



Issue Commentary

DR. CARR BETTIS

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EIA on Hedging Activity

New academic evidence suggests that hedging transactions by executives are used opportunistically on average. While these transactions generally portend bad news for investors, important differences exist between different types of hedging instruments. In this *Issue Commentary*, we elucidate the differences among hedging-instrument types, their motivating factors, and their implications for investors, and we discuss recent hedging transactions at both Pulte Homes (PHM) and Boston Scientific Corporation (BSX).



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Executive Summary

THE RELATIONSHIP BETWEEN HEDGING INSTRUMENTS USED BY EXECUTIVES AND SHARE-PRICE UNDERPERFORMANCE

Theory supports aligning executives' personal wealth interest with that of shareholders, in part by granting significant equity rights to executives via stock options and restricted stock awards.¹ However, executives can easily delink their personal fortunes from those of the firm by entering into hedging contracts. Consequently, executives who report significant ownership of company stock in their SEC filings may not actually have a material portion of their wealth tied to the success of the firm.

The use of hedging transactions by executives has important implications for both stock selection and portfolio risk management. In an academic study covering 2,010 hedging transactions across 911 unique firms over 11 years, Gradient co-founder/Chairman Dr. Carr Bettis and his co-authors Dr. John Bizjak and Dr. Swaminathan Kalpathy (BBK, 2009) provide compelling empirical evidence that, on average, executives appear to use hedging instruments "opportunistically" by entering into these transactions ahead of poor share-price performance and "bad-news" corporate events.

While, on average, all hedging contracts are essentially "bad news" for investors, BBK (2009) also note important differences among different types of hedging instruments. To examine these effects, the authors subdivide their sample into four different types of hedging instruments. This portion of the analysis found that when executives used a collar instrument, company shares declined 22%, on average, relative to peers (based on industry and size) in the 12 months following the date of the hedging contract. The abnormal return results are qualitatively similar for prepaid variable forward-sale (PVF) hedging contracts. However, equity-swap transactions were followed by average excess returns of positive 11% over 12 months.

BBK (2009) also find that the precipitous share-price declines that tend to follow the use of some hedging instruments appear to be linked to future events (or at least the awareness of an increased risk of such events) that were known or reasonably could have been anticipated by the hedging executives. For example, executives using collar transactions are more than four times as likely (compared to control firms) to be embroiled in securities-related shareholder litigation and almost twice as likely to restate earnings the year after the collar transaction.

Another important finding is that executives at acquiring firms were much more likely to use collar instruments, and acquisition activity tended to continue after the hedging transactions. These results suggest that collar

¹ For more detailed information on the characteristics of executive pay, see Murphy (1999). Also see Kay and Putten (2007) and Jensen, Murphy, and Wruck (2004).





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(and other hedging) instruments may be useful in identifying cases in which executive sentiment regarding acquisitions may differ from the company's public disclosures. The evidence relating to corporate events surrounding hedging transactions was qualitatively similar for PVFs.

The evidence surrounding corporate events is distinctly different for exchange trusts. For example, there was no significant difference in the probability of future shareholder litigation for companies whose executives used exchange funds to reduce their exposure to firm shares (compared to control firms). In this regard, the evidence suggests that the use of exchange funds may be motivated more by a desire for diversification while also retaining (indirectly) the voting rights associated with their shares, whereas collars and PVFs appear to be used much more opportunistically.

It is also important to note that while executives are not permitted to short shares, as the counterparty to these transactions, the investment bank should short the shares of the issuer to mitigate its own downside risk.

Background

MOTIVES FOR THE USE OF HEDGING INSTRUMENTS: DESIRE FOR DIVERSIFICATION VERSUS OPPORTUNISTIC ACTIONS TAKEN TO REDUCE KNOWN RISKS

Over the past several decades there has been an explosion in the use of equity-incentive compensation (stock options and restricted stock in particular).² Option and restricted-stock grants are intended to better align the interests of executives receiving the grants with those of outside shareholders. In theory, executives win when share price appreciates, and so do outside shareholders.³

Notwithstanding the purpose of equity-based compensation, the interests of executives and outside shareholders can never really be completely aligned. For example, executives tend to have a disproportionate share of their personal wealth tied to the firm. Consequently, executives are inclined to diversify the holdings, for example by exercising options and selling the acquired shares earlier than they might otherwise do if they had a more diversified portfolio. The executive's desire to diversify is rational since the value of company holdings is a function of both firm performance and market-wide factors that are outside of the executive's control. Indeed, even firm-specific performance is at least partially outside of the executive's control, as the actions of other executives also play a role in firm results.

Non-public (i.e., inside) information about facts that may adversely affect future firm performance can also motivate executives to delink their interests from those of shareholders. While in theory any actions taken with respect to non-public information may be illegal, in practice it is not always easy to

² Academics back up the obvious: See Murphy (1999), Hall, and Liebman (1998) and Holderness, Kroszner, and Sheehan (1999).

³ We also believe that the overall structure of compensation and the form of the equity granted is important to long-term share-price performance. See for example evidence by Bettis, Bizjak, Coles, and Kalpathy (2008).





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detect. Furthermore, certain types of events that appear to precede hedging transactions (such as a perception of increased execution risk following an acquisition) may not meet the legal definition of “non-public” information.

Regardless of the underlying motives, the most common way for executives to diversify is by selling shares in the open market. However, in some cases, the use of hedging contracts may have distinct advantages compared to open-market sales, even taking into account the often hefty fees (including spreads). Most importantly, at least some types of hedging instruments may allow insiders to use their knowledge of firm-specific information to initiate a hedge in advance of a decline in firm performance. Using a hedging contract to trade on inside information can be more advantageous than selling shares before a stock-price decline because these transactions are typically much less transparent than an open-market sale. Therefore, the use of hedging instruments may reduce the risk of regulatory or shareholder actions.⁴ In such cases, executives may be able to diversify in advance of negative share-price performance without signaling their actions to the broader markets. Another potential advantage is that hedging instruments typically enable executives to retain voting control over the underlying shares. Finally, certain hedging contracts may offer significant tax advantages compared to open-market sales.

CATEGORIES OF HEDGING CONTRACTS

In this section we briefly summarize the most important characteristics of the four different types of hedging instruments used most often by executives. We also discuss how the investment banker hedges downside risk associated with three of the four types of hedging contracts.

Zero-Cost/Zero-Premium Collar (“Collars”): A collar involves the simultaneous purchase of a put and sale of a call. The collar is zero-premium because the proceeds from the sale of the call are used to finance the purchase of the put. The put option provides insurance for the holder against a decline in share value below the strike price of the put. On the other hand, any appreciation in share value above the strike price of the call option is forgone profit. In most cases there is a cash-advance feature, but because of the spread between the put and the call, the cash advance is not taxable as it is not considered a constructive sale.⁵

Prepaid Variable Forward Sales/Forward Sales (“PVFs”): A PVF is a contract between an executive and an investment bank wherein the executive promises to deliver shares at some future date in exchange for an up-front cash advance. The amount of stock that must be delivered upon settlement depends

⁴ These transactions are less transparent than a regular sale of stock because they are reported in Table II of Form 4s, which makes them much harder for shareholders and the market to identify. In addition, these transactions are potentially less likely to raise regulatory and legal issues that surround insider trading and open-market sales. Besides being reported on Table II, many of these transactions are recorded in footnotes or as attachments to the regular forms.

⁵ For additional information on the specific structure of collars see Bettis, Bizjak, and Lemmon (2001).





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on the value of the stock at that future date. At maturity if the share price has fallen below the floor price specified in the contract, the executive is required to deliver all of the shares covered by the contract. Typically the floor price on the forward sale is the current (at the time of the transaction) stock price. Consequently a PVF generally provides full downside protection against depreciation of the underlying stock price. The executive also participates fully in any price appreciation in the underlying stock up to the upper ceiling value specified in the contract. If the stock price exceeds the upper ceiling, the executive receives a predefined percentage of any price appreciation above the upper ceiling. If the share price appreciates, the investor is required to deliver only that percentage of the shares necessary to repay the contract amount. It is also possible to structure the agreement so that the investor has the right to settle the contract in cash and retain the underlying shares upon termination. By cash settling the contract, the investor avoids any capital gains tax that would occur upon disposition of the shares and also retains voting and cash-flow rights associated with the shares.

PVF's were the most common form of hedging contract used by executives over the past five years.

Equity Swaps: With an equity swap, the executive exchanges the future returns on his stock for the cash flows of another financial instrument (which can be an equity instrument but is most typically a debt instrument such as the LIBOR minus 2%) over some extended period, such as five years. These instruments fell out of favor with executives after the 1997 Tax Payer Relief Act rendered them a constructive sale at the time of the transaction for tax purposes.⁶

Exchange Trusts/Exchange Funds: Exchange trusts and funds consist of a group of corporate executives and directors (typically around 50 but sometimes fewer and sometimes as many as 500) from diverse companies who place their shares in a limited partnership (or limited liability company) in order to create a diversified portfolio of securities for all members. As long as investors remain in the fund (typically for seven years) they do not pay any

⁶ As noted by BBK (2009), swap transactions have recently seen a recurrence with hedge funds and other large blockholders. Swap agreements allow the separation of economic ownership from voting rights. By separating economic ownership from voting ownership, investors can avoid public disclosure of their equity position in the firm, and this appears to have been a strategy by a number of hedge funds involved in proxy fights or M&A activity. E.g., Children's Investment Fund, 3G Capital, and a number of other hedge funds' use of equity swaps gave them an effective ownership stake greater than 5% in CSX railroad before launching a proxy contest at the firm. Such a stake would typically trigger disclosure via a 13D filing in the U.S. However, since the long position in the swap did not have voting rights, the hedge funds arguably did not have to reveal their equity position in the company before engaging in a proxy battle. It is noteworthy that investment banks usually hedge the M&A deal—in this case by buying shares in CSX—thus these hedge funds can easily obtain the shares from the investment banks when they are needed to vote in the proxy fight, but at the same time can delay disclosing their ownership to the market. Although it is not the purpose of our study, BBK (2009) observe that another advantage of equity swaps is that they can be used to keep voting rights but not an economic interest. This occurs by taking a short position in the swap and also holding shares. See Hu and Black (2007) for more detailed discussion of how hedge funds (or any institutional investor) can use swap transactions to decouple economic and voting ownership and the recent regulatory controversy that surrounds their use.





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taxes until they sell their underlying stock.⁷ Upon the dissolution, some funds distribute the particular stock contributed back to the insider while others distribute a *pro rata* portion of the fund's total marketable securities. These funds are typically set up and run by investment banks, which collect a significant management fee for operating the funds.

Exchange trusts may be less attractive as a mechanism for opportunistic hedging actions because any future income from the investment will be dependent on the trusts' performance—which is dependent on the performance of the shares contributed by the participating executives. In this context, executives who contribute to these funds may have personal reputations at stake when contributing securities of their own firms to an exchange trust. Additionally, their own returns from the investment will be at least partially dependent on performance of their companies' shares. The ability to use exchange trusts for opportunism also may be negated by the fact that these trust arrangements often take months to form, given that they typically consist of different insiders from a large number of diverse firms who must all agree to the terms of the arrangement.

Finally, exchange trusts (and funds) are generally used to hedge a much smaller portion of the participating executive's holdings. BBK (2009) report that the average size of collars, forwards, and swaps ranged from 28% to 33% of holdings, in contrast to just 9% in the case of exchange-fund contracts. This finding suggests that the contracts may be used as just one of many vehicles for achieving diversification, and that (if materiality of the transaction is an indication of opportunism) they appear less likely to be used for opportunistic actions.

IMPLICATIONS OF OFFSETTING HEDGES USED BY THE INVESTMENT BANK TO MITIGATE ITS OWN DOWNSIDE RISK

Another important, but often overlooked, aspect of hedging contracts is the impact of offsetting hedges used by the investment bank to mitigate its own downside risk. Notwithstanding the significant fees charged for hedging arrangements, investment banks would not be willing to offer three of the four types of hedging contracts discussed above (collars, PVFs, and equity swaps) without taking an offsetting short position in the subject company's shares.

To this end, the magnitude of shares that can be hedged by executives in any single transaction is often limited by the economics of the deal. In order to reduce risk from structuring the hedge contract (other than for exchange

⁷ In order for the contributions into the fund to not trigger an immediate capital-gains tax liability for the participants, the partnership (fund) cannot invest more than 80% of its assets in marketable equities. Twenty percent of its assets must be invested in non-publicly traded securities which are often relatively illiquid real estate investments.

⁸ The use of these instruments is clearly relevant for governance and arguably to proxy voting decisions. Our strategic partner *Verus Research* investigates and evaluates the nuances of compensation programs at firms globally with the objective of rendering informed opinion on every proxy voting compensation-related issue and providing their opinion on related governance issues, including hedging transactions.





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trusts), the counter party (investment bank) borrows shares to establish a short position, which limits the bank's exposure to adverse movements in the stock price. Typically the more the bank borrows, the more expense it incurs and the less profit it receives. In addition, to further ensure that they do not lose money on share-price declines, particularly if the stock price falls below the contract floor, the investment bank must establish a net short position very quickly. This becomes more difficult and costly the larger the hedge.

Finally, while executives and directors are precluded from directly shorting their own firm's shares, the investment banks themselves do short the shares. While Gradient takes no position with respect to the ethical implications of hedging transactions,⁸ we believe the economic consequences are an important factor to consider when evaluating various investment-related issues such as quality of earnings risk, the validity of management assertions, and the likelihood that recent mergers, acquisitions, and other corporate actions will deliver results commensurate with expectations.

The Empirical Evidence

ABNORMAL RETURNS PERFORMANCE BEFORE AND AFTER EXECUTIVE HEDGING DECISIONS—ARE THEY INFORMATION BASED?

BBK (2009) empirically investigate the use of three of the four types of hedging instruments (collars, PVFs, and exchange trusts) from January 1996 through December 2006. In this section we review the most important results from this study to illustrate why it is critical for investors to monitor the use of these instruments.⁹

Note: Because equity swaps are used infrequently (there were only 34 observations in the sample), BBK was unable to perform a rigorous analysis of returns surrounding these transactions.

Figures 1 through 3 graphically illustrate the cumulative abnormal returns (CAR) surrounding collars, PVFs, and exchange trusts included in the BBK (2009) sample. The return window presented in the graphs extends from 250 days before each hedging transaction until 250 days after the transaction. Excess returns were measured using two alternative metrics: (1) raw returns less the return earned by size- and industry-matched firm control firms and (2) raw returns less the return to an equally-weighted index.

Figures 1 and 2 illustrate abnormal returns associated with collars and PVFs, respectively. Both graphs show a strikingly similar pattern where, on average, the sample firms generated significant, positive abnormal returns in the 250-day period leading up to a hedging transaction. However, after the hedging transaction, average excess returns turned sharply negative. This result indicates that, on average, the hedging transactions in the BBK sample appear to have been information-based. That is, the executives involved appear to have

⁹ Gradient financial engineers have also extended the analysis through 2008. This analysis confirmed that the results in BBK (2009) extend through the last two calendar years.





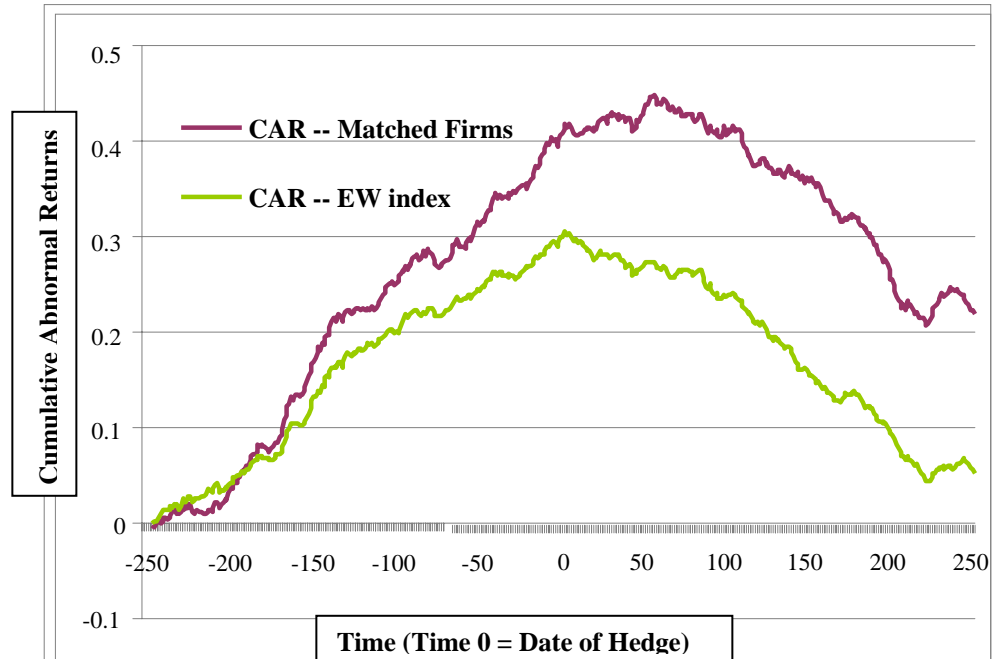
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had advance knowledge of certain facts or circumstances that (1) motivated their decision to hedge and (2) ultimately had an adverse impact on share price. In a later section of this report we examine the subsequent occurrence of several types of events in order to gain insight on the nature of information that lies behind executive hedging decisions.

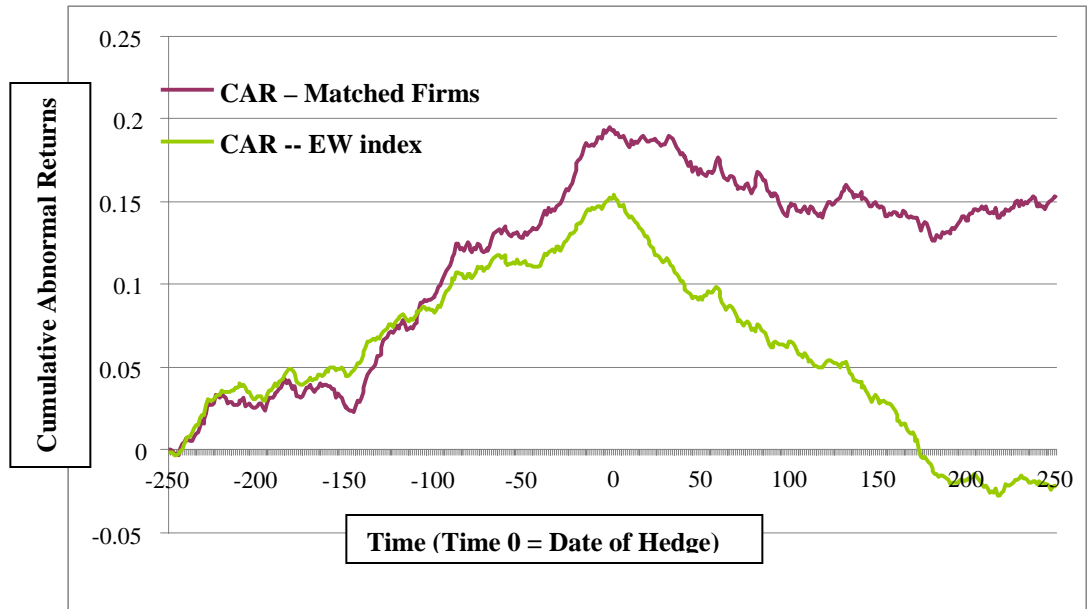
Figure 1. Cumulative Abnormal Returns (CAR) for Zero-Cost Collars



(See figure, Prepaid Variable Forward-Sales Contracts, next page)



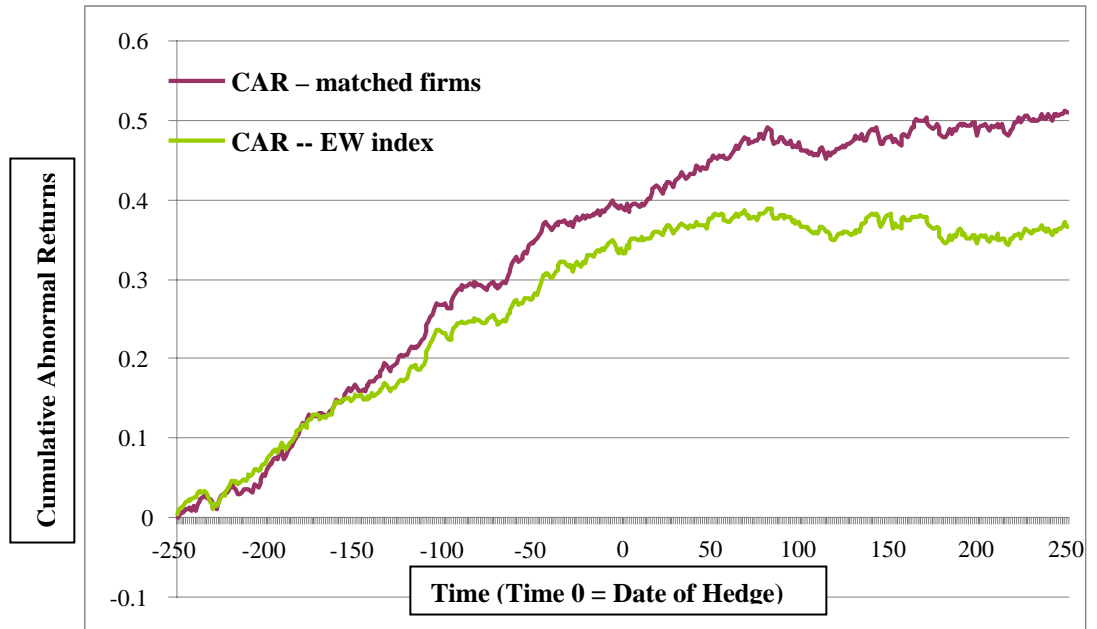
Figure 2. Prepaid Variable Forward-Sales Contracts



In contrast to the results depicted in Figures 1 and 2, Figure 3 shows no evidence of opportunistic behavior. While the magnitude of excess returns earned before exchange-trust transactions were fairly similar to those earned before collar and PVF transactions, the sample firms continued to earn excess returns even after executives had entered into the exchange-trust transactions. This result suggests that, while the executives may have had reason to hedge (to protect profits earned before the hedging transactions), their decisions do not appear to have been information based.

(See figure, Exchange Trusts, next page)

Figure 3. Exchange Trusts



EVIDENCE THAT COLLAR AND PVF TRANSACTIONS OCCUR, ON AVERAGE, BEFORE SPECIFIC TYPES OF EVENTS THAT ARE ASSOCIATED WITH FUTURE SHARE-PRICE UNDERPERFORMANCE

To better understand the motives of the executive hedging decisions, BBK (2009) investigate various corporate events surrounding these transactions. Specifically, BBK compare the frequency of these events for the hedging firms with the frequency of the events for companies in the same industry, with similar market capitalizations and similar levels of insider selling in the year before the hedging transaction. BBK (2009) conclude that the evidence surrounding corporate events supports the hypothesis that, on average, executives use collars and PVFs to “trade” opportunistically on the basis of private information.

In this part of the analysis, BBK (2009) investigate four types of corporate events both before and after hedging transactions. These include securities-related shareholder litigation, financial-statement restatements, M&A activity and new equity issuances. Below, we summarize some of the more important findings with respect to collar transactions. Note, however, that the results for PVFs are substantially identical.

- **Securities-related litigation:** Only 4.27% of collar firms faced securities-related shareholder litigation in the year before the collar transaction. However, 17.41% of these firms faced securities-related litigation in the year after the transaction (versus only 3.9% of control firms). By two years after the transaction, almost 30% of collar firms faced securities-



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related shareholder litigation (versus only 10% of control firms).

- **Financial-statement restatements:** Only about 1% of collar firms (and control firms) had financial-statement restatements in the year before the hedging transaction. However, almost 6% (11%) of collar firms had restatements within one year (two years) after the collar transaction. Control firms had approximately half as many restatements.
- **M&A activity:** Collar firms are more likely to be acquirers than control firms in the periods before and after hedging transactions. In general, acquisitive firms on average tend to underperform their peers in post-acquisition periods so this result is not surprising. However, this result is also consistent with the actions of executives who are more likely to want to retain voting control over their shares. Arguably, then, hedging provides the perfect mechanism to retain voting control while also being able to diversify and opportunistically lock in share-price gains.
- **New equity issuances:** Collar firms are also more likely to have issued new equity in the year before the hedging transactions but are no more likely to do so after the hedging transaction. Given that equity issuances are typically followed by weak stock-price performance (Loughran and Ritter, 1995) this result also supports the notion that insiders at collar firms hedge in anticipation of poor future firm performance.

The results for exchange funds stand in marked contrast to those for collar or PVF sample firms. In this regard, BBK find no statistical or qualitative difference in the probability of shareholder litigation or restatements after executives initiate exchange-fund transactions. However, like firms whose executives use collars or PVFs, firms whose executives use exchange funds are more likely to be acquisitive firms. They are also more likely to have issued new equity before and after these transactions.

As BBK (2009) speculate, and as already mentioned, investment banks are likely to care about (and may even have an active interest in) the performance of firms whose executives use exchange trusts. The likelihood of selling more exchange trusts is a function of the performance of each trust (and, by extension, the securities contained in each trust). In addition, the fees earned by the bank on each trust are a function of the returns generated by each security contained in the trust. In contrast, investment banks arguably do not care about the performance of firms whose executives hedge via collars, PVFs, or equity swaps. In these cases, the banks collect fees that are independent of future share-price performance and they can hedge their own downside risk exposure by shorting the issuer's stock.

Recent Examples

PULTE HOMES INC. (PHM)

Pulte Homes Inc. (PHM) Chairman William Pulte entered into three separate





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PVF contracts during 2008 and 2009. In aggregate, the contracts involved 13.1 million shares and provided cash proceeds of \$110.2 million to Pulte.¹⁰

The first contract was initiated on 02/26/08 with a settlement date of 03/04/09, a ceiling of \$19.01 and floor of \$10.15. PHM shares were trading at \$15.30 on the contract date (dividend-adjusted close), yielding cash proceeds of \$33.0 million to Pulte.

With shares down 23.2% from the time of Pulte's first PVF contract, Pulte entered into a second PVF on 12/08/08, when PHM shares were trading for \$11.75 (dividend-adjusted close). The cash proceeds totaled \$43.3 million on 5.0 million shares covered under the contract. Scheduled to settle on 12/22/10, the contract included a cap price of \$13.72 and a floor price of \$9.19.

On 02/09/09 Pulte terminated the first PVF by delivering the 3,350,000 shares to the counterparty. At that same time, he adopted another PVF with a different counterparty, this time pledging 4,750,000 shares. Pulte received proceeds of \$33.9 million. The third contract has a scheduled settlement date of 06/09/10 with a ceiling price of \$13.94 and floor price of \$9.20.

PHM shares have decreased 14% (10%) since the date of the second (third) forward-sale contract. If the contract were to settle at today's price, Pulte would (hypothetically) be able to avoid \$13.2 million in equity losses on the two remaining contracts.

Subsequent to Pulte's 02/26/08 hedging contract, PHM went on to miss earnings expectations in every quarter of 2008. Nearly half of the company's annual loss of -\$5.81 per share was incurred in Q1 2008, which ended just five weeks after the first hedging transaction. PHM reported a Q1 2008 loss of \$2.75 per share versus a consensus expectation of a loss of \$0.41 just before Pulte's hedging transaction. Additionally, PHM reported its second largest quarterly loss of the year (\$1.33 per share) in Q4, which ended just three weeks after the CEO's second hedging transaction.

As discussed previously, BBK (2009) report that companies with hedging executives are much more likely to be involved in merger and acquisition activity in the year following their transactions. Interestingly PHM recently announced the acquisition of Centex Corp. (CTX) in a stock-for-stock swap deal worth \$1.3 billion. The deal, which is expected to close in Q3 CY2009, will create the largest U.S. homebuilder. Together, the combined entity will have a presence in more than 59 markets across America. The transaction is expected to provide Pulte annual cost savings of \$350 million and provides Pulte access to Centex's holdings in Texas and North and South Carolina, which PHM CEO Richard J. Dugas described as "two areas that continue to exhibit

¹⁰ While these are material transactions, as of 10/24/08 Pulte still held in excess of 41 million common shares of PHM. As noted previously in this report, the magnitude of shares that can be hedged by executives is inherently limited because of the expense incurred by the bank and their need to quickly short the shares of the issuer.





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strength in the face of today's difficult housing market." The new company will have \$1.8 million in debt, with cash reserves of \$3.4 billion. Until the deal closes, both PHM and CTX will continue to operate as separate entities.

Table 1. William Pulte Forward Sales

Initiation Date	Price at Decision	Settlement Date	Price at Settlement	Securities	Ceiling Price	Floor Price	Proceeds
02/26/08	\$15.30	03/04/09	\$8.33	3,350,000	\$19.01	\$10.15	\$33,026,978
2/08/08	\$11.75	12/22/10	NA	5,000,000	\$13.72	\$9.19	\$43,292,127
2/09/09	\$11.36	06/09/10	NA	4,750,000	\$13.94	\$9.20	\$33,871,250
Totals				13,100,000			\$110,190,355

BOSTON SCIENTIFIC CORP (BSX)

Gradient initiated coverage on global medical device company Boston Scientific (BSX) with a grade of D in a 01/22/09 *Research Alert* based in part on the ongoing hedging activity of co-founders Peter Nicholas and John Abele. Nicholas was the first of the two co-founders to enter into a series of forward-sale contracts from 09/09/08 to 04/06/09. This series of contracts covered 5.6 million shares and yielded an estimated \$51.8 million in proceeds. Abele's forward sales began on 12/04/08 and have continued through at least 04/06/09. During this period, Abele hedged his exposure to 2.8 million shares for estimated proceeds of \$19.8 million.

Of note, the two co-founders' hedging contracts coincided with a series of open-market sales totaling 822,100 shares (\$5.9 million) and 1.8 million shares (\$14.6 million) for Nicholas and Abele, respectively, from 11/14/08 to 02/24/09. According to the company, Nicholas (Abele) was forced to sell 35.8 million (20.0 million) shares to satisfy margin calls. These involuntary sales accounted for 78.4% (78.7%) of the 45.6 million (25.5 million) shares Nicholas (Abele) sold and/or hedged since September 2008. However, since the 10/08/09–12/03/08 period of significant margin sales, the two co-founders have sold or hedged exposure to an additional 22.7 million shares in the aggregate with only 816,005 shares sold as a result of margin calls.

BSX has also reported a battery of bad news during this period, including a negative preannouncement regarding Q3 2008 losses, an adverse court ruling related to patent litigation with J&J's Cordis subsidiary, and a number of ongoing regulatory inquiries into incentives provided to doctors. The company also faces stiff competition in the market for coated stents and ongoing challenges to restructure the business and reduce a heavy debt burden.





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AMERICAN INTERNATIONAL GROUP INC. (AIG)

It is also commonplace for outgoing executives or board members with significant holdings in the companies from which they have departed to use hedging contracts to protect against downside price movement. Thus while it may be tempting to disregard hedging by departing executives, we still believe that their transactions should be considered in assessing firm value. An example is the significant hedging of AIG shares by outgoing Chairman Herb “Hank” Greenberg (via CV Starr & Co.). On 11/15/05, Greenberg entered into a variable prepaid forward-sale contract for up to 4.4 million shares of AIG. Under the terms of the agreement, CV Starr received proceeds of approximately \$240 million in exchange for the November 2008 delivery of a number of shares of AIG stock. The amount to be delivered was to be determined by a set of agreed-upon factors. As it turned out, the relevant one was that if the volume-weighted average price was less than (or equal to) the forward-floor price of \$65.85, CV Starr was to deliver the maximum number (more specifically, 1/10th the maximum amount for each of 10 days leading up to 11/20/08 on which share price was below the floor price), which was worth less than \$10.0 million at that time. Greenberg reported a proportionate interest of 12.749% in shares of common stock held by CV Starr.

About the Data

Before the mandated electronic filing of transactions subject to SEC Section, the Disclosure division of Primark Corp. (now part of Thomson/Reuters) collected and compiled the paper-filed insider forms on behalf of the SEC and its institutional clients. In 1996, Gradient encouraged Primark to collect and compile data on possible hedging contracts. During this period, data-collection agents at Primark would identify certain key words in footnotes to Form 4 filings and fax any filings that contained potential hedging transactions to Gradient to determine whether or not a hedging transaction was apparent.

In 2001 Gradient co-founder and Chairman Dr. Carr Bettis published the first academic paper related to these instruments with co-authors Dr. John Bizjak and Dr. Michael Lemmon (BBL, 2001). They speculated that hedging instruments appeared to be used more pervasively but that the reporting requirements were either too ambiguous and/or that compliance was poor. The BBL (2001) paper was presented to the SEC in 2001.

Reporting requirements for hedging instruments were subsequently refined, allowing for the identification of a greater number of hedging transactions in more recent periods.

Reflecting the insights gained through time, Gradient currently collects, evaluates, and maintains a database of each filing that appears to be a hedging contract. Gradient has also covered hedging transactions as part of its *Equity Incentive Analytics* research service since 2006.

The use of hedging instruments is also common in Western Europe. Gradient





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