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Can managers time the market? Evidence using repurchase price data ☆

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ABSTRACT

Little is known about the price firms pay for stock repurchases. Using a data set of all U.S. repurchases from 2004 to 2011, we compare the actual average price paid monthly in a repurchase with the average market price for the same stock over various horizons. We find that firms repurchase stock at a significantly lower price than the average market price in all sample years. Less frequent repurchasers, firms that repurchase when insiders buy on their own account, and firms that experience low stock returns prior to the repurchase obtain significantly lower prices. After controlling for risk factors, repurchasing firms earn positive returns. Infrequent repurchasers earn a significantly higher return up to three years following the actual repurchase.

1. Introduction

Can managers time the market in making security issuance and repurchasing decisions? This question has spurred many studies in both the security issuance and repurchases literatures. Despite numerous investigations, whether the evidence supports or disputes the market timing hypothesis remains unclear. Several papers present evidence in support of market timing but others dispute the interpretation of the evidence.[1] Therefore, whether firms are able to obtain significantly lower prices when they repurchase stock is uncertain.

One of the reasons that it is difficult to determine whether managers can time the market in a repurchase is that much of the literature relies on long-run returns after the announcement event (Lakonishok and Vermaelen, 1990; Ikenberry, Lakonishok, and Vermaelen, 1995, 2000a, 2000b; Peyer and Vermaelen, 2009).[2] This evidence is particularly difficult to link to market timing because many firms announce but never actually repurchase stock (Stephens

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[1] Baker and Wurgler (2000, 2002), Ikenberry, Lakonishok, and Vermaelen (1995, 2000a, 2000b), and Peyer and Vermaelen (2009) present evidence consistent with market timing. Eckbo, Masulis, and Norli (2000), Schultz (2003), Butler, Grullon, and Weston (2005), and Dittmar and Dittmar (2008) dispute the interpretation of these findings as evidence of market timing.

[2] The evidence based on operating performance is similar to the long-run returns but more inconclusive. Lie (2005) shows that firms' operating profitability improves following a repurchase announcement. Gong, Louis, and Sun (2008) show that this is due, at least in part, to pre-repurchase announcement downward earnings management.

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and Weisbach, 1998). Other studies based on large-scale U.S. data on repurchases show that firms repurchase after a stock price run-down (e.g., Jagannathan, Stephens, and Weisbach, 2000), but this analysis is based on annual or perhaps quarterly data on the amount of (but not the price paid for) stock repurchased. Further, several studies provide evidence that firms repurchase for reasons other than undervaluation (Dittmar, 2000; Grullon and Michaely, 2002; Jagannathan, Stephens, and Weisbach, 2000; Kahle, 2002; Bens, Nagar, Skinner, and Wong, 2003; Massa, Rehman, and Vermaelen, 2007). Understanding managers' ability to repurchase undervalued stock is vital to reconcile the academic studies of repurchases with the fact that Chief Financial Officers (CFOs) list undervaluation as the primary factor driving the motive to repurchase. Brav, Graham, Harvey, and Michaely (2005) conduct a survey of financial executives and find that 86.4% of all firms agree or strongly agree with the supposition that firms repurchase when their stock is a good value, relative to its true value. Moreover, they find that about half of the interviewed CFOs say that their firm tracks repurchase timing and can beat the market, with some saying they can beat the market by $1 or $2 a share over the course of a year.

In this paper, we utilize monthly data of repurchase prices, available from 10-K and 10-Q filings on the Securities and Exchange Commission's (SEC) Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system, and the average stock price from the Center for Research in Securities Prices (CRSP) before and after the repurchase to examine whether firms are able to time the market with repurchases. By utilizing these data, we are able to speak to both the ability of firms to time the market and the cross-sectional dispersion in firms' ability to repurchase at a low and possibly undervalued price. Our sample consists of 2,237 firms that repurchase stock as part of an open market stock repurchase program in a total of 38,900 firm-months between 2004 and 2011 and is an exhaustive list of stock repurchased within an open market repurchase program over this period. This paper is the first to examine the price paid in monthly U.S. stock repurchases for a full sample of repurchasing firms.

To measure market timing, we estimate a relative repurchase price by comparing the average reported monthly repurchase price with the average CRSP daily closing price for the same stock over the month of the repurchase and one-, three-, and six-month windows before and after the repurchase month. We predict that if firms can time the market, the relative repurchase price should be significantly less than zero. We find that the relative repurchase price is, on average, significantly less than zero. The average firm repurchases stock at a price significantly lower than the average closing price over the month of the repurchase and over the months surrounding the repurchase. The median firm repurchases stock at a price that is 1.8% lower than the average closing price six months before to six months after the repurchase.

Jagannathan, Stephens, and Weisbach (2000) show that firms repurchase after a stock price run-down. To distinguish our results from this previous finding and to better determine if firms can time the market, we repeat our analysis using a forward-looking relative repurchase price, which compares the average monthly repurchase price with the average CRSP daily closing price in the month of and months following the repurchase. We find similar results. The average firm repurchases stock at a price lower than the average closing price for the month of and one, three, and six months following the repurchase. The median firm repurchases stock at a price that is 2.3% lower than the average closing price in the month of and six months following the repurchase. We also examine post-repurchase returns by calculating the alpha from Fama and French (1993) calendar-time portfolios and examine these returns over several investment horizons between three months and three years post-repurchase. We confirm that, on average, repurchasing firms earn superior returns after controlling for risk factors, but these superior returns vary in the cross section.

Our sample spans before, during, and after the financial crisis. Aggregate repurchases fluctuated greatly during this time, peaking in 2007 and reaching a low in 2009. Given fluctuations in stock prices over this time, we may expect the ability of firms to repurchase at a low price to be correlated with the aggregate market. When we examine how the relative repurchase price varies over time, we find that, on average, firms buy at prices significantly lower than the average closing price in all calendar years. The relative price paid is highest in 2007 and 2008 and lowest in 2009, corresponding to the years that firms repurchased more and less stock. To further investigate if firms time the aggregate market, we examine the correlation between the relative repurchase price and the market return in the six months prior to the repurchase, controlling for other factors. We find that firms pay a lower relative repurchase price following a market downturn, suggesting that managers time the aggregate market as well as the price of their own stock.

In addition to the repurchase price, we observe detailed information on the amount and timing of repurchase activity using a monthly window, which is much narrower than that used in other U.S. studies. We therefore examine the frequency of repurchase activity and find that it varies considerably, with 20% of firms repurchasing stock in at least nine months of a calendar year. Frequent and infrequent repurchasers differ significantly in several ways. Frequent repurchasers are significantly larger, more profitable, and have significantly higher dividend payouts. Frequent repurchasers also have a significantly higher market-to-book (M/B) ratio, lower volatility, and lower bid-ask spread. Moreover, though the fraction of stock repurchased in one month is smaller for frequent repurchasers, the median frequent repurchasers repurchase 4.6% of their market value over a calendar year (compared with 1.2% for infrequent repurchasers), accounting for over 58% of aggregate repurchases. These differences suggest that the motives for repurchasing and the potential role of market timing could differ for frequent and infrequent repurchasers.

We find that firms' ability to time the market is decreasing in the frequency of repurchase activity. Firms repurchasing only once in a year pay an average 8.2% discount relative to the average CRSP price over six months before and after the repurchase. Measured over the month of and six months after the repurchase, the average discount is 3.2%. The average price paid by monthly repurchasers is not significantly different from