

Model Option Contracts

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Although option usage has grown dramatically in the last few years among professional investors, most investors do not use them at all. For those investors who are as reluctant to climb the learning curve of option pricing theory as they are suspicious of the options market, a novel form of option can help overcome their concerns.

Model Options¹ are a new type of option contract that was developed to enable companies and individuals to understand the components of option valuation and to provide ready and continuous access to option pricing, even when there is no active options market. With Model Options, one can employ the financial leverage and theoretical characteristics of options without being bound by the limitations and imperfections of the traditional option market.

Like traditional options, Model Options specify: whether the contract is a put or a call, the underlying asset (such as a stock, commodity, index, etc.); the strike price; the expiration date; and the holder's ability to exercise the contract².

Option Comparison		
	Model Option	Traditional Option
Basic Option Terms:		
Type of Contract (Put/Call)	Specified	Specified
Underlying Asset	Specified	Specified
Strike Price	Specified	Specified
Expiration Date	Specified	Specified
Ability to Exercise	Specified	Specified
Right to settle contract by selling it back to option seller at a price determined by a specified option valuation methodology	Specified	Not Specified
Option Valuation Model Used	Specified	Not Specified
Risk-free Rate of Return	Specified	Not Specified
Dividend Yield	Specified	Not Specified
Volatility	Specified	Not Specified

¹ Patent applications have been filed on this business method.

² Options are often classified by their exercise terms. American style options enable the holder to exercise the option at any point up until expiration, Bermudian options enable exercise at pre-determined points, and European options only permit exercise at expiration.

Model Options differ from traditional options in that Model Options provide the holder with the right to settle the contract by selling it back to the option seller at a price determined by a valuation methodology that is specified in the contract. The valuation methodology specified in a Model Option contract consist of identifying a particular option pricing model that will be used (such as the Black and Scholes, Binomial, and Trinomial models, etc.) and a description of how each of the inputs to the option pricing model will be determined.

To create a Model Option, one must either specify a value for each of the specified option pricing model's inputs or describe a means by which these inputs will be determined. Since the risk-free rate of interest and the dividend rate rarely change much over short periods of time, it may make sense to specify fixed values for short-term options. For options with longer durations, the effects of these inputs are more material, and one might desire a formula driven approach that will incorporate the impact of changing conditions over time. Like the risk-free rate and the dividend yield, the volatility of the underlying asset can be determined by setting a value at the beginning of the contract or by agreeing upon a formula that will be used to determine the volatility input.

The Value of a Model Option

A Model Option contract's value can be decoupled into two parts: its "traditional option component" and its "cash settlement component". The traditional option component is the value that a Model Option Contract would have if it did not have a cash settlement feature or if the cash settlement component was worthless. One can use an option pricing model to value the traditional option component in the same way one would value a traditional option.

Model Options can be structured so that the traditional option component has no value by stipulating in the contract that the holder has no right to force delivery of the underlying asset. In this case, all of the Model Option's value will be derived from its cash settlement feature.

Conversely, the cash settlement feature of a Model Option may be structured so that its value is de minimis in comparison to the value of the traditional option component. This condition could result from using significantly different input values in determining the value of the two components, or it could result from limitations being placed on the settlement right of the Model Option.

A Model Option cannot be worth less than the value of its traditional option component or its cash settlement component. The theoretically correct value of a Model Option is the present value of the greater of its cash settlement component or its traditional option component at each future point in time until the contract expires. Although Model Options can be structured so that they do not require the use of a special option valuation

Model to generate a theoretical value, a mathematical valuation model has been designed for this purpose.³

Benefits

Incorporating a specified valuation methodology and a settlement right into an option contract makes option valuation more understandable, more certain, and less costly. Model Option Contracts can be structured in countless ways and help expand option usage by permitting buyers and sellers to use options in ways that are currently impossible.

For example, Model Option contracts may be structured so that the holder does not have the right to force delivery of the underlying asset. This prevents unnecessary trading since the buyer can receive the option's value (both intrinsic value and time value) without having to force delivery of the underlying asset or engage in other trading to close out or rebalance a given trading position.

Exchange Traded Options

Used in the context of options that are already traded on an exchange, Model Option contracts can be structured so as to act as an insurance policy on the value of the option. Such options could be traded to a third-party and they might allow the holder to force delivery of the underlying asset, but under no circumstance would the option be worth less than the settlement price of the contract. In effect, the option seller would be guaranteeing that it is willing to extinguish the contract at the settlement price, regardless of what is happening in the options market and no matter how little trading is taking place.

Model Option contracts alleviate the need for the price discovery function of an exchange. This enables trading on small company stocks, on long-duration options, and on deep out-of-the-money options that is not possible presently due to a lack of liquidity, and concerns about the potential for pricing distortions and manipulation. Model Option Contracts eliminate the importance of small speculators to the price discovery process. This, in turn, lessens the importance of the credit risk management function that option exchanges provide, at least to large, credit-worthy enterprises that wish to trade with each other.

Absent the need for price discovery and credit risk management, it is possible to set up smaller exchanges that can facilitate the trading of Model Option contracts directly between credit-worthy participants. By reducing transaction costs, it becomes feasible for large institutions to buy and sell deep out-of-the-money Model Option Contracts that have very small expected values. Currently, such trading is infeasible because, at a certain point, the cost of trading exceeds the expected value of the options.

³ Contact admin@riskinnovations.info if you are interested in learning more about this valuation model.

By agreeing to a specific formula for determining an option's value, investors can use Model Option Contracts to create more precise hedges. Using Model Options, investors can disaggregate each of the component values of an option's price and trade each of these values separately. Thus investors can use Model Options to hedge or speculate on the volatility of a company's share price or on its dividend payout directly. This is impossible with traditional options.

Used as Compensation

Model Option contracts can also be very useful in the context of incentive stock options. Most employees do not have the financial sophistication to understand the value of the options that they are granted as part of their employment. Employees tend to value these grants in terms of how much they are worth to them at the present time and do not place much value on these options unless they can exercise them immediately and generate cash.

Meanwhile, companies must account for the theoretical value of these option grants as compensation expense. Typically, there is a large difference between the theoretical value of option grants and the amount of value that the average employee ascribes to these options. This difference has been termed a "valuation gap" by compensation experts who have noted that option grants lose their effectiveness as a tool for retaining and motivating employees when employees do not apprehend the true value of these grants.

The valuation gap is the result of several factors. First, the average employee does not understand options or option valuation models and is unable to independently calculate the theoretical value of the options they receive. Second, companies are reluctant to help individuals determine the theoretical value because they are afraid of potential litigation that might result from misunderstandings, misrepresentations, and misapplications of option valuation models. Third, vesting periods typically diminish the employee's sense of the option grant's value more than they actually diminish this value.

Fourth, employees have no ability to sell their options. This impairs an employee's ability to get the theoretical value of the option grant because they can only get the time value of the option grant by waiting until close to the expiration date to exercise the option. For a variety of reasons, an employee may not have the ability to wait until the expiration date to exercise the option grant.

Finally, employees generally suspect that exercising their options may be administratively complex or disadvantageous in some way. For example, an employee that has in-the-money options learns that he is being dismissed and must immediately exercise his options or forfeit them. He can opt for getting the intrinsic value and paying a sizable tax on it or he can use his options to force delivery of the company's stock, keep the stock for a period of time and then qualify for a lower, long-term capital gains tax rate. The second alternative seems preferable but it means that he must have the cash available to pay for the exercise price. In order to get the cash, the employee must sell other investments or incur other indebtedness creating other transaction costs.

By structuring option grants in the form of Model Options, companies can largely eliminate the valuation gap. Because a valuation methodology is specified in the option grant, companies can help their employees calculate the settlement value of these contracts without recriminations or misunderstandings. Companies may decide that it makes sense for the option grant to vest in full under certain conditions, such as death, disability, retirement, involuntary termination for reasons other than cause, etc. Structuring the option in this way enables employees to get the time value of the options without having to wait until the options expire. These features make the value of the Model Option grant real to employees.

Model Options can be structured to lessen the transaction burden on employees who wish to exercise their rights under the contract by enabling them to get the settlement value in cash or in the stock of the underlying company. This latter option enables them to delay tax recognition of the gain and get preferential treatment as a long-term capital gain after a sufficient holding period. It also prevents them from having to generate liquid assets in order to exercise their rights under the option.

Scratching the Surface

Regardless of the forum in which they are used and the particular way in which they are structured, Model Options are a means of establishing limits on the uncertainty of option performance. Used in the context of exchange traded options, Model Options can help alleviate user concerns about potential illiquidity, market impact costs, and manipulation. In the context of incentive compensation options, Model Options can eliminate the valuation gap that results from employees' uncertainty about: the value of these options, the ability to get the time value of these options, and the conditions under which these options may be exercised.

Model Options also enable hedgers and speculators to make much more precise investments by nullifying or deemphasizing individual components of option value in a direct and objective manner. This makes Model Options much more efficient and predictable than traditional options. By offering investors a way of gaining the theoretical benefits of options without needing all of the functions of an options exchange, Model Options offer the potential to expand options trading for expiration dates beyond one year, for smaller companies, and for deep-out-of-the-money options.

While there are many benefits that can be achieved from using Model Options, these contracts must be constructed so that they achieve the desired objective. Given the variety of potential uses, the examples described in this paper only scratch the surface of this subject.