CSOs. Most notably, recent studies like Prezas and Simonyan (2015), Rocha et al. (2015), Curran et al. (2016) and Penela et al. (2019) have built up the momentum of CSOs literature to consider external factors that affect CSOs decisions directly, motivate CSOs indirectly, or determining CSO outcome expectation. Prezas and Simonyan (2015) explores how the market valuation, performance, and degree of investor optimism or pessimism about the market at the time of divestitures affect the choice of managers between CSO and sell-off decisions. Similarly, Rocha et al. (2015) linked circumstances to post CSOs' survival rates or

efficiency. They found that Pulled CSO does not outperform Pushed CSOs and Pushed CSOs recorded a higher survival rate comparatively. Curran et al. (2016) explored new typologies of CSOs that are "opportunistic spin-offs," where they focused on studying Pushed CSOs' performance outcome, which was a reaction to an adverse event. We trail the arguments to the role of market optimism and circumstances of CSOs from these studies and focusing it on the outcome of the decision to achieve our goal of reporting market condition and performance tailor-to-fit CSOs analysis.

We categorized the predicted market circumstances in which these underlying conditions or motivations will be prevalent in Table 1.

3. METHODOLOGY

3.1. Data

This study examined 90 CSOs announcements from companies listed in the Bursa Malaysia, previously known as Kuala Lumpur Stock Exchange (KLSE), between year 1987 to 2019. Analyst reports, articles, and newspaper clippings provided the announcement dates. Share prices and FTSE Bursa Malaysia Kuala Lumpur Composite Index (KLCI), along with companies' financial information were extracted via DataStream.

3.2. Measuring Pulled CSOs and Pushed CSOs Wealth Effect

Average of abnormal returns by Market Model:

$$AAR_t = \frac{1}{N}\sum_{i-t}^{N}(R_{i,t} - \hat{\alpha} - \hat{\beta}R_{m,t}) \tag{1}$$

Cumulative average abnormal returns:

$$CAAR_t = \frac{1}{N}\sum_{i-t}^{N}\sum_{t=s}^{t=e} AR_t \tag{2}$$

The cumulative average abnormal return window periods observed (*s*, *e*) for all observation groups were three days (-1,1), eleven days (-5,5), forty-one days (-20,20), and one hundred and one days (-50,50). The market index used is the FTSE Bursa Malaysia KLCI (KLCI). Prices and indexes are accurate to four decimals points. To estimate Beta β, the estimation window period is set to end 60 days before the beginning of the computation window period and the estimation window period of 261 daily trading days.

3.3. Financial Market Based Sub-Sample Criteria

We appraised the distinct characteristics of the 90 CSOs samples for wealth effect differences between CSOs announced during the period of three stock market crashes in Malaysia and CSOs announced during the non-crisis period. We determined the three financial crisis periods in Malaysia as proxies of poor market optimism comprised the commodity market crash in the year 1985-1989, the currency crunch in the year 1997-1998, and the worldwide financial crisis in the year 2008-2009. CSOs with announcement dates that fell on the financial crisis period was categorized as Crisis-pushed CSOs, while the rest Market-pulled CSOs.

3.4. CSO Performance-Based Sub-Sample Criteria

CSOs are segmented into two segments based on 151 days (100,50) cumulative abnormal returns performance, at t_{50}. We identify successful CSOs that resulted in positive wealth effect in 151 days window period and poorly performed CSOs that resulted in negative wealth effect in the same 151 days window period. Computation of the 151 days cumulative abnormal returns followed procedures described leading to Equation 2. CSOs that ended up with surplus cumulative abnormal return at t_{50} were classified as Positive CSOs and vice-versa, CSOs that ended up with deficit cumulative abnormal return at t_{50} were classified as Negative CSOs.

3.5. Statistical Problems from Subsampling

Kolari and Pynnonen (2010, 2011) evidenced traditional parametric methods testing the significance of these residuals can be misrepresenting if one of the critical assumptions of traditional parametric methods was breached. The assumption that assumes normality in data distribution goes contrary to the norms of share price data are often not normally distributed. Additionally, the averaging approach used to measure cumulative average abnormal return can cause bias amongst results, namely, (i) event-induced volatility bias and (ii) cross-sectional correlation bias. Yoon et al. (2019) demonstrated market-based criteria subsampling as the segmentation resulted in data groups that constitute by datapoints that occurred in the same period or preceding period. The consequences of ignoring the presence of these bias were a reduction bias in standard deviation. It then causes an upward bias t-statistic which finally increased vulnerability to type I errors.

We demonstrated the shift in the cascading intensity between the sub-samples group using two graphs per CSO group for comparison. The daily abnormal return of CSOs cascaded on a unified timeline where darker regions represent the higher overlapping intensity and CSOs group's population-adjusted overlapping data points where higher adjusted values represent higher overlapping data points. CSOs group's population-adjusted overlapping data points at any point of time is computed by dividing the total number of datapoints overlapped at the time by the number of populations. The earlier represents the intensity of datapoint cascading and the latter represent a dilution of intensity by the total population.

Figure 1: General CSOs Abnormal Return

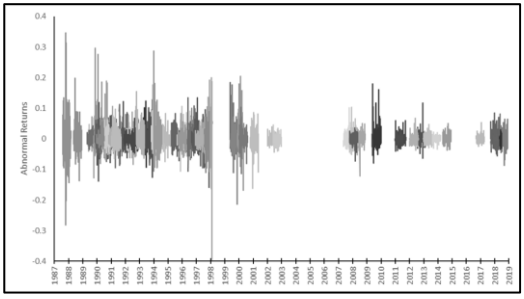


Figure 2: General CSOs Population Adjusted Overlapping Datapoints

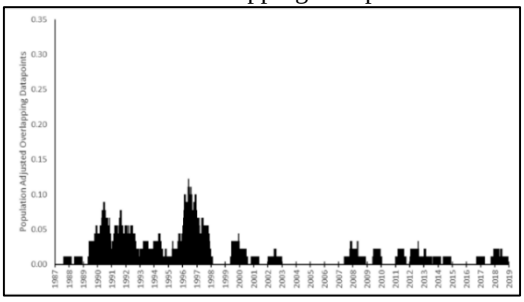


Figure 1 and Figure 2 show the cascaded CSOs' abnormal return for the data population and population-adjusted overlapping data points, respectively, before any sub-sampling techniques were applied to the dataset. Specific to this general group, the overlapping of data points was not more than 0.15.

Figure 3: Market-pulled CSOs Abnormal Returns

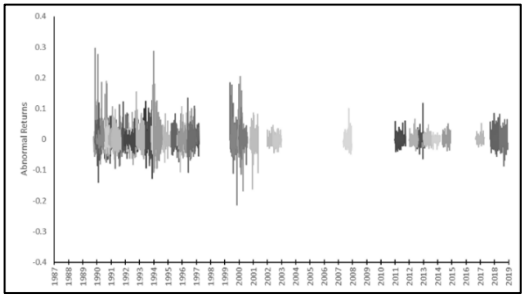


Figure 4: Market-pulled CSOs Population Adjusted Overlapping Datapoints

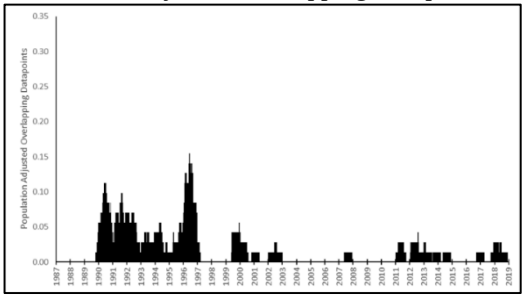


Figure 5: Crisis-pushed CSOs Abnormal Returns

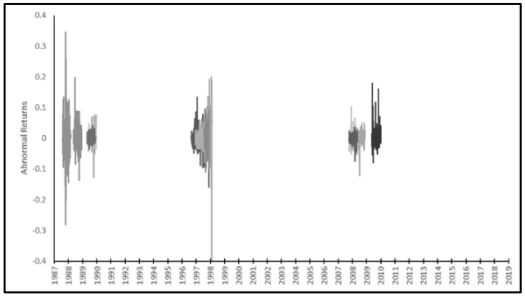
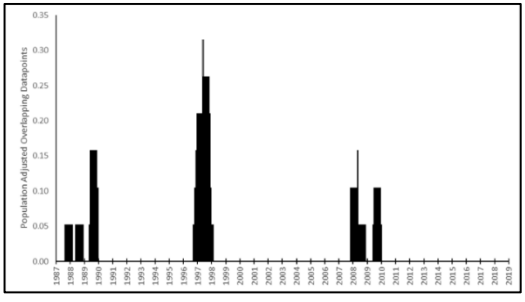


Figure 6: Crisis-pushed CSOs Population Adjusted Overlapping Datapoints



These CSO groups in Figures 3 to 4 and Figures 5 to 6 also present a narrower spread compared to the general group. The sub-sampling CSOs based on financial market condition criteria is incidental to timeline-based datapoints segmentation, increased intensity in overlapping data points is observed. Judging purely on the above 0.30 population-adjusted overlapping data point, the Pushed CSOs group had increased exposure to event induced volatility bias and cross-sectional correlation bias.

Figure 7: Pulled CSOs Group Abnormal Returns

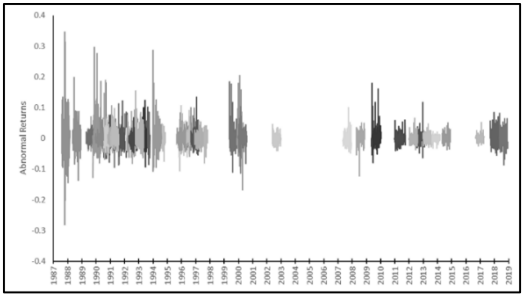


Figure 8: Pulled CSOs Group Population Adjusted Overlapping Datapoints

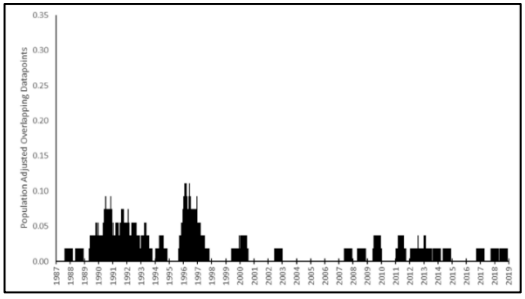


Figure 9: Pushed CSOs Group Abnormal Returns

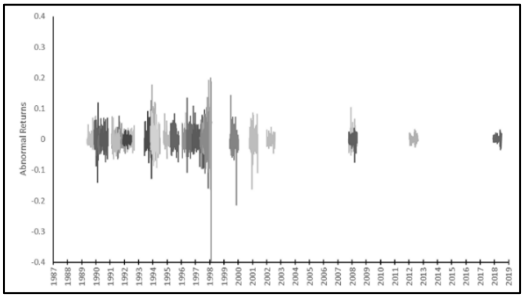
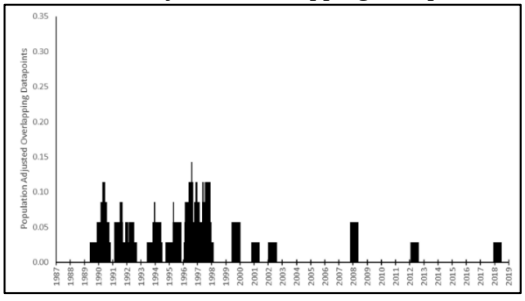


Figure 10: Pushed CSOs Group Population Adjusted Overlapping Datapoints



As for CSOs segmented based on performance-based criteria, the results were presented in Figures 7 to 8 and Figures 9 to 10. Due to the nature of performance-based criteria not being a timeline-based criterion, cascading of data points in these CSO segments did not significantly differ. The observation of narrowing spread in financial market condition criteria sub-sample groups was not present. The population-adjusted overlapping data point for the sub-sample groups remained below 0.15 and have no increased exposure to event induced volatility bias and cross-sectional correlation bias.

3.6. Remedial Statistical Significance Tests for Statistical Problems from Subsampling

The null hypothesis specified for statistical significance tests is H_0: There is no shareholder wealth effect arising from CSOs announcements, where CAAR=0. For comparison, we report common parametric tests that tests H_0: AAR=0 and H_0: CAAR=0 in event studies, namely, the conventional Cross-Sectional T-Test (Abbreviation: Csect T) and Standardized Residual Test, Z_{Patell}

(Abbreviation: Patell Z). As elaborated in Section 3.5, both are prone to cross-sectional correlation bias and event-induced volatility bias.

Cross-Sectional T-Test, t_{AAR_t} and t_{CAAR_t} (abbreviation: Csect T):

$$t_{AAR_t} = \sqrt{N}\frac{AAR_t}{S_{AAR_t}}\text{; and; } t_{CAAR_t} = \sqrt{N}\frac{CAAR_t}{S_{CAAR_t}} \tag{3}$$

Standardized Residual Test, Z_{Patell} (Abbreviation: Patell Z) by Patell (1976):

$$Z_{Patell,t} = \frac{ASAR_t}{S_{ASAR_t}}\text{ ; and; } Z_{Patell} = \frac{1}{\sqrt{N}}\sum_{i=1}^{N}\frac{CSAR_i}{S_{CSAR_i}} \tag{4}$$

To address sub-sampling statistical problems, we conduct the study using multiple statistical tests with customised denominators. We included Boehmer et al. (1991) BMP Test, $Z_{BMP,t}$ (Abbreviation: StdCSect Z) to capitalize its characteristic that addresses event-induced volatility, and noted that findings from Kolari and Pynnonen (2010) showed the test being unreliable when cross-sectional correlation is present.

$$Z_{BMP,t} = \frac{ASAR_t}{\sqrt{N}S_{ASAR_t}}\text{; and; } Z_{BMP} = \sqrt{N}\frac{\overline{SCAR}}{S_{\overline{SCAR}}} \tag{5}$$

We then included Kolari and Pynnonen (2010)'s Kolari and Pynnnen Adjusted Standardised Residual Test, Adj. Patell Z (Abbreviation: Adj. Patell Z), a modified version of Patell Z that offer properties that accounts for cross-sectional correlation issues in samples. This test is, however, not designed to be robust of event-induced volatility:

$$AdjZ_{Patell,t} = z_{Patell,t}\sqrt{\frac{1-\bar{r}}{1+(N-1)\bar{r}}}\text{; and; } AdjZ_{Patell} = z_{Patell}\sqrt{\frac{1-\bar{r}}{1+(N-1)\bar{r}}} \tag{6}$$

Kolari and Pynnonen (2010)'s Kolari and Pynnnen Adjusted Standardised Cross-Sectional Test, $AdjZ_{BMP}$ (Abbreviation: Adj. Std. Csect Z) is a modified version of the BMP Test, that is enhanced to additionally be robust of cross-correlation:

$$AdjZ_{BMP,t} = z_{BMP,t}\sqrt{\frac{1-\bar{r}}{1+(N-1)\bar{r}}}\text{; and; } AdjZ_{BMP} = z_{BMP}\sqrt{\frac{1-\bar{r}}{1+(N-1)\bar{r}}} \tag{7}$$

Finally, we also employed three statistical significance tests that are not based on the magnitude of datapoints. These tests rely on signs of abnormal return datapoints which mean as long as the excess volatilities do not flip the signs of the datapoints, these tests reduce the influence of excess event-induced volatility issues.

Cowan (1992)'s Cowan Generalised Sign Test, Z_{gsign} (Abbreviation: Gen. Sign Z):

$$Z_{gsign} = \frac{(w - N\hat{p})}{\sqrt{N\hat{p}(1-\hat{p})}} \tag{8}$$

Wilcoxon (1945)'s Wilcoxon Signed Rank Test, $Z_{wilcoxon,t}$ (Abbreviation: Rank Z):

$$Z_{wilcoxon,t} = \frac{W - N(N-1)/4}{\sqrt{(N(N+1)(2N+1)/12)}} \tag{9}$$

Kolari and Pynnonen (2011)'s Generalised Rank T-test, t_{grank} (abbreviation: Gen. Rank T) and Generalised Rank Z test, Z_{grank} (abbreviation: Gen. Rank Z):

$$Z_{grank} = \sqrt{\frac{12N(L_1+2)}{L_1}}\overline{K_0} \tag{10}$$

3.7. Multivariate Analysis for Search of CSOs Wealth Effect Determinants

We performed multivariate analysis using certain common positive CSO wealth effect theories determinants proposed by prior studies. We designed two multivariate Ordinary Least Square models to enable comparison and identification of the dynamics between the determinants and subsampled CSOs, specified as Equation 11 and Equation 12 below. Equation 11 accounts for market-based criteria and performance-based criteria by regressing all (-1,1) and (-20,20) cumulative abnormal returns CAR with dummy regressors. The dummy regressor was given value 1 for CSOs that matches the respective criteria specified in section 3.3 and section 3.4 and was given a value of 0, vice versa. Only one regressor was chosen for each criterion to avoid perfect collinearity between the regressors. The regressors chosen were Crisis-pushed CSOs, denominated as CRISIS for market-based criteria and Positive CSOs, denominated as POSITIVE for performance-based criteria.

$$\mathrm{CAR_i} = \mathrm{B_1MCAP} + \mathrm{B_2ASSETSIZE} + \mathrm{B_3FOCUS} + \mathrm{B_4DEBT} + \mathrm{B_5CRISIS/POSITIVE} + \alpha \tag{11}$$

Instead of allowing the dynamics of market and performance criteria to be subsumed into a single regressor, Equation 12 removed the dummy regressor and regressed different CSOs' cumulative abnormal returns independently.

$$\mathrm{CAR_i} = \mathrm{B_1MCAP} + \mathrm{B_2ASSETSIZE} + \mathrm{B_3FOCUS} + \mathrm{B_4DEBT} + \alpha \tag{12}$$

Following most CSOs studies, to control for size effect we have included market capitalisation of parent companies at the date of the announcement, t_0, denominated as MCAP in both models.

MCAP : Number of shares x share prices

The regressor, ASSETSIZE was the market capitalization of the spun-off firm to the pre-spin-off parent calculated as the market capitalization of the spun-off firm at the date of the completion divided by the market capitalization of the parent firm at the date of the announcement, t_0. This regressor represents the total collateral transferred out of the parent company. Similarly, the other regressor, DEBT represents the gearing ratios of the parent company at t_0 comprised of total liabilities plus preference shares. It is included for its interest-bearing characteristics, over the total equity of the parent company. Both regressors are specified as:

ASSETSIZE : $MCAP_{spun}$ / $MCAP_{parent}$

DEBT : (Total liabilities + Preference shares) / Equity x 100%

For regressors relating to cross-industry CSOs, we included a regressor denominated as FOCUS. FOCUS was assigned the value of 1 if the spun-off company has a different first two digits of Malaysia Standard Industrial Classification code (MSIC) from the parent company, and 0 otherwise. In turn, the unanticipated loss similarly resulted in potentially higher wealth transfer effects in favour of shareholders compared to non-cross-industry CSOs. The regressor is specified as:

FOCUS : $MSIC_{spun}$=$MSIC_{parent}$ then FOCUS=1; otherwise FOCUS=0

4. RESULTS AND DISCUSSION

4.1. CSOs Wealth effect – Market Model Cumulative Average Abnormal Returns

We show the significance test statistics in Table 2 for each value along with their respective p-values and notes indicating potential bias addressed by specific tests were annotated under the table with notes abbreviated a and b. Panel A presents results without sub-sampling to report wealth effect measurements without accounting for further criteria that affect wealth effect measurements. Panel A served as the benchmark for the following criteria-based measures in Panel B and Panel C.

Cumulative average abnormal returns remained positive 2.16% up to a very long window period (-50,50) of one hundred and one days showed that wealth gain from CSO, in general, is persistent and thus sustainable. H_0: CAAR=0 was rejected for window periods (-1,1), (-5,5), (-20,20) and (-50,50) with both parametric and non-parametric significance tests showing p-values as strong as 0.01 to 0.10. Interestingly, statistical results for the windows period longer than (-5,5) were only significant on statistical tests that remedy event-induced volatility bias and cross-sectional correlation bias.

Panel B showed the cumulative average abnormal return of CSOs sub-sampled based on market-based criteria as it addresses the critical yet unaccounted dynamics between market optimism and its effect on market player's expectations. Market-pulled CSOs exhibit the same positive, persistent value as the CSOs in general, but the cumulative average abnormal return achieved was higher and

comparable positives at 2.95% for window period (-50,50). Wealth gains from Market-pulled CSOs were sustainable. It is evident that like results for CSOs in general, H_0: CAAR=0 is rejected for all window periods observed as both parametric and non-parametric significance tests showing p-values between 0.01 to 0.10 for Market-pulled CSOs. Again, we observed event-induced volatility bias and cross-sectional correlation bias for windows periods longer than (-5,5). Whereas results for Crisis-pushed CSOs differed significantly. While cumulative average abnormal return in short window period (-1,1) was positive at 1.97%, results for (-5,5), (-20,20), and (-50,50) were negative at -1.71%, -2.40%, -0.81% respectively. We noted that cumulative average abnormal returns for (-5,5), (-20,20), and (-50,50) were not statistically significant irrespective of parametric or non-parametric tests. The results for Crisis-pushed CSOs showed that market-based criteria affect CSOs wealth effect. Noting the statistical significance of the result, we concur with hypothesis $H1_b$.

Panel C showed the cumulative average abnormal return of CSOs sub-sampled based on performance-based criteria. For the Positive CSOs, cumulative average abnormal gain for window periods (-50,50) and (-20,20) was significantly higher compared to generalized CSOs. Cumulative average abnormal return was positive from (-1,1) and remained a strong positive at 14.12% for the window period (-50,50). H_0: CAAR=0 rejected as both parametric and non-parametric tests showed strong significance for all window periods observed. Positive cumulative average abnormal returns in the window period (-50,50) indicated that wealth gains from Positive CSOs were sustainable. Unlike the generalized CSOs results, Positive CSOs' results were consistent across all statistical tests. Therefore event-induced volatility bias and cross-sectional correlation bias were negligible. Although Negative CSOs recorded a cumulative average abnormal gain of 1.30% at the window period (-1,1), the amount was not persistent as it dwindled to a cumulative abnormal loss of -16.18% at window period (-50,50). Both parametric and non-parametric tests showed significance for cumulative average abnormal return for window periods (-1,1), (-20,20) and (-50,50). Interestingly, even though the mean values for the window period (-50, 50) for both Positive CSOs and Negative CSOs were different extremes, both the spread were about the same at +/-15%. The results from this panel indicated a few important facts. It shows Malaysian CSOs had good potential for wealth creation in short term and potentially sustainable in long term. However, there were also instances where the short-term gain from CSOs dwindled and resulted in the erosion of shareholder wealth. When losses occurred, they happened in a higher magnitude. The results point towards hypothesis $H3_a$.

Table 2: KLCI market model cumulative average abnormal returns

Window period	CAAR Value	Sign +ve : -ve	Parametric Tests: Csect T	Patell Z [1]	Std-CSect Z [2,a]	Adj. Patell Z [3,b]	Adj.Std-CSect Z [4,ab]	Non-Parametric Tests: Gen. Sign Z [5]	Rank Z [6]	Gen. Rank T [7,ab]	Gen. Rank Z [8,ab]
Panel A: KLCI based Market Model by general conditions											
Generalised CSOs (n= 90)											
(-50, 50)	2.16%	54:36	0.822	1.341	1.197	1.444	2.271 **	2.379 **	0.168	1.837 *	1.752 *
(-20,20)	0.86%	52:38	0.565	1.728 *	1.484	1.861 *	2.364 **	1.957 *	0.830	2.047 **	1.952 *
(-5,5)	1.01%	59:31	1.236	3.041 ***	2.375 **	3.275 ***	2.835 ***	3.435 ***	1.347	3.177 ***	3.029 ***
(-1,1)	1.12%	53:37	2.667 ***	3.880 ***	3.281 ***	4.179 ***	3.490 ***	2.168 **	2.791 ***	3.445 ***	3.284 ***
Panel B: KLCI based Market Model by financial market conditions											
Market-pulled CSOs (n=71)											
(-50, 50)	2.95%	43:28	1.116	1.633	1.802 *	1.750 *	2.225 **	2.195 **	0.846	2.373 **	2.259 **
(-20,20)	1.74%	41:30	1.238	2.047 **	2.194 **	2.193 **	2.639 ***	1.719 *	1.320	2.187 **	2.082 **
(-5,5)	1.73%	48:23	2.163 **	3.605 ***	2.990 ***	3.863 ***	2.989 ***	3.383 ***	2.064 **	3.578 ***	3.407 ***
(-1,1)	0.90%	41:30	1.877 *	2.980 ***	2.378 **	3.194 ***	2.770 ***	1.719 *	2.399 **	2.699 ***	2.542 **
Crisis-pushed CSOs (n=19)											
(-50, 50)	-0.81%	11:8	-0.105	-0.239	-0.109	-0.244	0.873	0.937	-1.219	-0.049	-0.049
(-20,20)	-2.40%	11:8	-0.478	-0.194	-0.110	-0.198	0.290	0.937	-0.703	0.261	0.262
(-5,5)	-1.71%	11:8	-0.716	-0.349	-0.308	-0.356	0.183	0.937	-0.983	0.070	0.070
(-1,1)	1.97%	12:7	2.227 **	2.684 ***	2.409 **	2.734 ***	2.474 **	1.396	1.460	2.256 **	2.259 **
Panel C: KLCI based Market Model by performance											
Positive CSOs (n=54)											
(-50, 50)	14.12%	47:7	5.694 ***	5.315 ***	6.199 ***	5.575 ***	4.782 ***	5.700 ***	2.168 **	6.700 ***	6.443 ***
(-20,20)	5.81%	39:15	3.346 ***	4.389 ***	4.107 ***	4.604 ***	3.844 ***	3.521 ***	2.354 **	4.269 ***	4.105 ***
(-5,5)	1.03%	37:17	0.925	3.209 ***	2.273 **	3.366 ***	2.558 ***	2.977 ***	1.210	2.435 **	2.344 **
(-1,1)	1.07%	31:23	1.783 *	3.252 ***	2.430 **	3.411 ***	2.537	1,343	1.905 *	2.460 **	2.368 **
Negative CSOs (n=36)											
(-50, 50)	-16.18%	7:28	-4.134 ***	-4.442 ***	-4.586 ***	-4.249 ***	-5.402 ***	-3.088 ***	-2.199 **	-4.169 ***	-4.467 ***
(-20,20)	-6.92%	12:23	-2.954 ***	-2.747 ***	-2.578 **	-2.628 ***	-1.597	-1.392	-1.390	-1.940 *	-2.080 **
(-5,5)	0.49%	21:14	0.439	0.501	0.494	0.479	0.773	1.661 *	0.304	1.698 *	1.820 *
(-1,1)	1.30%	22:13	2.315 **	2.276 **	2.486 **	2.178 **	2.550 **	2.000 **	2.056 **	2.390 **	2.560 **

Notes: [1] Stand. Residual (Patell, 1976) [2]BMP (Boehmer et al., 1991) [3,4]Kolari and Pynnonen Adj. Stand. Residual; Adj. Stand. Cross-Sectional (Kolari & Pynnonen, 2010) [5]Cowan Generalised Sign(Cowan, 1992) [6] Wilcoxon (Wilcoxon, 1945) [7]Generalised Rank T and [8]Generalised Rank Z test(Kolari & Pynnonen, 2011). ***, **, * denotes p-values at significance level 1%, 5% and 10%. [a]Addresses event-induced volatility bias. [A]ddresses cross-sectional correlation bias.

Figure 11: Daily CAAR plots for market-based criteria CSOs

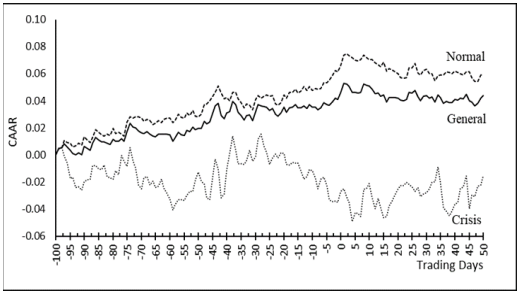


Figure 12: Daily CAAR plots for performance-based criteria CSOs

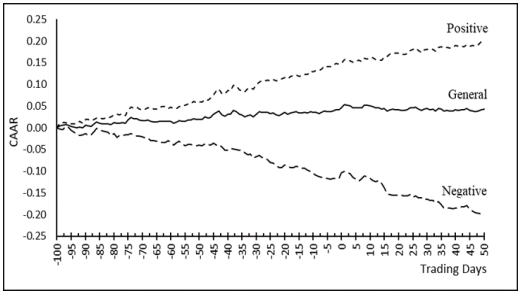


Figure 11 and Figure 12 illustrates the trend and the extended observation on the persistence of KLCI one hundred and fifty-one days cumulative average abnormal return for all CSOs. The observation period started from one hundred trading days before and fifty days after (-100,50) CSO announcement date, t_0.

As seen in Figure 11, both generalized CSO and Market-pulled CSOs exhibit a similar trend and persistence. Both trend and persistence of these CSOs conformed to the standard event study observations for a semi-efficient market where share price started increasing over time up to periods near the announcement date, and reduction in reactions was seen after and finally stabilized post-announcement date. This similarity was also due to the fact Market-pulled CSOs samples made up the bulk of the generalized CSOs at 71 samples out of 90 samples.

The cumulative abnormal returns for average lower throughout the window period observed and did not average higher than generalized and Market-pulled Crisis. This is consistent with the findings in Panel B. Additionally, it is important to note the weak statistical strength indicated by parametric and non-parametric statistical tests for longer periods measurements.

For performance-based criteria CSOs, Figure 12 shows an even spread of cumulative average abnormal return for Positive CSOs and Negative CSOs. The divergence between both CSOs grew larger as both CSOs trend away from each other throughout the window period. This complements the finding in Panel C where we concur the generalized average measurement is not positive dominant but consist of CSOs that have equal potential to gain and risk of loss.

4.2. CSOs Wealth effect – Timing of Market Reactions

Average abnormal return close to the announcement date (t=0) was highly significant for all CSOs groups, followed by some significant share price reactions post-announcement date (t>0) with few significant reactions preannouncement date (t<0).

Most CSOs' price reaction started around ten days before the announcement date. Significant price movement for the market-pulled CSOs was positive dominant, but for crisis-pushed CSOs was negative dominant. Interestingly, only positive performance CSOs recorded significant price reaction earlier, as early as 18 days, compared to other CSOs. Except for positive performance CSOs,

(i) the significance did not go beyond 0.10,
(ii) there was the more significant test that showed the average abnormal returns were statistically insignificant than significant, and,
(iii) Tests that indicated statistical significance does not encompass adjustments to address both event-induced volatility bias and cross-sectional correlation bias.

We do not reject hypothesis $H2_{null}$. Market criteria based sub-sampling did not uncover any significant difference in timing of price reactions and was not prone to misaligned window period problems. For performance-based CSOs, hypothesis $H4_a$ is accepted as Positive CSOs recorded significant price reaction much earlier than Negative CSOs. The risk of difference in timing of reaction distorting cumulative average abnormal return of generalised CSOs should be minimal as the composition of generalised CSOs was not dominated by Positive CSOs.

Table 3: KLCI Market Model Significant AAR Count for All CSOs (Parametric)

CSOs segments	Window period	Csect T	Patell Z	Std-CSect Z	Adj. Patell Z	AdjStd Csect Z
General	(-20,-6)	-	-	-	-	-
	(-5,5)	$1^{**}1^{*}$	$2^{***}2^{*}$	$1^{***}1^{*}$	$2^{***}2^{*}$	$1^{***}1^{*}$
	(6,20)	$1^{**}1^{*}$	$2^{**}1^{*}$	$1^{**}2^{*}$	$2^{**}1^{*}$	$1^{**}2^{*}$
Market-pulled	(-20,-6)	$1^{**}3^{*}$	1^{**}	1^{**}	1^{**}	1^{**}
	(-5,5)	1^{*}	$1^{***}1^{**}2^{*}$	2^{*}	$1^{***}1^{**}2^{*}$	2^{*}
	(6,20)	2^{*}	$1^{**}2^{*}$	2^{*}	$1^{**}2^{*}$	2^{*}
Crisis-pushed	(-20,-6)	-	$1^{***}1^{*}$	1^{**}	$1^{***}1^{*}$	1^{**}
	(-5,5)	1^{***}	$1^{***}1^{**}$	1^{***}	$1^{***}1^{**}$	1^{***}
	(6,20)	$1^{**}1^{*}$	$2^{***}1^{*}$	2^{**}	$2^{***}1^{*}$	2^{**}
Positive	(-20,-6)	$2^{**}1^{*}$	3^{**}	3^{**}	3^{**}	3^{**}
	(-5,5)	1^{*}	$1^{***}2^{**}$	2^{*}	$1^{***}2^{**}$	2^{*}
	(6,20)	$1^{**}2^{*}$	$1^{***}1^{**}$	$1^{**}1^{*}$	$1^{***}1^{**}$	$1^{**}1^{*}$
Negative	(-20,-6)	1^{**}	-	-	-	-
	(-5,5)	$1^{***}1^{*}$	$1^{***}1^{**}$	1^{***}	$1^{***}1^{**}$	1^{***}
	(6,20)	$3^{**}2^{*}$	$2^{***}2^{**}2^{*}$	$3^{**}2^{*}$	$2^{***}2^{**}2^{*}$	$3^{**}2^{*}$

Notes: ***, **, * denotes p-values at significance level 1%, 5% and 10%, respectively.

Table 4: KLCI Market Model Significant AAR Count for All CSOs (Non-Parametric)

CSOs segments	Window period	Gen. Sign Z	Rank Z	Gen. Rank T	Gen. Rank Z
General	(-20,-6)	2^{*}	3^{*}	3^{*}	2^{*}
	(-5,5)	1^{***}	1^{***}	1^{***}	1^{***}
	(6,20)	1^{**}	2^{*}	2^{*}	3^{*}
Market-pulled	(-20,-6)	$1^{***}2^{*}$	$1^{***}2^{*}$	$1^{***}1^{**}3^{*}$	$1^{***}2^{*}$
	(-5,5)	2^{*}	1^{***}	$1^{***}2^{*}$	1^{***}
	(6,20)	$1^{**}1^{*}$	-	1^{**}	1^{**}
Crisis-pushed	(-20,-6)	$1^{**}1^{*}$	1^{**}	1^{*}	$1^{**}1^{*}$
	(-5,5)	2^{*}	1^{***}	1^{**}	1^{**}
	(6,20)	2^{**}	$1^{***}2^{**}$	$1^{**}1^{*}$	2^{**}
Positive	(-20,-6)	2^{**}	$1^{***}1^{**}2^{*}$	$1^{***}1^{**}2^{*}$	$1^{***}1^{**}2^{*}$
	(-5,5)	-	1^{**}	1^{**}	1^{**}
	(6,20)	2^{*}	-	1^{*}	1^{*}
Negative	(-20,-6)	1^{*}	1^{**}	1^{**}	1^{**}
	(-5,5)	1^{**}	1^{***}	1^{***}	1^{***}
	(6,20)	$2^{**}1^{*}$	$2^{**}2^{*}$	$1^{**}3^{*}$	$1^{**}3^{*}$

Notes: ***, **, * denotes p-values at significance level 1%, 5% and 10%, respectively.

4.3. Determinants of CSOs

Panel 1 in Table 5 present the results of multivariate analysis for market-based criteria sun-sampling CSOs. This analysis aimed to provide a comparison of determinants identified in CSOs with and without market-based criteria subsampling. CSOs without subsampling (Model 1), indicates loss of collaterals increases CAR gain in the very short window period (-1,1) and a higher amount of parent companies' debts during CSOs resulted in CAR gain for the longer window period (-20,20). Adding CRISIS to cater for market-based criteria in CSOs Model 2 yielded essentially similar interpretations other than reducing the magnitude of both regressors and introducing a new regressor, CRISIS which notably, was not significant. However, CSOs are segmented into Market-pulled CSOs and Crisis-pushed CSOs, we observed a significant difference in the dynamics of regressors.

Table 5: Comparison of Market-Based Criteria Sub-Sampled CSOs' Determinants

Var.	**CSOs Model 1**		**CSOs Model 2**		**Market-pulled**		**Crisis-pushed**	
	(20,20)	**(1,1)**	**(20,20)**	**(1,1)**	**(20,20)**	**(1,1)**	**(20,20)**	**(1,1)**
Panel 1: Market-based criteria sub-sampling CSO's determinants								
MCAP	0.038	0.007	0.035	0.006	0.021	0.016	0.080	-0.034
	(1.226)	(0.702)	(1.110)	(0.555)	(0.736)	(1.530)	(0.967)	(-1.144)
ASSET -SIZE	0.004	0.005	0.003	0.005	0.007	0.006	0.013	0.007
	(0.423)	(1.923)*	(0.322)	(1.769)*	(0.951)	(2.280)**	(0.126)	(0.198)
FOCUS	0.048	0.004	0.054	0.006	-0.026	-0.009	0.325	0.051
	(0.950)	(0.230)	(1.044)	(0.383)	(-0.498)	(-0.469)	(2.654)**	(1.173)
DEBT	0.083	-0.003	0.075	-0.006	0.074	-0.004	0.783	0.070
	(2.637)***	(-0.242)	(2.261)**	(-0.556)	(2.629)***	(-0.394)	(2.264)**	(0.572)
CRISIS	-	-	-0.034	-0.016	-	-	-	-
	-	-	(-0.720)	(-1.029)	-	-	-	-
Inter -cept	-0.304	-0.033	-0.270	-0.018	-0.174	-0.080	-1.011	0.156
	(-1.55)	(-0.515)	(-1.337)	(-0.265)	(-0.938)	(-1.208)	(-1.847)	(0.808)
N	59	59	59	59	44	44	15	15
R^2	0.152	0.087	0.160	0.105	0.160	0.170	0.512	0.206
Adj. R^2	0.089	0.019	0.081	0.020	0.074	0.085	0.317	-0.112
S.E.	0.147	0.049	0.148	0.049	0.122	0.043	0.178	0.063

Notes: T-statistics are reported in parentheses. ***, **, * denote significance level at 1%, 5%, 10% respectively.

While Market-pulled CSOs inherited the results of CSOs without subsampling, Crisis-pushed CSOs showed that FOCUS is a driver of positive CAR in (-20,20) window period in addition to DEBT that was the only determinant for CSOs Model 1 and Model 2. This outcome indicates effects of specialization, reduction in diversity, operational improvement was not apparent to CSOs in general, but only Crisis-pushed CSOs. Unanticipated loss of coinsurance effects which arguably more suited to the theme of poor market optimism during Crisis-pushed CSOs were demonstrated here. Notably, there is a vast improvement on R^2 and Adjusted R^2 indicating better explanatory power of the regressor in Crisis Pulled CSOs compared to that of CSOs in general. We do not

observe this improvement in the dummy regressor approach when transiting from CSOs Model 1 to CSOs Model 2. Hypothesis H_{5null} is rejected.

Table 6: Comparison of performance-based criteria sub-sampled CSOs' determinants

Var.	CSOs (Model 1)		CSOs (Model 2)		Positive CSOs		Negative CSOs	
	(20,20)	(1,1)	(20,20)	(1,1)	(20,20)	(1,1)	(20,20)	(1,1)
Panel J: Performance based criteria sub-sampling								
MCAP	0.038	0.007	0.008	0.009	0.001	0.016	0.059	0.001
	(1.226)	(0.702)	(0.268)	(0.797)	(0.037)	(1.119)	(0.923)	(0.092)
ASSET	0.004	0.005	0.001	0.006	0.003	0.006	-0.029	-0.005
-SIZE	(0.423)	(1.923)*	(0.181)	(1.938)*	(0.493)	(1.972)**	(-0.573)	(-0.439)
FOCUS	0.048	0.004	0.050	0.004	0.058	0.015	0.139	0.005
	(0.950)	(0.230)	(1.071)	(0.224)	(1.154)	(0.647)	(1.257)	(0.186)
DEBT	0.083	-0.003	0.063	-0.002	0.093	0.013	-0.022	-0.019
	(2.637)***	(-0.242)	(2.130)**	(-0.145)	(2.970)***	(0.902)	(-0.280)	(-0.997)
POSI	-	-	0.131	-0.006	-	-	-	-
-TIVE	-	-	(3.382)***	(-0.442)	-	-	-	-
Inter	-0.304	-0.033	-0.183	-0.039	-0.040	-0.111	-0.428	0.022
-cept	(-1.55)	(-0.515)	(-1.000)	(-0.588)	(-0.190)	(-1.141)	(-1.124)	(0.243)
N	59	59	59	59	37	37	22	22
R^2	0.152	0.087	0.302	0.090	0.241	0.175	0.108	0.105
Adj. R^2	0.089	0.019	0.236	0.004	0.147	0.072	-0.102	-0.105
S.E.	0.147	0.049	0.135	0.049	0.116	0.053	0.163	0.039

Notes: T-statistics are reported in parentheses. ***, **, * denote significance level at 1%, 5%, 10% respectively.

The goal of performance-based criteria CSOs multivariate analysis presented in Table 6, Panel J was to examine the compatibility of the positive wealth effect theory's regressor on Negative CSOs. Like the outcomes in Panel I, adding dummy regressor POSITIVE does not affect the determinants identified in CSOs Model 1, CSOs Model 2 inherited characteristics of CSOs Model 1 perfectly, both in (-1,1) and (-20,20) window periods. The high significant regressor POSITIVE is not surprising, considering the basis of performance criteria to segment Positive CSOs was based on CAR. Interestingly, while the Positive CSOs outcome is close to CSOs Model 1 & 2, all determinants identified in the later model were not present in Negative CSOs. To supplement the argument, R^2 and Adjusted R^2 did not observe any significant improvement. The incompatibility of determinants meant hypothesis $H6_{null}$ is rejected.

5. CONCLUSION

5.1. Summary

The CSOs' potential to gain as well as potential to lose and examination here revealed that the population of CSOs comprised almost equal numbers of Positive and Negative CSOs. Magnitude wise, adjudicating from the equal absolute spread between the datasets, CSOs in Malaysia have almost equal potential to gain compared to their potential to lose. Sub-sampling data based on market-based criteria saw that Market-pulled CSOs achieved more and Crisis-pushed CSOs performed adversely, and, sub-sampling based on Pulled CSOs and Pushed CSOs reported even higher disparity in results.

Positive CSOs significant price reactions were seen much earlier, interestingly, in the pre-announcement date. This bespeaks market players needed to transact early before the CSO announcement date if they want to gain from a Malaysian stock market share's Positive CSO.

This paper provided empirical evidence that determinants have disparate dynamics in subsampled CSOs. There are different wealth effects for CSOs during an economic crisis viz non-crisis. There are sustainability implications of the CSOs at non-identical economic conditions.

5.2. Contribution and Recommendations

This study succor stakeholders in their economic decision on CSO shares investments by offering new dimensions of wealth impact analysis, along with new determinants to stakeholders. Through performance-based segmentation, Stakeholders can now understand their chances of wealth gain out of a CSO, along with the magnitude of risk of losses they are exposed to. Analysis of market reaction timing assists market players to ascertain windows periods to observe for each CSOs segment and when to watch out for the timely entry or exit of the CSO market.

A new framework capable of analyzing the coalescence of market conditions and CSO performance with CSOs wealth effect, it provided insights into statistical issues arisen due to the methodologies employed in the framework and recommended invigorating procedures. By and by, this paper attempt to explore a research gap on present CSO studies that new research designs are necessary to test segments of CSOs separately, especially when identifying determinants of the CSOs wealth effect through regression thereby sustainability.

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