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Impact of Business Cycles on Share Repurchases in the Finnish Stock Market

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Share repurchases have been extensively studied from the perspective of share repurchase program announced by corporate boards. The current study goes a step further and explores the role business cycles in impacting share repurchase programs. The study attempts to explore- the influence of business cycles on abnormal returns and determine how management's motivation changes during business cycles. The study finds the presence of short- and long-term abnormal returns after the announcement of the share repurchase. However, it fails to identify if short-term returns in recession are higher. Furthermore, free cash flow and signaling hypotheses triggers positive market reactions.

The subject of share repurchases has been extensively studied after 1981 in the US. Practitioners were mostly focused on the motivation of the management to start a share repurchase program, as well as consequences of share repurchases to the firm and to its shareholders' wealth. Over the last several years, researchers have also been exploring the subject of share repurchases in terms of the business cycles, a fundamental macroeconomic factor.

Generally, share repurchases are taken positively by the market and can be considered as an alternative to cash dividends as both use surplus cash to disbursements among shareholders. Shares that company buys back can be reissued and therefore classified as treasury shares or retired and consequently called canceled shares. The reason for the positive market reaction rests in the understanding that in either case the repurchased shares are not considered for voting or calculating earnings per share or dividends. Since the number of shares decreases, earnings per share increase, accordingly, implicitly ameliorating the company's performance. Additionally, share repurchases can be taken as a sign of management's confidence in the prospects of the company. Normally, these factors incentivize investors to buy shares, what in turn boosts the share prices, thereby creating abnormal returns.

Even though researchers agree on the positive short-term returns, some scholars underscore the potential alarming nature of the long-term consequences. Hopkins et al. (2020) state that buybacks do not contribute to the productive capabilities of the firm and disrupt the growth of the company. As a result, companies may be uncompetitive in global markets due to the lack of investment in employees and R&D as well as deprive themselves of liquidity in economic downturn. (Hopkins et al., 2020.) However, evidence presented by a few studies contradicts the presented arguments. For instance, Manconi et al. (2014) show that firms that repurchase shares outperform their peers in the long term. It happens because companies that choose to start a repurchase program do not have investment projects that could earn a higher yield. Therefore, when management has no profitable projects or growth opportunities, the company pays out cash in the form of a buyback to allow shareholders to make their own financial decisions.

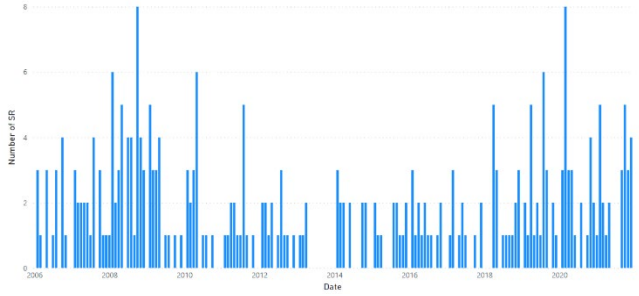
Companies can have different motives for starting a buyback program, ranging from signaling undervaluation to averting takeover activities. Furthermore, studies show that motives of share repurchase vary during the business cycle. Wang et al. (2021) concluded that in expansion companies are more likely to start a buyback program with a motivation of cash distribution, while the main motive in recession is to either enhance liquidity or boost undervalued stock values. Additionally, researchers figured out that returns are higher in the recession than in expansion. The present work aims to test the presented theoretical knowledge on the Finnish market.

Share Repurchases in Finland

In Finland, share repurchases were allowed to be used by companies significantly later than in USA. They were legitimated in 1997, by law 145, chapter 7 (Osakeyhtiölaki, 1997). Then buybacks were taken positively with around 50 buyback programs authorized by October 1999. Companies cumulatively planned to distribute EUR 1,4 billion and eventually used approximately EUR 500 million. (Karhunen, 2000.) Currently buybacks are still used actively in the Finnish market, as it can be observed in figure 1. Additionally, an obvious trend can be noted – the number of share buybacks seems to increase in the downturn of the economy, presenting an interesting baseline to investigate.

Figure 1.Composite indicator, adapted from National Audit Official of Finland (Business cycle heatmap, 2022)

Figure 2. Numbers of share repurchases by date, compiled by authors of the paper



Research objectives

The present research initially studies the short- and long-term consequences of share repurchases and motives behind announcing the intent of starting the repurchase program with no regard to the stage of the business cycle. Thereafter, researchers go deeper into the topic and studies the mentioned objectives on the grounds of business cycle's stage. Therefore, the core research objectives of this thesis can be summarized as follows:

- to analyze the short- and long-term returns of the share repurchases on the Finnish market,
- to investigate if there is a significant difference in the abnormal returns earned through buybacks during economic downturn and upturn in the Finnish market,
- to study the motivation of firm management to announce a share repurchase program with regard and/or regardless of business cycles.

Literature Review

Motives of the share repurchases

Firms have number of reasons to start a share repurchase program. The present thesis builds on the three main motivations of the management to announce a share repurchase program: leverage, free cash flow and signaling hypotheses. In the present subchapter each hypothesis is shortly described.

The leverage hypothesis Share buybacks can be utilized by management as a tool for managing the capital structure (Chan et al, 2004). Masulis (1980), as well as Jensen (1986) found that the abnormal returns around the announcement date are higher for the companies with higher degree of debt due to reduced agency losses. However, Vermaelen (1981) partly disagreed with the conclusion of Masulis (1980) and stated that it is more plausible that the core explanation for the phenomenon is the signaling hypothesis, even though the leverage hypothesis could also partially explain it. Nonetheless, both Masulis (1980) and Vermalaelen (1981) agreed that share repurchases can be used by management of the firm as a method to move the capital structure towards the optimal one, which in turn, increases firm value. Chan et al. (2004) also concluded that companies using buybacks to reach their optimal capital structure experience long-term positive abnormal returns, though do not experience abnormal returns on the announcement day as market is more interested in the actual buyback activity. Therefore, the current study infers that share repurchase announcement, if done with intent to reach the optimal capital structure, can be more likely to be incorporated in the long-term than in the short-term.

The free cash flow hypothesis In 1986, Jensen reported that companies are initiating a share repurchase when firms have cash that exceeds the current and potential investment opportunities of the company. Jensen also suggests that buybacks are effective to avoid agency costs as otherwise money could be wasted by management due to differing incentives of management and owners. (Jensen, 1986.) Contributing to Jensen's theory, Stephens, and Weisbach (1998) found that both expected and unexpected increases in cash flows are positively correlated with share buybacks. This finding entails that companies can adjust their payout policy in accordance with their financial position. Study of Stephens and Weisbach assumed that CFO will be distributing excess cash wisely instead of using it for personal benefits such as perks or negative NPV investment projects. (Stephens & Weisbach, 1998.) This assumption is refuted by other researchers, for instance, Jensen and Meckling (1976) and Dittmar and Mahrt-Smith (2007) who stated that managers would not be investing excess cash to benefit shareholders, representing agency conflict. Finally, Bagwell and Showen (1989) stated that companies with lower market-to-book ratios are lacking investment opportunities, therefore, such companies tend to accumulate more retained earnings. Once company gets rid of financial slack, market reacts positively.

The signaling hypothesis According to Miller and Modigliani (1961), in conditions of the perfect market, information asymmetry does not exist, what implies that payout policy is not affected by information availability. Despite that, in imperfect market signaling hypothesis is one of the dominant motivations to start a share repurchase program. Signaling hypothesis rests on two assumptions, undervaluation, and asymmetry of information.

(Vermalaelen, 1981.) Asymmetry of information implies that insiders have more information about the company in comparison with investors. Therefore, through share repurchase management can convey private information to the market. (Duinker, 2013.) Alternatively, management may be announcing share repurchase because of the valuation errors made by the market and consequently responding to the undervaluation assumption (Vermalaelen, 1981).

On the other hand, one could argue that the company sends a false signal via stock repurchase. However, Bhattacharya and Jacobsen (2015) concluded that it is unlikely since it is costly way to signal to the market. Moreover, Chan et al. (2010) stated that open market repurchases (OMR) act as a weaker signal of the undervaluation than repurchase tender offers as OMR are not assuming the obligation of the firm to buy shares, therefore, the cost of the false signaling is low. Nonetheless, Rau and Vermaelen (2002) proposed that since firms have no obligation to buy back shares, one cannot securely detect signaling. Additionally, Chan et al. (2004) argued that management establishes decision to pursue the share repurchase program or not after the announcement. Additionally, they find that the company will buy a larger number of shares if the market reaction is lower than expected. (Chan et al, 2004.)

Brav et al. (2005) who surveyed managers of 256 public companies, found that 86,4% of them state that undervaluation is one the most important incentives in the decision-making process of whether pursuing the buyback program or not. Moreover, 85,6% of managers state buyback announcement convey information to the investors. (Brav et al, 2005.) However, Chen and Obizhaeva (2022) concluded that open-market buybacks cannot be explained by signaling hypothesis alone as other types of share repurchases serve as a significantly stronger signal.

Business cycles and share repurchases

Dittmar and Dittmar (2008) have shown the pro-cyclicality of the US company share buyback value. They also state that tax advantages and financial flexibility are more important characteristics for the firm in boom periods than in bursts or stagnation. (Dittmar & Dittmar, 2008.) Wang et al. (2021) further explored the topic of the management's motivation over the business cycle. They concluded that in the economic recession, companies buy back shares due to the undervaluation hypothesis or in order to increase the market liquidity compared to the expansion period, when firms repurchase shares to distribute excess cash. (Wang et al, 2021.)

In expansion, firms normally have better financial results and more net cash inflows, resulting in larger cash distributions. (Dittmar, 2000.) Alternatively, in recession, companies are more likely to be undervalued due to market pessimism. In the presented case, companies can be utilizing the market conditions to repurchase stocks back as firms think that shares are undervalued. (Ikenberry et al, 1995.)

Hypotheses

Present work has two areas of interest: short- and long-term consequences of share repurchases and motives of buybacks in the various stages of economy. Taking that into account, present subchapter introduces hypotheses that are tested by researchers.

Short- and long-term consequences of buybacks

H_1: The announcement of the intent to start a share repurchase program has abnormal returns on the day of the share repurchase announcement and in the event window (-1; +1).

H_2: The firm that utilizes the share repurchase program has a long-term stock price reaction.

H_3: In recession the short-term stock returns are higher than in expansion.

Motives of buybacks

H_4: Leverage hypothesis is responsible for positive market reaction.

H_5: The free cash flow hypothesis is responsible for the positive market reaction.

H_6: The signaling hypothesis is responsible for the positive market reaction.

Research Framework

In this study, the event of interest is defined as the particular repurchase done by a particular company. Companies included in the study represent various industries and distribution of the event through time. Since the subject of the study are the share repurchases done on the Finnish market as a market portfolio index OMX Helsinki 25 is utilized.

The empirical study is based on 140 companies that are publicly traded on Nasdaq Helsinki. Out of 140 companies only 81 did announce an open-market share buyback program in the time frame from 01.01.2006 till 31.12.2021. The period was selected based on the availability of information about business cycles and financial data in the open sources. The information about share repurchase announcements was gathered physically from the Nasdaq OMX Nordic's website. The financial data was derived from reports published by companies on their websites.

Furthermore, as part of the research, the current study collates business cycles, and the share repurchase programs to conclude the correlations. Similarly to the study done by Wang et al. (2021), EXPANSION is defined as a dummy that equals one in trough-to-peak expansion quarters and zero otherwise. Trough-to-peak expansion is done based on the

composite monthly indicator of business cycle. Indicator is adapted to Finnish market by National Audit Office of Finland and is used to illustrate the state of the Finnish economy. Figure 1 represents the observations of the composite indicator from 2006 to 2021 on the Finnish market.

Present study consists of two analysis methods: event study and regression analysis. To analyze the short- and long-term price impact around the date of share repurchase announcement researchers use one-sample t-test and independent samples t-test. To determine the relationship between abnormal returns and multiple hypotheses that are potentially explaining the source of abnormal returns researchers utilize multiple linear regression.

Variables that are used in the regression model are presented in the table 1.

Table 1. Variables used in the regression model

	Variable	Proxy for
H_4: The Leverage Hypothesis	Debt/Assets (DEBTASSETS)	Suboptimal Capital Structure
H_5: Free Cash Flow Statement Hypothesis	Free Cash Flow (FCF)	Free Cash Flow
	Market-to-Book (MTB)	Investment Opportunities
	Return-on-assets ratio (ROA)	Agency Costs
H_6: The Signaling Hypothesis	Prior Abnormal Return (PAR)	Misevaluation
	Size (SIZE)	Information Asymmetry
	Market-to-Book (MTB)	Undervaluation

Results

In the present chapter researchers introduce findings of the event studies and the regression analysis.

Results of the event studies (overall)

Table 2 presents abnormal returns and cumulative abnormal returns over the tested periods. Mean abnormal return on the day of the share repurchase announcement (AR0) is statistically significantly higher by 0,875 than the market return on the same day. At the same time, CAR in the announcement window (-1; +1) is 0,91%. Similarly, CAR in the event window (-2; +2) is 1,08%. Mean abnormal return in the event window (0; +90) is 3,64%. Concurrently, mean abnormal return in the event window (0; +180) is 6,4%. Lastly, abnormal return in the event window (0; +360) is 13,01%.

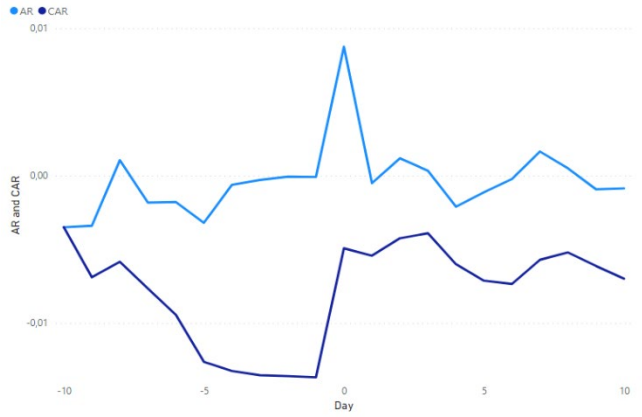
Table 2. Results of the One Sample T-tests, (1%, 5% and 10% significance level represented by *, **, and *)**

Panel A: ARs		
Day/Interval	AAR	t-stat
-10	-0,349%*	-2,848
-9	-0,339%**	-2,339
-8	0,11 %	0,932
-7	-0,18 %	-1,582
-6	-0,18 %	-1,515
-5	-0,319%**	-2,263
-4	-0,06 %	-0,457
-3	-0,03 %	-0,206
-2	-0,01 %	-0,043
-1	-0,01 %	-0,059
0	0,875%*	3,662
1	-0,05 %	-0,337
2	0,12 %	0,887
3	0,03 %	0,261
4	-0,21%***	1,905
5	-0,11 %	-0,939
6	-0,02 %	-0,186
7	0,16 %	1,344
8	0,05 %	0,42
9	-0,09 %	-0,786
10	-0,09 %	-0,671
Day 0 to +90	3,639%*	4,374
Day 0 to +180	6,403%*	4,184
Day 0 to +360	13,012%*	5,538
Day -60 to -20	-0,51 %	-1,013
Panel B: CARs		
Interval	CAR (%)	t-stat
Day -1 to +1	0,912%*	3,157
Day -2 to +2	1,08%*	3,063
Day -10 to -2	-0,11%*	-0,196
Day +2 to +10	0,43 %	-3,756
Day -10 to +10	-0,02 %	1,281

Figure 3 shows more vividly the abnormal and cumulative abnormal returns in the time interval (-10; +10). As can be observed, average cumulative abnormal returns strive to decrease before the announcement and increase rapidly on the day of the event, recovering from losses. After the announcement in the event window (+1; +10) a generally negative trend of CAR can be observed. Considering the abnormal returns, compared to the pre-announcement

returns, only six out of ten days are negative, catapulting to 0,875% on the day of the announcement. Moreover, can be noticed that the announcement positively affects the abnormal returns in the event window (+1; +10).

Figure 3. AR and CAR in the time interval (-10; +10)



Results of the event studies (by business cycles)

Figure 4 presents the CAR in the expansion and recession period. As can be noticed, cumulative abnormal returns are lower in the recession period than in expansion. The general trend is the same for both groups, reaching almost the same abnormal returns on the announcement day 0,84% and 0,96% in recession and in expansion correspondingly.

Figure 4. CAR in recession and expansion period

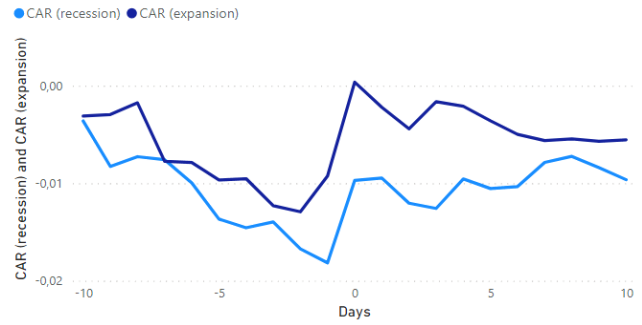


Table 3 presents the results of the independent sample t-test and independent-samples median test. Because of the nature of the data and due to the lack of events, the study of share repurchases does not provide with statistically significant results, except for the abnormal returns on 7th and 1st day prior to the announcement and 2nd day post announcement.

Table 3. Results of the Independent Sample T-tests, (1%, 5% and 10% significance level represented by *, **, and *)**

Panel A: ARs in recession and expansion period			
	Independent Sample T-Test		
Day/Interval	AAR, rec.	AAR, exp.	t-stat
-10	-0,36 %	-0,31 %	-0,18
-9	-0,47 %	0,02 %	-1,475
-8	0,10 %	0,12 %	-0,072
-7	-0,03%*	-0,6%*	2,198
-6	-0,24 %	-0,01 %	-0,847
-5	-0,37 %	-0,18 %	-0,594
-4	-0,09 %	0,01 %	-0,337
-3	0,06 %	-0,28 %	1,08
-2	0,01 %	-0,06 %	0,24
-1	-0,14%***	0,37%***	-1,597
0	0,84 %	0,96 %	-0,215
1	0,03 %	-0,26 %	0,842
2	0,24%***	-0,22%***	1,532
3	-0,05 %	0,28 %	-1,112
4	0,30 %	-0,05 %	1,402
5	-0,10 %	-0,15 %	0,19
6	0,02 %	-0,14 %	0,607
7	0,25 %	-0,06 %	1,122
8	0,06 %	0,02 %	0,161
9	-0,12 %	-0,03 %	-0,342
10	-0,12 %	-0,31 %	-0,478
Day 0 to +90	3,50 %	3,99 %	-0,258
Day 0 to +180	6,63 %	5,80 %	0,242
Day 0 to +360	14,00 %	10,17 %	0,711
Day -60 to -20	-0,40 %	-0,81 %	0,355
Panel B: CARs in recession and expansion			
	Independent Sample T-Test		
Interval	CAR, rec.	CAR, exp.	t-stat
Day -1 to +1	0,85 %	1,10 %	-0,395
Day -2 to +2	1,16 %	0,87 %	0,352
Day -10 to -2	-1,69 %	-1,11 %	-0,622
Day +2 to +10	0,69 %	-0,22 %	1,172
Day -10 to +10	-0,10 %	-0,15 %	0,04

Starting with the average abnormal returns in the time frame from tenth to first day prior to the announcement, seven out of ten mean ARs are higher (or abnormal losses are lower) in the expansion than in recession. After the announcement in the time frame from first until tenth day,

the mean abnormal returns are on average higher in recession than in expansion. Only two out of ten days show higher returns in expansion than in recession. Also, cumulative abnormal return in the interval (+2; +10) is also on average significantly higher in recession than in expansion and on the contrary in the interval (-10; -2) CAR are higher in expansion than in recession.

Long-term abnormal returns are higher in expansion than in recession only in interval (0; +90). Contrastingly, the abnormal returns in intervals (0; +180) and (0; +360) are higher in recession than in expansion.

Results of the regression analysis, overall

Table 4 shows the results of the multiple linear regression, the goal of which is to find the motives behind buybacks. Table represents four regressions with different sets of explanatory variables. Regression (I) includes all variables, regression (II), (III) and (IV) test the relationships for three hypotheses, mentioned earlier. Regression (II) tests the variables that explain the leverage hypothesis, regression (III) analyses variable that explain the free cash flow hypothesis and regression (IV) checks variable that can explain the signaling hypothesis.

In the first regression, researchers find MTB to impact cumulative abnormal returns. Market-to-book variable is an explanatory variable for both the Free Cash Flow hypothesis and the Signaling hypothesis. In regression (IV), testing signaling hypothesis, only variable Size significantly predicted CAR (-1; +1), underscoring signaling hypothesis.

Other variables do not provide statistically significant coefficients. Overall, the regressions are not explaining the abnormal returns well. It can be observed from the adjusted R-squares as all of them are less than 0,03.

Results of the regression analysis (by business cycles)

Table 5 presents the results of the multiple linear regression by the business cycle. Regressions have the same explanatory variables as in the general analysis. The regression analysis by recession and expansion does not provide a lot of statistically significant results and is not informative due to the small sample, especially in the expansion. In regression (I) only MTB significantly predicts CAR (-1; +1) in recession. To figure out further, which hypothesis explains the observed finding, regression (III) and (IV) are studied. Interestingly, both regressions present significant coefficients.

The prior abnormal returns do not show any statistical correlations except for MTB and Prior AR, presented in table 8. At the same time, both regressions presented in table 9 and 10, show that Prior AR does not explain the CAR (-1; +1) at a statistically significant level.

Discussion

In the present chapter researchers firstly discuss short- and long-term consequences of share repurchases. Then they examine motives of management to announce a share repurchase.

Short- and long-term consequences of buybacks

To start with, mean abnormal return on the share repurchase announcement day, as well as cumulative abnormal returns in intervals (-2; +2) and (-1; +1), is significantly higher than the market return on the same day or interval. The present findings are in line with results of other significant studies, such as Lee et al. (2015) finding CAR of 1,2% in the (-2; +2) event window and Chan et al. (2004) obtaining CAR of 2,18% in the event window (-2; +2). Since the statistically significant difference between means is found in all three cases, researchers accept the hypothesis H_1. Researchers paid attention to the Karhunen's results. In his study, Karhunen (2002) found cumulative abnormal returns of almost two times more than in the present study. This difference in returns can be explained by sample being gathered from different time periods. When Karhunen was executing his research, share buybacks were still a new phenomenon in the Finnish financial world, as in Finland share repurchases were legalized only in 1997. It is assumed in the current study that novelty of such activity resulted in more positive market reactions right after legalization.

Mean abnormal returns in the event windows (0; +90), (0; +180) and (0; +360) are as well above mean market returns in the corresponding intervals. The declared results allow researchers to accept the alternative hypothesis. When compared with results of other researchers utilizing the same approach of BHAR, Zhang (2005) finds a return of 2,02% in a year while Rau and Vermaelen (2002) find a return of -7%, Oswald and Young (2004) find 4,54% and Crawford and Wang (2012) find a return of 2,71% in the same window. As can be observed, presented results are not consistent, yet 3 out of 4 provide with positive abnormal returns. Results provided by the present study are also positive, yet significantly higher. Researchers hypothesize that it can be explained by different comparable periods and countries. To sum up, researchers accept the hypothesis H_2 since all three abnormal returns are positive and significant.

Moreover, on the 4th day post announcement researchers found negative abnormal return at 10% significance level. Assuming signaling hypothesis to be true, one would expect to see positive abnormal return in the post-announcement window. The current study underlines such results that can be attributed to significant negative outliers since the median abnormal return is 0.16%.

Figure 5 graphically shows that cumulative abnormal returns are lower in the recession than in expansion, confirming a general trend of the plummeting stock market

during the recession. Same downward trend in the pre-announcement period for both groups advocates for truthfulness of the signaling hypothesis. Besides, independent sample t-test does not provide with significant results, therefore researchers fail to accept the hypothesis H_3 as no short-term abnormal return is significant due to small sample.

Discussion of share repurchases motives

Results of the regression model, presented in table 4, show that MTB influences the cumulative abnormal returns. Since MTB is an explanatory variable for both free cash flow and signaling hypotheses and as these hypotheses are not mutually exclusive, regression (III) and (IV) are checked. Only regression (III) shows statistically significant results for variable MTB. Therefore, researchers conclude that MTB significantly predicted CAR (-1; +1) from the perspective of the free cash flow hypothesis. Accordingly, once company gets rid of financial slack by distributing it to the shareholders, market reacts positively.

However, in regression (IV) variable size significantly predicted CAR (-1; +1). This finding implies that smaller companies are misevaluated due to bigger information asymmetry by the market prior to the announcement and the share repurchase announcement does convey the missing information.

Based on the empirical findings, researchers accept hypotheses H_5 and H_6. Unfortunately, since there was not found any statistically significant evidence regarding the leverage hypothesis, H_4 cannot be accepted. Therefore, present study does not find any support for the fact that companies that are trying to increase their value through moving towards the optimal capital structure, get positive market reaction.

Regression analysis of business cycle does not provide with a lot of statistically significant results due to small sample size in the expansion group. Nonetheless, in the recession group MTB significantly predicts cumulative abnormal returns in regression (III) and (IV). Present finding implies that both free cash flow and signaling hypotheses can explain abnormal return in recession.

Additionally, by taking a closer look at table 2 and figure 3, researchers propose the following explanations. According to the table and figure, most of the days prior to the announcement show negative abnormal returns. These findings can be explained by the signaling hypothesis, which rests on the assumption of the undervaluation and asymmetry of information. It is proposed in the current study that companies, which are undervalued due to market valuation error, are conveying information to their investors through a share repurchase program, therefore, signaling about positive prospects of the firm. According to the shareholder theory, the core goal of the enterprise is to maximize the value of shareholders, implying that management should be acting to benefit their current and prospective investors. At the same time, investors assume that management is acting on their behalf and does not have malicious intents. Consequently, announcement of the intent to buy back shares is taken as a mean to convey to investors missing information, resulting in abnormal market returns on the announcement day. The signaling hypothesis is also indirectly strengthened by more positive returns in the post-event interval (+1; +10) as only six out of ten days show negative returns compared to nine out of ten in the pre-announcement window. Meantime, free cash flow hypothesis assumes that companies that do have more free cash flows, get larger abnormal returns in the announcement window because of decreasing agency costs. Writer of the thesis assumes that it can be explained by retained earnings, accumulated during the expansion period when businesses tend to have higher net profits.

Limitations and recommendations

Even though the topic of share repurchases is well studied, there has not been done studies about share repurchases by Finnish companies analyzed by business cycles. The present study fails to provide readers with detailed justification of the theories built up around buybacks and stages of economy due to small samples especially in the expansion period. Therefore, the same study can be conducted with a bigger sample of the share repurchase announcements. The results of such study can be compared with studies done on other markets to identify potential differences and similarities. Additionally, there is a variety of aspects that can be explored further. For instance, the correlation between the dividend payout and share buybacks done or announced by Finnish companies can be studied. Alternatively, researchers can focus on other hypotheses that could explain abnormal returns. Moreover, the abnormal returns can be contrasted with the completion rate of the buyback programs. In such case, events with different completion rates can be analyzed separately for the more precise analysis.

Lastly, more in-depth analysis techniques can also be used in future research. Long-term abnormal returns can be calculated using a more precise analysis of, for instance, Fama and French five factor, which takes into consideration market, size, and value risk factors, as well as future earnings that companies report and internal investment. Such analysis would also improve the accuracy of the results.

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