Employee Share Option Grant Size and Stock Prices

Wojciech Grabowski, Assistant Professor
Department of Economics University of Warsaw

1. Introduction

The research literature on employee share options (ESOs) concentrated in recent years on several major issues: expensing, valuation, incentive alignment, value relevance and taxation. It also considered the capital structure and payout policy aspects of stock option plans, as well as their correlation with the business opportunities of ESO issuers.

The option expensing debate culminated in 2004, when the new accounting standards were proposed by both IASB and FASB. The valuation procedures recommended by the accounting authorities focused on the complex contractual features of ESOs, in contrast to the methods proposed in the academic literature, which took into account the ESO holder portfolio and risk aversion aspects as well as the dilution effect of options. The agency theoretic papers examined in turn the incentive characteristics of these contracts. In addition, the taxation issues related to both the issuer and the holder of these instruments were investigated.

In this research note a few observations on the timing aspects of ESO grants are presented. First, several recent papers on the subject are briefly reviewed, and then a small ESO dataset is explored. In conclusion some topics for further investigation are proposed.

2. Selected recent research

Results related to the links between ESO grants and stock prices obtained recently by Zhang (2002), Murphy (2003) and Hall and Knox (2003) are summarized below.

Zhang (2002) explores the share over-valuation hypothesis in relation to ESO grants. He investigates the claim that managers sell overvalued equity through ESO issuance. Since options are exercised when options are ITM, and their price is then presumably up, this mechanism results in the issuance of highly-priced equity. Managers should issue more options when the vola-

tility is high, since the options are then more valuable. Zhang tests a hypothesis of a positive relationship between the probability of ESO adoption and high market valuation, stock price volatility and examines also the role played by the financial constraints on the issuer. Another interesting proposition tested in the paper deals with the allocation of option grants between executives and other employees. Zhang tests his hypotheses on the 1992–2000 data from a large sample of companies. Regressions produce a negative coefficient estimate at the market valuation proxy (B/M) and a positive one at volatility. The same coefficients in the executive grant fraction regressions have opposite signs, indicating that executives keep more option to themselves at lower stock price levels.

The hypothesis development should perhaps discuss several issues more extensively. Shares issued in the ESO exercise are first bought by the employees exercising the options. They may not necessarily sell these shares immediately. More importantly, the company receives the exercise price plus a tax deduction which is still less than the actual price of the stock in the market. Further, higher strike price will impact negatively the employee incentives and may make him less willing to accept options. The overvaluation hypothesis could also mean that executives grant overvalued *options* to employees and this may not be consistent with the incentive role of ESOs. Although Zhang employs several valuation measures they are usually computed at a single fixed date in a given year which may not fully reflect the valuation effect if the market is volatile. The B/M ratio may not able to capture fully the issuer reaction to changes in the stock price. This is also valid for the return variables. For many companies the market prices may vary substantially in a given year and may be much different from the year-end prices employed usually in the returns calculations. The option grants, in contrast, may be executed in a more opportune fashion taking into consideration rapid changes in the stock price. In such a case the year-end return based regression may not capture the timing aspect of the ESO issue well. The estimations in the paper are based on the data from the 1990s, a period of a long bull market, which also makes it more difficult to test ESO timing.

The reaction of managers to the price downturn is captured in a study by Murphy (2003), who documents that the new economy firms increased multiple option grants after the 2000 downturn. Hall and Knox (2002) investigate the corporate management of incentives provided by options for a large sample of top executives in the years 1992–2000. They find that companies were most likely to increase executive option grants following a period of stock price declines. They also find that grants were also larger after a period of higher returns. The Hall and Knox paper considers the same period as Zhang and employs similar observed returns variables. Through its focus on incentive management it recovers the post-decline ESO increase effect necessary to reduce option fragility. Their dataset, however, is limited only to the portfolios of top executives.

The above estimation results seem to warrant further investigation of the links between the stock price dynamics and ESO grants. We also have now an interesting opportunity to include the data following the 2000 downturn and see what effect a prolonged decline in stock market prices have had on ESO grants.

3. The contrarian option grants hypothesis

Incentive-alignment motivation demands that more options should be granted with lower exercise prices. Since long-term market movements are not easy to predict, executives might employ contrarian option policies and grant more options following the stock market decline and less options following the market price increase. We may call this the contrarian grants hypothesis.

In a small-scale introductory investigation of this hypothesis the ESO plans of seven well-known technology firms (Cisco, Dell, Intel, Microsoft, Oracle, Symantec and Yahoo!) in the fiscal years 1996–2003, and the dynamics of their ESO grants relative to the changes in the stock market price are analyzed. In contrast to other studies the change in stock market price is measured with the change in the exercise price of ESOs. Since ESO are usually granted at-the-money, the exercise price captures the price at the moment of the grant and therefore better reflects the timing behavior of the managers.

The examination of the data shows that all the companies in the sample seem to keep their level of the share of the outstanding options in total shares outstanding stable. The level of that share in turn is significantly different for each company, ranging from 8% for Oracle and 10% for Intel to 24% for Yahoo! The companies may be divided further into those adjusting rapidly their grants to the stock price changes and those less responsive. No company in the sample seems to be consistent in its change in the size of the option grants with respect to the change in the stock price, which would result in the opposite signs of both measures in all years. Cisco seems to have set its option grants in the timeliest fashion (Table 1). Cisco reduced the size of grants in 1998–9 when its shares where appreciating rapidly, it raised the number of options only slightly relative to the share price appreciation in 2000, and in 2001 with the fall in price it increased grants, decreasing them only marginally a year later when the share price was halved. Microsoft was also reducing the grant size in 1997–1999 when its shares appreciated, but then increased the grant almost three times in 2000 when the exercise price increased by 50%. Yahoo! also reduced or little changed its grants in 1997–2000 and then increased them significantly in 2001 when the exercise price fell by more than 80% (Table 2). Options grants were also managed in a contrarian fashion by Dell in 2000–2001 and Oracle in 2001–2 when the appreciation of market prices made the managers first reduce the grants and then increase them substantially when the prices declined in the following year.

The changes in the size of ESO grants against the changes in their exercise price for all companies in the sample are plotted in Figure 1. Following observations can be made: most observations have opposite signs i.e. exercise price increases are followed by declines in ESO grants and declines in price are followed by grant increases. Grants increases/decreases following exercise price increase/decrease are mostly less than proportional, which means that managers do not match the scale of the stock price increase with the same increase in grants. Similarly, the declines in grants do not match the stock price declines.

4. Conclusion

The incentive-alignment role of option compensation seems to support the contrarian option grant hypothesis developed in the paper. A consequence of this hypothesis could be that managers change the size of ESO grants in the way opposite to changes in stock price. The examination of a small ESO data sample seems to support this hypothesis. Since this result seems somewhat different from the results of previous studies, its closer and more comprehensive examination, including other corporate characteristics, in a larger scale study examining more data from the post–2000 period and taking into account the differences in the methodology is needed.

References

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Table 1.

Change in the weighted average exercise price for the ESOs granted, change in the number of ESOs granted and the number of options outstanding as a share of outstanding basic shares for Cisco, 1997–2003.

	Change in the ESO exercise price	Change in the number of ESO granted	ESO share in the number of shares outstanding-basic, bop
1997	0.928826	0.219048	0.108371
1998	0.845018	–0.26563	0.134843
1999	1.222	–0.13121	0.138783
2000	1.344734	0.204082	0.133765
2001	–0.23359	0.084746	0.140379
2002	–0.55622	–0.11875	0.147304
2003	–0.32223	–0.29433	0.165183

Table 2.

Change in the weighted average exercise price for the ESOs granted. change in the number of ESOs granted and the number of options outstanding as a share of outstanding basic shares for Yahoo!, 1997–2003.

	Change in the ESO exercise price	Change in the number of ESOs granted	ESO share in the number of shares outstanding-basic. bop
1997	4.581222	–0.19298	0.230024
1998	5.104139	0.152174	0.233333
1999	2.532808	–0.28302	0.295455
2000	0.268202	–0.28947	0.242248
2001	–0.81839	1.222222	0.214156
2002	–0.16828	–0.45	0.238596
2003	1.265676	–0.0303	0.222222

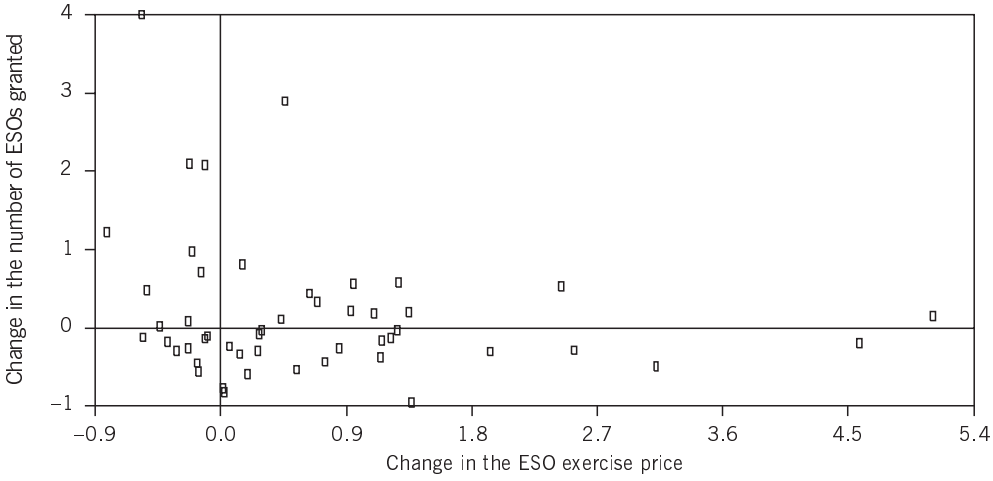

Figure 1.

Change in the number of ESOs granted vs. change in the weighted average ESO exercise price for Cisco, Dell, Intel, Microsoft, Oracle, Symantec and Yahoo!, 1997–2003.