



Short-term Returns of UK Share Buyback Activity

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Abstract

This paper examines the short-term signalling power of UK open market share repurchases between 1999 and 2004. The 5-day and 11-day abnormal returns centred on the announcement date are statistically significant at 1.13% and 1.21% respectively. However, there is no evidence to support any relationship between the 5-day announcement abnormal returns and characteristics of UK share repurchases, such as the percentage of shares to be repurchased, pre-announcement return, size and lag time. These results are largely in line with results reported by Rees (1996). It seems that UK share repurchases are not primarily motivated by share undervaluation. That is why the signalling hypothesis fails to explain the announcement abnormal returns of the UK open market share repurchases.

Key Words: UK share repurchases, signalling hypothesis, share undervaluation, announcement abnormal returns

JEL: G32, G35

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Short-term Returns of UK Share Buyback Activity

1: Introduction

Dann (1981) and Vermaelen (1981) use share repurchase data from the US to test the signalling hypothesis of repurchases against other explanations, like the personal taxation, leverage and expropriation hypotheses. They find significant increases in the share prices of the (mainly) small firms engaged in tender offers, within one day of the announcement. This supports the signalling theory, in which managers of the firm use share repurchases to bridge the information gap between the firm and markets. Later studies of US share repurchases generally agree with their results and the signalling theory is considered as the most plausible explanation for the short-term abnormal returns occurring around the announcement, an average 3.0% 5-day return ((Comment and Jarrell (1991); Ikenberry, Lakonishok and Vermaelen (1995)). In contrast, the cause of UK share repurchases is still an enigma.

The earliest work on UK open market share repurchases is by Rees (1996), who finds a 0.25% 5-day announcement abnormal return in the UK market from 1981 to 1990. Subsequently, Rau and Vermaelen (2002) report a 1.14% abnormal return in the 11 days surrounding the announcement of 264 UK share repurchases (including open market share repurchases, private repurchases and tender offers) between January 1980 and June 1998. Due to the significant negative one-year abnormal returns (-7%) repurchasing firms earned after the announcement, they conclude that share repurchases in the UK market are triggered not by share undervaluation, but by the tax consequences for pension funds, and thus UK share repurchases have little signalling power. In contrast, the recent study by Oswald and Young (2004) for the period between January 1995 and December 2000 shows a different picture. A more comprehensive sample yields a 1.95% 11-day abnormal return, and significant positive one-year return (7.53%) following the announcement, supporting the view that UK share repurchases are influenced by share undervaluation.

These conflicting results inspire our study and the purpose of this paper is to examine the

signalling power of UK open market share repurchases, identify the relationship between short-term abnormal returns and the characteristics of repurchasing firms, reveal regulatory differences between the US and the UK market regarding open market share repurchases and find out how announcement returns are affected by firm size and book-to-market ratio.

The market model is used for the calculation of short-term abnormal returns. To examine the signalling power of UK share repurchases, we hypothesise that the short-term announcement return of UK share repurchases should, like the US repurchases, be negatively related to the pre-announcement return and positively related to the percentage of shares to be repurchased. Moreover, the short-run CAR (cumulative abnormal return) is influenced by the firm size and book-to-market ratio. Finally, as the abnormal return of the UK repurchases is much lower than that of the US repurchases, we conduct a sensitivity analysis of announcement abnormal returns using Fama and French (1993) three-factor model and examine the constitution of the UK share repurchases and the effects of multiple announcements.

The paper is organised as follows: section 2 briefly summarizes previous literature. Section 3 describes the data resources, collection methods, and descriptive statistics of our final sample. Section 4 summarises the hypotheses. Section 5 considers the changes in tax law during the sample period. Section 6 includes methodology used, univariate results, regression results and sensitivity analysis of announcement abnormal returns. Section 7 concludes the study.

2: Literature Review

Extensive research in the US provides plenty of theory and evidence on the motivation behind share repurchases. The dominant theme is the signalling effect of share repurchases ((Dann (1981) and Vermaelen (1981) and Comment and Jarrell (1991)). Vermaelen (1981) finds that the pricing behaviour of repurchasing firms is consistent with the hypothesis that firms offer premia for their own shares mainly in order to signal positive information and that the market uses the premium, the size of repurchase and the fraction of insider holdings as signals in order to price securities around the announcement date. With a sample of 131 tender offers and 243 open market share repurchases announced from 1962 to 1976, he detects an average 5.25%

announcement abnormal return. His sample is dominated by small firms, which are mainly held by insiders who commit themselves not to tender their shares. Moreover, tender offers are followed by significant improvement in earnings per share. Subsequently, Dann (1981) compares the signalling hypothesis with other hypotheses like personal tax savings and the wealth transfer or expropriation hypothesis using a sample of 143 cash tender offers announced between 1962 and 1976. The mean announcement abnormal returns on the announcement date and the day after the announcement date are 8.95% and 6.83% respectively, both significant at the 1% level and such increases of share prices are permanent following the announcement. Moreover, the mean portfolio daily return of the 50-day period beginning 60 days prior to the announcement date is -0.09%. He further examines the changes of senior security prices surrounding the announcement date and finds that announcement returns of these securities are either significantly positive or insignificantly different from zero. In addition, the announcement returns of these securities are positively related to the size of repurchase and stock price movements, results that are inconsistent with the expropriation hypothesis. He finds some evidence to support the personal tax savings hypothesis. However, the positive stock price movement following announcements of completion of previously unannounced open market repurchases is contrary to the prediction of the tax savings hypothesis. Overall, his interpretation of the evidence is generally consistent with Vermaelen's (1981).

Ikenberry, Lakonishok and Vermaelen (1995) examine a sample of 1,239 open market share repurchases announced between January 1980 and December 1990 by firms whose shares traded on the NYSE, ASE and NASDAQ. They realize that the initial share price movement surrounding the announcement is consistent with the signalling hypothesis. For example, the mean announcement period abnormal return is 4.51% for programmes that are for more than 10% of outstanding shares. For those programmes that are for less than 2.5% of outstanding shares, the average market reaction is 2.58%. In addition, 38 firms that announced undervaluation as the motive for repurchases have an average -5.52% pre-announcement return as well as a large mean announcement return, 5.31%. When the sample is segmented on the basis of firm size, firms in the two largest size deciles exhibit an abnormal return of only 2.09% while those in the two smallest size deciles show a highest average abnormal return of 8.19%. The

results of a regression model with announcement abnormal returns as the dependent variable and factors, like the size of repurchase, firm size, book-to-market ratio and pre-announcement returns as explanatory variables, show that announcement abnormal returns are positively related to the size of repurchase and negatively related to firm size while unrelated to book-to-market ratio.

To our knowledge, there is only one paper examining the relation between announcement abnormal returns of UK open market share repurchases and related independent variables. Rees (1996) uses the effective date as the announcement date and considers all Regulatory News Services (RNS) announcements of share repurchases as open market share repurchase announcements. Although only 105 firms repurchased shares in the period from 1981 to 1990, he identifies 882 repurchase announcements and, not surprisingly, the average 5-day abnormal return of the sample is 0.25%, given that the average repurchase of shares is less than 0.5% of equity. Though he finds a positive relationship between the announcement return and the percentage repurchased, the regression results of the model with independent variables like log market value, percentage repurchased, log gearing and log liquidity show no evidence to support the signalling hypothesis.

3: Data

Our data is collected from various resources- the Financial Times, The FAME database, RNS (Hemscott), and Company annual reports - in order to include all UK open market share repurchases announced between 1st January 1999 and 31st December 2004. We search all repurchase announcements published by the Financial Times for the sample period with keywords like “share buybacks” and “share buy-back”, excluding repurchase announcements made by close-fund investment trusts, as well as announcements of tender offers and preferred share repurchases. This process yields 219 open-market share announcements. As the Financial Times focuses on the largest firms, we use the FAME database to supplement our data search. FAME includes all publicly traded UK companies, and it generates 317 firms whose reported year-end outstanding shares decreased at least once on a yearly basis between 1999 and 2005. 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 announcements are added to our data after checking RNS supplied by Hemscott, while other RNS news related to privately negotiated share repurchases and directors' share trading are ignored. Finally, we have a data set composing of 468 open market repurchase announcements, which is far smaller than the sample size used in US studies. Rau and Vermaelen (2002) believe that the UK tax (imputation system) and regulatory systems are to blame for the low level of repurchasing activity. However, our sample period is free of the UK imputation tax system, but the number of repurchase announcements has not risen substantially. Our sample size is in line with that (413) used by Oswald and Young (2004). We believe the cause of such a huge difference between the sizes of the US and UK samples lies in the database. Jagannathan, Stephens and Weisbach (2000) believe that the collection method of SDC (Securities Data Company), which gathers all firms expressing their intentions of repurchases, inflates the number of repurchases, and thus results in a low completion rate of US share repurchase programmes (Stephens and Weisbach (1998)). In contrast, our data collection procedure prevents overestimation of the number of share repurchases announced. The Financial Times reports repurchase news when the firm makes an indication of repurchase explicitly or has already repurchased some shares in the market. All announcements obtained from FAME are deducted backwards. For instance, we check the firm's annual report if FAME shows a decrease in the firm's outstanding shares in the sample period. When the annual report reveals that the firm repurchased shares on the market in the past year, we then check with RNS for the announcement date or AGM date. Therefore, only 13 out of 468 announcements were aborted without repurchasing any shares on the market before the next AGM date.

The Financial Times and RNS provide us with the announcement and/or effective date. The announcement date is defined in this paper as either the first time repurchase news was published by the newspapers and RNS or the AGM and/or EGM date, where firms were granted repurchase authority by shareholders, while the effective date is the date that firms first repurchased shares on the market after obtaining authorisation each year. When the firm announced more than one open market repurchase, we only account for one announcement for

the firm in that year and the announcement date would be the first news publishing date following the expiration of the previous authorisation period. The information regarding the percentage of repurchases is usually retrieved from company annual reports or special circulars published on RNS. Share prices, market capitalisation and market-to-book ratio of repurchases firms are drawn from DataStream.

Table 1 summaries the characteristics of share repurchases announced between January 1999 and December 2004, such as size and book-to-market ranking and the mean percentage of shares sought at the announcement for each year between 1999 and 2004. At the end of each June from 1998 to 2004, all UK listed shares are collected and divided into 6 portfolios in the following ways. First, allocate all firms into two size groups, Small (S) and Big (B) on the basis of the FTSE all Shares Median Cap and then each size group is further divided into 3 roughly equal book-to-market value (BTMV) portfolios, low (L), medium (M) and high (H). The breakpoints for size groups and BTMV portfolios at the end of each June can be identified. Then, based on these breakpoints, all repurchase firms are allocated into the corresponding size and BTMV portfolios on the basis of market capitalization and book-to-market ratio on the announcement.

The average percentage of shares sought at the announcement for the sample period is 11%, which is similar to the 9.8% reported by Rau and Vermaelen (2002). The percentage of shares sought for the UK share repurchases should be considered more conservative than that of the US share repurchases because US firms are likely to announce the amount of cash spent on repurchases while UK firms are likely to announce the percentage of shares sought. Most of the UK firms renew authorisation for open market share repurchases every year and do not change the percentage allowed very frequently.

Table 1

Descriptive statistics for open market share repurchases announced between January 1999 and December 2004

The Table records the number of share repurchases announced each year during the sample period, the percent of shares sought, size groups and book-to-market portfolios of the firms at the announcement date. At the end of each June from 1998 to 2004, all UK listed firms are collected and divided into 6 portfolios in the following ways. First, allocate all firms into two size groups on the basis of the FTSE all Shares Median Cap and then each size group is further divided into 3 roughly equal BTMV portfolios on the basis of book-to-market ratio. The breakpoints for size groups and BTMV portfolios at the end of each June can be identified. Then, based on these breakpoints, all repurchase firms are allocated into the corresponding size and BTMV portfolios on the basis of market capitalization and book-to-market ratio on the announcement.

Year	N	Percent of shares sought					Size groups		Book-to-market portfolios							
		Mean % of shares sought	0 to 5%	5 to 10%	10 to Over 10%	Missing data	Small	Big	BL	BM	BH	SL	SM	SH	Missing BTMV	Negative BTMV
1999	65	10.99	6	34	16	9	29	36	6	16	10	5	6	17	2	3
2000	74	11.62	5	35	27	7	34	40	6	15	15	5	8	19	4	2
2001	67	11.57	5	33	26	3	38	29	4	10	14	2	9	26	1	1
2002	96	10.76	14	42	32	8	56	40	10	13	12	8	18	29	2	4
2003	82	10.95	6	46	26	4	33	49	21	10	16	4	11	18	0	2
2004	84	10.41	6	49	23	3	34	50	21	10	14	7	12	14	2	4
Total	468	11.01	45	239	150	34	224	244	68	74	81	31	64	123	11	16

4: Hypotheses

With regard to signalling theory, we test the following four hypotheses:

H1: The short-term announcement returns are negatively related to the pre-announcement returns.

A negative relationship between the announcement abnormal returns and pre-announcement returns exists in the US market and is considered as evidence supporting the signalling theory, which identifies share undervaluation as the main driver of open market share repurchases. Vermaelen (1981) and Ikenberry, Lakonishok and Vermaelen (1995) observe negative pre-announcement returns. If share undervaluation is the prime motivation for UK share repurchases, we would expect a similar pattern with our sample. Given that the mean abnormal return surrounding the announcement in existing UK research is much lower than that in American repurchases, it is reasonable to expect a much smaller negative pre-announcement mean return.

H2: announcement returns are positively related to the percentage of shares firms intend to repurchase.

Firms whose shares are heavily undervalued are more likely to announce a larger share repurchase programmes than firms whose shares are just a little undervalued. The market perceives that and so reacts accordingly. Ranking open market repurchases by the percentage of shares sought, Ikenberry, Lakonishok and Vermaelen (1995) find that the larger is the share repurchase programme, the higher are the mean announcement period abnormal returns. The abnormal return difference between announcements of more than 10% of outstanding shares and announcements of less than 2.5% is almost 2%. Employing UK data, Rees (1996) finds a positive relationship between the proportion of equity repurchased and the abnormal return on the transaction day.

H3: The higher is the announcement abnormal return, the longer the firm waits to repurchase shares in the market.

If the market adjusts the share price of the firm upon the share repurchase announcement date to, or close to the level managers expect, the firm will have no incentives to repurchase shares in the future. Moreover, Ikenberry, Lakonishok and Vermaelen (1995) suggest that managers who treat share repurchases as an investment should start to repurchase shares after the announcement if the price decreases. A negative relationship between share repurchase completion and post-announcement share price is found and recorded by Ikenberry, Lakonishok and Vermaelen (2000) and Stephens and Weisbach (1998). The announcement share price takes time to slide to the level that managers perceive as a cheap purchase, and, accordingly the higher the announcement abnormal return the firm earns, the longer the firm waits before starting repurchases, given that the stock market is informationally efficient and market participants behave rationally. To our knowledge, we are the first to test this relationship. We are able to identify the first effective date of a repurchase after authorisation because repurchasing firms are required to notify the Stock Exchange before 12 noon the following day after repurchasing shares on the market.

H4: The announcement abnormal return is negatively related to firm size but not related to the book-to-market ratio.

Large firms are under more scrutiny from the market than are small firms, so are less likely to suffer severe share undervaluation. In other words, small firms are more likely to use share repurchases to inform the market about share undervaluation than are big firms. Likewise, value firms are more likely to repurchase shares than growth firms, partly because of share undervaluation and partly because value firms tend to have more excess cash and fewer investment opportunities than growth firms. In the United States, repurchase tender offers are dominated by small firms, Vermaelen (1981) cites that as evidence supporting the signalling hypothesis. However, Ikenberry, Lakonishok and Vermaelen (1995) remark that, in spite of severe information asymmetry among small firms, open market share repurchases in the United States are dominated by big firms. Though only 179 repurchases are made in the two smallest size deciles, they earn a mean 8.19% 5-day abnormal return, which is 6.1% higher than that

earned by 406 repurchases from the two largest size deciles. It looks as if the mean abnormal return on the announcement in their study is mainly driven by the returns from small firms. In contrast, they find little difference in the mean abnormal returns between growth firms and value firms.

5: UK regulations and tax law

Rau and Vermaelen (2002) give a detailed record of changes in regulation and tax law between 1988 and 1995. They forecast that share repurchases should become more popular after July 2, 1997, when the Inland Revenue eliminated tax credits for dividends, which should have made pension funds indifferent between dividends and capital gains. However, we find no evidence of a rapid surge of share repurchases announcements in the UK following the rule change. In addition, the sample size of 264 share repurchases reported by Rau and Vermaelen (2002) is highly controversial for two reasons. First, Lasfer (2000) reports 465 UK share repurchases for the same time period. Second, Oswald and Young (2004) stress that the SDC for UK share repurchases is systematically biased towards larger transactions, and the SDC reports less than half the number of repurchase intentions in the Sequencer/FT sample of their study. We observe that the number of open market share repurchase announcements in the UK has been relatively stable since 1995. Oswald and Young (2004) report 431 open market share repurchases between 1995 and 2000, which is comparable to our sample size of 468 for the six-year time span from 1999 to 2004.

Another factor mentioned by Rau and Vermaelen (2002) is the existence of the ACT (Advance Corporation Tax) in the tax system. They only estimate how the ACT affects individual investor preferences for dividends, while the ACT could theoretically affect corporate payout decisions. Loss-making firms and some profit-making ones could not realise sufficient profits to offset the ACT in the specific time period (5 years), so they should always prefer share repurchases to dividends. For loss-making firms, dividends are paid from reserves, which have already been taxed, but the Inland Revenue required all dividend-paying firms, whether loss making or profit making, to pay ACT on dividend payments. Though profit-making firms could deduct the ACT from their mainstream corporation tax, loss-making firms might not be able to claim that back

before the 5-year time period runs out. Besides, ACT can be considered as a restraint on the firm's cash flow. ACT is payable on the time frequent basis (quarterly, a-half year and yearly) of dividend payouts, while mainstream corporation tax is payable 9 months after the financial year-end. A study of payouts of all UK firms listed on the LSE in the 1990's shows that 85% of the firms paid dividends and less than 6 percent of the firms repurchased shares (Renneboog and Trojanowski (2005)). That implies two things: First, loss-making firms have little impact on the aggregate payouts in the UK, and second, ACT is not a factor determining firms' decisions on payout methods. Therefore, the abolition of ACT on 5 April 1999 should have no impact on the number of open market share repurchases, and our sample supports this. However, the abolition of ACT is still worth mentioning because we do not need to consider the tax effect in our data analysis. Now, the UK tax system, like the US tax system, treats share repurchases and dividends in the same way.

The final change regarding open market share repurchases happened in December of 2003, when the Companies Act 1985 was amended to allow firms not to cancel repurchased shares, but to retain these shares in treasury, allowing them to be re-issued later or distributed to managers when stock options are exercised, as in the US. Fenn and Liang (2001) emphasise that employee stock options are the reason behind the popularity of open market share repurchases in the United States. Managers in the US use open market share repurchases to improve EPS (earnings per share) and share price, thereby raising the value of their stock options. Our study shows that UK managers recognised the effect of share repurchases on stock options long before December 2003. Over 19% of our sample firms cite improvement of EPS as the reason for open market share repurchases (Panel E of Table 2). In addition, the number of share repurchase announcements in the year 2004 is only 2 announcements more than that of the year 2003, but 12 less than 2002.

After all the changes in the tax and company law system, the characteristics of UK open market repurchases are the same as those of the US, apart from the different tax rates for capital gains and dividends at the personal level in two countries. However, UK special business practices and company law make the comparison of the UK and the US open market share repurchases

difficult for the following reasons:

1. The difficulty in identifying the announcement date: the announcement date is the date when the information regarding share repurchases is first available to market participants, therefore, we expect to see a sudden jump in share prices on that date. US share repurchase announcement dates are gathered from the Wall Street Journal and defined as the date when a firm receives its buyback authorization. Given the possibility that the news service lags behind the event, the US studies use a 5-day event window to measure announcement abnormal returns. A 5-day event window has proven to be efficient and there is no evidence of information leakage 2-day before the announcement. In contrast, it is much harder to determine the announcement date for UK share repurchases. This is emphasised by Rees (1996), who believes that there is no equivalent of the US type of announcement date under UK regulations. That is why he uses the effective date for the announcement return study and finds a 0.25% 5-day announcement abnormal return. Rau and Vermaelen (2002) analyse 11-day announcement return on two types of announcement dates: the date firms announced repurchase intentions and the date firms completed repurchase plans. That would create a duplication problem - the same share repurchase announcement is counted more than once, though at different times, in the data. Oswald and Young (2004) restrict their analysis of the announcement abnormal return to repurchase intentions, defined by Rau and Vermaelen (2002) as the announcement that the board has approved a share repurchase programme and will be seeking approval of this programme at the next shareholders meeting. Rau and Vermaelen (2002) find no evidence of a significant market reaction to announcements of repurchase completions. This paper calculates announcement abnormal returns on two kinds of announcement dates: the date of repurchase intentions, as in Rau and Vermaelen (2002), and the date of AGM and/ or EGM. When the announcement date is the AGM date, information leakage is inevitable. According to the Companies Act 1985, a firm needs to send the AGM agenda to its shareholders at least 28 days before the meeting. The agenda describes all the business that will be conducted at the meeting, including ordinary resolutions like the election of directors, and special resolutions such as the power to issue new shares and/or repurchase shares in the coming year.

2. Compounding element of repurchase intentions news: repurchase intentions in the UK are always announced with other financial news, such as preliminary final results, property disposal news, reorganisation news, and failure to complete a merger or obtain government approval for their plans. The AGM is partly used for updating shareholders on the trading performance of the firm, usually the first quarter earnings and sales. Thus, announcement abnormal returns are influenced not only by repurchase news but also earnings or sales surprises. When there is an earnings warning, the share price of the firm is likely to drop even with a promise of share repurchase.
3. Difficulty in calculating the total value of share repurchases on an annual basis: many studies of US repurchases mention the trend change in payout policy and the total value in dollar terms for dividends and repurchases (Bagwell and Shoven (1989) and Jagannathan, Stephens and Weisbach (2000)). It is not feasible to get that kind of value for UK share repurchases. 95% of firms in our sample announced the percentage of share sought rather than the amount of money spent, so calculation of the value of repurchases based on that information will be inaccurate and should not be used for research purposes.
4. Repurchase reasons: nearly 85% of the repurchase announcements of Ikenberry, Lakonishok and Vermaelen (1995) study gave no reasons for repurchases. In contrast, the reasons for repurchases can be easily collected in the UK. As required by the Companies Act 1985, UK repurchasing firms need to give the number and percentage of shares bought during the year in the Annual Report. Most of them also explain reasons for repurchases there, and thus, we are able to report and analyse the motivation for repurchases from the management's point of view. Nearly 95% of repurchasing firms give reasons for share repurchases in our sample.

6: Methodology and results

6.1 Methodology and Univariate results

We evaluate the short-term announcement performance with the event-window methodology outlined by MacKinlay (1997). The event window in this study is 31 days comprising 20 pre-announcement days, the announcement day and 10 post-announcement days. Two models are employed for the short-term performance estimation, the constant mean return model and

the market model. The FTSE Non-financial Index is used to proxy the market and constants and coefficients are obtained by using share mid-prices from -270 day to -21 day before the announcement. The mean announcement abnormal returns yielded by the two models are not very different, 0.0034% for 5 days and 0.1307% for 31 days. Therefore, we use abnormal returns calculated by the market model for the rest of the analysis. The repurchase announcements are quite evenly dispersed during the sample period. We find a low autocorrelation in daily announcement abnormal returns in this study. The autocorrelation adjustments we made in the t-test had no material impact on the results; therefore, we present t-tests assuming zero autocorrelation. Two sets of CARs are measured, -20 to -3 , -2 to $+2$, and $+2$ to $+10$ for comparison with the US studies, -1 to $+1$, -5 to $+5$, and -10 to $+10$ with the UK studies (see Panel A and B of Table 2). The 5-day (-2 to $+2$) CAR, at 1.13%, is evidently lower than the 3.54% reported by Ikenberry, Lakonishok and Vermaelen (1995) based on American data, but is comparable with the 1.64% measured by Lasfer (2000) using UK data. The 11-day (-5 to $+5$) CAR, 1.24%, is in line with the 1.14% and 1.95% estimated by Rau and Vermaelen (2002) and Oswald and Young (2004) respectively. The 21-day (-10 to $+10$) CAR, 1.18%, is not much different from the 11-day CAR, 1.21%, while Oswald and Young (2004) find 2.31% 21-day CAR, which is much higher than our, with the UK data, though in the different period.

The main difference between our CARs and the US ones lies in the pre-announcement CAR. We have a positive 0.89% 18-day, statistically significant at 5% level, pre-announcement CAR, while Ikenberry, Lakonishok and Vermaelen (1995) find a statistically significant negative 3.07% 18-day pre-announcement CAR, which, they claim, is strong evidence supporting the signalling theory-share undervaluation. Lasfer (2000) finds a positive 0.23% (-40 to -3) pre-announcement CAR and he argues that UK firms are not able to time their repurchase announcements. Apart from Lasfer (2000), other studies have not compared the pre-announcement CAR in the two markets. We are not in agreement with his suggestion, as we believe that the divergence is caused by the requirements of the UK Companies Act 1980 – to send out the AGM circular to shareholders at least 28 days before the meeting. Therefore, the positive pre-announcement CAR is the effect of information leakage. Figure 1 indicates the CAR movement around the announcement date. For all announcements, the 31-day CAR line shows that share prices began

to rise before the announcement date. The CAR lines for the years 1999, 2000, and 2003 give a clear indication of information leakage and the other 3 years reveal little or no evidence of information leakage. There is a jump in share price from day 0 to day 1 for all CAR lines, which means that the selection of the announcement date used in the study is effective.

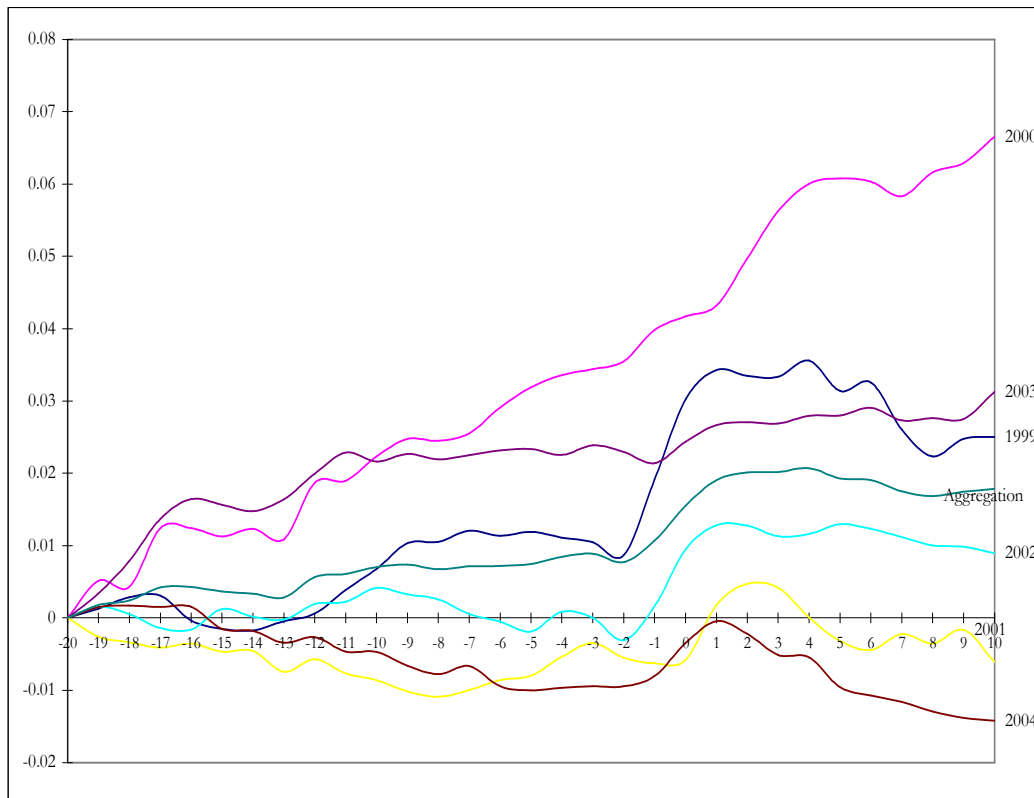


Fig 1. Cumulative daily abnormal returns for UK open market share repurchases over a 31-day period surrounding the announcement

The figure plots the 31-day cumulative abnormal returns of open market share repurchases announced each year between 1999 and 2004 as well as on the aggregation. Announcement abnormal returns are calculated using the market model and the FTSE Non-financial Index is used as the market portfolio.

To clarify the nature of announcement returns, we summarise 5-day announcement abnormal returns based on the percentage of repurchase sought, the lag time and the reason stated by managers (see Panel C, D, and E of Table 2).

The relationship between the percentage of shares sought and the 5-day CARs is presented in Panel C. The higher is the percentage of shares sought, the higher is the average 5-day CAR. The 5-day CAR of repurchases less than 5% is statistically insignificant, while the

Table 2

Announcement abnormal returns of UK open market share repurchases between January 1999 and December 2004

The table reports two sets of announcement abnormal returns (in percent) measured with the market model, -20 to -3, -2 to +2, and +3 to +10; -1 to +1, -5 to +5 and -10 to +10. The FTSE Non-Financial Index is used for calculation of constants and coefficients.

Abnormal returns are summarized for all repurchase firms, by time period, the percent of shares sought, the lag time and the cited reason by managers. T-test results are presented in parenthesis and without consideration of autocorrelation adjustments.

		Days relative to repurchase announcement					
		-20 to	-3	-2 to	+2	+3 to	+10
Panel A							
Time period	n						
1999	65	1.05	(0.853)	2.30	(3.213)***	-0.85	(-1.109)
2000	74	3.44	(2.625)**	1.53	(1.292)	1.68	(2.061)**
2001	67	-0.35	(-0.335)	0.82	(1.317)	-1.08	(-1.817)*
2002	96	0.00	(0.002)	1.27	(2.059)**	-0.38	(-0.718)
2003	82	2.39	(2.384)**	0.32	(0.514)	0.42	(0.921)
2004	84	-0.95	(-1.386)	0.73	(1.378)	-1.20	(-3.537)***
All firms	468	0.89	(2.130)**	1.13	(3.763)***	-0.23	(-0.941)
Panel B							
		-1 to	+1	-5 to	+5	-10 to	+10
Time period							
1999	65	2.56	(3.953)***	2.00	(2.054)**	1.97	(1.550)
2000	74	0.77	(0.682)	3.17	(2.075)**	4.76	(2.639)***
2001	67	0.73	(1.231)	0.54	(0.598)	0.16	(0.143)
2002	96	1.59	(2.682)***	1.35	(1.883)*	0.67	(0.649)
2003	82	0.37	(0.712)	0.48	(0.708)	0.84	(0.922)
2004	84	0.90	(1.782)*	-0.02	(-0.026)	-0.96	(-1.191)
All firms	468	1.13	(4.039)***	1.21	(3.233)***	1.18	(2.422)**
Panel C							
Percent of shares sought		-20 to	-3	-2 to	+2	+3 to	+10
<= 5%	45	1.40	(1.513)	0.32	(0.304)	0.06	(0.062)
>5%, but <=10%	239	0.44	(0.780)	1.10	(3.212)***	0.16	(0.546)
>10%	150	1.61	(2.083)**	1.40	(2.396)**	-0.92	(-2.036)**
No disclosed	34	0.14	(0.071)	1.21	(0.727)	-0.30	(-0.272)
Panel D							
The Lag time		-20 to	-3	-2 to	+2	+3 to	+10
<=10 days	129	0.80	(0.975)	0.40	(0.620)	-0.12	(-0.293)
>10 <=60 days	96	0.88	(0.974)	1.36	(2.061)**	-0.29	(-0.552)
>60 <360 days	176	1.43	(2.184)**	1.11	(2.876)***	-0.32	(-0.824)
360 days (no repurchases)	13	2.05	(0.967)	1.93	(1.079)	-1.66	(-1.231)
Panel E							
Cited reason		-20 to	-3	-2 to	+2	+3 to	+10
Cash rich	128	0.46	(0.526)	1.35	(2.336)**	-0.46	(-1.031)
Share undervaluation	116	1.62	(1.851)*	1.00	(1.597)	-0.25	(-0.567)
Improvement of EPS	92	0.13	(0.151)	0.75	(1.490)	0.19	(0.362)
Capital structure change	56	0.06	(0.068)	0.81	(1.054)	-0.51	(-0.699)
Company reorganisation	30	5.40	(3.303)***	1.20	(0.588)	-0.15	(-0.103)
Pressure from shareholders	12	-0.27	(-0.174)	3.16	(1.967)*	-1.81	(-2.123)*
Liquidity improvement	10	1.97	(1.352)	1.23	(0.830)	2.74	(0.977)
No stated	24	-1.07	(-0.500)	1.64	(1.326)	-0.40	(-0.549)

*** statistically significant at 1% level

** statistically significant at 5% level

* statistically significant at 10% level

CARs of repurchases from 5% to 10% and over 10% are statistically significant at the 1% and 5% levels respectively.

Panel D reveals the relationship between the lag time and announcement abnormal returns. The lag time is defined as the difference between the announcement date and the effective date. The effective date is gathered from RNS Hemscott, which only records current “live” firms news, therefore, it is impossible to find out the lag time for “dead” firms. The study of the lag time and CARs consists of all live firms (414) in our sample. Repurchase firms which wait for more than 10 days before the first repurchase generate statistically significant 5-day announcement abnormal returns, while firms which repurchase shares within 10 days earn an insignificant 0.4% 5-day return.

Panel E reports announcement abnormal returns on the basis of the reason given by the firm. The distribution of cash is the most popular reason for repurchases and the mean 5-day announcement abnormal return of this subgroup is a significant 1.35%. Though more than 24% of repurchasing firms mention that share undervaluation is the motivation for repurchases, this subgroup generates an average insignificant 1% 5-day CAR. Other popular reasons are improvement of EPS, capital structure changes and company reorganisation, though none of these subgroups generates mean significant 5-day CARs. Panel E shows that UK open market share repurchases are motivated by a variety of reasons and share undervaluation is not the dominant one.

6.2 Regression results

The regression results are summarized in Table 3. With the exception of the percentage of shares sought of Model 4, the coefficients of the other independent variables of all models have the right sign, though none of independent variables has any explanatory power. Model 4 containing the size (Log MV), book-to-market ratio (Log BTMV), and the percentage of shares sought has the best adjusted-R-squared, although none of the explanatory variables has a statistically significant coefficient. As suggested by Ikenberry, Lakonishok and Vermaelen (1995), we add 18-day pre-announcement CAR to Model 5 in order to control of the possibility of mean

reversion of abnormal returns. The result is disappointing. The adjusted R-squared is not

Table 3

Regression Results of the models

The table reports regression results of four models. Model 1 and 2 regress 5-day announcement abnormal returns on 18-day pre-announcement cumulative returns and the percent of shares sought at the announcement, respectively. Model 3 regresses the lag time on 5-day announcement returns. The lag time is defined as the time difference between the announcement date and the effective date, scaled by 360 days and then log transferred to control the boundary nature of the variable. Model 4 regresses 5-day announcement returns on the percent of shares sought, log size and log book-to-market ratio.

	Model 1	Model 2	Model 3	Model 4
Dependent variables	5-day CAR (-2 to +2)	5-day CAR (-2 to +2)	The Lag Time	5-day CAR (-2 to +2)
Constant	0.011391*** (3.93)	0.006925 (0.67)	-2.539164*** (-25.85)	0.024738** (2.20)
Percent of shares sought		0.038907 (0.403121)		-0.079148 (-1.08)
5-day CAR (-2 to +2)			1.559155 (1.069193)	
18-day PreCAR (-20 to -3)	-0.013360 (-0.25)			
Ln(MV)				-0.000189 (-0.28)
Ln(BTMV)				0.006006 (1.36)
Adjusted R-Squared	-0.001799	-0.001675	0.000029	0.002794
Number of observations	468	434	414	441

*** statistically significant at 1% level

** statistically significant at 5% level

* statistically significant at 10% level

improved, while the t-stats for Log MV and Log BTMV are even more statistically insignificant.

Thus, the results of that regression model are not reported here. These results show that there is no evidence supporting the signalling theory, which is consistent with the findings of Rees (1996).

He tests the relationship between announcement returns and various independent variables, including log market value, percentage repurchased, log gearing and log liquidity. The regression results of his study show that the announcement abnormal return is not affected by these independent variables. Lasfer (2000) regresses the day 0 AR and +20 to +151 CAR on a range of independent variables, of which log MV is included. The results show that the Log MV has explanatory power for the day 0 AR, but not for CAR. The regression results in general, could not exclude the impact of signalling hypothesis, but do suggest that the UK open market share repurchases between 1999 and 2004 are not mainly influenced by share undervaluation.

6.3 Sensitivity analysis of announcement abnormal returns

The average 1.15% 5-day CAR of UK share repurchases is obviously much lower than the average 3% 5-day CAR of US share repurchases. That leads to a question - is the average CAR of our sample affected by the constitution of repurchasing firms or multiple announcements? To examine that, we conduct a test of the robustness of the announcement CARs with respect to two issues: the impact of financial organizations and regulated industry firms and multiple announcements. Rau and Vermaelen (2002) and Oswald and Young (2004) have different views about whether the low 11-day CAR of the UK repurchases can be treated as abnormal return. Thus, we analyse announcement abnormal return from another angle, using the Fama and French (1993) three-factor model to analyse daily announcement returns on a calendar-time portfolio consisting of repurchasing firms. The intercept of three-factor model provides a test of the null hypothesis that the mean daily excess return on the portfolio is zero.

Following Perfect, Peterson and Peterson (1995), we exclude all repurchases announced by financial firms and regulated firms from our sample, and thereby leaving 424 announcements for the return analysis. The mean 5-day and 11-day announcement CARs of 424 open market share repurchases are 1.11% and 1.29% (both significant at the 1% level), which are 0.1% lower and 0.16% higher than the corresponding CARs of the whole sample. Independent t-test results show that neither of these return differences is statistically significant.

Following Ikenberry, Lakonishok and Vermaelen (1995), we examine the impact of multiple announcements on announcement abnormal returns. 75 firms in our sample announced repurchases more than 3 times. If share repurchases are a part of established corporate strategy, consecutive repurchase announcements are unlikely to be a surprise to the market. Therefore, we examine whether multiple announcements somehow affect announcement CARs. We eliminate consecutive repurchases from the data, leaving only the first announcement and thereby reduce the sample to 235 announcements. The 5-day and 11-day CAR differences between this sample and the whole sample are positive 0.38% and 0.66% respectively, both statistically insignificant at any conventional level. Hence, financial organizations, regulated firms or multiple announcements will not result in downward estimation of announcement CARs of the UK share

repurchases.

To employ the three-factor model, we use daily returns (calculated by the market model) over the event window of all repurchase firms to build up a calendar-time portfolio on the basis of the announcement date. Equally-weighted daily returns of this portfolio are calculated. The returns of FTSE Total non-financial index are used as the market returns. After 17th May 1999 the risk free rate is the daily rate of UK Repo middle rate and before that daily rate of UK bank bill 1-month rate is applied. Then daily excess returns of the calendar-time portfolio and market portfolio are obtained.

To calculate returns for size and book-to-market factors, we use the methodology of Fama and French (1993). First, we form two size portfolios at the end of June each year from 1998 to 2004, using all UK listed firms, based on the median market value of FTSE All Share Index. Subsequently, each of the two size portfolios is further sorted by book-to-market ratio into six portfolios, BH (big and high B/M), BM (big and median B/M), BL (big and low B/M), SH (small and high B/M), SM (small and median B/M), and SL (small and low B/E). Then, the daily equally-weighted returns of six portfolios are calculated between 10th December 1998 and 4th January 2005, the period ranging from the earliest repurchase announcement to the last one.

The alpha of the regression is -0.01% daily, significant at a 1% level, so the null hypothesis of zero daily abnormal return is rejected. This result is debateable in several ways. First, one of the assumptions of the model is that there are no structural changes for the whole sample period. As we rebuild the size and book-to-market portfolios every year, we use the 1st July of each year during the sample period as the breakpoint for the Chow test. The results reveal that the coefficients of these variables are not stable over time. Second, this methodology implies that the three-factor model is valid for estimation of daily excess return of calendar-time portfolio. The three-factor model works very well for monthly excess returns and the R-squared is consistently over 0.9. However, the adjusted R-squared of the model in our paper is only 0.19. Thus, the alpha of the model is highly influenced by some other unknown factors. Third, the Breusch-Godfrey LM test shows that residuals of the model are positively autocorrelated, which

leads an increase in the probability of type 1 error, rejecting the null hypothesis sometimes when it is true. Still, the statistically negative alpha suggests that repurchase firms generate a negative 0.3% 31-day abnormal return.

6.4 The effects of firm size and book-to-market ratio on announcement abnormal returns

Following Fama and French (1993), at the end of each June from 1998 to 2004 all UK listed shares are collected and divided into 6 portfolios. First, allocate all firms into two size groups on the basis of the FTSE All Shares Median Cap and then each size group is further divided into 3 roughly equal BTMV portfolios on the basis of book-to-market ratio. The breakpoints for size groups and BTMV portfolios at the end of each June can be identified. Then, based on these breakpoints, all repurchase firms are allocated into the corresponding size and BTMV portfolios on the basis of market capitalization and book-to-market ratio on the announcement. Table 4 reports announcement abnormal returns on the basis of size and book-to-market ratio for all repurchase firms as well as each calendar year during the sample period.

From a size perspective, in two out of six years, share repurchases announced by big firms earn a higher return than repurchases announced by small firms. On aggregation, small firms offer a mean 5-day 0.4% higher return than big firms. That is very different from the result reported by Ikenberry, Lakonishok and Vermaelen (1995). They find the abnormal return from the two smallest size deciles earn 6.1% more than that from the two biggest size deciles.

From a book-to-market perspective, BH (big firms with the highest BTMV) and SH (small firms with the highest BTMV) generate more 5-day abnormal returns than BL (big firms with the lowest BTMV) and SL (small firms with the lowest BTMV) between 1999 and 2002. Especially in the year 2000, BH and SH earn a 5-day 19.62% more abnormal return than BL and SL.

Table 4

Table 4 reports abnormal returns based on size and book-to-market ratio for all repurchasing firms for each calendar year of the study. At the end of each June from 1998 to 2004, all UK listed shares are collected and divided into 6 portfolios in the following ways. First, allocate all firms into two size groups on the basis of the FTSE all Shares Median Cap and then each size group is further divided into 3 roughly equal BTMV portfolios on the basis of book-to-market ratio. The breakpoints for size groups and BTMV portfolios at the end of each June can be identified. Then, based on these breakpoints, all repurchase firms are allocated into the corresponding size and BTMV portfolios on the basis of market capitalization and book-to-market ratio on the announcement.

Panel A

Panel A shows 5-day announcement returns of size groups and book-to-market portfolios for each calendar year of the sample period.

Time period	Size Groups		Book-to-market Portfolios					
	Big firms	Small firms	BL	BM	BH	SL	SM	SH
1999	2.59 (2.520)**	1.95 (1.661)*	-1.57 (-0.474)	2.91 (1.949)*	4.21 (2.899)**	2.28 (0.542)	2.01 (1.122)	2.14 (1.95)*
2000	1.21 (0.601)	1.90 (1.830)*	-11.21 (-2.262)*	1.38 (0.346)	5.40 (2.700)**	0.63 (0.986)	-2.66 (-1.090)	3.64 (3.022)***
2001	0.97 (0.301)	0.70 (0.825)	-0.48 (-0.328)	-0.69 (-0.479)	1.59 (1.364)	-3.42 (-0.815)	2.38 (0.961)	0.39 (0.454)
2002	0.63 (0.540)	1.73 (2.642)**	-0.21 (-0.103)	-0.30 (-1.100)	1.30 (0.883)	2.18 (0.875)	0.53 (0.469)	2.42 (2.954)***
2003	0.04 (1.048)	0.73 (1.014)	1.50 (1.739)*	-0.95 (-0.664)	-0.90 (-0.369)	1.52 (1.242)	0.82 (0.465)	0.50 (0.643)
2004	0.63 (1.137)	0.87 (0.847)	0.96 (1.221)	0.96 (0.605)	0.03 (0.026)	0.98 (0.990)	-1.00 (-0.668)	2.50 (1.209)

*** statistically significant at the 1% level

** statistically significant at the 5% level

*** statistically significant at the 10% level

Panel B

Panel B reports -20 to -3, -2 to +2, +3 to +10 and -20 to +10 announcement returns for all repurchasing firms based on size and book-to-market ratio.

Days relative to repurchase announcement

	-20 to -3	-2 to +2	+3 to +10	-20 to +10
Big	0.69 (1.186)	0.94 (1.971)**	-1.03 (-0.085)	1.60 (1.909)*
Small	1.11 (1.842)*	1.33 (3.797)***	-0.45 (-1.183)	1.99 (2.323)**
BL	-0.27 (-0.276)	-0.43 (-0.542)	-0.20 (-0.326)	-0.90 (-0.655)
BM	1.61 (1.439)	0.76 (0.725)	-0.44 (-0.713)	1.93 (1.227)
BH	1.44 (1.396)	1.81 (2.410)**	-0.15 (-0.311)	3.10 (2.005)**
SL	3.54 (1.631)	1.23 (1.277)	-0.102 (-1.104)	3.75 (1.364)
SM	-0.43 (-0.361)	0.29 (0.410)	-0.24 (-0.399)	-0.38 (-0.241)
SH	1.51 (2.208)**	1.87 (4.197)***	-0.46 (-0.834)	2.91 (2.715)***

*** statistically significant at the 1% level

** statistically significant at the 5% level

*** statistically significant at the 10% level

In 2003, the reverse is true and BL and SL together bring a 5-day 3.42% more abnormal return than BH and SH. On aggregation, BH and SH earn a 5-day 2.88% more abnormal return than BL and SL. That is much higher than the mean 5-day announcement CAR difference (0.5%) between value stocks and glamour stocks in Ikenberry, Lakonishok and Vermaelen (1995) study. The minimal difference in the abnormal returns between big and small firms means that the UK market does not respond very differently to repurchases announced by either big firms or small firms, which is a violation of the signalling theory. On the other hand, the UK market does take notice of repurchases announced by big firms with high B/M. However, lack of similar trend among small firms implies a low signalling power of the UK share repurchases in general during the sample period. That is consistent with the results of Model 4 of Table 3, of which Log BTMV seems more related to announcement abnormal returns than Log MV.

7: Conclusion

In this paper, we analyse the motivations of UK share repurchases announced between January 1999 and December 2004. We find that share repurchase announcements generate statistically significant 1.13% and 1.21% mean abnormal returns in the 5-day and 11-day window surrounding the announcement. The results are consistent with announcement abnormal returns reported by other authors (Oswald and Young (2004); Rau and Vermaelen (2002); Lasfer (2000)), though is much lower than 3.5% of the US repurchases reported by (Ikenberry, Lakonishok and Vermaelen (1995)).

When repurchases are grouped by the size of repurchase or the lag time, abnormal returns seem to react as hypotheses predict. For example, the higher the percentage of repurchase announced, the higher the abnormal return is. The higher the abnormal return upon the announcement, the longer the firm waits to start the repurchase programme. However, the regression results reveal no relation between announcement abnormal returns and size, book-to-market ratio, percentage of shares intended to repurchase or pre-announcement CARs. These results are consistent with Rees (1996). In addition, our paper reveals that the UK market reacts to repurchases very differently from the US market. Repurchases announced by small firms earn a fractional 5-day

0.4% higher announcement abnormal return than repurchases announced by big firms, while firms in highest book-to-market portfolios generate an average 5-day 2.88% higher announcement abnormal return than firms in lowest book-to-market portfolios. That is contrary to the results reported by Ikenberry, Lakonishok and Vermaelen (1995).

To summarise, like Rees (1996), we find no evidence to contradict the signalling hypothesis, but, we suggest that the UK open-market share repurchases are unlikely to be mainly motivated by share undervaluation. Moreover, based on repurchase news, we find that the most cited reason for share repurchases is to distribute free cash rather than to signal share undervaluation. The results of this paper set the tone for our future research. As the signalling theory is unable to explain announcement abnormal returns, we suggest using other hypotheses, such as free cash flow hypothesis, or capital structure change to explain the motivations of UK share repurchases.

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