NEW YORK — About 1,400 corporate directors received option grants whose timing was manipulated, according to an academic study released Monday.

Of all options grants to directors, about 9 percent were received at "lucky" times _ when the stock price was equal to a monthly low, according to a Harvard Law and Economics paper released Monday.

After studying the period form 1996 to 2005, academics at Harvard Law School, Cornell University and INSEAD in France estimated that about 800 lucky grant events were the result of opportunistic timing.

Options give the recipient a right to buy a stock at a fixed "strike price," generally set at the stock's market price the day of the grant and options holders benefit if the stock rises above the strike price. In the backdating scandal, companies have dated option grants to days when the stock was at a low, enhancing the potential benefit.

According to the study:

- Director grants were more likely to be manipulated when potential gains were larger.

- Grants were more likely to be manipulated when the company had more provisions protecting insiders from risk of removal.

- Directors' grants were more likely to be lucky when executives, and especially the CEO, also received a grant on the same date.

- Grants were more likely to be manipulated when the board did not have a majority of independent directors.

The report was written by Lucian Bebchuk at Harvard, Yaniv Grinstein at Cornell and Urs Peyer at INSEAD.

At least 189 companies have disclosed Securities and Exchange Commission, Department of Justice or internal investigations related to backdating, according to an Associated Press review.