

# Stock options with fixed exercise prices



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## **Table of Contents (Jump to)**

1 Introduction

2 Fixed Price Options versus Indexed Options

3 Case for Indexed Options

3. 1 Compensation for Relative rather than Absolute Performance

3. 2 Protection of Managers during Market Downturns

3. 3 Reduced Expected Costs

4 Case against Indexed Options

4. 1 Unpredictability

4. 2 Difficulty in Controlling Compensations

4. 3 Larger Deadweight Costs.

4. 4 Tax Treatment

4. 5 Reluctance of Managers

5 Reasons for Choosing Alternatives of Indexed Options

5. 1 Requirements of Firms

5. 2 Sensitivity of Payoff

6 Empirical Evidence

7 Conclusion

8 References

## **1 Introduction**

The principal-agent problem has long been a matter of discussion within organisational institutions. As a matter of fact, the owners of a limited company normally elect a Board of Directors to control the business's resources on their behalf. However, conflict arises among these managers and shareholders due to their different objectives.

As owners, shareholders would want to maximise profits while managers may want to maximise sales, build empire buildings and enjoy perks. To align the interests of both stakeholders therefore, compensation of managers should be linked with the firm's performance. One way to do this is the introduction of options: fixed price options and indexed options.

Basically, an option is a financial derivative representing a contract that gives the buyer the right, but not the obligation, to buy or sell an underlying asset at a specific price on or before a certain date. An option, just like a stock or bond, is a security.

Fixed price options and indexed options differ significantly from each other. For the purpose of this assignment, we will discuss how indexed options provide a better case compared to fixed price options.

## **2 Fixed Price Options versus Indexed Options**

Fixed price options whose exercise price is already agreed upon and will remain the same until expiration date. The option exercise price is usually set equal to the stock price at grant. When an executive is given a fixed price option as a means compensation, two situations can arise. If the share

price rises above the exercise price, the executive gains. On the other hand, the executive receive absolutely nothing if there is a decrease in share price

In contrast, an indexed option is a stock option whose exercise price is connected to a benchmark index, which may be a specific sector index or a broad market index. Indexed price options have unknown selling price when contract is being made, and the final price of the option depends on market status on the expiration date. A change in the absolute value of the share will have no effect unless

thecompanyoutperformssomestatedindexsuchastheS&P500 or a group of peers. Then only, the optionwillbeexercised.

### **3Case for Indexed Options**

#### **3. 1Compensation for Relative rather than Absolute Performance**

Fixed price options reward performance in absolute terms. If the share price increases, the executives are rewarded in spite of rising market trends being unconnected to managers' performance. Executives are still rewarded if competitors' or the market have performed better. Similarly, when the share price falls, no rewards are given even if the firm did better than its peers.

On the other hand indexed options reward relative rather than absolute performance. Hence, executives do not enjoy windfall gains by luck in rising markets, but by their performance instead. Only if the company performs better than the market or its peers that the executives can cash in. The executives have therefore further incentives to deliver good performance.

The example below gives a better idea of how indexed options actually reward relative performance.

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XYZ Ltd.'s equity stock is currently selling for \$100 per share when the market (benchmark) index is at a level of 1000. XYZ limited grants an option to its CEO which enables him to purchase an option consisting of 100000 shares at an exercise price of \$100, but the same will move in line with the market in future. Taking a specific case, the CEO is given indexed options. The value of the option granted to the CEO under 4 various scenarios is shown in the table below.

Value of Indexed Option under Indexed Options

| SHAREPRICE               | INDEX                                |                                     |
|--------------------------|--------------------------------------|-------------------------------------|
|                          | <i>Rises</i>                         | <i>Falls</i>                        |
| Outperforms<br>the index | Index: 1150<br>(by 15%)              | Index: 850                          |
|                          | Exercise<br>price: \$115<br>(by 15%) | Exercise<br>price: \$85<br>(by 15%) |
|                          | Stock price:<br>\$120 (by<br>20%)    | Stock price:<br>\$90 (by<br>10%)    |
|                          | Value of<br>option:<br>\$500, 000    | Value of<br>option:<br>\$500, 000   |

Underperforms Index: 1150 Index: 850

|           |              |              |
|-----------|--------------|--------------|
|           | (by 15%)     | (by 15%)     |
|           | Exercise     | Exercise     |
|           | price: \$115 | price: \$85  |
|           | (by 15%)     | (by 15%)     |
| the index | Stock price: | Stock price: |
|           | \$110 (by    | \$80 (by     |
|           | 10%)         | 20%)         |
|           | Value of     | Value of     |
|           | option: \$0  | option: \$0  |

Table 1

From Table1, indexed options only reward the CEO when the companies' stock outperforms the market, even if indexes have increased or decreased. They have a fair way of rewarding CEOs; they do not reward under-performing executives nor do they penalize superior performers whenever the market index has increased or decreased in respective cases. This is a convenient way of keeping CEOs motivated and thus encourage them perform well in their duties of decision making for a company's investment. In general, indexed options reward superior performance under all market conditions.

However, if the same example is taken in the case of fixed price option, and that there is a 5% change in the share price, the scenarios will differ as follows:

Value of Option under Fixed Price Options

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|                  |           |          |
|------------------|-----------|----------|
|                  | Exercise  |          |
|                  | price:    |          |
|                  | \$100     |          |
|                  | Share     |          |
|                  | price:    |          |
| SHAREPRICE RISES | \$105 (by | EXERCISE |
|                  | 5%)       | OPTION   |
|                  | Value of  |          |
|                  | option :  |          |
|                  | \$500,    |          |
|                  | 000       |          |
| FALLS            | Exerci    | NOT      |
|                  | se        | EXERCISE |
|                  | price:    | OPTION   |
|                  | \$100     |          |
|                  | Share     |          |
|                  | price:    |          |
|                  | \$95      |          |
|                  | (by       |          |
|                  | 5%)       |          |
|                  | Value     |          |
|                  | of        |          |
|                  | option:   |          |

\$0

## Table 2

As shown in Table 2, when the share price increases from \$100 to \$105, the option is exercised to the benefit of the manager. The latter receives a compensation of \$ 500, 000. In the reverse case, when the share price falls to \$95, the shareholders gets no compensation.

### **3. 2Protection of Managers during Market Downswings**

In the case of fixed price options, executives are not rewarded when the market is declining because share prices are below the exercise price. However, indexed options can well reward managers in bearish markets as long as the decline in the company's stock price is less steep than that of his peers. Indexed options reward better performers.

### **3. 3Reduced Expected Costs**

Traditional options plans reward employees as long as the share price is higher than the grant price. However, indexed options eliminates the possibility that managers can be compensated for share price movements that are unrelated to what they might have done. Thus it helps a firm to remove or lower undeserved compensations. A study by J. Angel and D. McCabe values that the expense of providing conventional options to executives at the 100 largest NYSE-listed companies is 41 percent more than the expense of providing options that take out market outcomes. The lower expected costs against future earnings of indexed options compared to fixed priced options can only be to the advantage of companies.



## **4Case against Indexed Options**

The advantages of indexed options over fixed price options are flagrant in light of the above. However, the application of indexed options is still rare. They lag behind fixed price options in many ways.

### **4. 1Unpredictability**

Unlike indexed options, fixed price options brings predictability and certainty to a transaction due to the fixed exercise price. Through the characteristic of ‘all or nothing’, the manager will exercise, and therefore make money, if and only if the firm’s stock price is above the exercise price.

### **4. 2Difficulty in Controlling Compensations**

Budgeting and forecasting business costs are made easier using fixed value plans. They allow for firms to plan and control how much compensation to offer to employees. Retention risk, in particular concerning non- executive staff members, can be largely minimised when compensations are close to that offered by rival companies. Indexed options, on the other hand, can cause large discrepancies in compensations and the loss of key employees.

### **4. 3Larger Deadweight Costs**

An indexed option plan has a greater deadweight loss compared to a traditional option plan. This is because, with agency problems, where the interests of owners and managers do not always line up, there is the need to expose the managers to firm-specific risk to encourage a specific type of behaviour. However, this means that they are unable to diversify their portfolios to their full potential, exposing them to both systematic and unsystematic risks while compensating them only for the systematic portion

of risk. Consequently, managers will always value their equity-based compensation at less than its market value.

#### **4.4 Tax Treatment**

So as to obtain favourable tax treatments, a company can grant incentive stock options. However, according to the 1994 US Code, this entails that the option price should be less than the fair market value of the stock at the time such an option is granted. In this case, it implies that the option price be fixed on the grant date.

#### **4.5 Reluctance of Managers**

Managers are unwilling to accept a compensation plan based on relative performance. This is because in the case of fixed price options, when the stock market performs well, they reap high rewards for stock price performance unrelated to their own efforts. Managers are reluctant to forego the potentially huge rewards conferred by the bull market, especially when they estimate that a downturn is less likely to occur in the stock market.

### **5 Reasons for Choosing Alternatives of Indexed Options**

Besides, it should be noted that indexed options are not suitable in all cases. Some reasons are illustrated below and the corresponding alternatives are also suggested.

#### **5.1 Requirements of Firms**

Compensation systems have the following functions: to compensate managers for completed work, to reduce principal-agent costs by more closely aligning managers interests with those of shareholders, and to retain the manager. Compensation that accomplishes one of these functions

successfully may not carry out the other functions of a compensation system as effectively. Stock options, for instance, serve to align incentives. However, a firm where incentive alignment is not that important, would not be keen to use stock or stock options to compensate its managers. It would rather use cash compensation. Cash avoids the deadweight costs that accompany any equity-based compensation plan.

### **5.2 Sensitivity of Payoff**

Indexed options do not work as expected in practice. Instead, their payoff tends to be highly sensitive to market price movements. As the market increases, the value of the variable-exercise-price option increases too. For example, Lisa Meulbroek of Harvard Business School shows that the estimated value of an option indexed to the S&P 500 rises by 15% if that stock index rises by 15%. Clearly, indexing does not even achieve its aim; separating the general market movements from the movements in the value of the option.

An alternative design that rewards managers only for performance and not for that is due to overall gains in the market or industry can be considered. Instead of using the firm's stock as an underlying asset, an alternative design employs a performance benchmarked portfolio. Under this proposed structure, the value of the portfolio changes to reflect the firm's performance, net of market and industry effects, while the exercise price remains fixed. (Meulbroek, 2001).

## 6 Empirical Evidence

A brief empirical review will determine whether relative performance is compensated in practice. We also explore if indexed options are indeed better than fixed price options.

According to Gibbons and Murphy (1990), chief executive officers are compensated upon relative performance. It was found that there is a positive and significant relationship between the remunerations of CEOs and the firm performance, but an inverse and significant one with the industry and market performance.

On the contrary, Bertrand and Mullainathan (1999) report that CEOs are remunerated for market-wide and industry movements that they perceive as luck. However firms that are better managed reward their CEOs less for such market movements compared to other firms. Sloan (1993)'s also found that CEO compensation depends on earnings so as to help separate market movements from the reward.

With regard to the effectiveness of indexed options, in their works titled “*Indexing Executive Compensation Contracts*” in 2013, Ingolf Dittmann, Ernst Maug and Oliver G. Spalt gave empirical evidence that indexed options provide incentives at a higher cost than conventional options.

## 7 Conclusion

In light of the above, it is observed that stock options with fixed exercise prices do not properly link managers' performance to compensation since they relate to absolute and not relative performance reward. Indexed options have higher incentive advantages over the fixed price option since it takes

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into account the skills of the executives. It is also highlighted that indexed options result in a lower compensation costs than equivalent fixed price options. Nevertheless, the drawbacks and suitability of indexed options should not be ignored either. As a result, a firm is well advised to properly weigh the costs and benefits of indexed options before applying them.

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