Influence of Reason to Repurchase on Company Performance

Maurice Otten
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,
In this study the question how does the reason to repurchase shares influence company performance is answered. Company performance is assessed through its market-to-book ratio (MTB) and earnings before interest and taxes (EBIT). Both performance measures are looked at in the year of the repurchase and the following year. The reasons discussed are the distribution of excess cash (DEC), neutralizing the dilutive effect of stock option exercises (NDE), undervaluation (UND), reduction of capital (RCL) and the funding of employee stock options (FEO). Positive relations between MTB and the reasons DEC, NDE and UND are expected, and negative relations for RCL and FEO. For EBIT a positive relation is expected for DEC and a negative for FEO. I find statistically significant results for DEC and FEO. The MTB for both reasons are in accordance with my predictions. For EBIT, only FEO is in accordance with my prediction, the results of DEC are contradicting. The results for NDE, UND and RCL did not show statistical significance. The MTB of companies repurchasing for reasons NDE and RCL moved in the opposite direction than expected. For UND, in the year of the repurchase a negative relation is found, turning into positive the following year.

Graduation Committee members:
Henry van Beusichem, Samy Essa, Xiaohong Huang, Rezaul Kabir

Keywords
Share repurchase, excess cash, dilutive effect, undervaluation, reducing capital, employee options

9th IBA Bachelor Thesis Conference, July 5th, 2017, Enschede, The Netherlands.

1. INTRODUCTION

Companies often opt for share repurchasing instead of paying dividends. Ever since the United States loosened the restrictions placed on share repurchases in 1982[1] its popularity increased and other countries followed their lead. Other major economies like Japan and Germany also loosened the restrictions. Up until 1994, the Japanese commercial code in principle banned all companies from repurchasing shares**,** but in October 1994 the Japanese government revised the commercial code and allowed for share repurchases.[2] In Germany, share repurchases were highly restricted until 1998 (Hackethal & Zdantchouk, 2006), however the popularity of share repurchases in other countries contributed to new regulations in Germany in May 1998. In recent years popularity kept growing with S&P 500 companies repurchasing $500 billion worth of shares in 2013[3] and an expected increase up to $780 billion in 2017.[4] Repurchasing shares, next to paying dividends, is another way of returning cash to shareholders. When a company repurchases its shares, it reduces its outstanding shares which typically results in an increase in share price. For shareholders a repurchase can be more beneficial than receiving dividend (Grullon & Ikenberry, 2000). Share repurchases result in capital gains which are taxed lower than dividends on which ordinary income tax applies.

There are two common ways for a company to repurchase shares, it can announce a tender offer or engage in an open-market repurchase, the latter being the most common one. When a company announces a tender offer, it presents its shareholder with an offer to tender their shares within a time frame given and also states the amount it is willing to repurchase at which price. The price is given as a range. Shareholders then can accept the offer and when the time frame expires the company reviews all accepted offers. The company combines all the offers in order to repurchase shares at the lowest costs. When a company engages in open-market repurchasing the company buys its own share in the marketplace the same way investors do, and the price it pays is the current market price.

When a company decides to repurchase its own shares it often announces its intention to do so. These announcements can contain valuable information for the marketplace. A company might include the reason for the repurchase activity. The reasons companies have to repurchase shares are diverse. Jensen (1986) states that the distribution of excess cash is one of the reasons to repurchase. This hypothesis is supported by Stephens and Weisbach (1998) who identified a positive relation between the level of cash flow and repurchases. Next to this relation, they also find a negative relation between the company's prior stock performance and repurchases. This illustrates that companies are more likely to repurchase shares when the stock prices are perceived as undervalued which is in accordance with the findings of Vermaelen (1981). He finds that companies use repurchases to signal undervaluation. Besides the distribution of excess cash and undervaluation, there are several other motives to repurchase shares. Changes in the way employees are compensated caused changes in company pay-out policy (Kahle, 2002). The increased use of stock options as a means of compensation created the need to revise pay-out decisions. When the stock options are exercised, more shares are issued which dilutes the share prices. To neutralize this dilutive effect, a company can engage in share repurchasing (Bens, Nagar, Skinner, & Wong, 2003). It is important to control this dilutive effect, as earnings per share (EPS) is also diluted after stock options are exercised and investors see this a relevant measure of performance (Core, Guay, & Kothari, 2002). However, the increased use of stock option compensation also requires that more shares are available. Therefore another reason to repurchase shares is to fund employee options, a company wants to acquire the shares needed to compensate employees by repurchasing them. Next to EPS, also other ratios can be influenced by repurchasing. A company can also influence its leverage ratio (Opler & Titman, 1996). By repurchasing a company reduces its capital, thereby increasing its leverage ratio which allows for tax benefits. During the mid-1980s there was an active takeover market (Dittmar, 2000), which introduced another reason to repurchase. By repurchasing, companies could fend off unwanted takeovers attempts (Bagwell, 1991) by reducing shares outstanding, making them less prone to takeovers.

Evidently, the decision for a company to repurchase shares can be reached because of diverse reasons that arise because of different needs. I think the various reasons a company can have to repurchase shares have a different impact on what the company looks like afterwards. This leads to the following research question: How does the reason to repurchase shares influence company performance?

In this study company performance is measured by looking at its market-to-book ratio (MTB) and its earnings before interest and taxes (EBIT). MTB gives an insight to what extent a company uses its resources efficiently. This ratio can help investors determine the attractiveness of an investment. EBIT is a measure of profit that can also help investors choose investments. The relationship between the reason to repurchase and company performance is tested using regression. Data is collected from non-financial listed companies in Germany, the Netherlands and the United Kingdom that provided an announcement to repurchase including the reason in the period 2010-2014.

I find a significant relation between company performance and repurchases done in order to distribute excess cash and to fund employee options. When the reason to repurchase is the distribution of excess cash, this causes a positive market reaction, however can lead to a decrease in EBIT over the years. If repurchases are done to fund employee options, the market does not react favorably to this and also causes a drop in EBIT. Repurchases to neutralize the dilutive effect of stock options exercises lead to a negative market reaction, but an increase in EBIT. EBIT also increases if companies repurchase to reduce capital. Moreover, this evokes an increase in MTB. Undervaluation as the reason to repurchase initially leads to lowered MTB and EBIT, but the results show an increase in both the following year.

The academic relevance of this study is contributing to the existing literature by providing an overview of how different reasons to repurchase each have a different impact on company performance. In practice, this study is relevant because it can help investors and shareholders decide to buy and/or sell stock when a company announces a repurchase.

The study will proceed as follows. Section 2 provides an overview of relevant literature which is discussed and leads to the hypotheses development. Section 3 discusses the methodology. In this section variables and data are explained. The results are presented in section 4. Finally, section 5 provides a summary and conclusion.

[1] SEC Rule 10b-18

[2] See Wada (2005) pp.2

[3] The Economist: The Repurchase Revolution

[4] Wall Street Journal: Stock Buyback Forecast to Surge 30% in 2017

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In their article Ikenberry, Lakonishok, and Vermaelen (1995) identify undervaluation as one of the reasons for a company to announce a share repurchase. They state that when managers of repurchasing companies are asked for the reason of the repurchase, undervaluation is one of the prevalent reasons alongside the claims that it is 'a good investment'. Undervaluation being one the main reasons is the result of managerial claims that the market fails to recognize the true value of their stock. This can be caused by information asymmetry between managers and the marketplace, managers can have inside information that the marketplace does not. If the marketplace reacts in an efficient way to the announcement, a new stock price should establish, one that better reflects the 'true' value. It is found that the average response of the market to an open-market share repurchase announcement is 3%. Given that this percentage is not much higher than the daily standard deviation of returns for many stocks[5], this response does not seem in accordance with the views of the managers. If the managers are right and the stock is undervalued, a greater response could be expected. This minor reaction can be the consequence of two things. Either the managers are too optimistic about the value of the company, or the marketplace fails to recognize important information from the announcement. Next to this they found that this relatively small return only applies for the short term. In their study they look at the long-term effects of a share repurchase by using a buy-and-hold strategy for four years starting in the month after the announcement. They find that if this strategy is used, an abnormal return of more than 12% is reached. Combining these findings leads to a staggering undervaluation around 15%, a number which better reflects the managers' claims about their company being undervalued. Even if the response of the marketplace is small in short term compared to long term, there still is a positive reaction. So I expect that whenever a company states undervaluation as reason to repurchase, this leads to an increased MTB.

If a company's stock price is relatively low, this is not necessarily the result of stock being undervalued**.** A possible other explanation for this can be a company's growth perspectives. If it lacks growth opportunities this could result in a lower stock price, because stock prices are partially based on a company's expected performance in the coming years. When a company has several profitable projects lined up, this is likely to result in a higher share price. If this is not the case, a company has to find an alternative for its cash. Grullon and Michaely (2004) find that companies that cannot find profitable business-related investments, redirect excess cash, which would normally be used for investments, towards repurchasing. By distributing the free cash flow, i.e. the cash flow that exceeds the amount needed to fund all positive NPV projects after discounting (Jensen, 1986), the company deals with agency problems that can occur due to accumulation of high amounts of free cash flow. By repurchasing the company returns this cash to the shareholders whereas overinvesting might happen if this excess cash is not distributed. As overinvesting can be the cause of agency problems, the distribution of excess cash also results in a decrease in agency problems. A decrease in agency problems should result in a positive market reaction. Moreover, Grullon and Michaely (2004) suggest that repurchases arising from a lack of growth opportunities coincide with a company's transition of its growth phase. As the company becomes more mature, it moves from a phase with more growth to a phase in which there is less growth, resulting in fewer possibilities to invest. They say that this means a company's assets become a more important determinant of its value and consequently its systematic risk declines. Evidence suggests that this decrease facilitates in a positive reaction from the marketplace to the announcement. Not only does a repurchase for this reason affect a company's value, it also has its impact on a company's earnings. It was found that companies that engage in open-market share repurchasing to distribute excess cash experience a reduction in earnings the years after the announcement. Given these findings, I expect that a repurchase with the reason to distribute excess cash will lead to an increase in MTB, however it also causes a decrease in EBIT.

For the first time in history, companies spend more money on repurchasing shares than on paying dividends in 1999 and 2000 (Grullon & Michaely, 2002). With this great increase in popularity of share repurchases, a corresponding drop in number of shares outstanding could be expected, but this is not the case. A possible explanation for this phenomenon is the change in corporate remuneration. Stock-based compensation is used more and more providing employees with stock options. When these options are exercised the number of shares outstanding increases and this could cancel out the decrease in shares outstanding caused by repurchases. However the amount of exercised options have become increasingly prevalent in companies and Kahle (2002) found that these changes in compensation enforced changes in pay-out policy. Repurchases were done in order to neutralize the dilutive effect of stock option exercises. Both the dilutive effect of EPS and the number of shares outstanding are neutralized through repurchases. The propensity to repurchase for this reason is strengthened by the incentive managers have to repurchase instead of paying dividend as paying dividends reduces the value of both exercisable and unexercisable options. The amount of managerial stock options is positively related to repurchases. Babenko (2009) found that many unvested stock options, i.e. stock options that are awarded when certain conditions are met, in a company evoke a positive market reaction. Given that it is in the interest of managers to repurchase instead of pay dividends when they hold stock options in order to prevent their shares from becoming worth less, and the marketplace react positively to a higher amount of unvested stock options amongst managers, I expect repurchases that happen to neutralize the dilutive effect to cause an increase in MTB.

The increased use of stock option also creates another challenge for companies. If a stock option holder decides to exercises the option, the company must have shares in its possession to award the shares linked to the option. This forms another reason for companies to repurchase shares, which is to fund employee options. Companies repurchase shares and hold them in treasury in order to fulfill requirements of stock options exercises. Bens, Nagar, and Wong (2002) find that companies in which a high amount of stock options are exercised, reallocate resources from real investments to repurchasing shares. Furthermore, they provide evidence that ROA declines in companies that shift resources from investment to repurchasing. Based on this I expect a company's EBIT to decrease if shares are repurchased to fund employee options. Next to a decrease in EBIT, I also expect a decrease in MTB. When investment opportunities are not pursued because money is used to repurchase, this will affect future performance and subsequently share prices.

With share repurchases companies can alter several ratios, including its leverage ratio. The leverage ratio, calculated by dividing total debt over total equity, gives investors an insight about how much of the company is financed with debt, and how much is financed with equity. Having debt gives the company tax

[5] See Ikenberry et al (1995) pp. 2

benefits as it reduces the company's taxable income. However, too much debt also comes with the cost of financial distress. By repurchasing shares, a company can lower its equity and thereby increase its leverage ratio. Increasing dividends also absorbs equity, however it can be better for companies to repurchase instead of increase dividends, because if dividends have to be lowered later, the company suffers from a penalty the market inflicts (Feldstein & Green, 1983). For investors a company's leverage ratio can play a role in determining in what company they should invest. With everything else the same, companies with a lower leverage ratio tend to be a safer choice as it is more capable to pay its debts. Keeping this in mind, and given that a repurchase increases a company's leverage ratio, I expect that the MTB of companies that repurchase shares to reduce capital will decrease. When a company has a high leverage ratio investors might not want to invest in it, resulting in a lower share price and therefore a lower market value.

3. METHODOLOGY

3.1 Dependent Variables

To answer the question how does the reason to repurchase shares influence company performance, I must first identify measures to determine performance. In this study performance is measured by looking at a company's market-to-book ratio (MTB) and earnings before interest and taxes (EBIT). MTB is calculated by: $MTB = \frac{market\ capitalization}{book\ value\ of\ assets}$ where market capitalization is the product of share price and shares outstanding. I choose MTB as a performance measure, because this gives an indication of how efficiently a company uses its assets by comparing the value the market places on its assets and what those assets are actually worth, the book value. It is also a useful measure for investors as it can be used for a quick comparison with competitors. Furthermore, MTB is also used to judge whether a company is over- or undervalued.

Next to MTB, EBIT is also assessed to determine performance. EBIT is measure of profit that does not take into account interest and taxes. I choose this measure because this prevents bias that might occur due to different tax rates used in different countries that are part of the data. Just as MTB, EBIT can be used by investors for a quick comparison between competitors. Moreover, EBIT is used in various financial calculations such as the interest coverage ratio and the profit margin ratio. Due to the multiple uses of EBIT and its tax-neglecting aspect it is a helpful indicator for investors and thus used as a performance measure. EBIT is scaled by revenue to control for size.

The performance measures are assessed in both the year in which the repurchase takes place (t) and the year following it (t+1).

3.2 Independent Variables

In the existing literature several reasons for a share repurchase are discussed. In this study I will focus on five reasons that companies put forth as the reason for them to repurchase. The first reason is the distribution of excess cash, from now on referred to as DEC. I expect when a company states this as the reason for the repurchase, the repurchase will have a positive influence on MTB and a negative influence on EBIT. Secondly, the reason neutralizing the dilutive effect (NDE) is researched. This dilutive effect applies to both EPS and the number of shares outstanding. I expect that a repurchase for this reason leads to an increase in MTB. I have no expectations about how EBIT is influenced. The third reason is undervaluation (UND). A repurchase that happens for this reason is expected to have a positive influence on MTB. Again, there is no expectation about how it influences EBIT. The fourth reason is the reduction of capital (RCL). I expect a repurchase for this reason to negatively influence MTB. Also for this reason there is no expectation about its influence on EBIT. The final reason discussed is the funding of employee stock options (FEO). Whenever a company repurchases shares for this reason, I expect it to negatively influence performance for both MTB and EBIT.

3.3 Regression

The influence of the reason to repurchase on company performance is determined by running a linear regression to see the relationship. Data is winsorized to try to eliminate outliers. In all regressions the natural logarithm of sales is used to control for size. The natural logarithm of sales is chosen rather than the natural logarithm of assets to control for size, because using assets would give distorted results with respect to service companies as they often do not have many assets. Year dummies are also used to control for certain trends that might be present in the stated reasons. For each coefficient the corresponding p-values are checked to assess the significance. Next to that the VIF scores are assessed. If high VIF scores are found in the regression, each reason is tested separately in order to deal with multicollinearity problems that could be present otherwise.

3.4 Data

Data is collected from companies listed on stock exchanges in Germany, The Netherlands and the United Kingdom that repurchased shares between 2010 and 2014. Financial companies are excluded from the sample. Germany and the United Kingdom are selected because they are the two largest European economies.[6] The sample is limited to repurchases done in the period 2010-2014, however data is collected for the years 2010-2015. Data from 2015 is also collected because it is needed for MTB t+1 and EBIT t+1. The financial data required for the analysis is collected via Orbis. Information about companies that repurchased is collected via Zephyr. By manually searching for ad-hoc announcements and annual reports, repurchases are added to the list to create a larger sample. After a list of companies that repurchased in the period 2010-2014 is created, the reason for the repurchase must be identified. This is done by manually searching for the announcements companies provided. If the company did not disclose the reason within the announcement, I will look at the company's annual report to see if it is stated there. By including several countries and multiple industries a representative sample is created.

4. RESULTS

4.1 Descriptive Statistics

In Table 1 the descriptive statistics of the variables used can be found. From the reasons provided in the announcements, the most notable is the number of announcements that state undervaluation as the reason to repurchase. According to Ikenberry et al. (1995), undervaluation was the most prevalent reason stated by managers when asked for the reason of the repurchase. However, undervaluation was the least stated reason in the announcements provided by companies that are part of this study's sample, representing only 2%. A possible explanation for this is that Ikenberry et al. (1995) conducted their research more than two decades ago and other reasons have become more popular and therefore undervaluation as reason to repurchase is not as common as it used to be. With 33.7% distribution of excess cash was the most stated reason by companies, followed by funding employee options representing 29.6% of the sample.

[6] According to OECD, in terms of GDP in million USD

Table 1 Descriptive statistics

	Mean	Median	St. dev.	Min	Max	N
MTBt	3.919	2.278	3.997	0.452	18.988	98
MTBt+1	4.414	2.753	4.613	0.340	21.861	98
EBITt	0.141	0.111	0.095	0.012	0.478	98
EBITt+1	0.137	0.107	0.092	0.001	0.418	98
DEC	0.34	0	-	0	1	98
NDE	0.10	0	-	0	1	98
UND	0.02	0	-	0	1	98
RCL	0.24	0	-	0	1	98
FEO	0.30	0	-	0	1	98
SLS	15.268	15.345	2.028	10.262	19.711	98

This table shows the descriptive statistics. The sample consists of non-financial listed companies that announced to repurchase their shares including their reason to repurchase from Germany, the Netherlands and the United Kingdom, and covers the period between 2010 and 2014. MTBt is the market-to-book ratio of the company in the year it repurchased shares. MTBt+1 is a company's market-to-book ratio the year after it repurchased shares. EBITt represents a company's earnings before interest and taxes scaled by revenue in the year the company repurchased share, and EBITt+1 is its earnings before interest and taxes the year following the repurchase. SLS is measured by the logarithm of sales. The other variables are dummy variables and represent reasons to repurchase. Companies stating DEC as reason to repurchase are given a score of 1 under DEC and the other reasons 0. The same applies to the other reasons. DEC means distribution excess cash, NDE is neutralizing dilutive effect, UND stands for undervaluation, RCL means reducing capital and FEO means funding employee options.

Table 2 Correlation table

	DEC	NDE	UND	RCL	FEO	SLS
DEC	1					
NDE	-0.240*	1				
UND	-0.103	-0.049	1			
RCL	-0.406**	-0.192	-0.082	1		
FEO	-0.462**	-0.219*	-0.094	-0.369**	1	
SLS	0.063	0.198	-0.053	-0.005	-0.176	1

This table shows the correlation coefficients between the variables employed in the analysis. Definitions of the variables can be found in Table 1. ** and * refer to the statistical significance at the 1% and 5% levels, respectively.

4.2 Correlation

In Table 2 the correlation between the reasons to repurchase and the natural logarithm of sales can be found. It shows a relatively high correlation between DEC and FEO and RCL. Both correlations show statistical significance. Further, we can see there is also relatively high correlation between FEO and RCL that is also statistically significant. Looking at Table 3, high VIF scores are found for these variables thus explaining the high correlation. These VIF scores are found by regressing the reasons to repurchase and the natural logarithm of sales. High VIF scores were found for all the performance measures used in this study, however only the VIF scores found when looking for the relation between the reason to repurchase and MTB is presented in Table 3. The correlations between the other variables are relatively low and also show lower significance levels or none at all.

Table 3 VIF scores

DEC	11.656
NDE	5.476
UND	1.195
RCL	9.841
FEO	10.915
SLS	1.066

This table shows the VIF scores of variables employed in the regression analysis for MTB. Other performance measures also showed high VIF scores, but are not presented in the table. Definitions of the variables can be found in Table 1.

4.3 Regression Results

In Table 4 the results of the regressions are presented. The difference between Panel A and B is the use of year dummies, they are only used in Panel B. The table shows the coefficient, t-value and R^2 of each reason. Further, it shows the expected sign according to the literature. Due to the high VIF scores, presented in Table 3, each reason is regressed separately with the control variable. The coefficients in the table represent the relation each reason has with the performance measures. The use of year dummies changes the value of the coefficients, yet the signs remain unaltered. Also the R^2 is higher in Panel B for all regressions, but this can be explained by the fact that more variables are used in the regression and therefore the explanatory power is greater. The results of the regressions compared to my predictions are mixed, some are consistent with my predictions while others are contradictory. Statistical significance is only found for reasons DEC and FEO. For DEC statistical significance is found for MTB in the year of the repurchase, the following year and also EBIT in the year of the repurchase. For FEO the MTB in the year following the repurchase, and EBIT in the year of the repurchase and the following year are statistically significant. Given that these two reasons had the most observations, it is not surprising that statistical significance is only found for these reasons. NDE and UND had the least observations, 10 and 2 respectively, and therefore it was expected no significance would be found.

Looking at the different reasons separately shows some interesting findings, starting with DEC and FEO. For both DEC and FEO the relation with MTB is as expected, a positive relation for DEC and a negative for FEO. Looking at EBIT, however, shows something different. For FEO a negative relation was expected and is also found. DEC on the other hand does not show a negative correlation where I expected to see one.

Table 4 Regression results

Panel A Without year dummies

	Exp.	MTB t		MTB t+1		Exp.	EBIT t		EBIT t+1	
DEC	+	1.476*	*0.031*	2.023**	*0.044*	-	0.049**	*0.062*	0.029	*0.026*
		(1.733)		(2.072)			(2.456)		(1.456)	
NDE	+	-0.801	*0.004*	-1.137	*0.006*	+/-	0.014	*0.005*	0.021	*0.009*
		(-0.584)		(-0.718)			(0.427)		(0.650)	
UND	+	-0.013	*0.001*	0.978	*0.001*	+/-	-0.004	*0,003*	0.040	*0.008*
		(-0.307)		(0.293)			(-0.056)		(0.607)	
RCL	-	0.026	*0.000*	0.044	*0.000*	+/-	0.004	*0.003*	0.009	*0.006*
		(0.027)		(0.040)			(0.162)		(0.413)	
FEO	-	-1.213	*0.034*	-1.870*	*0.034*	-	-0.063***	*0.092*	-0.053**	*0.071*
		(-1.348)		(-1.815)			(-3.059)		(-2.614)	

Panel B Including year dummies

	Exp.	MTB t		MTB t+1		Exp.	EBIT t		EBIT t+1	
DEC	**+**	1.630*	*0.064*	2.178**	*0.071*	-	0.042**	*0.138*	0.020	*0.106*
		(1.843)		(2.141)			(2.074)		(1.025)	
NDE	**+**	-0.771	*0.032*	-1.144	*0.029*	+/-	0.025	*0.103*	0.033	*0.106*
		(-0.538)		(-0.689)			(0.762)		(1.035)	
UND	**+**	-0.796	*0.030*	1.238	*0.025*	+/-	-0.013	*0.098*	0.036	*0.099*
		(-0.270)		(0.363)			(-0.186)		(0.544)	
RCL	**-**	0.185	*0.029*	0.150	*0.024*	+/-	0.001	*0.098*	0.008	*0.097*
		(0.191)		(0.133)			(0.057)		(0.374)	
FEO	**-**	-1.517	*0.057*	-2.120**	*0.065*	-	-0.056***	*0.164*	-0.047**	*0.147*
		(-1.649)		(-2.005)			(-2.691)		(-2.323)	

This table shows the result of the regression analysis. The sample consists of non-financial listed companies that announced to repurchase their shares including their reason to repurchase from Germany, the Netherlands and the United Kingdom, and covers the period between 2010 and 2014. I show the results of multiple separate regressions for both MTB and EBIT for the periods t and t+1, i.e. each model includes one reason to repurchase (DEC, NDE, UND, RCL or FEO). I include per reason the expected sign based on the literature review, next, I report the coefficients and the (t-values) for the reason and the R^2 (in italics) of the model. Although not reported, all regression models include a constant and Ln(Sales) as a control variable. The regressions in Panel B also include year dummies. All regressions in Panel A and B are based on 98 observations. Definition of the variables can be found in Table 1. ***, ** and * refer to the statistical significance at the 1%, 5% and 10% levels, respectively.

Grullon and Michaely (2004) stated that companies that repurchase in order to distribute excess cash experience a reduction in earnings the following years. I find something different, however this difference might be explained through a lag. I find that the EBIT in the year of the repurchase and the following year is positively related to DEC, but the coefficient decreases substantially. If this trend continues in the same manner for the subsequent year, a negative relation could establish. If this is the case then my findings would suggest a negative relation between DEC and a company's EBIT which would be in accordance with my prediction.

Further, the results of the regression contradict my predictions concerning the MTB of NDE and RCL. I expected the MTB to increase when a company repurchases to neutralize the dilutive effect, however the regression shows a decrease. This could imply several things. One option is that the amount of unvested stock options is not related to the need to neutralize the dilutive effect through a repurchase. Another possibility for the negative market reaction could be that investors deem it unfavorable that employee stock options are awarded due to the decrease in share price that can occur when many stock option exercises happen. It is also possible that the amount of shares repurchased is not sufficient to neutralize the dilutive effect and share prices are still diluted after the repurchase. The regression also shows a result that opposes my predictions regarding RCL. It presents a positive relation, albeit small and insignificant, where I expected a negative. I assumed a negative relation because of the higher leverage ratio reducing capital causes, however it appears that the market reaction does not lead to a decrease in MTB when a company increases its leverage ratio. A possible explanation for this is that in the market's view the increased financial distress of the company is outweighed by the lowered tax burden. This lowered tax burden in its turn can lead to increased profits which results in a positive market reaction.

For the MTB of UND the results are mixed, in the year of the repurchase a negative relation is found, however a positive relation establishes the following year. This is not entirely in accordance with my prediction of a positive impact on MTB when undervaluation is the reason to repurchase, although this difference seems logical. As described by Ikenberry et al. (1995) the average initial market response amounts only to 3%, which is comparable to the daily standard deviation of stock prices. When a buy-and-hold strategy is used the market response becomes much greater, up to 12% over the following four years. Thus the negative relation in the year of the repurchase could be the result of the stock prices still being undervalued. In the following year, when the market had time to respond efficiently, the market response becomes evident and a positive relation establishes.

There were no predictions involving the EBIT of NDE, UND and RCL. A notable thing in the results are the signs of the coefficients for these reasons, they are exactly the same for EBIT as for MTB. For both NDE and RCL the results are positive for both years, where UND first shows a negative correlation which changes in positive the following year. The positive relation between NDE and EBIT can be the result of the stock-based compensation used by companies. Repurchases for this reason become more likely when employees hold many stock options. If stock options are used as a substitute of normal wage, the company saves money which leaves more room for profit and thus an increased EBIT. The relation between RCL and EBIT might be justified by the decrease of equity. For every company there is a cost of equity. When the equity is lowered, the cost of equity lowers with it. This decrease in costs could lead to more profit and therefore a higher EBIT, hence the positive relation. The positive relation in the year following the repurchase for UND might be the result of the company's future prospects. The managers that announce undervaluation as the reason to repurchase can have inside information about what will happen the following year. If they have profitable projects lined up, the current market price might not be in accordance with the price that it should be according to the manager. When these profitable projects are carried out, the company's profit can increase therefore realizing a higher EBIT.

5. CONCLUSION

Companies can repurchase their shares for several different reasons, each one having different implications on the company. These different reasons all arise from different needs ranging from the distribution of excess cash to the reduction of capital and therefore should also have different impacts on the company.

In this study I looked at how the reason to repurchase influences company performance, measured by a company's market-to-book ratio and its earnings before interest and taxes. This was done by looking at a sample of 98 non-financial listed companies that announced to repurchase their shares including their reason from Germany, the Netherlands and the United Kingdom in the period 2010-2014. From the relation between company performance and the five reasons discussed, only two turned out to be significant, although this could be the result of a relatively small sample size. My results suggest that a positive market reaction can be expected when a company repurchases its own shares if it wants to distribute excess cash, which is in accordance with my predictions arising from the literature and also showed significance. It also suggests that a positive market reaction can be expected if a company repurchases to reduce its capital, however no significance was found here. Undervaluation as the reason to repurchase also shows a positive market reaction, however this only becomes evident in the year following the repurchase. Further, if a company repurchases to acquire shares that are later used to compensate employees with stock options, a negative market reaction can be expected according to my results which showed significance. My results also suggest a negative market reaction if a company repurchases to neutralize the dilutive effect of stock option exercises.

Furthermore, according to my results a company's EBIT is expected to increase if a company repurchases in order to neutralize the dilutive effect of stock option exercises, reduce capital or distribute excess cash, the latter showing significance. My results suggest a repurchase on grounds of undervaluation also leads to an increase in EBIT but only in the year after the repurchase. Beside this I find a negative, significant relation between EBIT and the company repurchasing in order to fund employee options.

Overall, my results that showed significance were almost all in accordance with the predictions resulting from the literature review. The other, insignificant, results for the most part did not match my predictions. This insignificance could be the result of a relatively small sample size of 98 companies. A suggestion for further research is to use a larger sample size that includes more countries and looks at a longer period. By doing so it is more likely to find statistically significant results which will create a better understanding of the relation between the reason to repurchase and company performance.

6. REFERENCES

Babenko, I. (2009). Share repurchases and pay-performance sensitivity of employee compensation contracts. *The Journal of Finance, 64*(1), 117-150.

Bagwell, L. S. (1991). Share repurchase and takeover deterrence. *The Rand Journal of Economics, 22*(1) 72-88.

Bens, D. A., Nagar, V., Skinner, D. J., & Wong, M. F. (2003). Employee stock options, EPS dilution, and stock repurchases. *Journal of Accounting and Economics, 36*(1), 51-90.

Bens, D. A., Nagar, V., & Wong, M. (2002). Real investment implications of employee stock option exercises. *Journal of Accounting Research, 40*(2), 359-393.

Core, J. E., Guay, W. R., & Kothari, S. (2002). The economic dilution of employee stock options: Diluted EPS for valuation and financial reporting. *The Accounting Review, 77*(3), 627-652.

Dittmar, A. K. (2000). Why do firms repurchase stock. *The Journal of Business, 73*(3), 331-355.

Feldstein, M., & Green, J. (1983). Why firms pay dividends. *American Economic Review, 73*, 312-328.

Grullon, G., & Ikenberry, D. L. (2000). What do we know about stock repurchases? *Journal of Applied Corporate Finance, 13*(1), 31-51.

Grullon, G., & Michaely, R. (2002). Dividends, share repurchases, and the substitution hypothesis. *The Journal of Finance, 57*(4), 1649-1684.

Grullon, G., & Michaely, R. (2004). The information content of share repurchase programs. *The Journal of Finance, 59*(2), 651-680.

Hackethal, A., & Zdantchouk, A. (2006). Signaling power of open market share repurchases in Germany. *Financial Markets and Portfolio Management, 20*(2), 123-151.

Ikenberry, D., Lakonishok, J., & Vermaelen, T. (1995). Market underreaction to open market share repurchases. *Journal of Financial Economics, 39*(2), 181-208.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(2), 323-329.

Kahle, K. M. (2002). When a buyback isn'ta buyback: Open market repurchases and employee options. *Journal of Financial Economics, 63*(2), 235-261.

Opler, T. C., & Titman, S. D. (1996). Financial distress and capital structure choice. *Research in Finance, 14*, 1-12.

Stephens, C. P., & Weisbach, M. S. (1998). Actual share reacquisitions in open-market repurchase programs. *The Journal of Finance, 53*(1), 313-333.

Vermaelen, T. (1981). Common stock repurchases and market signalling: An empirical study. *Journal of Financial Economics, 9*(2), 139-183.