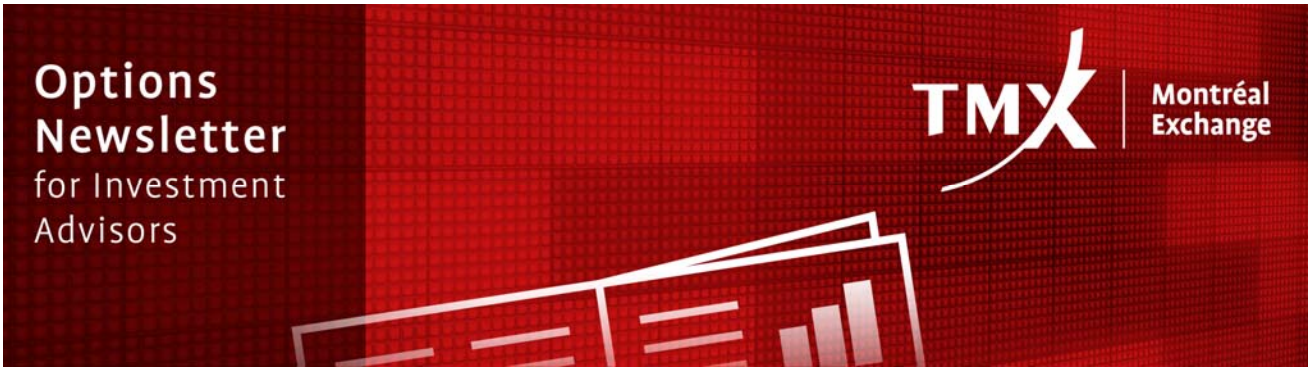

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The Role of Market Makers

The Montréal Exchange (MX) regularly lists new options classes upon request from the market. However, not all securities are eligible for option listing. The criteria used by MX to determine whether a stock is eligible for option listing are found in article B-603 of Rule B-6 of the Canadian Derivatives Clearing Corporation (CDCC). To be eligible for option listing, stocks must meet the following criteria:

1. the stock must be listed on a Canadian exchange;
2. the market capitalization of the stock must be within the top quartile (25%) of securities listed on all Canadian exchanges as of the last trading day of the previous quarter;
3. the monthly North American volume of the stock must be within the top quartile (25%) of securities listed on all Canadian exchanges as of the last trading day of the previous quarter.

Hence, the market capitalization and the liquidity of a stock are among the most important criteria that MX uses to decide to list options. Upon listing of new options classes, MX lists ten options series, five call options and five put options, distributed across five expiry months for a total of 50 options series. With more than 300 options classes listed on MX, there is a total of 15,000 options series that are available for trading every day. In order to ensure that there are bid prices and ask prices posted on all options series, the options market requires that market makers provide the necessary liquidity on all the options series for which they assume responsibilities.

The role of market makers has always been, and still is, essential for the growth of the options market. With such a large selection of options series listed, it is crucial that investors are assured they can easily open or close-out their options positions. That is, market makers must provide investors a minimum quantity of contracts with a narrow spread between the bid price and the ask price in order for an investor to easily open or close-out an options position. As a result of the presence of market makers, investors can select to trade any options series that fits their risk profile, and not just the most actively traded options series. Therefore, the more actively traded an option is, the narrower the spread between the bid price and the ask price should be, and the lesser will be the need for the market maker to intervene to post prices and size. But even in such situations, the market maker, at a minimum, will be required to post bid prices and ask prices for some minimum quantity size. The posting of such prices and quantity size will improve the depth of the market when they are not the best bid price or best ask price with sufficient quantity size available. Most of the times, the best market quality, in part or in total, is generally offered by the market maker. Therefore, it is not surprising that statistics show that between 40% and 50% of all investors' transactions in options are executed against market makers. When they provide liquidity to the market, market makers will most likely take the other side of an investor's order. Consequently, every time a market maker opens a new position, there is a risk the market maker must manage.

For example, let's look at a market maker who just sold 10 call options contracts with a strike price of $50 to an investor. The investor just acquired the right to buy 1,000 shares of stock (10 contracts x 100 shares per contract) at a price of $50. Conversely, the market maker just contracted the obligation to sell 1,000 shares at a price of $50 if the investor exercises the call options. Since the market maker will not wait until the expiration of the call options to see whether the investor will exercise the call options, the market maker will start reducing his risk first by trying to buy back the same call options at a more favourable price compared to the price that they

were originally sold at. If this cannot be accomplished, the market maker will then try to buy different call options series, which even if they are not the same as those that were just sold, will help to reduce the risk of loss that may occur if the stock rises prior to the expiration of the call options. Finally, if it is not possible to buy different call options series, the market maker will buy enough shares, on the Toronto Stock Exchange, or on a US exchange, in order to be able to sell them back if the investor exercises the call options.

As a result, the higher the volume of shares traded for a particular stock on the Toronto Stock Exchange, the more likely a market maker will be required to supply liquidity to MX options market. The stock bid-ask price spread also has an impact on the options bid-ask price spread. Since the market maker will resort to the stock market in order to reduce risk in the options market, the wider the stock's bid-ask price spread, the higher it will cost the market maker to protect the options position. The options bid-ask price spread is therefore directly linked to the stock bid-ask price spread. A stock that is not very active and that displays a large bid-ask price spread will also exhibit a large bid-ask price spread on the options market compared to another stock that is much more active on the stock market. As a result, the market quality of the shares of a stock traded on the stock market becomes an important factor in determining the quality of the options market. However, the same can be said about the options market. Robust trading activity in the options market can also have a positive impact on the price of the shares traded on the stock market.

Let's take for example an investor who would like to sell 10 call options contracts instead of buying them. The market maker who buys the call options from the investor does not face the same risk compared to if he sells the call options. In buying call options, the market maker cannot lose more than the premium paid if the price of the stock drops; however, his profit is unlimited if the price of the stock rises. The market maker has the right to buy 1,000 shares if the price of the shares is higher than the strike price at the expiration of the call options. However, he has no obligation to buy the shares if the price of the shares is below the strike price. As a result, the market maker can start to sell some shares as the price of the shares rises, and he can buy back the shares when the price of the shares drops. At the time he buys the call options, the market maker could protect himself by selling half the shares that he would be able to buy if the price rises high enough. As the price of the stock rises, he will gradually sell the balance of the shares; and as the price of the stock drops, he will be able to buy back gradually the shares. These countertrend trades supply the stock market with liquidity since the buyers of shares are able to find sellers when prices rise, and sellers of shares are able to find buyers when prices drop.

The options market in Canada started on MX in 1975. Market makers at the time did not have access to the sophisticated technology that is available today. In the early years, the typical market maker would start the trading session by printing options prices in relation to the different stock prices. Each series would subsequently be updated through open outcry by a process called the opening rotation. As trading progressed and the prices of stocks fluctuated, all the options series had to be updated one by one during the trading session. It was a tedious and frustrating process for market makers and for investors as well. However, technology came to the rescue in the 1990's when specialized software allowed all the options series to be automatically updated in real time as the stock prices fluctuated. The number of options transactions increased substantially with the rapid development of new technology. However despite the advent of new technologies, options trading was still conducted in an open outcry environment. It is only in 2001 that MX options market took off when options trading became fully electronic. It is in large part because of this capacity to update markets in real time that the growth of the options market soared in the last ten years.

Marker makers have been compelled to adapt to all the recent technological developments, by giving up their pad and pen and adopt new specialized trading algorithms to allow them to follow and manage their options positions in real time. The speed at which the trades are executed is now an important part of the survival and the success of market makers. Market making firms have invested enormous amounts of capital to develop specialized tools which allow market makers not only to update their bid and ask prices in real time but also to hedge their risks related to the fluctuations of share prices, and all the other factors impacting the price of options - such as; time value, volatility, interest rates, and dividends. All these automated operations render today the options market more efficient, and as a result, investors are the ones who ultimately benefit the most through greater liquidity, and more efficient pricing which allows them to establish options strategies in line with their investment objectives and risk profile.