Managerial Statements And Share Performance Of Open Market Share Repurchases

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The unique Listing Rules of the London Stock Exchange, UK company law and UK managers' behaviours with regard to share repurchases make the examination of the implication of the traditional signalling models tenable. Managerial statements have an information role in share performance when actual repurchases are observable to the market. The initial market reaction is unrelated to managerial statements while long run abnormal returns are clearly influenced by managerial statements. Our results suggests that UK share repurchases are mainly motivated by firms using actual repurchases to stabilise underpriced shares, adjust capital structure and by value firms to improve earnings per share.

Keywords: Open market share repurchases; traditional signalling theory; long run abnormal returns; repurchase reasons

JEL Classification: G14; G35

1. Introduction

Theoretical signalling models (Bhattacharya (1979); Miller and Rock (1985); Vermaelen (1984)) have rarely been used to examine the motivations of open market share repurchases. As Lie (2005) points out, the problem with traditional signalling models in the context of announcements of open market share repurchase programmes is that such announcements do not commit the firm to actually repurchase shares. Thus, traditional signalling models become untenable in the absence of signalling cost. Likewise, Peyer and Vermaelen (2009) suggest that theoretical signalling models would not predict that managerial statements have a predictive capacity because "talk is cheap" even though they assume that lying is not a costly activity. In addition, managerial statements surrounding US repurchase

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announcements are difficult to collect. Ikenberry, Lakonishok and Vermaelen (1995), for example, are unable to identify repurchase reasons for 85% of their data. Peyer and Vermaelen (2009) have collected more repurchase reasons for their sample, 3,481out of 5,348 events.

The purpose of this study is to investigate the motivations of UK open market share repurchases in the context of theoretical signalling models. To do so, we examine the link between managerial statements and share performance of UK open market share repurchases. UK open market share repurchases are chosen specially for several reasons. First, the number of UK repurchases each year is smaller than that of US repurchases so it is relatively easy to hand-pick information such as repurchase reasons through various resources. Moreover, UK managers often explain their action for actual repurchases in the financial news or/and Annual Reports. This unique aspect of UK open market share repurchases enables us to investigate the empirical implications of theoretical signalling models. Second, unlike US actual repurchases, UK actual repurchases are readily observable to market participants because UK firms need to file their actual repurchases with the London Stock Exchange no later than 12.00 the next business day. In addition, UK repurchases have a shorter authorisation period than US repurchases, a 12-month rather than 3 years to implement actual repurchases. Thus, the UK market can soon find out whether managers are committed to actual repurchases and whether managers are honest about repurchase reasons at the announcement. Third, it is important to understand UK open market share repurchases since UK firms are the most prolific share repurchasers in the European Union (Von Eije and Megginson (2008)).

In this paper, we examine the impact of repurchases reasons stated by managers at the announcement or later on in other financial news or/and in Annual Reports on share performance surrounding and following the announcement. We propose three hypotheses. First, repurchase reasons mentioned at the announcement or later on should have similar influence on share performance in the short-term and long-term because managerial statements do not commit firms to repurchase shares in the future and the fact that managers are not interested in publicizing repurchase reasons at the announcement. Second, repurchase reasons cannot influence the initial market reaction because the market and managers are both unable to predict the size of actual repurchases at the announcement due to ever-changing financial and economic situations. Third, repurchase reasons influence long run share performance of repurchasing firms in the presence of actual repurchases. The relationship between repurchases reasons and long run share performance will disclose the motivations of share repurchases. This paper is the first to explore multiple motivations of UK repurchases, such as, share undervaluation, disgorging free cash flows, managing capital structure and improving earnings per share by evaluating cross-sectional differences in the initial market returns and the long run abnormal returns.

Relying on various resources, we collect 468 open market share repurchases announced between January 1999 and December 2004. We then read all information relating to the repurchase announcements by searching through the Financial Times, Annual Reports, Annual General Meeting Circulars, and Regulatory News Services and identify repurchase reasons for 443 cases. The majority of managers in our sample do not mention repurchase reasons at the announcement and the timing of repurchase reasons announced has no material impact of short-term and long-term share performance. We consider the initial market returns first. Consistent with the literature, the average market reaction to repurchase announcements is positive and statistically significant. However, the initial market reaction seems to be unrelated to characteristics of firms and repurchases such as size, book-to-market and the percentage of repurchase. Particularly, the initial market reaction is not affected by repurchase reasons mentioned by managers either at the announcement or later on in other financial news or/and in Annual reports. It seems that the initial market reaction is a response to possible future actual repurchases.

We then investigate the long run abnormal returns. Consistent with the literature, the long run abnormal returns of repurchasing firms are positive and significant. We find abnormal share performance of 2.71% (p=0.098) in the first year following the announcement, the so called authorisation period, controlling for both size and book-to-market. Two years following announcements, the abnormal compounded return is 10.44% (p=0.003). During the authorisation period, we find a strong relationship between abnormal returns and repurchase reasons. Firms whose repurchase reasons are undervaluation and capital structure change are likely to suffer from a significant share underperformance during the authorisation period. It is hardly a surprise since several studies (Stephens and Weisbach (1998); Dittmar (2000); Ikenberry, Lakonishok and Vermaelen (2000)) show that share price drops usually take place before actual repurchases. If managers believe that their shares are underpriced, they will repurchase shares to stabilize share prices. Similarly, underpriced shares can make the equity financing expensive and make managers feel a need to readjust capital structure through actual repurchases.

Consistent with previous studies of long run abnormal returns, we find some evidence to suggest that the market reacts slowly to actual repurchases. First, firms whose repurchase reasons are share undervaluation and capital structure change suffer less share underperformance following the authorisation period while firms whose repurchase reason is cash rich experience a reverse return pattern, from significantly negative -4.52% in 12-month to insignificant positive 11.87% in 24-month. Second, the size of actual repurchases begins to influence long run abnormal returns in a positive though insignificant way following the authorisation period. These results hold after controlling for size, book-to-market, and other known factors that affect long run share performance. Third, value firms (high book-to-market ratios) attract a positive and significant return drift two years following the announcement. We further investigate the impact of repurchase reasons on long run abnormal returns of value firms. Abnormal returns in the first year are high among value firms which wish to improve earnings per share or plan to distribute free cash flows. This result seemingly supports the free cash flow hypothesis. Overall, empirical results indicate that UK open market share repurchases are largely motivated by firms which believe that they suffer from share undervaluation or/and intend to alter capital structure. In addition, the UK market seems to reward value firms which resort to repurchases to improve earnings and distribute free cash.

This study contributes to the literature along several dimensions. First, this study validates the implications of theoretical signalling models, which has never been examined cross-sectionally in the context of open market share repurchases in prior literature. Our results reveal that managerial statements do have an impact on abnormal returns in the authorisation period (one year following the announcement) in the presence of signalling cost (actual repurchases). Second, this paper extends the literature by exploring the possible influence of multiple motivations on UK share repurchases. Previous papers (Rau and Vermaelen (2002); Oswald and Young (2004)) explain the motivations of UK repurchases using the taxation preference hypothesis or the share undervaluation hypothesis while this paper examines whether share performance of UK repurchases is influenced by four motivations simultaneously. Third, this research is related to the literature linking long run share performance with book-to-market ratios (Ikenberry, Lakonishok and Vermaelen (1995); Zhang (2005); Peyer and Vermaelen (2009)). The current paper reveals that UK value firms on average attract a higher positive and significant abnormal return than glamour firms following the announcement. In addition, we extend this literature by demonstrating that repurchase reasons have different influences on long run abnormal returns among value firms.

The rest of the paper proceeds as follows. Section 2 discusses the development of hypotheses while the data and variables are described in Section 3. Section 4 presents empirical results and Section 5 concludes.

2. Hypotheses

A share repurchase programme can be considered as a two-stage financial activity. First, managers decide to announce a repurchase programme. Second, managers decide to implement the repurchase programme through actual repurchases following the announcement. Repurchase announcements do not naturally result in following-up actual repurchases because managers can choose not to repurchase any shares in the market or discontinue actual repurchases at any time following the announcement.

At the announcement, managers do not have obligations to tell the market about the reason for a repurchase. It is common that repurchase news some time contain no information about repurchase reasons. For example, Peyer and Vermaelen (2009) are unable to find any information for 1,623 repurchases at the time of the announcement. In this study, managers declare repurchase reasons in just 26% of cases at the announcement. The majority of managers explain repurchase reasons later on in other financial news or Annual Reports when the implementation and the amount of actual repurchases are reported to shareholders and the market. It seems that managers do not consider the timing of announcing repurchases reasons as important. The reason why managers are so unvocal at the announcement may originate in the fact that the market knows the flexible nature of open market share repurchases so does not react to a repurchase on the basis of managerial statements made at the announcement. On the other hand, managerial statements made later on are used to explain actual repurchases which already happened. Managerial statements made later on are the same as managerial statements made at the announcement in that these statements do not guarantee future actual repurchases. So, why do some managers mention repurchases reasons at the announcement while others do so later on? It is possible that some mangers wish to draw the attention of the market early on, say, around the announcement because of share undervaluation. However, without the signalling cost (actual repurchases), these managerial statements are unlikely to influence share performance in a way that managers expect. It is likely that these managerial statements will affect share performance in a similar way as managerial statements made following the announcement. Managers are aware that as soon as actual repurchases take place, the market will figure out the motivations of repurchases (repurchase reasons). The pattern of actual repurchases may be untraceable in the US market, however, UK firms are obligated to report their actual repurchases including the number of shares and share prices to the London Stock Exchange the following business day. Thus, it makes no sense for managers to declare false repurchase reasons at the announcement or following the announcement since mangers have an option of remaining silent and lying is not a cost-free activity.

At the announcement, the market cannot predict the size of actual repurchases following the announcement. On the other hand, managers prefer repurchases to dividends mainly because of their flexible nature with regard to actual repurchases (Brav, Graham, Harvey and Michaely (2005)). It is impossible to foresee actual repurchases for the market and managers because financial situations in firms and economic situations as a whole change rapidly. For example, some profitable investment opportunities might arise following the announcement so managers have to abandon repurchases. Similarly, managers would like to keep cash rather than repurchase shares if general economic situations make borrowing and cash generation from operations difficult. Thus, we pose the following hypotheses:

H1: share performance in short-term and long-term should not be affected by the timing of managerial statements because management statements do not guarantee actual repurchases.

H2: the initial market returns are unrelated to repurchase reasons due to the lack of the signalling cost (actual repurchases) at the announcement. The market and managers are both unable to predict the size of actual repurchases at the announcement due to ever-changing financial and economic situations.

Traditional signalling models become tenable in the presence of the signalling cost (actual repurchases) while the motivations or the reasons of repurchases can only be materialized through the implementation of actual repurchases following the announcement. Repurchase reasons contained in managerial statements will begin to influence share performance following the announcement when actual repurchases take place. Prior literature reveals the existence of long run abnormal returns generated by repurchasing firms and suggests that the market is inefficient either by overreacting to bad news prior to announcements or by underreacting to repurchase news at announcements (Peyer and Vermaelen (2009); Chan, Ikenberry and Lee (2004); Ikenberry, Lakonishok and Vermaelen (1995)). This study does not intend to examine the efficiency of the market at the announcement or following the announcement. Instead, this paper is to suggest that traditional signalling models are able to explain the long run abnormal returns because of the implementation of actual repurchases. Repurchase reasons disclose the aims or motivations of repurchases and the benefits that firms wish to obtain through actual repurchases. Therefore, the long run abnormal returns are related to repurchases reasons. For example, if managers believe that share prices drop below their intrinsic value, they will use repurchases to maintain or stabilize share prices from sliding down too far. Likewise, repurchases can be used to alleviate the agency costs of free cash flows among firms whose profitable investment opportunities are limited. Actual repurchases can also help to adjust capital structure to its optimal level or temporarily lift up earnings per share. The above discussion leads to the following hypothesis:

> **H3**: the long run abnormal returns are related to repurchase reasons when the signalling cost (actual repurchases) is clear to the market and investors. The relationship between the long run abnormal returns and repurchases reasons discloses the motivations of repurchases.

3. Data and Variables

3.1. Data

Panel A of Table 1 summarizes the formation of our sample. As there is no UK equivalent of the Wall Street Journal Index, our sample is collected from various resources, such as the Financial Times, FAME, Regulatory News Service (RNS) provided by Hemscott and companies' annual reports. The use of various resources ensures that the sample includes but does not overestimate open market share repurchases announced in the time period. First, all repurchase announcements published by the Financial Times for the sample period are collected by using keywords like "share buybacks" and "share buy-back", while repurchase announcements made by close-fund investment trusts as well as announcements of tender offers and preferred share repurchases are excluded from the sample. This process yields 219 open-market share announcements. Second, as the Financial Times focuses on the medium to large companies, the FAME database is used to supplement the sample. FAME keeps all stock data of all UK publicly quoted firms (including live and dead firms). A search of the FAME UK publicly listed companies' stock data yields 317 cases whose reported year-end outstanding shares decreased at least once on a yearly basis between 1999 and 2005. Third, companies' annual reports and the RNS (Hemscott) are used to check the nature of these repurchases. With the aid of companies' annual reports, 162 out of 317 firms announcements are found to be unrelated to open market share repurchases, while the rest of the firms announced 213 open market repurchases during the sample period. 36 more open market share repurchase announcements are added to the sample after checking these companies' RNS (Hemscott). A direct search of open market share repurchases through the RNS could result in overestimation of sample size. As required by the Listing Rules of the London Stock Exchange, UK companies that repurchase shares in the market need to provide the news containing the number of shares repurchased and the prices paid for shares the following day to the London Stock Exchange, which then publishes the repurchase information on the RNS. British Petroleum (BP), for example, could have hundreds of share repurchase news items on the RNS in a single financial year, but as a matter of fact all of these are executed under one authorisation right. Therefore, unlike in Oswald and Young (2004) the RNS is not used here directly to search for open market repurchase news. Our initial sample consists of 468 open market share repurchases. Panel A of Table 1 shows the number of repurchase announcements collected from each of the above sources.

We then collect repurchase reasons for 468 cases from the FT, the RNS, AGM (Annual General Meeting) circulars and Annual Reports. Repurchase reasons for the rest are classified into the following categories:

1. Share undervaluation: Managers explicitly mention of low current share price, low shareholders' return, share underperformance, undervaluation and low net asset value per share.

2. Distribution of free cash flows: Managers explain repurchases because of cash rich or as a way to distribute excess cash reserve or returning excess capital. Managers often pledge to share repurchases prior to property disposals. This category also includes the cases when managers commit to share repurchases due to the lack of merger and acquisition opportunities.

3. Capital structure change: Managers state the desire to change capital structure, either by increasing borrowings to repurchase shares, lowering capital cost or adjusting capital structure to a pre-determined level.

4. Earnings per share enhancement: Managers explicitly express the need to strengthen earnings per share.

5. Company reorganisation: The repurchase is part of a company reorganisation.

6. Pressure from shareholders: Financial Times report that repurchases are sought by rebellious shareholders who seek capital gain

7. Liquidity improvement: Managers realise the low liquidity of their shares in the stock market and offer shareholders a chance to liquidate their capital.

8. Other reasons: Reasons are not included in the previous categories.

In 25 cases, no motivation was given at the time of the announcement or following the announcement. On the other hand, managers sometimes cite multiple reasons in the announcements and Annual Reports. Managers for instance mention two reasons for share repurchases in 122 cases while in 4 cases three reasons are given by managers. Panel B of Table 1 shows the frequency of each motivation and the frequency of one motivation mentioned together with any of the other six motives. For example, 39 announcements cite undervaluation together with one of other six motives. In total, 119 repurchases cite undervaluation as the repurchase reason (or one of the reasons). The second most cited reason is earnings per share enhancement (115 cases) and it is followed by reasons such as cash rich (109) and capital structure adjustment (79). Aside from these four main reasons, other reasons are cited in only 32 cases.

Table 1
Sample Selection

Panel A: UK open market share repurchases from 1999 to 2004

	Keywords or sections search	Raw results	Repurchases
The FTs	Share buy-back or share buybacks	1,163	219
FAME	Report sections: stock Data-annual stock data	317	213
RNS	Select companies: AGM/EGM; share buybacks; repurchase of own shares	189	36
Total		1,669	468

Panel B: Frequency distribution of repurchase reasons

No of motivates per announcement	Undervalued	EPS	Cash rich	Capital structure	Pressure from shareholders	Liqu
1	79	75	96	45	5	1
2	39	36	13	25	6	
3	1	4	0	2	1	
Total	119	115	109	72	12	1

Panel C: Description statistics for UK repurchases

		Size quartiles				Book-to-Market quintiles					Missing	Negative
Year	**N**	**Small Size 1**	**Size 2**	**Size 3**	**Large Size 4**	**Lowest BTMV 1**	**BTMV 2**	**BTMV 3**	**BTMV 4**	**Highest BTMV 5**	**BTMV**	**BTMV**
1999	65	4	9	19	29	5	5	14	10	27	2	2
2000	73	6	8	18	35	2	2	11	18	34	4	2
2001	69	3	15	19	30	4	5	13	17	28	1	1
2002	93	6	16	24	41	11	12	14	23	27	2	4
20	8	4	14	11	49	13	10	13	14	28	0	2

03	0											
2004	88	3	10	11	57	22	15	10	17	17	2	5
Total	468	26	72	102	241	57	49	75	99	161	11	13

Panel A summarizes the number of repurchases collected from the Financial Times (FTs), FAME and Regulatory News Service (RNS) for the period between January 1999 and December 2004. The table also reports the keywords and key sections that are used to search for repurchase announcements from the Financial Times, FAME and Regulatory News Service (RNS).

Panel B reports the number of cases per repurchase reason for firms that announced open market share repurchases between1999 and 2004. Repurchase reasons for each repurchase are determined by reading ether repurchase news, or financial news and Annul Reports. We classify repurchase reasons into the following 8 categories:

1. Share undervaluation: Managers explicitly mention of low current share price, low shareholders' return, share underperformance, undervaluation and low net asset value per share.
2. Distribution of free cash flows: Managers explain repurchases because of cash rich or as a way to distribute excess cash reserve or returning excess capital. Managers often pledge to share repurchases prior to property disposals. This category also includes the cases when managers commit to share repurchases due to the lack of merger and acquisition opportunities.
3. Capital structure change: Managers state the desire to change capital structure, either by increasing borrowings to repurchase shares, lowering capital cost or adjusting capital structure to a pre-determined level.
4. Earnings per share enhancement: Managers explicitly express the need to strengthen earnings per share.
5. Company reorganisation: The repurchase is part of a company reorganisation.
6. Pressure from shareholders: Financial Times report that repurchases are sought by rebellious shareholders who seek capital gain
7. Liquidity improvement: Managers realise the low liquidity of their shares in the stock market and offer shareholders a chance to liquidate their capital.
8. Other reasons: Reasons are not included in the previous categories.

Panel C summarises the number of open market repurchases by year, size and book-to-market ranks. At the end of June each year, all UK listed companies with above or equal to zero book-to-market ratios on DataStream are initially divided into four size quartiles and each size quartile contains 25% of all stocks. Size quartile 1 consists of the top 25% smallest companies while size quartile 4 constitutes the bottom 25% largest companies. Then each size quartile is further divided into 5 quintiles on the basis of book-to-market ratios and each quintile contains 20% of all companies in a given size quartile. The 20% of all companies with the lowest book-to-market ratios in a given size quartile are assigned to quintile 1 while quintile 5 contains the 20% of all companies with the highest book-to-market ratios in the given size quartile. This allocation procedure results in 20 reference portfolios each month.

Size and book-to-market ranks of sample firms are determined against these 20 portfolios at the announcement.

3.2 Variables

3.2.1 Dependant Variables

To examine the hypotheses in Section 2, the initial market return and long run share performance are measured and used as dependant variables:

Initial market returns (CAR -2, +2): A 51-day event window is used in this study, comprising 36 pre-announcement days (-40, -3), 5 announcement days and 10 past-announcement days. The market adjusted model is used for the initial market return estimation. The FTSE Non-financial Index is used to proxy the market. For each sample firm, the market adjusted model is estimated by using share mid-prices in the 51-day event window to subtract the corresponding share prices of the market index. The conventional *t*-tests are used to interpret significant level.

Long run buy-and-hold abnormal returns: Monthly windows up to one and two years are used to investigate long run share performance following the announcement. An authorisation right in the UK gives firms a 12-month duration to repurchase shares in the market. Thus, one and two-year abnormal returns are measured. Long run abnormal returns are very sensitive to the benchmark and the procedure used (Barber and Lyon (1997); Lyon, Barber and Tsai (1999); Mitchell and Stafford (2000)). Lyon, Barber and Tsai (1999) recommend an equally-weighted buy-and-hold return should be used to measure long-run abnormal share returns. Furthermore, they argue that the power and specification of test statistics for detecting long run abnormal returns is better represented using the empirical bootstrapping *p* values which are employed in Ikenberry, Lakonishok and Vermaelen (1995). This paper follows Ikenberry, Lakonishok and Vermaelen (1995) and Lyon, Barber and Tsai (1999) to measure and interpret long run abnormal returns. Equally-weighted buy-and-hold abnormal returns are calculated relative to matched equally-weighted reference portfolios conditional on firm size and BTMV ranking at the announcement. Reference portfolios are built according to size and book-to-market ratios. All listed firms on the London Stock Exchange and AIM are used to form 20 reference portfolios at the end of each June. Size quartile 1 consists of the top 25% smallest firms while size quartile 4 constitutes the bottom 25% largest firms. Then each size quartile is further divided into 5 quintiles on the basis of book-to-market ratios and each quintile contains 20% of all firms in a given size quartile. The 20% of all companies with the lowest book-to-market ratios in a given size quartile are assigned to quintile 1 while quintile 5 contains the 20% of all firms with the highest book-to-market ratios in the given size quartile. Following Ikenberry, Lakonishok and Vermaelen (1995), statistical inference of the one year and two-year equally-weighted buy-and-hold abnormal returns is done via bootstrapping and empirical *p* values.

3.2.2 Independent Variables

Pre-announcement returns (CAR -40, -3): Prior studies (Ikenberry, Lakonishok and Vermaelen (1995); Chan, Ikenberry and Lee (2004); Peyer and Vermaelen (2009)) show that repurchasing firms tend to suffer from a recent share undervaluation. To control the impact of mean reversion arising from negative returns prior to the announcements, we include pre-announcement returns into the regression analysis. Pre-announcement returns are measured in the same manner as the initial market return.

Size and BTMV ranking: All listed firms on the London Stock Exchange and AIM are used to determine the size quartile and BTMV quintile cut-off values at the end of each June. All sample firms are sorted into size quartiles and BTMV quintiles relative to the cut-off values at the announcement. Largest firms are in size quartile 1 while value firms are in BTMV quintile 5. Panel C of Table 1 reports the number of open market repurchases by size and book-to-market ranks.

Percent: The percentage of shares sought by managers at the announcement date. Following Comment and Jarrell (1991) and Ikenberry, Lakonishok and Vermaelen (1995), we use this variable to examine the possible impact of percentage shares announcement on the initial market returns and long run abnormal returns.

Log (1+ % Completion rate): completion rate of an open market share repurchase is calculated as a percentage, representing the amount or the number of shares repurchased in the authorisation period (12 months) relative to the size of the repurchase announced. It is relatively easy to identify the number of shares repurchased in the authorization period for a UK open market share repurchase programme because of law and LSE regulations. As required by the Companies Act 1985, UK listed firms need to report the amount of shares repurchased during the financial year in their Annual Reports. In addition, all actual repurchases are also reported in detail on RNS (Hemscott). However, there are some impediments for calculations of completion rate. If firms repurchase shares in several consecutive years, repurchases reported in Annual reports sometimes are overlapping. In this case, we resort to the RNS to clarify the amount or numbers of repurchases for each authorisation period. Another problem is that some firms' annual reports are gone missing while repurchase news are not recorded on the RNS (Hemscott) because these firms are delisted. Due to these obstacles, we are unable to compute completion rate for 84 cases. After computing completion rate, we add 100% to completion rate and then log transform (1+ completion rate) to control the boundary nature of completion rate (0% to 100%).

Repurchase reason dummies: Panel B of Table 1 reveals four dominant reasons mentioned by managers. Since other reasons do not represent a majority of the data, we construct four dummy variables to be included into the regression analysis. These are undervaluation (SU), cash rich (CR), EPS enhancement (EPS) and capital structure adjustment (CS). Undervaluation dummy variable is equal to one if the repurchases cited share undervaluation as the reason or one of the reasons and zero otherwise. The other three reason dummy variables are constructed in the same manner.

Timing of repurchase reasons mentioned dummy variable (RAD): Repurchase reasons were cited at the announcements in 126 cases while in 317 cases repurchase reasons are mentioned following the announcement. It is possible that repurchase reasons mentioned at the announcements can influence share performance differently from repurchases reasons mentioned later on. Therefore, a dummy variable is built to examine the relationship between share performance and the timing of repurchases reasons mentioned. This dummy variable is equal to one if repurchase reasons are cited at the announcement and zero otherwise.

Finally, two dummy variables are constructed to accommodate the law change in December 2003 and two types of announcement dates used in the paper.

Year dummy: In December 2003, the Companies Act 1985 was changed to allow repurchased shares to be treated as treasury shares which could then be sold in the market later on. As changes in tax and regulations have played a huge role in the swing between dividend and share repurchases both in the US (Bagwell and Shoven (1989); Fama and French (2001)) and the UK (Rau and Vermaelen (2002)), it is necessary to analyse the nature of announcement abnormal returns for these two time periods, from January 1999 to December 2003 and from January 2004 to December 2004. The year dummy variable is designed to capture the impact of the law change in December 2003 and is equal to 0 for the repurchases announced between January 1999 and December 2003 and 1 for the repurchases announced between January 2004 and December 2004.

Announcement type dummy: Unlike US share repurchases, UK repurchases do not have a universally defined announcement date. Previous studies (Rees (1996); Rau and Vermaelen (2002)) suggest several definitions of announcement dates for UK open market share repurchases. Since this paper focuses on the analysis of announcement period return upon the announcement of a repurchase, the repurchase completion date is excluded from the study. We analyse two kinds of announcements. Following Rau and Vermaelen (2002), we regard the repurchase intention date as the announcement date, the date when a repurchase announcement is first published on the RNS (Hemscott) and/or the Financial Times. When the repurchase intention date is untraceable, we use an alternative announcement date which is the shareholders' general meeting (Annual General Meeting or Extraordinary General Meeting) date. An authorisation right of a repurchase for a UK company is granted by shareholders at the Annual General

Meeting or the Extraordinary General Meeting. The announcement type dummy variable is designed to differentiate the impact of these two kinds of announcement dates and is equal 1 for the repurchase intention date and 0 for the AGM and EGM date.

4. Emprical Results

4.1 Announcement Market Returns

Table 2 reports short-term abnormal returns surrounding the announcement. Panel A of Table 2 shows pre-announcement (CAR -40, -3) and announcement abnormal returns (CAR -2, +2) by year. The median values of size rank, BTMV rank and the percentage of shares sought at the announcement are also reported by year in Panel A of Table 2. It is evident that the majority of UK repurchasing firms are large with high book-to-market ratios (value firms). The median percentage of shares sought at the announcements is rather stable across the sample period, 10% in years 1999 and 2004, 11% in years 2002 and 2003 and 12% in years 2000 and 2001. The number of repurchases announced changes slightly across the sample period, from 65 in 1999 to 93 in 2002. Except the year 1999, there are positive and mainly statistical significant abnormal returns prior to the announcement between 2000 and 2004. The average pre-announcement abnormal return is 2.27, statistically significant at a 1% level. The initial market reaction, measured from two days before through two days after the announcement, is positive and significant in most of the sample years. The average five-day announcement abnormal return is 1.33, significant at a 1% level.

Panel B of Table 2 also reports short-term announcement returns according to the timing of repurchases reasons announced, the number of motivates per announcement, repurchase reasons, announcement type and announcement year. It looks like firms which suffer from pre-announcement undervaluation (-1.06%, statistically insignificant) are more willing to provide the reasons for repurchases at the announcement than firms which do not suffer from pre-announcement share underpricing (3.90%, *p*=1%). When the whole sample is divided by repurchase reasons, there is no evidence to suggest that the initial market reaction is influenced by repurchase reasons. For the 119 cases in which undervaluation is the only one or one of the reasons mentioned, both the return drift prior to the announcement (2.66%, *p*=5%) and the market reaction at the announcement (1.20%, *p*=5%) are not much different from that of the 115 cases in which earnings per share improvement is the reason mentioned (3.13%, *p*=1%; 1.24%, *p*=5%) or of the 72 cases in which capital structure change is the reason mentioned (2.35%, *p*= 10%; 1.85%, *p*=10%). For the 109 cases in which cash rich is the reason mentioned, short-term abnormal returns around the announcement are positive but statistically insignificant.

Table 2
Abnormal returns on and prior to the announcement of open market share repurchases from 1999 and 2004

Panel A Abnormal returns reported by year and summary statistics

Year	n	Size Quartile	BTMV Quintile	Percent	Pre (-40, -3) CAR	Five-day CAR
1999	65	3.20	3.80	10%	-3.41*	1.91***
2000	73	3.22	4.19	12%	4.02**	1.41
2001	69	3.13	3.90	12%	4.77***	1.58**
2002	93	3.15	3.49	11%	4.29***	2.20***
2003	80	3.35	3.44	11%	2.81**	-0.35
2004	88	3.51	2.90	10%	0.37	1.32**
Total	468	3.27	3.59	11%	2.27***	1.33***

Panel B Abnormal returns reported by the timing of repurchase reasons announced, number of motivations per announcement, repurchase reasons, announcement type and year

		n	Pre (-40, -3) CAR	(-
Timing of repurchase reasons mentioned	Motivate mentioned at the announcement	126	-1.06	1
	Motivate mentioned later on	317	3.90***	1
No of motivates per announcement	No motivate	25	-1.57	
	One motivate mentioned	317	2.65***	1
	Two motivates mentioned	122	2.22**	
	Three motivates mentioned	4	-2.35	
Repurchase reasons	Undervaluation	119	2.66**	1
	EPS enhancement	115	3.13***	1
	Cash rich	109	1.56	
	Capital structure adjustment	72	2.35*	
	The rest	32	2.37	2

Announcement type	Announcements	171	-0.80	1
	AGM/EGM	297	4.04***	1
Announcement year	1999-2003	380	2.71***	1
	2004	88	0.37	[illegible]

Panel A reports announcement returns and the median values of size rank, BTMV rank and the percentage of shares sought at the announcements by year.
Panel B shows Abnormal returns reported by the timing of repurchase reasons announced, number of motivations per announcement, repurchase reasons, announcement type and year. Repurchase reasons are classified into 8 categories as described in Panel B of Table 1. The first subgroup consists of 119 cases that repurchases are used due to share undervaluation. The second subgroup contains 115 firms which wish to use repurchases to enhance earnings per share. The third subgroup comprises 109 firms that repurchases are used to distribute free cash flows, while the fourth subgroup contains 72 firms which plan to mange capital structure through repurchases. The rest includes firms that repurchase reasons do not fall into these four subgroups. Two announcement types: the repurchase intention date and AGM/EGM date. The repurchase intention date is the first time that a repurchase or an intention for a repurchase is known to the market. The AGM/EGM date is used as alternative date if the repurchase intention date is untraceable. The AGM/EGM date is the date when a AGM or EGM is held to pass the resolution for a repurchase.

To clarify the nature of the initial market reaction, we regress five-day announcement abnormal returns on various factors. The results are shown in Table 3. The regression results are largely consistent with the results reported on Table 2. The initial market reaction is unrelated to the timing of repurchase reasons mentioned (RAD), repurchase reasons (CRD, CSD, EPSD and SUD), announcement type and announcement year. The results support hypotheses 1 and 2. First, the timing of repurchase reasons given by managers makes no impact on the initial market returns. Second, the initial market reaction is unrelated to repurchase reasons due to the lack of the signalling cost (actual repurchases). Furthermore, announcement abnormal returns are not influenced by size rank, BTMV rank and the percentage of shares sought at the announcement. In fact, the initial market reaction is positive and statistically significant but is not correlated to various firm and announcement characteristics. As mentioned in Section 2, open market share repurchase announcements do not guarantee future actual repurchases. Without actual repurchases, no motivates mentioned at the announcement or later on can be realised and economic benefits of actual repurchases are not clear to the market at the announcement. Since actual repurchases are difficult to predict at the announcement for the market as well as managers who will have to make decisions with regard to the timing and the amount of actual repurchase in ever-changing economic and financial environment. Therefore, firm characteristics at the announcement such as size and book-to-market as well as repurchase characteristics at the announcement such as repurchase reasons and the percentage of shares sought are unable to predict actual repurchases following the announcement. It is reasonable that the initial market reaction is not related to these factors. Instead, the size of the initial market reaction might be a response to possible actual repurchases following the announcement.

Table 3
Cross-Sectional Regressions of Announcement Abnormal Returns

	5-day CARs		
	1	2	3
Intercept	0.0200 (0.0011)	0.0299 (0.2063)	0.0324 (0.2087)
Size quartile ranking		-0.0033 (0.3387)	-0.0042 (0.2773)
BTMV quintile ranking		0.0005 (0.8509)	0.0004 (0.8795)
Announcement type		0.0041 (0.5203)	-0.0009 (0.9139)
Year dummy		-0.0010 (0.8907)	-0.0007 (0.9196)
CAR (-40, -3)		-0.0190 (0.4461)	-0.0055 (0.8382)
CR dummy	-0.0103 (0.1615)	-0.0088 (0.2403)	-0.0100 (0.2473)
CS dummy	0.0030 (0.7652)	0.0085 (0.3690)	0.0083 (0.3947)
EPS dummy	-0.0063 (0.3633)	-0.0093 (0.1758)	-0.0093 (0.2027)
SU dummy	-0.0051 (0.4689)	-0.0034 (0.6080)	-0.0034 (0.6380)
Percent		-0.0157 (0.8691)	-0.0176 (0.8511)
RAD			0.0112 (0.2585)
Adjusted R-Squared	-0.0012	-0.0065	-0.0072
F-test (P-values)	0.8656	0.7330	0.7442
Number of observations	468	413	394

Table 3 reports cross-sectional results of the initial market returns on various explanatory variables. The dependent variable is the difference between share returns of a repurchase over days -2 to +2 relative to the announcement and share returns of the market model, the FTSE Non-financial Index over the same period. Size quartile (one being the smallest) is based on the market value of equity at the announcement while BTMV quintile (one being the lowest book-to-market ratios) is based on the book-to-market ratio at the announcement. Announcement type dummy is one when the announcement date is the repurchase intention date, zero otherwise. Year dummy is one when a repurchase is announced between January 2004 and December 2004, zero otherwise. CAR (-40, -3) is the difference between share returns of a repurchase over days -40, -3 relative to the announcement and share returns of the market model, the FTSE Non-financial Index over the same period. CR dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is cash rich, zero otherwise. CS dummy is one if the repurchase reason or one of repurchase reasons of an announcement is to change capital structure, zero otherwise. EPS dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is to improve earnings per share, zero otherwise. SU dummy is one if the repurchase reason or one of repurchase reasons of an announcement is share undervaluation, zero otherwise. Percent is the percentage of shares that a firm intends to repurchase at the announcement. RDA is a dummy variable taking one if repurchase reasons of an announcement are given at the announcement, zero otherwise. Numbers in parentheses are White (1980) heteroskedasticity-adjusted *p* values.

4.2 Long Run Abnormal Returns

Table 4 shows mean compounded buy-and-hold returns up to two years following the announcement, allowing for annual rebalancing. The return difference in share performance after two years is substantial, 10.44% with a *p*-value of 0.003. Only 3 out of the 1,000 pseudo-portfolios demonstrate compounded abnormal returns higher than 10.44% two years following the month of the announcement. Focusing on year 1, the difference between compounded returns between the repurchase and the reference portfolio is 2.14% with a corresponding *p*-value of 0.098, meaning that 98 of the 1,000 pseudo-portfolios perform better.

Table 4
Long run buy-and-hold returns

	N	Sample Companies	Reference Portfolio	Return Differences	P-value
All firms					
12-month	441	15.9102	13.2012	2.7090	0.0980
24-month	436	39.1036	28.6627	10.4410	0.0030
Size quartile 1 (small)					
12-month	26	40.2484	26.3046	13.9438	0.1860
24-month	26	104.2952	45.6334	58.6618	0.0400
Size quartile 2					
12-month	72	13.0987	22.3692	-9.2705	0.8780
24-month	70	36.2967	43.6322	-7.3355	0.6870
Size quartile 3					
12-month	102	22.7683	12.1529	10.6154	0.0080
24-month	102	52.1688	27.3374	24.8314	0.0000
Size quartile 4 (large)					
12-month	241	11.2219	9.4923	1.7296	0.1600
24-month	238	27.2080	22.9739	4.2342	0.0680
Panel 3					
BTMV quintile 1 (Low)					
12-month	57	14.7185	8.4940	6.2246	0.1330
24-month	56	22.2187	15.4791	6.7396	0.1540
BTMV quintile 2					
12-month	48	-0.8195	7.7624	-8.5819	0.8000
24-month	46	24.4864	21.8704	2.6160	0.3420
BTMV quintile 3					
12-month	74	10.6825	10.4319	0.2505	0.4180
24-month	74	23.8571	16.8644	6.9927	0.1580

BTMV quintile 4					
12-month	101	15.0086	12.8270	2.1816	0.3030
24-month	101	40.5258	30.4662	10.0595	0.0970
BTMV quintile 5 (High)					
12-month	161	24.2883	17.9969	6.2914	0.0230
24-month	159	55.4718	39.6163	15.8555	0.0040

Table 4 reports the one-year and two-year compounded buy-and-hold returns (in percent) for equally-weighted portfolios of UK companies announcing open market share repurchases between 1999 and 2004. Returns are reported by size quartile and BTMV quintiles. Size quartile and BTMV quintile of a repurchasing firm is based on the market capitalisation and book-to-market ratio at the announcement relative to 20 size and BTMV portfolios formed at the end of June each year. All UK listed companies in DataStream are ranked into one of four size quartiles. Size 1 contains 25% of all UK listed companies with the smallest market capitalizations. Each of size quartiles is further segmented by book-to-market ratios into quintiles. Each of five book-to-market quintiles contains 20% of all stocks in a given size quartile. Quintile 1 includes stocks with the lowest book-to-market ratios while quintile 5 contains stocks with the highest book-to-market ratios. This process results in 20 benchmark portfolios every year (4 size quartiles multiples 5 book-to-market quintiles). Compounded buy-and-hold returns assume annual rebalancing. Reference portfolios are size and book-to-market portfolios matched to the repurchasing companies by size and price-to-book at the announcement. *P* values are derived from bootstrapping. Repurchasing firms that cannot be ranked at the announcement are excluded.

Compounded buy-and-hold abnormal returns of repurchases are also reported by size and book-to-market ranking at the announcement in Table 4. Several studies show that repurchasing firms with high book-to-market ratios have performed substantially better than those with low book-to-market ratios (Peyer and Vermaelen (2009); Chan, Ikenberry and Lee (2004); Ikenberry, Lakonishok and Vermaelen (1995)). Small firms and firms with high book-to-market ratios often suffer from share undervaluation. Announcements of actual repurchases on RNS can help arouse awareness of these firms to market traders and investors and can help lift share prices of these firms, leading to substantially high and positive share performance following actual repurchases. Focusing on high book-to-market firms (value firms) in quintile 5, the differences of compounded one-year and two–year returns between the repurchase and the reference portfolio are 6.29% and 15.86% with respectively corresponding *p*-values of 0.023 and 0.004, meaning that 23 and 4 of the 1,000 pseudo-portfolios perform as well. This high and positive share performance is not subject to a small number of cases. Value firms in quintile 5 (161) comprise 34.4% of the sample (468) measured on the number of announcements basis. Looking at small firms in quartile 1, the difference between compounded two-year returns between the repurchase and the reference portfolio is striking 58.66% with a corresponding *p*-value of 0.040. However, small firms (26) consist of less than 6% of the sample (468) measured on the number of announcements basis. Therefore, this extraordinary share performance of small firms is limited to a small number of cases.

We then regress compounded one-year and two-year buy-and-hold abnormal returns not only on size and book-to-market ranking but also on variables mentioned in Section 3. The results of regression analysis of one-year and two-year buy-and-hold abnormal returns are illustrated in Table 5. The coefficients for size ranking and BTMV ranking are positive and are generally consistent with the undervaluation hypothesis. For example, a move from the lowest to the highest book-to-market quintile changes the one-year buy-and-hold abnormal return by 11% (0.0275 X 4) and the two-year buy-and-hold abnormal return by 18.6% (0.0465 X 4). Similarly, a move from the lowest to the highest size quartile changes the one-year buy-and-hold abnormal return by 12.7% (0.0422 X 3). The impact of book-to-market on the long run abnormal return is consistent with the results of several papers (Ikenberry, Lakonishok and Vermaelen (1995); Chan, Ikenberry and Lee (2004); Zhang (2005); Peyer and Vermaelen (2009)). Then, we focus on the relationship between long run abnormal returns and repurchase reasons (economic benefits of actual repurchases). Here, we first examine the impact of repurchase reasons on one-year buy-and-hold abnormal returns. When all independent variables are included into the analysis (Model 1), firms whose repurchase reasons are undervaluation and capital structure adjustment attract negative and significant returns following the announcement. We then exclude three independent variables, year dummy, percent and log (1+% completion rate) which are not significant determinants from the regression analysis in Model 2. The results are still held. The coefficients of SU dummy (share undervaluation) and CS dummy (capital structure change) are negative and statistically significant, suggesting greater actual repurchases as share prices fall. Undervalued firms use actual repurchases to stabilise their share prices during the authorisation period. Likewise, the cost of equity finance has become expensive if share prices severely fall below the intrinsic value. It makes sense to managers that the cost of capital can be reduced following actual repurchases, and thereby repurchasing shares during the authorisation period. Several studies show that firms become more aggressive in repurchasing following price drops (Ikenberry, Lakonishok and Vermaelen (2000); Dittmar (2000); Stephens and Weisbach (1998)). Hence, our results resonate with the results of these studies by showing that some firms do suffer from severe share underperformance (-9.97% for undervaluation and -8.64% for capital structure change) compared with other firms (-3.25% for earnings per share enhancement and -4.52% for cash rich) during the authorisation period.

We also test the determinants of two-year buy-and-hold abnormal returns in regressions 3 and 4. Ikenberry, Lakonishok and Vermaelen (1995), Chan, Ikenberry and Lee (2004) and Peyer and Vermaelen (2009) all use long run share performance up to four years following the announcement to understand the motivations of US repurchases which usually have three years authorisation period. Model 3 which includes all variables possess limited explanatory power while Model 4 which excludes some of insignificant variables offers high and statistical significant explanatory power. Looking at Model 4, we notice several changes in return following the authorisation period. First, firms whose repurchase reasons are share undervaluation and capital structure change suffer less share underperformance following the authorisation period (-9.97% in 12-month and -11.58% in 24-month; -8.64% in 12-month and -10.25% in 24-month, respectively). Second, firms whose repurchase reason is cash rich experience a reverse return pattern, from significantly negative -4.52% in 12-month to insignificant positive 11.87% in 24-month. Third, log (1+ % completion rate) begins to influence long run abnormal returns in a positive though insignificant way following the authorisation period. These results suggest a delayed market reaction to actual repurchases. Ikenberry, Lakonishok and Vermaelen (1995) suggest that long run abnormal returns of US repurchases are a response to market underreaction to the repurchase news. Since actual repurchases are not considered in their paper, it is impossible to tell whether 4-year long run abnormal returns in their paper can also be a response of market underreaction to actual repurchases.

Table 5

Cross-sectional regressions of long run abnormal returns

	Y1BHRs		Y2BHRs		Y1BHRs	Y2BHRs
	1	**2**	**3**	**4**	**5**	**6**
Intercept	-0.0694	-0.1192	-0.1278	-0.1911	-0.1123	-0.0404
	(0.6115)	(0.2909)	(0.6164)	(0.3108)	(0.2297)	(0.8071)
Size quartile ranking	0.0312	0.0422	0.0309	0.0338	0.0384	0.0208
	(0.2435)	(0.0920)	(0.5188)	(0.4242)	(0.1216)	(0.6219)
BTMV quintile ranking	0.0278	0.0275	0.0484	0.0465		
	(0.129)	(0.0892)	(0.0803)	(0.0807)		
Announcement type	-0.0088	-0.0982	-0.0853	-0.0872	-0.0944	-0.0767
	(0.1205)	(0.051)	(0.1970)	(0.1510)	(0.0602)	(0.1929)
Year dummy	-0.0004		0.0125			
	(0.9917)		(0.8775)			
CR dummy	-0.0366	-0.0452	0.0847	0.1187		
	(0.5124)	(0.3768)	(0.2964)	(0.1405)		
CS dummy	-0.1030	-0.0864	-0.1374	-0.1025		
	(0.0645)	(0.0943)	(0.1197)	(0.2404)		
EPS dummy	-0.0576	-0.0326	-0.1052	-0.0698		
	(0.2579)	(0.4888)	(0.1686)	(0.3572)		
SU dummy	-0.1069	-0.0997	-0.1449	-0.1158		
	(0.0480)	(0.0398)	(0.0854)	(0.1538)		
Percent	-0.0588		-0.0226			
	(0.9294)		(0.9777)			
Log (1+ % completion rate)	-0.0049		0.1457	0.1844		0.1864
	(0.9542)		(0.2578)	(0.1437)		(0.1345)
RAD	0.0926	0.0697	0.0062		0.0618	
	(0.1052)	(0.1658)	(0.9310)		(0.2095)	
BTMV rank 5 X CR dummy					0.0349	0.0614
					(0.1196)	(0.1456)
BTMV rank 5 X CS dummy					0.0095	0.0223
					(0.6789)	(0.7227)

BTMV rank 5 X EPS dummy					0.0400	0.0034
					(0.0131)	(0.9027)
BTMV rank 5 X SU dummy					0.0025	-0.0086
					(0.7630)	(0.5428)
Adjusted R-Squared	0.0025	0.0138	0.0081	0.0145	0.0238	0.0040
F-test (P-values)	0.3748	0.0906	0.2404	0.0959	0.0180	0.2902
Number of observations	364	417	364	384	417	384

Table 5 presents cross-sectional regression results of long run abnormal returns of UK repurchasing firms on various explanatory variables. The dependent variable is the one-year or two-year compounded buy-and-hold abnormal return defined as the difference in holding a portfolio of sample firms and its corresponding portfolio matched on size and book-to-market ranking. Size quartile (one being the smallest) is based on the market value of equity at the announcement while BTMV quintile (one being the lowest book-to-market ratios) is based on the book-to-market ratio at the announcement. Announcement type dummy is one when the announcement date is the repurchase intention date, zero otherwise. Year dummy is one when a repurchase is announced between January 2004 and December 2004, zero otherwise. CR dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is cash rich, zero otherwise. CS dummy is one if the repurchase reason or one of repurchase reasons of an announcement is to change capital structure, zero otherwise. EPS dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is to improve earnings per share, zero otherwise. SU dummy is one if the repurchase reason or one of repurchase reasons of an announcement is share undervaluation, zero otherwise. Percent is the percentage of shares that a firm intends to repurchase at the announcement. Completion rate measures the percentage of shares bought during the one-year period after the announcement to Percent (percentage of shares sought at the announcement). RDA is a dummy variable taking one if repurchase reasons of an announcement are given at the announcement, zero otherwise. Numbers in parentheses are White (1980) heteroskedasticity-adjusted *p* values.

The explanatory power of book-to-market raises a question: how long run abnormal returns among value firms are affected by these four repurchase reasons? We interact the highest BTMV ranking 5 (value firms) with 4 repurchase reason dummy variables. We find that value firms with four main repurchase reasons attract a positive return one-year following the announcement. However, the market seems to react most favourably to value firms whose reason is to improve earnings per share using repurchases (4%; *p*=0.0131). It follows by value firms whose repurchase reason is to disburse free cash flows (3.40%, *p*=0.1149). Other two reasons seem to influence one-year abnormal returns of value firms in a meagre and insignificant way. On the other hand, all four reasons do not seem to affect two-year long run abnormal returns of value firms significantly. The highest two-year abnormal return is earned by value firms whose repurchase reason is cash rich (6.14%, *p*=0.1456) while value firms whose repurchase reason is undervaluation attract a insignificant and negative two-year return (-0.86%, *p*=0.5428). These results seem to be consistent with the implications of free cash flow hypothesis. Through actual repurchases, value firms' EPS can be enhanced temporarily. If the market believes EPS improvement relating to a change of firms' investment opportunities, the market will react favourably to those value firms. Similarly, the market will react favourably to value firms if actual repurchases are perceived to be used to alleviate the agency costs of free cash flows.

Overall, the empirical results support our hypotheses. First, the timing of repurchase reasons mentioned, represented by RAD, has no material impact on short-term announcement returns and long run abnormal returns. Second, the initial market reaction is not influenced by repurchase reasons. Third, the relationship between long run share performance and repurchase reasons suggests that UK share repurchases are mainly motivated by firms which believe that their shares are undervalued and by firms which plan to adjust their capital structure. The evidence also suggests that UK repurchases are influenced by the free cash flow hypothesis.

5. Conclusion

This paper is the first to examine the motivations of open market share repurchases using traditional signalling theory. In a nutshell, we propose three hypotheses. First, repurchase reasons mentioned at the announcement or later on should have similar influence on share performance in the short-term and long-term because managerial statements do not commit firms to future actual repurchases and the fact that managers are not interested in publicizing repurchase reasons at the announcement. Second, repurchase reasons cannot influence the initial market reaction due to the lack of signalling cost, actual repurchases. Third, repurchase reasons influence long run share performance of repurchasing firms. The relationship between repurchases reasons and long run share performance will disclose the motivations of share repurchases.

The empirical results support these hypotheses. The timing of repurchase reasons announced does not affect short-term announcement returns and long run abnormal returns. The initial market reaction is positive and statistically significant but is not influenced by characteristics of firms and repurchases. It seems that the initial market returns might be a response to the possibility of actual repurchases following the announcement. Repurchasing firms attract abnormal and significant returns following the announcement, conditional on size and book-to-market. Firms whose repurchase reasons are undervaluation and capital structure change are likely to suffer from significant share underperformance during the authorisation period. It is hardly a surprise since several studies (Stephens and Weisbach (1998); Dittmar (2000); Ikenberry, Lakonishok and Vermaelen (2000)) show that share price drops usually take place before actual repurchases. Underpriced shares also make the equity financing expensive and propel managers to readjust capital structure through actual repurchases. On the other hand, two-year buy-and-hold abnormal returns show some evidence which suggests that the market reacts slowly to actual repurchases. First, firms whose repurchase reasons are share undervaluation and capital structure change suffer less share underperformance following the authorisation period while firms whose repurchase reason is cash rich experience a reverse return pattern, from significantly negative -4.52% in 12-month to insignificant positive 11.87% in 24-month. Second, the size of actual repurchases begins to influence long run abnormal returns in a positive though insignificant way following the authorisation period. These results hold after controlling for size, book-to-market, and other known factors that affect long run share performance. Third, value firms (high book-to-market ratios) attract a positive and significant return drift two years following the announcement. We further investigate the impact of repurchase reasons on long run abnormal returns of value firms. Abnormal returns in the first year are high among value firms which wish to improve earnings per share or plan to distribute free cash flows. This result seemingly supports the free cash flow hypothesis. Overall, UK share repurchases are mainly motivated by firms which believe that their shares are undervalued and by firms which plan to adjust their capital structure. The evidence also suggests that UK repurchases are influenced by the free cash flow hypothesis.

This study contributes to the literature along several dimensions. First, this study validates the implications of theoretical signalling models, which has never been examined cross-sectionally in the context of open market share repurchases in prior literature. Our results reveal that managerial statements do have impact on abnormal returns in the authorisation period (one year following the announcement) when the signalling cost (actual repurchases) is observable to the market and investors. Second, this paper extends the literature by exploring the possible influence of multiple motivations on UK share repurchases. Previous papers (Rau and Vermaelen (2002); Oswald and Young (2004)) explain the motivations of UK repurchases using the taxation preference hypothesis or the share undervaluation hypothesis while this paper examines whether share performance of UK repurchases is influenced by four motivations simultaneously. Third, this research is related to the literature linking long run share performance with book-to-market ratios (Ikenberry, Lakonishok and Vermaelen (1995); Zhang (2005); Peyer and Vermaelen (2009)). The current paper reveals that UK value firms on average attract a higher positive and significant abnormal return than glamour firms following the announcement. In addition, we extend this literature by demonstrating that repurchase reasons have different influences on long run abnormal returns among value firms.

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Table 1
Sample Selection

Panel A: UK open market share repurchases from 1999 to 2004

	Keywords or sections search	Raw results	Repurchases
The FTs	Share buy-back or share buybacks	1,163	219
FAME	Report sections: stock Data-annual stock data	317	213
RNS	Select companies: AGM/EGM; share buybacks; repurchase of own shares	189	36
Total		1,669	468

Panel B: Frequency distribution of repurchase reasons

No of motivates per announcement	Undervalued	EPS	Cash rich	Capital structure	Pressure from shareholders	Liquidity	Reorganisation	Others
1	79	75	96	45	5	10	3	4
2	39	36	13	25	6	0	2	1
3	1	4	0	2	1	0	0	0
Total	119	115	109	72	12	10	5	5

Panel C: Description statistics for UK repurchases

		Size quartiles				Book-to-Market quintiles					Missing	Negative
		Small			Large	Lowest				Highest	BTMV	BTMV
Year	**N**	**Size 1**	**Size 2**	**Size 3**	**Size 4**	**BTMV 1**	**BTMV 2**	**BTMV 3**	**BTMV 4**	**BTMV 5**		
1999	65	4	9	19	29	5	5	14	10	27	2	2
2000	73	6	8	18	35	2	2	11	18	34	4	2
2001	69	3	15	19	30	4	5	13	17	28	1	1
2002	93	6	16	24	41	11	12	14	23	27	2	4
2003	80	4	14	11	49	13	10	13	14	28	0	2
2004	88	3	10	11	57	22	15	10	17	17	2	5
Total	468	26	72	102	241	57	49	75	99	161	11	13

Panel A summarizes the number of repurchases collected from the Financial Times (FTs), FAME and Regulatory News Service (RNS) for the period between January 1999 and December 2004. The table also reports the keywords and key sections that are used to search for repurchase announcements from the Financial Times, FAME and Regulatory News Service (RNS).

Panel B reports the number of cases per repurchase reason for firms that announced open market share repurchases between1999 and 2004. Repurchase reasons for each repurchase are determined by reading ether repurchase news, or financial news and Annul Reports. We classify repurchase reasons into the following 8 categories:

9. Share undervaluation: Managers explicitly mention of low current share price, low shareholders' return, share underperformance, undervaluation and low net asset value per share.
10. Distribution of free cash flows: Managers explain repurchases because of cash rich or as a way to distribute excess cash reserve or returning excess capital. Managers often pledge to share repurchases prior to property disposals. This category also includes the cases when managers commit to share repurchases due to the lack of merger and acquisition opportunities.
11. Capital structure change: Managers state the desire to change capital structure, either by increasing borrowings to repurchase shares, lowering capital cost or adjusting capital structure to a pre-determined level.
12. Earnings per share enhancement: Managers explicitly express the need to strengthen earnings per share.
13. Company reorganisation: The repurchase is part of a company reorganisation.

14. Pressure from shareholders: Financial Times report that repurchases are sought by rebellious shareholders who seek capital gain
15. Liquidity improvement: Managers realise the low liquidity of their shares in the stock market and offer shareholders a chance to liquidate their capital.
16. Other reasons: Reasons are not included in the previous categories.

Panel C summarises the number of open market repurchases by year, size and book-to-market ranks. At the end of June each year, all UK listed companies with above or equal to zero book-to-market ratios on DataStream are initially divided into four size quartiles and each size quartile contains 25% of all stocks. Size quartile 1 consists of the top 25% smallest companies while size quartile 4 constitutes the bottom 25% largest companies. Then each size quartile is further divided into 5 quintiles on the basis of book-to-market ratios and each quintile contains 20% of all companies in a given size quartile. The 20% of all companies with the lowest book-to-market ratios in a given size quartile are assigned to quintile 1 while quintile 5 contains the 20% of all companies with the highest book-to-market ratios in the given size quartile. This allocation procedure results in 20 reference portfolios each month. Size and book-to-market ranks of sample firms are determined against these 20 portfolios at the announcement.

Table 2
Abnormal returns on and prior to the announcement of open market share repurchases from 1999 and 2004

Panel A Abnormal returns reported by year and summary statistics

Year	n	Size Quartile	BTMV Quintile	Percent	Pre (-40, -3) CAR	Five-day CAR
1999	65	3.20	3.80	10%	-3.41*	1.91***
2000	73	3.22	4.19	12%	4.02**	1.41
2001	69	3.13	3.90	12%	4.77***	1.58**
2002	93	3.15	3.49	11%	4.29***	2.20***
2003	80	3.35	3.44	11%	2.81**	-0.35
2004	88	3.51	2.90	10%	0.37	1.32**
Total	468	3.27	3.59	11%	2.27***	1.33***

Panel B Abnormal returns reported by the timing of repurchase reasons announced, number of motivations per announcement, repurchase reasons, announcement type and year

		n	Pre (-40, -3) CAR	(-2, +2) CAR
Timing of repurchase reasons mentioned	Motivate mentioned at the announcement	126	-1.06	1.41**
	Motivate mentioned later on	317	3.90***	1.29***
No of motivates per announcement	No motivate	25	-1.57	1.36
	One motivate mentioned	317	2.65***	1.47***
	Two motivates mentioned	122	2.22**	0.93
	Three motivates mentioned	4	-2.35	1.54
Repurchase reasons	Undervaluation	119	2.66**	1.20**
	EPS enhancement	115	3.13***	1.24**
	Cash rich	109	1.56	0.78
	Capital structure adjustment	72	2.35*	1.85*
	The rest	32	2.37	2.84***
Announcement type	Announcements	171	-0.80	1.62***
	AGM/EGM	297	4.04***	1.16***
Announcement year	1999-2003	380	2.71***	1.33***
	2004	88	0.37	1.32**

Panel A reports announcement returns and the median values of size rank, BTMV rank and the percentage of shares sought at the announcements by year.

Panel B shows Abnormal returns reported by the timing of repurchase reasons announced, number of motivations per announcement, repurchase reasons, announcement type and year. Repurchase reasons are classified into 8 categories as described in Panel B of Table 1. The first subgroup consists of 119 cases that repurchases are used due to share undervaluation. The second subgroup contains 115 firms which wish to use repurchases to enhance earnings per share. The third subgroup comprises 109 firms that repurchases are used to distribute free cash flows, while the fourth subgroup contains 72 firms which plan to mange capital structure through repurchases. The rest includes firms that repurchase reasons do not fall into these four subgroups. Two announcement types: the repurchase intention date and AGM/EGM date. The repurchase intention date is the first time that a repurchase or an intention for a repurchase is known to the market. The AGM/EGM date is used as alternative date if the repurchase intention date is untraceable. The AGM/EGM date is the date when a AGM or EGM is held to pass the resolution for a repurchase.

Table 3
Cross-Sectional Regressions of Announcement Abnormal Returns

	5-day CARs		
	1	2	3
Intercept	0.0200	0.0299	0.0324
	(0.0011)	(0.2063)	(0.2087)
Size quartile ranking		-0.0033	-0.0042
		(0.3387)	(0.2773)
BTMV quintile ranking		0.0005	0.0004
		(0.8509)	(0.8795)
Announcement type		0.0041	-0.0009
		(0.5203)	(0.9139)
Year dummy		-0.0010	-0.0007
		(0.8907)	(0.9196)
CAR (-40, -3)		-0.0190	-0.0055
		(0.4461)	(0.8382)
CR dummy	-0.0103	-0.0088	-0.0100
	(0.1615)	(0.2403)	(0.2473)
CS dummy	0.0030	0.0085	0.0083
	(0.7652)	(0.3690)	(0.3947)
EPS dummy	-0.0063	-0.0093	-0.0093
	(0.3633)	(0.1758)	(0.2027)
SU dummy	-0.0051	-0.0034	-0.0034
	(0.4689)	(0.6080)	(0.6380)
Percent		-0.0157	-0.0176
		(0.8691)	(0.8511)
RAD			0.0112
			(0.2585)
Adjusted R-Squared	-0.0012	-0.0065	-0.0072
F-test (P-values)	0.8656	0.7330	0.7442
Number of observations	468	413	394

Table 3 reports cross-sectional results of the initial market returns on various explanatory variables. The dependent variable is the difference between share returns of a repurchase over days -2 to +2 relative to the announcement and share returns of the market model, the FTSE Non-financial Index over the same period. Size quartile (one being the smallest) is based on the market value of equity at the announcement while BTMV quintile (one being the lowest book-to-market ratios) is based on the book-to-market ratio at the announcement. Announcement type dummy is one when the announcement date is the repurchase intention date, zero otherwise. Year dummy is one when a repurchase is announced between January 2004 and December 2004, zero otherwise. CAR (-40, -3) is the difference between share returns of a repurchase over days -40, -3 relative to the announcement and share returns of the market model, the FTSE Non-financial Index over the same period. CR dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is cash rich, zero otherwise. CS dummy is one if the repurchase reason or one of repurchase reasons of an announcement is to change capital structure, zero otherwise. EPS dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is to improve earnings per share, zero otherwise. SU dummy is one if the repurchase reason or one of repurchase reasons of an announcement is share undervaluation, zero otherwise. Percent is the percentage of shares that a firm intends to repurchase at the announcement. RDA is a dummy variable taking one if repurchase reasons of an announcement are given at the announcement, zero otherwise. Numbers in parentheses are White (1980) heteroskedasticity-adjusted *p* values.

Table 4
Long run buy-and-hold returns

	N	Sample Companies	Reference Portfolio	Return Differences	P-value
All firms					
12-month	441	15.9102	13.2012	2.7090	0.0980
24-month	436	39.1036	28.6627	10.4410	0.0030
Size quartile 1 (small)					
12-month	26	40.2484	26.3046	13.9438	0.1860
24-month	26	104.2952	45.6334	58.6618	0.0400
Size quartile 2					
12-month	72	13.0987	22.3692	-9.2705	0.8780
24-month	70	36.2967	43.6322	-7.3355	0.6870
Size quartile 3					
12-month	102	22.7683	12.1529	10.6154	0.0080
24-month	102	52.1688	27.3374	24.8314	0.0000
Size quartile 4 (large)					
12-month	241	11.2219	9.4923	1.7296	0.1600
24-month	238	27.2080	22.9739	4.2342	0.0680
Panel 3					
BTMV quintile 1 (Low)					
12-month	57	14.7185	8.4940	6.2246	0.1330
24-month	56	22.2187	15.4791	6.7396	0.1540
BTMV quintile 2					
12-month	48	-0.8195	7.7624	-8.5819	0.8000
24-month	46	24.4864	21.8704	2.6160	0.3420
BTMV quintile 3					
12-month	74	10.6825	10.4319	0.2505	0.4180
24-month	74	23.8571	16.8644	6.9927	0.1580
BTMV quintile 4					
12-month	101	15.0086	12.8270	2.1816	0.3030
24-month	101	40.5258	30.4662	10.0595	0.0970
BTMV quintile 5 (High)					
12-month	161	24.2883	17.9969	6.2914	0.0230
24-month	159	55.4718	39.6163	15.8555	0.0040

Table 4 reports the one-year and two-year compounded buy-and-hold returns (in percent) for equally-weighted portfolios of UK companies announcing open market share repurchases between 1999 and 2004. Returns are reported by size quartile and BTMV quintiles. Size quartile and BTMV quintile of a repurchasing firm is based on the market capitalisation and book-to-market ratio at the announcement relative to 20 size and BTMV portfolios formed at the end of June each year. All UK listed companies in DataStream are ranked into one of four size quartiles. Size 1 contains 25% of all UK listed companies with the smallest market capitalizations. Each of size quartiles is further segmented by book-to-market ratios into quintiles. Each of five book-to-market quintiles contains 20% of all stocks in a given size quartile. Quintile 1 includes stocks with the lowest book-to-market ratios while quintile 5 contains stocks with the highest book-to-market ratios. This process results in 20 benchmark portfolios every year (4 size quartiles multiples 5 book-to-market quintiles). Compounded buy-and-hold returns assume annual rebalancing. Reference portfolios are size and book-to-market portfolios matched to the repurchasing companies by size and price-to-book at the announcement. *P* values are derived from bootstrapping. Repurchasing firms that cannot be ranked at the announcement are excluded.

Table 5

Cross-sectional regressions of long run abnormal returns

	Y1BHRs		Y2BHRs		Y1BHRs	Y2BHRs
	1	**2**	**3**	**4**	**5**	**6**
Intercept	-0.0694	-0.1192	-0.1278	-0.1911	-0.1123	-0.0404
	(0.6115)	(0.2909)	(0.6164)	(0.3108)	(0.2297)	(0.8071)
Size quartile ranking	0.0312	0.0422	0.0309	0.0338	0.0384	0.0208
	(0.2435)	(0.0920)	(0.5188)	(0.4242)	(0.1216)	(0.6219)
BTMV quintile ranking	0.0278	0.0275	0.0484	0.0465		
	(0.129)	(0.0892)	(0.0803)	(0.0807)		
Announcement type	-0.0088	-0.0982	-0.0853	-0.0872	-0.0944	-0.0767
	(0.1205)	(0.051)	(0.1970)	(0.1510)	(0.0602)	(0.1929)
Year dummy	-0.0004		0.0125			
	(0.9917)		(0.8775)			
CR dummy	-0.0366	-0.0452	0.0847	0.1187		
	(0.5124)	(0.3768)	(0.2964)	(0.1405)		
CS dummy	-0.1030	-0.0864	-0.1374	-0.1025		
	(0.0645)	(0.0943)	(0.1197)	(0.2404)		
EPS dummy	-0.0576	-0.0326	-0.1052	-0.0698		
	(0.2579)	(0.4888)	(0.1686)	(0.3572)		
SU dummy	-0.1069	-0.0997	-0.1449	-0.1158		
	(0.0480)	(0.0398)	(0.0854)	(0.1538)		
Percent	-0.0588		-0.0226			
	(0.9294)		(0.9777)			
Log (1+ % completion rate)	-0.0049		0.1457	0.1844		0.1864
	(0.9542)		(0.2578)	(0.1437)		(0.1345)
RAD	0.0926	0.0697	0.0062		0.0618	
	(0.1052)	(0.1658)	(0.9310)		(0.2095)	
BTMV rank 5 X CR dummy					0.0349	0.0614
					(0.1196)	(0.1456)
BTMV rank 5 X CS dummy					0.0095	0.0223
					(0.6789)	(0.7227)
BTMV rank 5 X EPS dummy					0.0400	0.0034
					(0.0131)	(0.9027)
BTMV rank 5 X SU dummy					0.0025	-0.0086
					(0.7630)	(0.5428)
Adjusted R-Squared	0.0025	0.0138	0.0081	0.0145	0.0238	0.0040
F-test (P-values)	0.3748	0.0906	0.2404	0.0959	0.0180	0.2902
Number of observations	364	417	364	384	417	384

Table 5 presents cross-sectional regression results of long run abnormal returns of UK repurchasing firms on various explanatory variables. The dependent variable is the one-year or two-year compounded buy-and-hold abnormal return defined as the difference in holding a portfolio of sample firms and its corresponding portfolio matched on size and book-to-market ranking. Size quartile (one being the smallest) is based on the market value of equity at the announcement while BTMV quintile (one being the lowest book-to-market ratios) is based on the book-to-market ratio at the announcement. Announcement type dummy is one when the announcement date is the repurchase intention date, zero otherwise. Year dummy is one when a repurchase is announced between January 2004 and December 2004, zero otherwise. CR dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is cash rich, zero otherwise. CS dummy is one if the repurchase reason or one of repurchase reasons of an announcement is to change capital structure, zero otherwise. EPS dummy takes one if the repurchase reason or one of repurchase reasons of an announcement is to improve earnings per share, zero otherwise. SU dummy is one if the repurchase reason or one of repurchase reasons of an announcement is share undervaluation, zero otherwise. Percent is the percentage of shares that a firm intends to repurchase at the announcement. Completion rate measures the percentage of shares bought during the one-year period after the announcement to Percent (percentage of shares sought at the announcement). RDA is a dummy variable taking one if repurchase reasons of an announcement are given at the announcement, zero otherwise. Numbers in parentheses are White (1980) heteroskedasticity-adjusted *p* values.