Primer: Options

Analyzing Market Metrics and Fundamentals of Markets

September 2024

SIFMA Insights Primers

The primer series from SIFMA Insights breaks down important technical and regulatory nuances. By fostering an understanding of the marketplace, we set the scene to address complex issues arising in today's markets. The primer series can be found here: www.sifma.org/primers

In addition to this primer, the series includes the following reports: Capital Markets, Global Equity Markets Comparison, Capital Formation and Listings Exchanges, Equities, Exchange-Traded Funds (ETF), and Fixed Income Markets and Electronic Trading.

In this primer: We analyze the U.S. options markets. 2023 represented a continuation of the growth in options volumes, ending the year at 43.4 million contracts on average, +7.1% Y/Y. Markets saw thirty-nine days last year where volumes were greater than 50 million contracts and three days where volumes topped 60 million contracts. In this report, we explain the fundamentals of options – terminology, pricing, the Greeks, and more. We also map options strategies (showing diagrams of profits) by investment objective and market environment. We finalize this primer with the exchange landscape, fun facts, and a history of markets.

Contents

Executive Summary

An option is a contract to buy or sell an underlying security (stocks, ETFs, etc.) at a specified price on or before a given date. With an equity option, the contract holder (buyer) has the right – but not the obligation – to buy/sell (if a call/put) shares of the underlying security. The writer (seller) of an option is obligated to sell/buy (if a call/put) the shares to/from the buyer of the option at the specified price upon the buyer's request.

Contracts are detailed, and terms include strike price – price the contract may be exercised or acted on – and an expiration date – point in time the option no longer has value, or no longer exists. Options are frequently used as a risk management tool by investors to hedge positions and limit portfolio losses. For example, an individual investor can buy a put as insurance to protect a stock holding against an unfavorable market move, while maintaining stock ownership.

Options provide flexibility, enabling an investor to tailor their portfolio to investment objectives and market environment, including:

- Protect from a decline in stock prices.
- Benefit from a stock price decline.
- Purchase a security below market price.
- Position a portfolio for market moves, even if direction of the move is unpredictable.
- Benefit from little or no stock movement.
- Boost portfolio returns without the costs or capital outlay of buying the individual stock; the initial investment is limited to the price of the option contract premium.
- Generate income against stock holdings in your portfolio.
- Define risk, time, and probability in a trade.

As a standalone investment, options strategies can limit the risk to an investor but also present unlimited profit and loss potential (depending upon whether the investor is the buyer or seller of the options contract). Options transactions also typically require less capital than single stock trades. For example, an equity option allows an investor to lock in the price at which he/she can buy/sell 100 shares of stock, paying only the premium or price of the option contract. This leverage enables investors to increase the potential benefit from stock price movements. This is not to say that options come without risks. As an options holder (buyer), the entire amount of the premium paid is at risk. The risks are higher for options writers (sellers). For example, writers of an uncovered (naked) call[1] face unlimited potential loss, as there is no cap on how high a stock price can rise.

2023 represented a continuation of the growth in options volumes, ending the year at 43.4 million contracts on average, +7.1% Y/Y. The overall trendline for options volumes in 2021 was essentially flat. Markets saw thirty-nine days last year where volumes were greater than 50 million contracts and three days where volumes topped 60 million contracts.

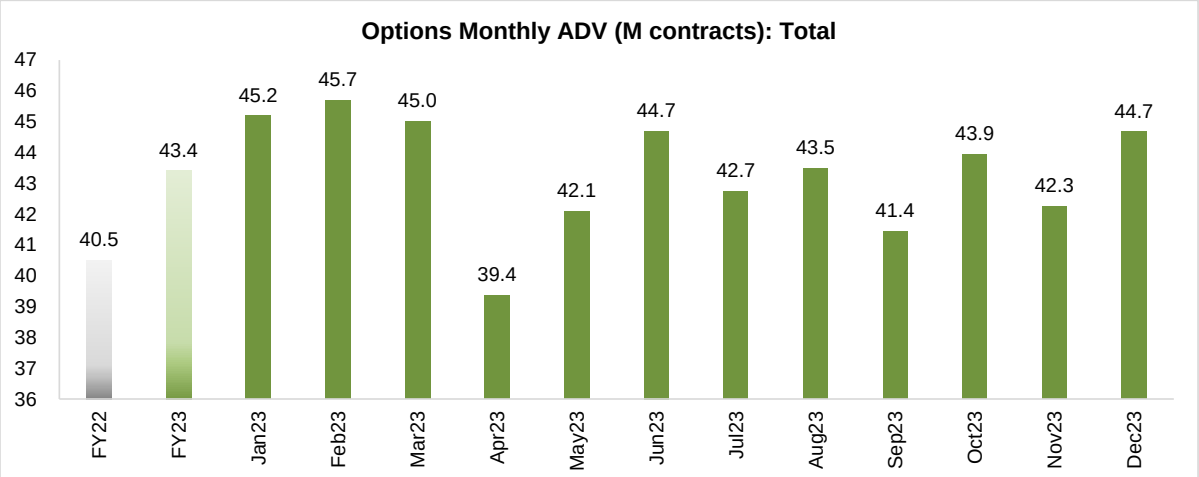
[1] An investor writes (sells) a call option without owning the underlying stock. If the option is exercised before the date of expiration, the investor must purchase the option's underlying stock at the current market price – which could have increased significantly – enabling potential significant losses.

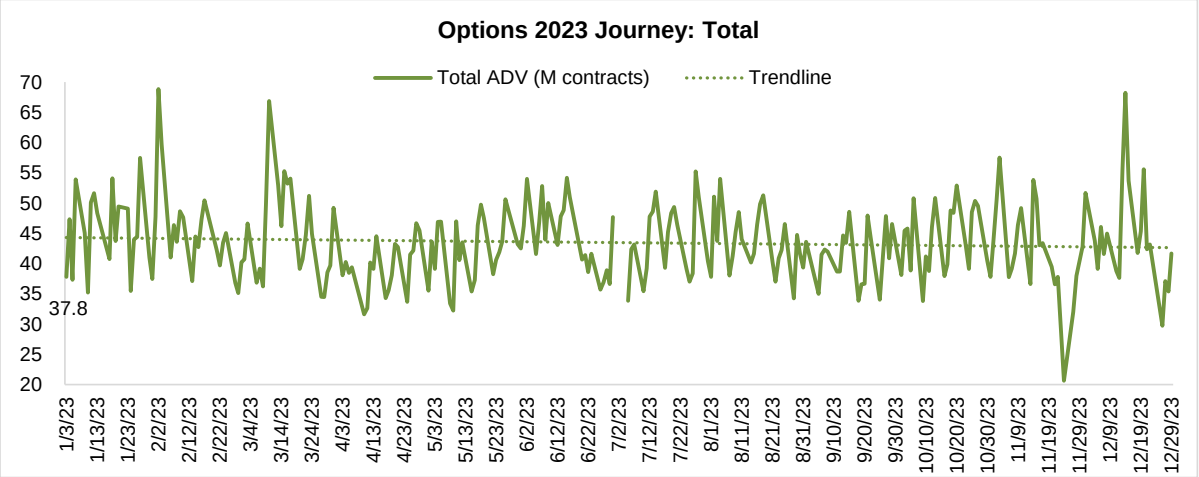
Market Metrics

2023 represented a continuation of the growth in options volumes, ending the year at 43.4 million contracts on average, +7.1% Y/Y. The overall trendline for options volumes in 2021 was essentially flat. Markets saw nineteen days last year when volumes were greater than 50 million contracts and three days where volumes topped 60 million contracts. We highlight the following trends:

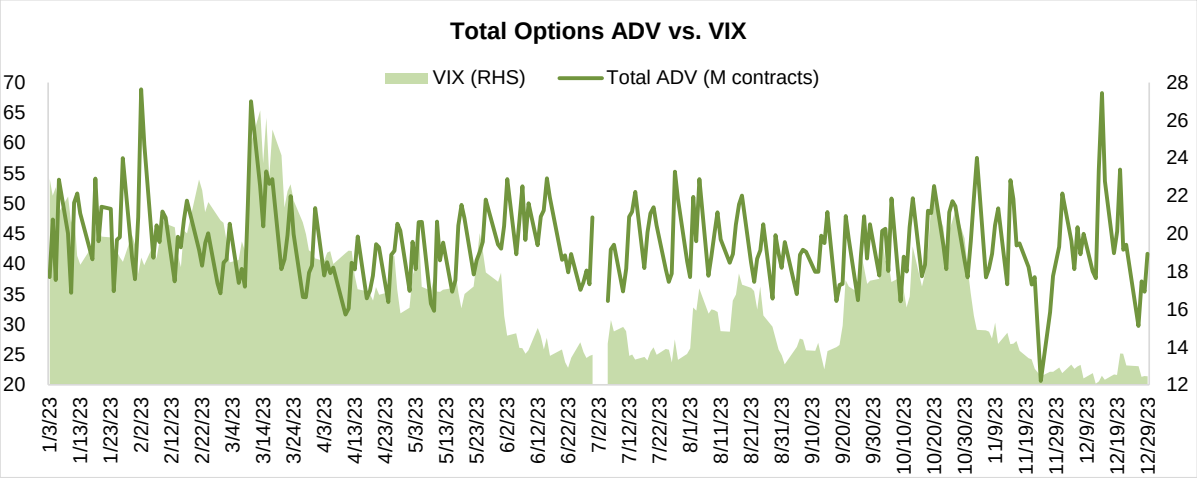
Total Options ADV

- 2023 average 43.4 million contracts
  - +7.1% Y/Y
  - Peak 68.9 million contracts on February 2
  - Trough 29.7 million contracts on December 26 (the day after Christmas, excludes half trading days)
- 5-Year CAGR +16.2%
- 10-Year CAGR +10.3%

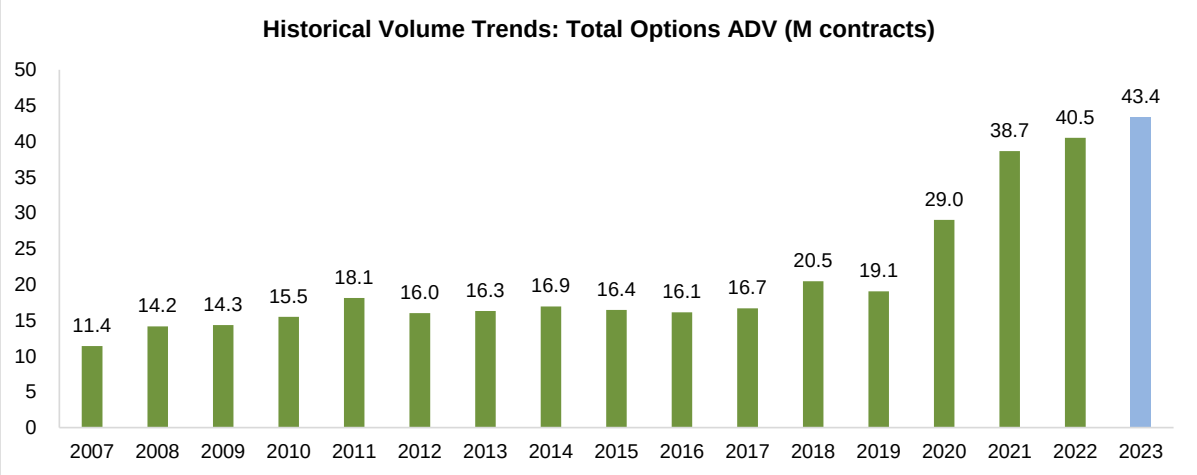




Source: Cboe Global Markets, SIFMA estimates
Note: Days when markets close early around holidays were removed



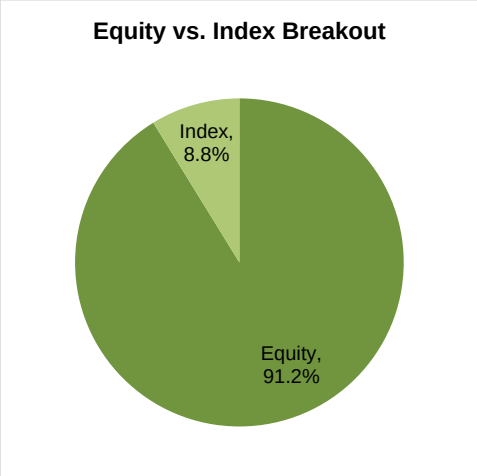
Source: Cboe Global Markets, Bloomberg, SIFMA estimates



Source: Options Clearing Corporation, SIFMA estimates
Note: Data varies slightly from previous charts given different sources

Options Breakout

On average for 2023, the total options trading volumes breakout was: equity 91.2% and index 8.8%. Since 2007, equity options peaked at 94.9% and troughed at 88.1%.



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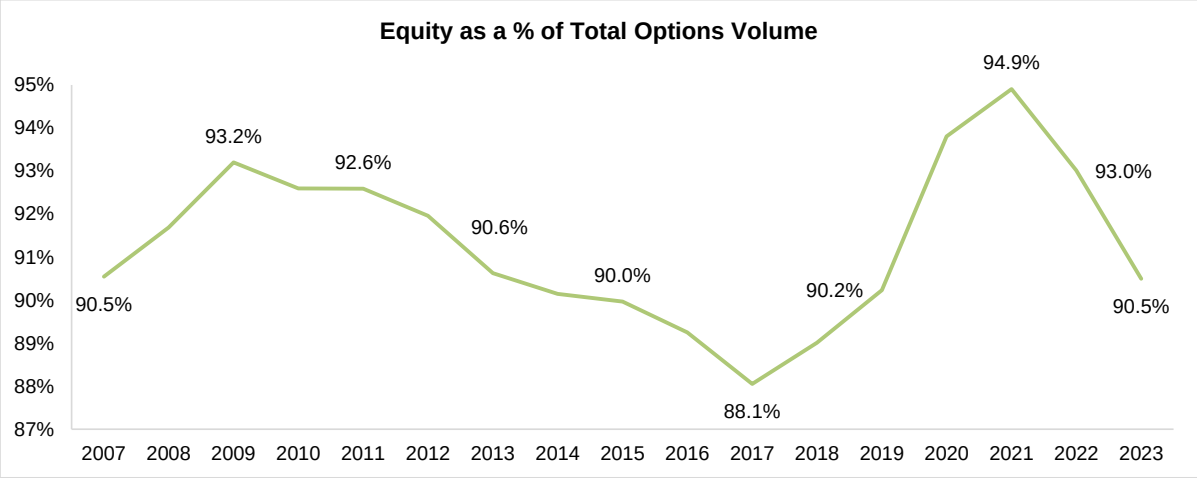
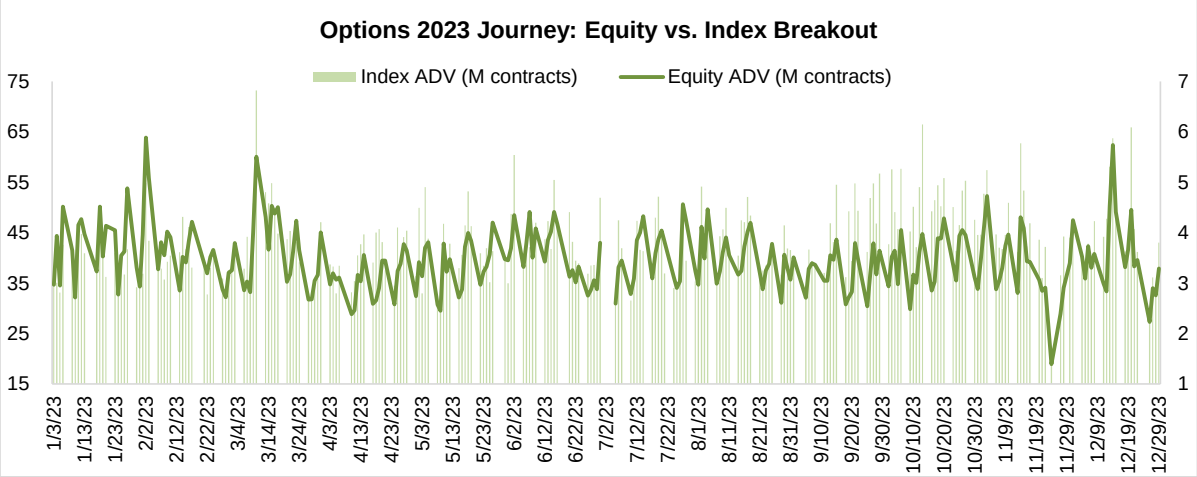
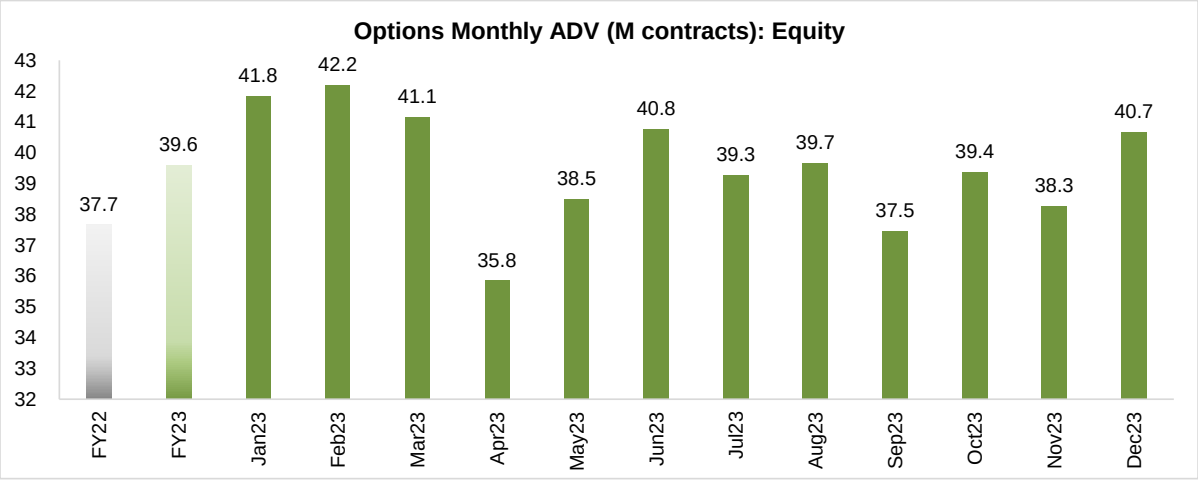


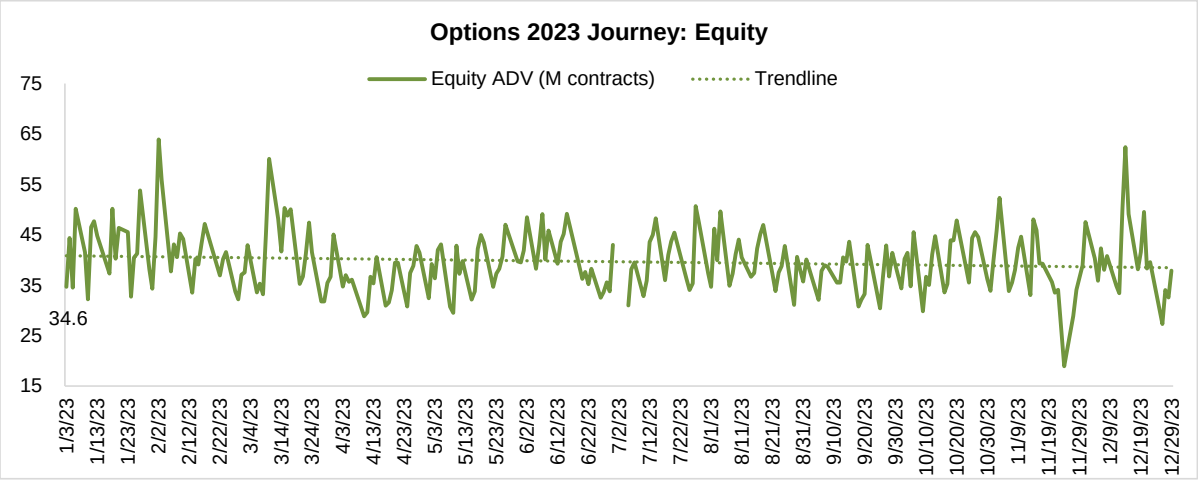


Source: Options Clearing Corporation (OCC), Cboe Global Markets, SIFMA estimates
Note: Days when markets close early around holidays were removed

Equity Options ADV

- 2023 average 39.6 million contracts
  - +5.2% Y/Y
  - Peak 63.9 million contracts on February 2
  - Trough 27.3 million contracts on December 26 (the day after Christmas, excludes half trading days)
- 5-Year CAGR +16.8%
- 10-Year CAGR +10.4%

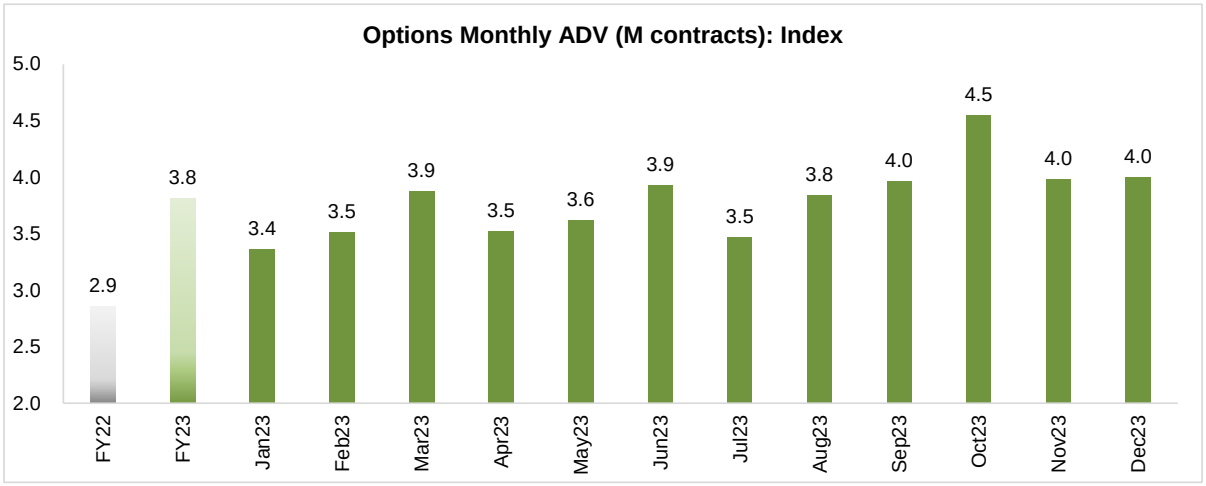


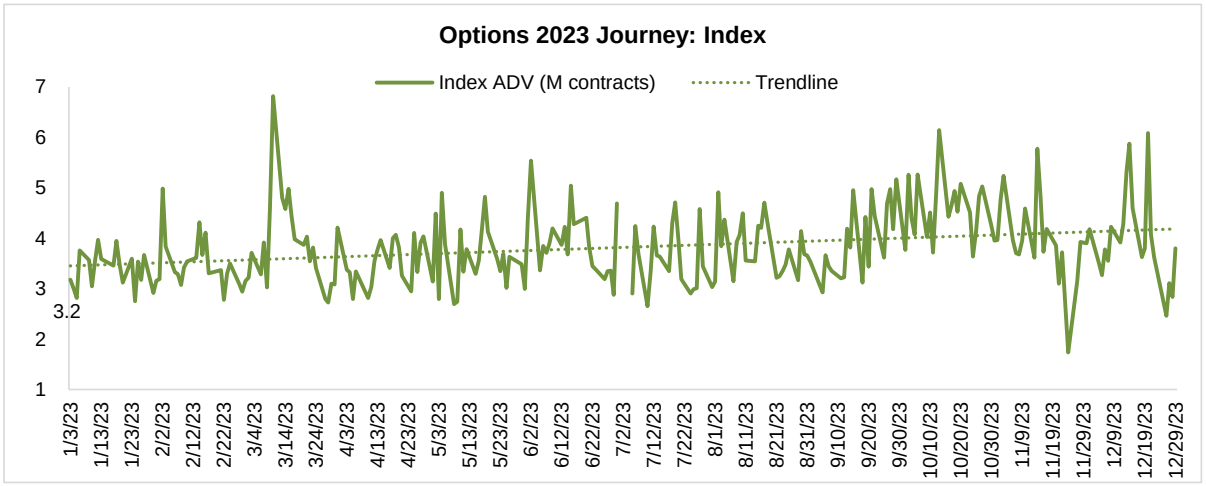


Source: Cboe Global Markets, SIFMA estimates
Note: Days when markets close early around holidays were removed

Index Options ADV

- 2023 ADV 3.8 million contracts
  - +33.5% Y/Y
  - Peak 6.8 million contracts on March 10
  - Trough 2.5 million contracts on December 26 (the day after Christmas, excludes half trading days)
- 5-Year CAGR +11.1%
- 10-Year CAGR +9.6%





Source: Cboe Global Markets, SIFMA estimates
Note: Days when markets close early around holidays were removed

Fundamentals of Listed Options

Terminology

An option is a contract to buy or sell an underlying security (stocks, ETFs, etc.) at a specified price on or before a given date. The following terms are used in the options industry to analyze and value options contracts:

- **Contract** – one contract is equal to 100 shares.
- **Exercise** – To put into effect the right specified in a contract; ex: the owner of a call/put may buy/sell the underlying stock.
- **Underlying** – The underlying security is the instrument on which the options contract is based, or the security being bought or sold upon exercise notification; ex: a common stock for an equity option.
- **Expiration** – The set date at which the options contract ends, or ceases to exist, or the last day it can be traded. Expiration Friday is the last business day prior to the option's expiration date, typically the third Friday of the expiration month for equity options (some index and ETF options contracts now expire each day of the week). Weekly expiration contracts are now more prevalent than monthlies or quarterlies.
- **Strike price** – The predetermined price at which the options contract can be exercised, at any time before expiration in an American option and on expiration day for a European option.
- **Premium** – The purchase price of the options contract, or the price the option contract trades at, which fluctuates with movements in the underlying security. The option holder’s potential loss is limited to the premium, while the writer’s potential loss is unlimited, offset by the initial premium received for the contract. Can also be referred to as the amount paid over intrinsic value of an option.
- **Time decay** (also known as Theta) – The rate at which the value of an options contract decreases over time. This happens in an exponential fashion, that is the decay accelerates as an options time to expiration draws closer.

Options come in two standard styles, with differences in when the options can be exercised:

- **American** – Option may be exercised on any trading day on or before expiration.
- **European** – Option may only be exercised on expiration date.

Options can have one of two types of rights (from the viewpoint of the holder or buyer):

- **Call** – The right to buy the underlying security (ex: 100 shares of the underlying stock for an equity option), on or before expiration at the strike price.
- **Put** – The right to sell the underlying security, on or before expiration at the strike price.

Buyers versus Sellers

An investor can buy (long) or sell (short) either type of option depending upon their investment objectives. An investor's "right" varies depending upon whether they are buying or selling the contract. The holder's, or buyer's, rights are the option, but not the obligation, to buy, sell, or not to exercise. The writer, or seller, is actually obligated to buy and deliver the underlying if the holder, or buyer, chooses to exercise. Writers have no control over whether or not the contract is exercised. They can, however, purchase the same option back at any time to close the position, or purchase an offsetting contract to meet the terms, i.e. create a spread to hedge the position.

Difference Between Holders & Sellers

	Holder (Buyer)	Writer (Seller)
Call	Right to buy	Obligation to sell
Put	Right to sell	Obligation to buy

Note: Options that are in the money are automatically exercised by the Options Clearing Corporation

As one options expert explained, an easy way to think about options is, from the perspective of the buyer: call up (expect the stock price to increase), put down (expect the stock price to decrease).

On the risk side, options traders can experience pin risk. This is the risk that an option holder or writer faces when the underlying asset price is very close to the option's strike price at expiration. This creates uncertainty about whether the option will be in the money or out of the money by a small margin and therefore be exercised or not. The main sources of options pin risk are market volatility and liquidity during the final hours of trading before expiration. The underlying asset price may fluctuate rapidly and unpredictably, making it hard for option holders and writers to decide whether to exercise, close, or hedge their positions. If the option holders and writers have different expectations and actions, they may end up with unwanted or unhedged positions over the weekend, exposing them to the risk of adverse price movements. Therefore, unless the underlying position is desired, it is often in the option traders' best interest to roll out in time[2] or close the position before expiration.

[2] Options rolling is where you close an option position and simultaneously open a new one, typically with an expiration further out in time.

Pricing an Option

The price of the option is a function of many factors. Among them are the price of the underlying instrument, the strike price, time to expiration, dividends, (if applicable) interest rates, the intrinsic value of the option (if any), and volatility. Options must be in the money – value greater than $0, described in the next section – to have intrinsic value.

An option's intrinsic value will decline with time, referred to as time decay, or the measure of the rate of decline in the value of an option contract due to the passage of time. Time decay accelerates as time to expiration draws near (depending on whether an option is in-the-money), given there is less time to realize a profit from the trade. Conversely, the more time until expiration, the slower the time decay.

The following walks through the basics of options pricing:

Options Pricing					
Calls	**IV**	**=**	**P**	**-**	**X**
Puts	**IV**	**=**	**X**	**-**	**P**
Option Premium	**OP**	**=**	**IV**	**+**	**TV**

- **Current stock price** (P) – Price of the underlying stock.
- **Strike price** (X) – Price the contract may be exercised, or acted on.
- **Intrinsic Value** (IV) – The in-the-money portion of an option's premium (for a long position), equal to the difference between the stock price and the strike price.
    - Calls – In-the-money when the underlying security's price is higher than the strike price.
    - Puts – In-the-money if the underlying security's price is less than the strike price.
- **Time Value** (TV; also called extrinsic value) – Any premium in excess of intrinsic value before expiration, reflecting the hope the option's value increases before expiration due to a favorable change in the underlying security's price.
- **Option Premium (OP)** – Intrinsic value plus time value.

The following factors can impact an options premium:

- **Stock price** – As the value of the underlying security rises, the premium on a call/put option will generally increase/decrease.
- **Strike price** – As the option becomes further in-the-money/out-of-the-money, the premium generally increases/decreases.
- **Passage of time**, changing time until expiration – An option's time value generally decreases the closer it gets to expiration, for both puts and calls (most noticeable with at-the-money options).
- **Implied volatility** – While difficult to quantify, higher volatility indicates greater expected changes in the underlying security's price and typically raises options premiums for both calls and puts. This is because it implies a higher probability the option will move in-the-money (most noticeable with at-the-money options).
- **Interest Rates** – The impact is less significant than other factors and reflects the cost to carry shares of the underlying security (potential interest paid for margin or interest which could be earned from another investment, i.e. U.S. T-bill).
- **Dividends** – The impact is also less significant and reflects the cost to carry shares of the underlying security (dividends lost from not owning the shares outright).

Moneyness and Profit

The value of an option is determined by whether or not the option is in-the-money (worth greater than $0) or out-of-the-money at expiration. Moneyness can be described as:

- **In-the-Money** – For a call option, when the stock price is greater than the strike price; reversed for puts
- **At-the Money** – Stock price is identical to the strike price; the option has no intrinsic value
- **Out-of-the-Money** – For a call option, when the stock price is less than the strike price; reversed for puts

Options Moneyness			
In-the-Money			
Calls	P	>	X
Puts	P	<	X
At-the-Money			
Calls	P	=	X
Puts	P	=	X
Out-of-the-Money			
Calls	P	<	X
Puts	P	>	X

Call Option Example:

If stock A is trading at $15 (P), and the strike price is $12 (X) -- the call option is in-the-money.

If stock A is trading at $15 (P), and the strike price is $16 (X) -- the call option is out-of-the-money.

Note: Reversed for put options

- **Profit** – When an investor buys an option, he/she begins with a net debit, i.e. money spent that may not be recovered. The option premium will then be subtracted from the gross transaction profit to calculate net profit. The reverse is true for sellers of an option (begin with a net credit). The option's potential loss is limited to the premium if buying an option. The writer of an option has potential unlimited loss, offset by the premium received.

A Call Option Example

One call option gives the holder the right to buy 100 shares of the stock. Below we show the differences in profits for a stock purchase versus buying a call option, based upon whether the underlying stock price increases or decreases:

- When the stock price **increases**, the stock purchase profit outweighs that of the call option, as you subtract out the premium paid.
- When the stock price **declines**, the stock purchase can experience a significant loss while the option loss is capped by the premium paid for the option contract (multiplied by the 100 shares).

Purchased Call Example

Stock Purchase		Call Option*	
Original Stock Price	$50.00	Option Price	$2.00
# Shares	100	Strike Price	$50.00
Initial Cash Outlay	$5,000.00	Initial Cash Outlay	$200.00
Buy 100 shares at $50 per share		Buy call option ($2 premium * 100 multiplier)	
Stock price increases		**Stock price increases**	
New Stock Price	$55.00	New Stock Price	$55.00
Profit	$500.00	Option is in-the-money, option exercised; profit	$300.00
Stock price decreases		**Stock price decreases**	
New Stock Price	$40.00	New Stock Price	$40.00
Loss	-$1,000.00	Option is out-of-the-money, option expires; loss	-$200.00

Source: SIFMA estimates
Note: *Gives the option holder the right to buy 100 shares of the stock.

Option Greeks

An option's price can be influenced by a number of factors. Some of the important factors are measured by the Greeks. These are a set of risk measures named after the Greek letters that denote them, which indicate how sensitive an option is to time-value decay, changes in implied volatility, and movements in the price of its underlying security. Below we explain the Greeks.

Delta

This is the theoretical estimate of how much an option's premium will change with a $1 move in the underlying. If an option has a delta of 0.50, there would be about a $0.50 move per $1.00 change in the price of the underlying. For example, an investor purchases a KMK call option with a delta of 0.50. The option premium is $2.00. If the price of the underlying rises to $51.00 from $50.00, the investor will expect the call to now be worth about $2.50.

Call Option Delta	
Premium	$2.00
Underlying Price (Day 1)	$50.00
Initial Cash Outlay	$200.00
Buy call option ($2 premium * 100 multipler)	
Delta	0.50
Stock price increases	
New Stock price	$51.00
Value of Option	$2.50
Stock price decreases	
New Stock price	$49.00
Value of Option	$1.50

Source: SIFMA estimates

Gamma

Gamma is the rate of change between an option's delta and the underlying asset's price. Higher gamma indicates delta could change dramatically, even with very small price changes in the underlying. Or it indicates how delta is expected to change given a $1 move in the underlying. Gamma ranges from 0 to 1.00, since delta cannot be over 1.00. If an option has a delta of 0.50 and a gamma of 0.05 and the underlying goes up by $1, the new delta value will be 0.55.

Call Option Gamma	
Premium	$2.00
Underlying Price (Day 1)	$50.00
Initial Cash Outlay	$200.00
Buy call option ($2 premium * 100 multipler)	
Delta	0.50
Gamma	0.05
Stock price increases	
New Stock price	$51.00
Value of Option	$2.50
New Delta	0.55
Stock price decreases	
New Stock price	$49.00
Value of Option	$1.50
New Delta	0.45

Source: SIFMA estimates

Theta

This represents how time decay affects an option. Theta is the actual dollar or premium amount and can be calculated weekly or daily. Theta represents how much an option’s premium decays with all things remaining the same. Theta tends to be gradual at first, then accelerates as expiration approaches. At expiration, an option has no time value and trades at its intrinsic value.

Call Option Theta	
Premium	$2.00
Underlying Price (Day 1)	$50.00
Initial Cash Outlay	$200.00
Buy call option ($2 premium * 100 multipler)	
Theta	0.025
Assuming underlying remains the same ($50)	**Option value**
Day 1	$1.98
Day 2	$1.95
Day 3	$1.93
Day 4	$1.90
Day 5	$1.88

Source: SIFMA estimates

Vega

This measures an option's sensitivity to implied volatility. Implied volatility is measured in percentage terms and has no direct correlation to realized volatility or statistical volatility. Vega can change even if the underlying does not change. Longer-dated options are more affected by Vega rather than near-term options.

Call Option Vega	
Premium	$2.00
Underlying Price (Day 1)	$50.00
Initial Cash Outlay	$200.00
Buy call option ($2 premium * 100 multipler)	
Vega	0.15
Implied Volatility increases by 1%	**Option value**
Stock price	$50.00
Value of Option (1 x 0.15 = 0.15)	$50.15
Implied Volatility decreases by 1%	**Option value**
Stock price	$50.00
Value of Option (-1 x 0.15 = -0.15)	$49.85

Source: SIFMA estimates

Rho

This measures how sensitive an option is to interest rate changes. Interest rate changes impact longer date options more than near-term ones. Rho is positive for purchased calls because higher interest rates increase call premiums. Rho is negative for purchased puts because higher interest rates decrease put premiums.

Call Option Rho	
Premium	$2.00
Underlying Price (Day 1)	$50.00
Initial Cash Outlay	$200.00
Buy call option ($2 premium * 100 multipler)	
Rho	0.45
Current interest rate	3.00%
Interest rates increase by 1%	**Option value**
Stock Price	$50.00
Current interest rate	4.00%
Value of option (1 x 0.45) = 0.45	$50.45
Interest rates decreases by 1%	**Option value**
Stock Price	$50.00
Current interest rate	2.00%
Value of option (-1 x 0.45) = -0.45	$49.55

Source: SIFMA estimates

Mapping Options Strategies

Options are flexible in terms of strategies offered, providing investors the tools needed to meet a host of different investment objectives and risk tolerances. Options can protect portfolios or improve returns in rising, falling or neutral markets (or a sharp move in markets in either direction). Most options strategies possess limited risk but also limited profit potential. Options transactions (generally) require less capital, thereby returning smaller dollar amounts but (potentially) a greater percentage of the investment versus equivalent stock transactions.

Options are often used as a risk management tool to hedge an investment portfolio and limit potential losses. For example, if an investor expects stock prices to decline, they can purchase put options. This will ensure the investor can sell the stock at the contracted strike price, no matter how far the stock price drops. When purchasing put options to hedge against declining stock prices, the loss is limited to the price paid for the premium. However, choosing an options strategy to limit risk may also limit the potential return.

Regardless of the options strategy, both gains and losses can be realized quickly, with the risk varying by strategy. Risks further differ by whether you are the holder (buyer) or writer (seller) of the option contract. Holders risk the premium paid, but writers can face much higher levels of risk. For example, with an uncovered call, there is no cap on how high a stock price may move, which presents potential unlimited losses for the call writer. The investor on this side of the contract must go into the market to purchase the stock at these higher prices, as he is obligated to deliver (sell) the stock to the call holder.

Writing a Covered Call

A common options strategy is writing (selling) a covered call, i.e. the call is covered by an equivalent long stock position. The covered call writer expects a steady or slightly rising stock price in the near to medium term (the length of the contract). They do not expect a significant increase/decrease in the stock price.

Benefits of writing covered calls include:

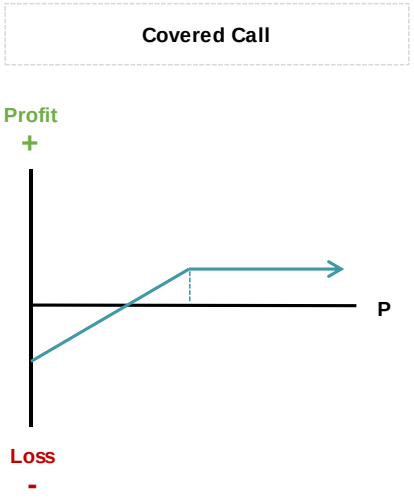
- Earn income on the premium received, thereby increasing overall returns on a stock holding.
- Help investors target a selling price for the stock that is above the current price.
- Provide a small hedge on the stock (limited downside protection).

Risks of writing covered calls include:

- Opportunity cost of not participating in a large rise in the stock price rise, i.e. forfeiting upside potential.
- Losing money if the stock price declines below the breakeven point.

Example of writing a covered call:

- Buy KMK stock for $50 per share.
- Expect the stock price to rise to $55 within one year.
- Sell a $55 six-month call option on KMK stock, which has a $4 per share premium.
- Profit, if stock price hits $55:
  - Profit/(Loss) = $55 (option strike price) + $4 (premium) - $50 (stock purchase price) = **+**$9 per share profit.
- Profit, if stock price hits $40:
  - The option buyer will not exercise the contract because they can buy the stock cheaper in the market than at the option contract price.
  - Profit/(Loss) = $40 (stock selling price) - $50 (stock purchase price) + $4 (premium) = **-**$6 per share loss.



Options Strategies by Investment Objective

The table below summarizes options strategies as they are positioned for outlook, investment objective, or implied volatility. On the following pages, we map out select (not all) options strategies, showing potential profit or loss scenarios, grouped by the investment outlook for the underlying.

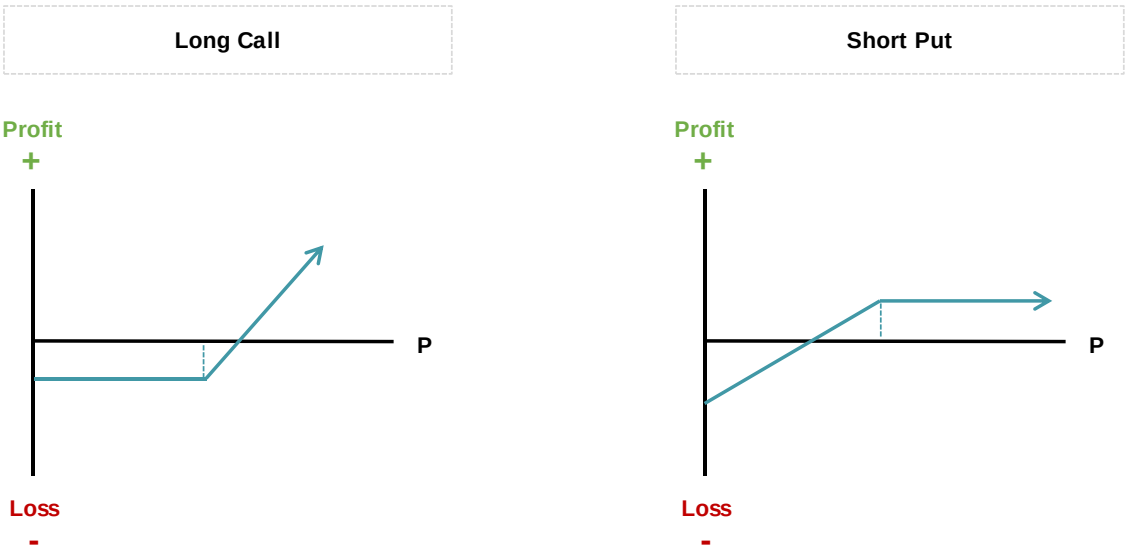
	Outlook				Objective			Implied Volatility	
	Bullish	Bearish	Neutral	Sharp Move	Acquire Stock	Hedge Stock	Generate Income	Increase	Decrease
Bear Call Spread		X	X				X		X
Bear Put Spread		X	X	X				X	
Bull Call Spread	X			X				X	
Bull Put Spread	X						X		X
Cash-Backed Call	X			X	X			X	
Cash-Secured Put	X		X		X		X		X
Collar	X					X			
Covered Call	X		X			X	X		X
Covered Put		X	X				X		X
Covered Ratio Spread	X		X			X	X		X
Covered Strangle	X		X		X		X		X
Long Call	X			X				X	
Long Call Butterfly			X						
Long Call Calendar Spread			X		X			X	
Long Call Condor			X						X
Long Condor				X				X	
Long Iron Butterfly				X				X	
Long Put		X		X				X	
Long Put Butterfly			X						
Long Put Calendar Spread			X					X	
Long Put Condor			X						X
Long Ratio Call Spread	X			X				X	
Long Ratio Put Spread		X		X		X		X	
Long Stock	X						X		
Long Straddle				X				X	
Long Strangle				X				X	
Naked Call		X	X				X		X
Naked Put	X		X				X		X
Protective Put	X			X		X		X	
Short Call Butterfly				X					
Short Call Calendar Spread				X					X
Short Condor			X				X		X
Short Iron Butterfly			X				X		
Short Put Butterfly				X					
Short Put Calendar Spread				X					
Short Stock		X							
Short Straddle			X				X		X
Short Strangle			X				X		X
Short Ratio Call Spread		X	X				X		X
Short Ratio Put Spread	X		X				X		X
Synthetic Long Put		X		X				X	
Synthetic Long Stock	X			X					
Synthetic Short Stock		X		X					

Source: Options Industry Council

Strategies for Expected Bull Markets

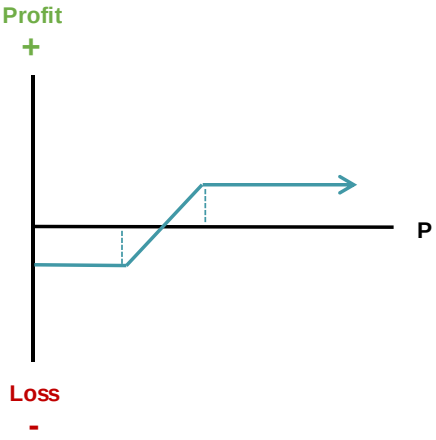
In bull strategies, the investor expects the price of the underlying to increase but also wants to limit risk:

- **Long Call** – Buy a call.
- **Short Put** – Sell a put.
- **Bull Call Spread** – Buy a call and sell another call at a higher strike price.
- **Bull Put Spread** – Sell a put and buy another put at a lower strike price with the same expiration.
- **Covered Call** – Buy the stock and sell calls on a share-for-share basis.
- **Protective Put** – Buy a put and own 100 shares of the stock.
- **Cash-Secured Short Put** – Sell a put and hold cash equal to the strike price times 100.

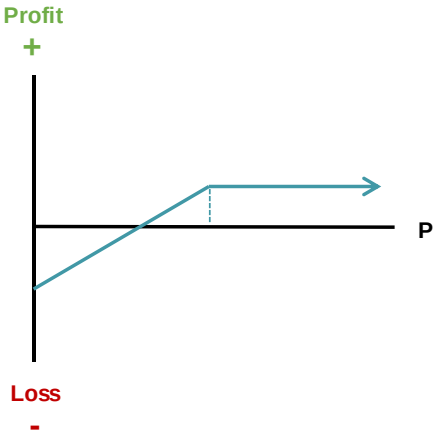


Source: The Options Industry Council (P = stock price)

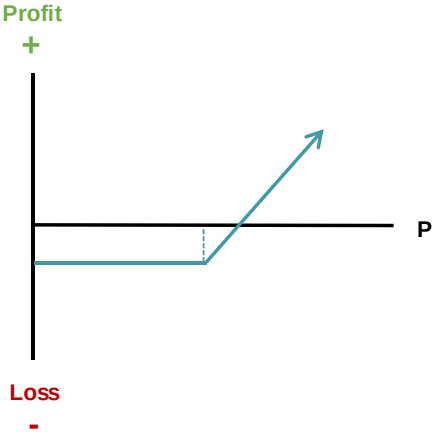
Bull Call/Put Spread



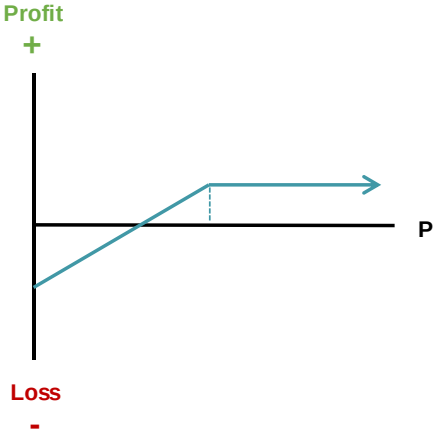
Covered Call



Protective Put



Cash-Secured Short Put



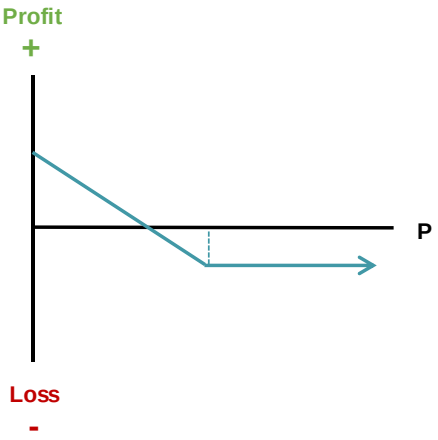
Source: The Options Industry Council (P = stock price)

Strategies for Expected Bear Markets

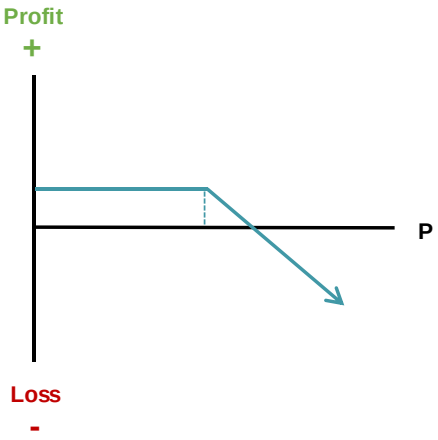
In bear strategies, the investor expects the price of the underlying to decrease but also wants to take on less risk:

- **Long Put** – Buy a put.
- **Short Call** – Sell a call.
- **Bear Put Spread** – Sell a put and buy another put at a higher strike price.
- **Bear Call Spread** – Sell a call and buy another call at a higher strike price.

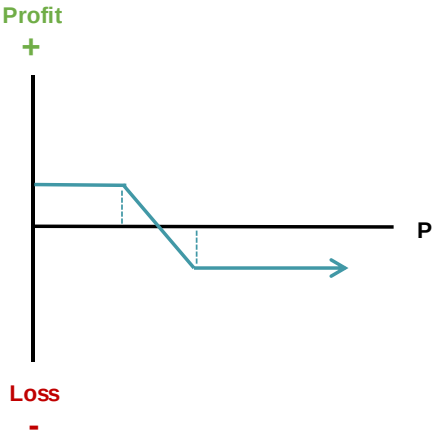
Long Put



Short Call



Bear Put/Call Spread



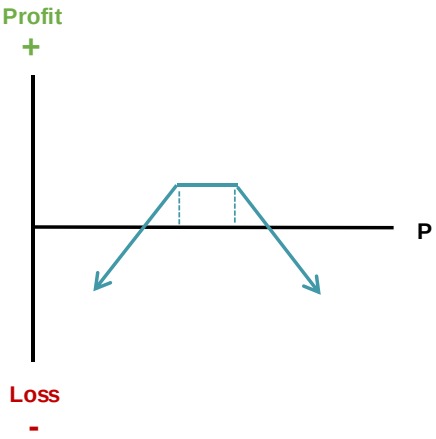
Source: The Options Industry Council (P = stock price)

Strategies for Expected Neutral Markets

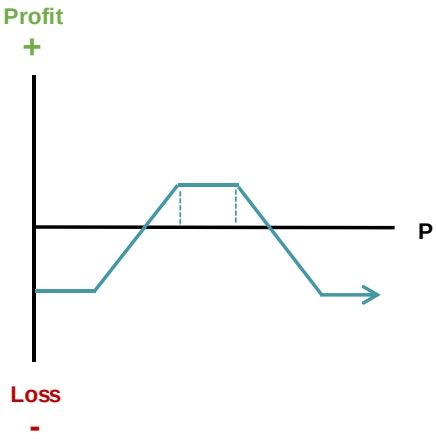
Market outlook is neutral or range bound, i.e. the investor expects no/little change in the underlying's price and is willing to limit upside potential in exchange for downside protection:

- **Short Strangle** – Sell a call with a higher strike price and sell a put with a lower strike price.
- **Iron Condor** – Sell a call, buy a call at a higher strike price, sell a put, and buy a put at a lower strike price; all options have the same expiration.
- **Collar** – Own the stock and protect it by purchasing a put and selling a call with a higher strike price.
- **Covered Strangle** – Own the stock, sell a call, and sell a put.
- **Long Call Butterfly** – Sell two calls, buy a call at a lower strike price, and buy a call at a higher strike price; the strike prices are equidistant.
- **Short Straddle** – Sell a call and sell a put at the same strike price.
- **Calendar Spread** – Sell a call (put) and buy a call (put) at the same strike price but with a longer expiration.

Short Strangle

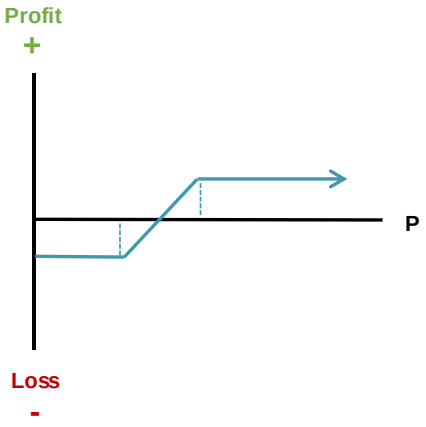


Iron Condor

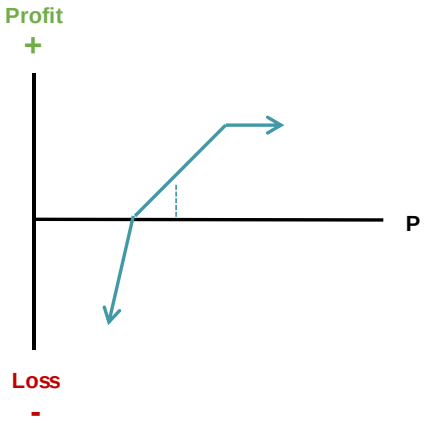


Source: The Options Industry Council (P = stock price)

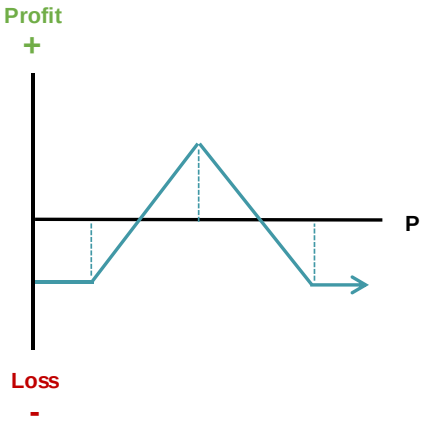
Collar



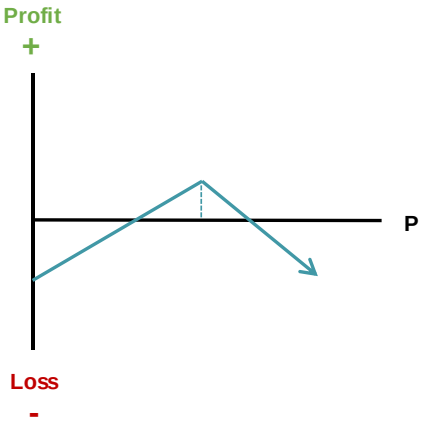
Covered Strangle



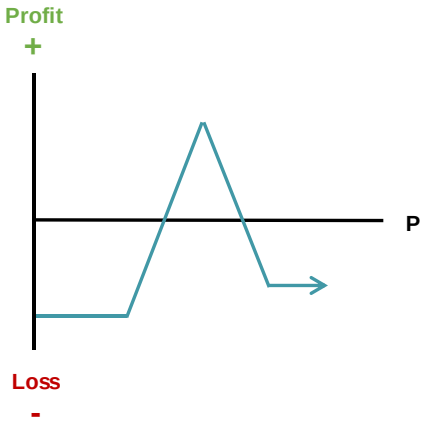
Long Call Butterfly



Short Straddle



Calendar Spread



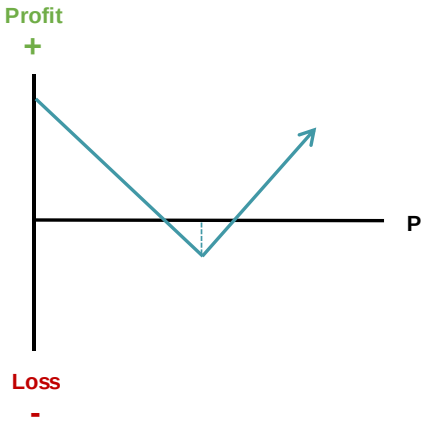
Source: The Options Industry Council (P = stock price)

Strategies for Expected Market Volatility

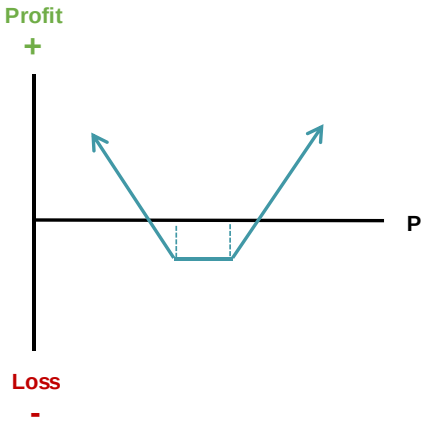
Investors expect large market moves – with prices moving either higher or lower – and want to position their portfolio to either profit from the price movement or provide downside protection:

- **Long Straddle** – buy a call and buy a put at the same strike price.
- **Long Strangle** – buy a call with a higher strike price and buy a put with a lower strike price.
- **Call Backspread** – sell a call and buy two calls at higher strike prices.
- **Put Backspread** – sell a put and buy two puts at lower strike prices.

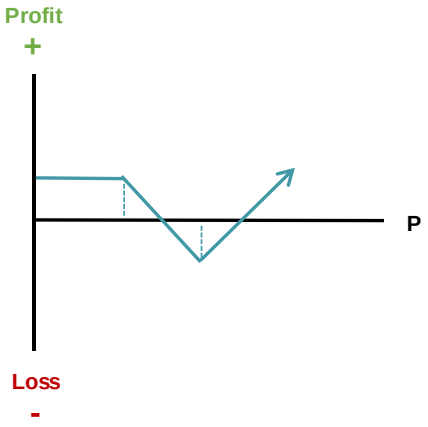
Long Straddle



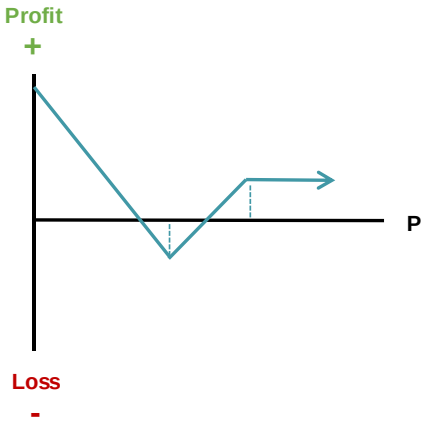
Long Strangle



Call Backspread



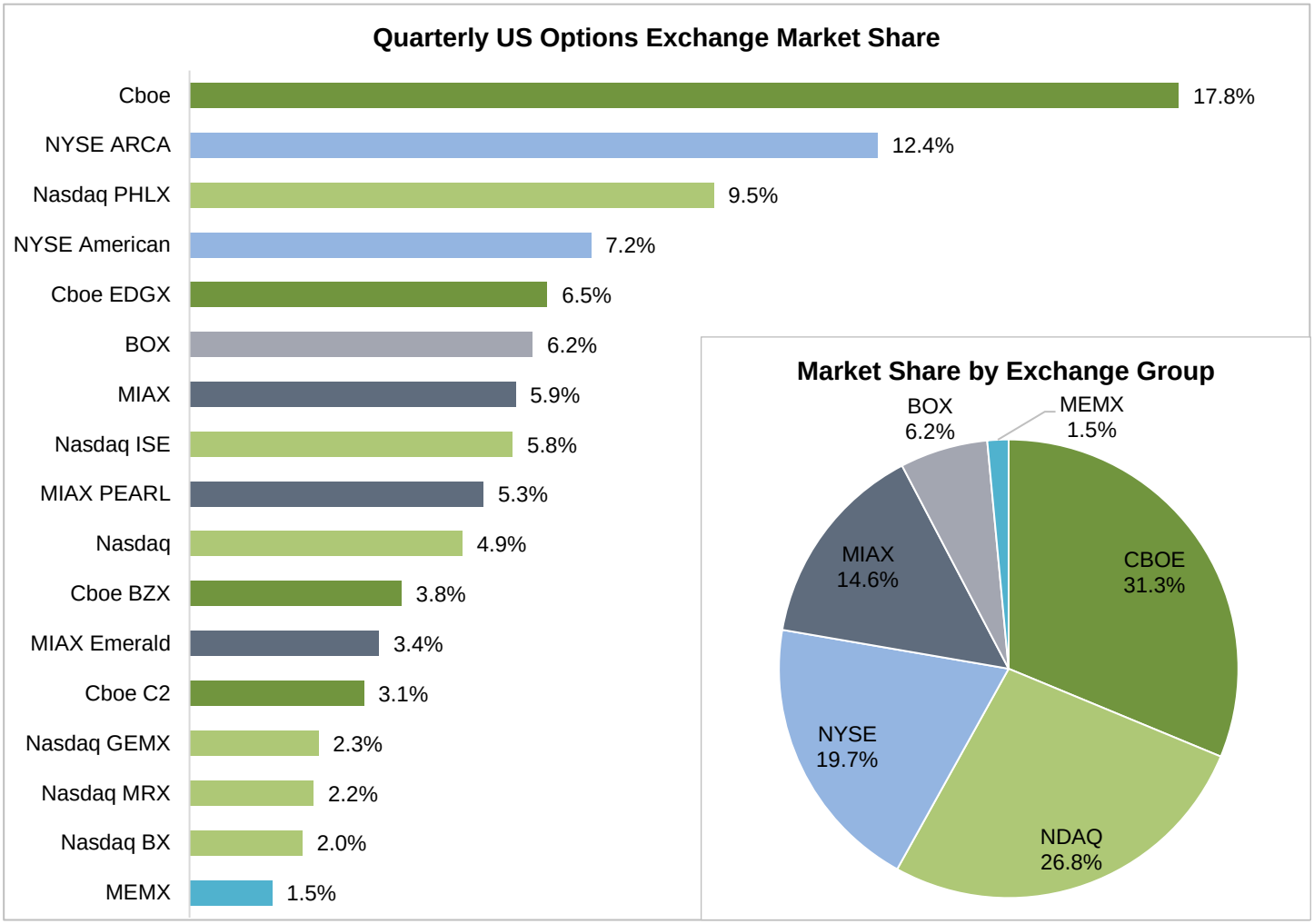
Put Backspread



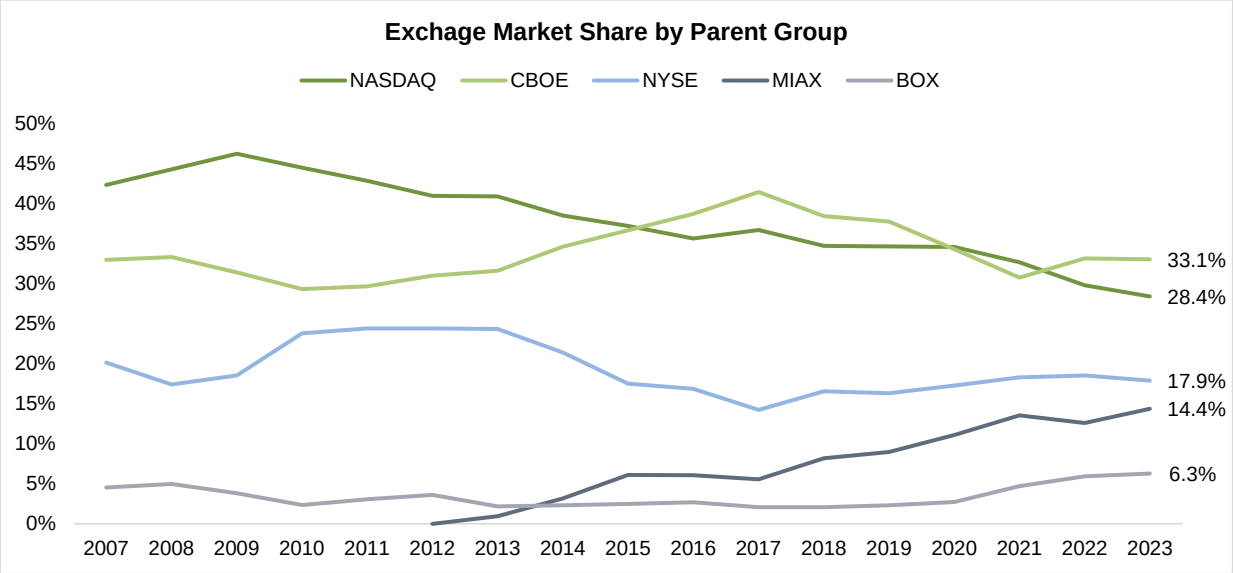
Source: The Options Industry Council (P = stock price)

Market Landscape

Within options trading, the top exchange group holds around a 30% market share in aggregate across all its individual exchanges. Market share can vary within each exchange group's individual exchanges (different exchanges are set up to serve the various needs of end users, mainly based on pricing model), as shown in the following charts.



Source: Options Clearing Corporation (OCC), SIFMA estimates
Note: As of 4Q23. Cboe =Cboe, Cboe EDGX, Cboe BZX, Cboe C2; Nasdaq = Nasdaq PHLX, Nasdaq, Nasdaq ISE, Nasdaq BX, Nasdaq GEMX, Nasdaq MRX; NYSE = NYSE Arca, NYSE American; MIAX = MIAX, MIAX Pearl, MIAX Emerald. Intercontinental Exchange (ICE) owns the NYSE exchanges, as well as other exchanges and clearing houses.



Source: Options Clearing Corporation, SIFMA estimates
Note: MEMX opened an options exchange in September 2023; excluded from this chart given a 0.1% market share.

Fun Facts on Options

An option is called an option for a reason – you have a choice. An option gives the option buyer the right, but not the obligation, to buy or sell the underlying security at a set price on a set date. This differs from futures contracts, which are contracts with the obligation to buy or sell the underlying security at a fixed price on a designated date. With futures, you either have to buy the security or trade out of the futures contract. As an option buyer, you can either buy the security or let the contract expire, taking no action. (Option sellers are obligated to buy and deliver the underlying security if the buyer chooses to act.)

No ownership. Options do not give the investor the same rights as shareholders (ownership, voting rights, dividends, etc.).

When multi isn't multi. After the options market shifted to single name multi listings in 2000, it became important for exchanges to develop proprietary products to set themselves apart from their competitors. The exchange creating proprietary options maintains exclusive rights to trade these contracts and indexes (or license the right to trade to other exchanges).

LEAP to the future. Equity LEAPS (Long-term Equity AnticiPation Securities) are long-term equity options, providing the holder the right to buy/sell shares of a stock at a set price on or before a date in the future of up to three years. LEAPS are available in calls and puts and are American style options. LEAPS enable investors with a longer term view of a stock to benefit from a stock price increase without making an outright stock purchase for those investors.

Options are flexible. Flex options are a type of customized option contract that allows the buyer and seller to negotiate the terms such as strike price, expiration date, exercise style, and other features. Flex options offer more flexibility and precision than standard options but also require higher premiums and minimum contract sizes. Flex options are typically used by institutional investors and sophisticated traders who want to tailor their options strategies to specific market conditions or hedge complex portfolios.

Markets are patriotic. Markets have a long tradition of closing for days of mourning for former U.S. presidents (and other extraordinary events and holidays)[3], dating back to the burial of President Ulysses S. Grant in 1885 (albeit the NYSE also closed in 1865 after the assassination of President Abraham Lincoln). Markets can also take up a shortened trading schedule, instead of a full day close, as seen with former President Herbert Hoover's funeral in 1964. The most recent day of mourning close was in 2018 in honor of former President George H. W. Bush. Investor concerns around closures include the inability to reset positions should market-moving news break while markets are closed. Additionally, as shorter dated options expirations have grown – and these contracts are managed differently than traditional monthly expiration contracts – a day of closure becomes more impactful.

[3] We note that bond markets now recognize a half day close for days of mourning.

It's Halloween several times a year in options, with:

- Triple witching – When contracts for stock index futures, stock index options, and stock options simultaneously expire. It happens four times a year on the third Friday of March, June, September, and December. It can bring escalated trading activity and volatility as traders close, roll, or offset expiring positions.
- Quadruple witching (formerly) – The same as triple witching, but inclusive of stock index futures, stock index options, stock options, and single stock futures. Single stock futures were added in 2002 but have not traded since 2020 and were never a major contributor to equity trading volumes.
- Given the shift, triple and quadruple witching are now the same.

History of US Options Exchanges and Market Events[4]

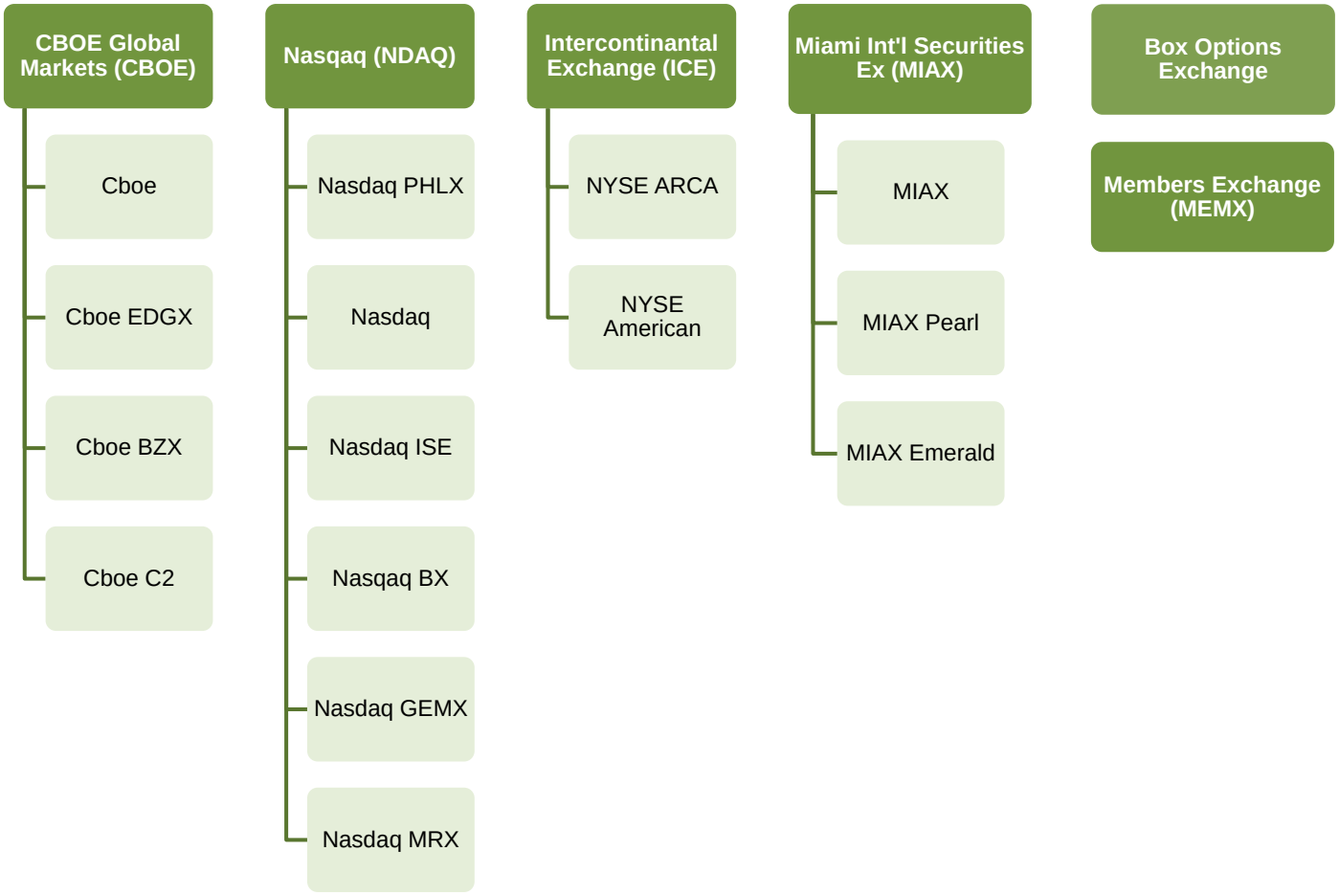
- **Ancient Greece**, Predicting the next olive harvest would be significant, Philosopher Thales of Miletus created essentially the first call option when he paid the owners of olive presses money to secure the rights to use the olive presses at harvest time. He then resold his rights to the olive presses to others who needed more olive presses at harvest time.
- **1630s**, Tulip Bulb Mania in Holland – As the demand for tulip bulbs increased at a dramatic rate, tulip growers would buy puts to protect from price decreases, while tulip wholesalers would buy calls to protect from price increases. As the demand for tulips increased prices of the bulbs, the options value also increased, forming a secondary market for these contracts. Eventually the bubble burst and tulip bulb prices plummeted, driving away buyers. Since the options market was unregulated, there was no way to force investors to fulfill their obligations.
- **1790**, Board of Brokers of Philadelphia (will become the Philadelphia Stock Exchange) founded
- **1817**, New York Stock and Exchange Board (will become NYSE) founded
- **1834**, Boston Stock Exchange (BX, formerly BSX or BSE) opened
- **Late 1800s**, American financier Russell Sage created call and put options to trade over-the-counter. He is also believed to have established a pricing relationship between the option, the underlying security and interest rates. Using put-call parity, he created synthetic loans by buying stocks and related puts, loaning money at an interest rate set by fixing contract prices and strike prices.
- **Late 1800s**, Put and Call Brokers and Dealers Association was formed to establish networks to match buyers and sellers of contracts more effectively. There was still no standard options pricing and a lack of liquidity in the market.
- **1864**, Oil Exchange (Pittsburgh Coal Exchange, Pittsburgh Oil Exchange; will become Pittsburgh Stock Exchange) founded
- **1864**, Open Board of Stock Brokers founded
- **1869**, Open Board of Stock Brokers merged with NYSE
- **1875**, Board of Brokers of Philadelphia renamed itself the Philadelphia Stock Exchange (PHLX)
- **1884**, Washington Stock Exchange began operating
- **1881**, Baltimore Stock Exchange opened
- **1882**, San Francisco Stock and Bond Exchange founded
- **1894**, Pittsburgh Oil Exchange rebranded as Pittsburgh Stock Exchange
- **1899**, Los Angeles Oil Exchange founded
- **1908**, the New York Curb Market Agency was established, with formal trading rules for curbstone brokers
- **1928**, San Francisco Stock and Bond Exchange took the name San Francisco Stock Exchange
- **1929**, New York Curb Market Agency changed its name to New York Curb Exchange
- **1939**, National Association of Securities Dealers established as an SRO[5] to play a leading role in the management of stock trading in the markets
- **1949**, Philadelphia Stock Exchange and Baltimore Stock Exchange merged

[4] This section is not meant to be exhaustive of all U.S. exchanges or highlights in the history of options markets.
[5] Self-regulatory organization

- **1953**, New York Curb Exchange changed its name to the American Stock Exchange (AMEX)
- **1954**, Philadelphia-Baltimore Stock Exchange merged with the Washington Stock Exchange
- **1956**, Pacific Coast Stock Exchange (becomes NYSE Arca) was formed with the merger of the San Francisco Stock and Bond Exchange and the Los Angeles Oil Exchange
- **1968**, Chicago Board of Trade (CBOT) decided to expand to options trading and eventually spun off the Chicago Board of Options Exchange (CBOE), which established open outcry trading pits (similar to futures exchanges)
- **1969**, Philadelphia-Baltimore-Washington Stock Exchange acquired the Pittsburgh Stock Exchange
- **1969**, Institutional Networks Corporation (Instinet) founded
- **1970s**, Standardized options contract terms created (uniform expiration dates, established strike prices, etc.)
- **1971**, National Association of Securities Dealers Automated Quotations (NASDAQ, now Nasdaq) founded as the world's first electronic stock market
- **1973**, The Pacific Coast Stock Exchange was renamed the Pacific Stock Exchange
- **1973**, CBOE opened the first formal options exchange, offering call options on 16 stocks
- **1973**, Economists Fischer Black and Myron Scholes developed the Black-Scholes options pricing model. Robert Merton published an additional study and mathematical amplification of the Black-Scholes model.
- **1975**, Cboe Clearing Corporation became The Options Clearing Corporation (OCC), the industry clearing house for all U.S. options trades
- **1977**, CBOE added put options
- **1977**, CBOE acquired the Midwest Stock Exchange's options business
- **1978**, CBOE automated order-routing and limit order book access
- **1982**, The industry reached 500,000 contracts traded in one day
- **1983**, CBOE introduced its first contracts on the S&P indexes (SPX)
- **1985**, CBOE introduced electronic execution of small customer orders (retail investors)
- **1989**, Options on interest rates began trading
- **1992**, Options on sector and international indexes began trading
- **1993**, CBOE introduced the VIX index, now widely viewed as the gauge of implied market volatility
- **1994**, TerraNova Trading was founded; it started accepting orders on Archipelago in 1997
- **1997**, CBOE launched the first options on the Dow Jones Industrial Average
- **1998**, Attain (will become Direct Edge) founded
- **2000**, Options began trading on multiple exchanges (multi listed options)
- **2000**, International Securities Exchange Holdings (ISE) founded as the first fully electronic U.S. options exchange
- **2004**, BOX Holding Group (BOX) founded
- **2004**, NYSE merged with Euronext
- **2004**, CBOE Future Exchange (CFE) opened
- **2005**, Bats Global Markets (BATS) founded, launching as an alternative trading system
- **2005**, Nasdaq acquired Instinet (from Reuters, which acquired it in 1987; Nasdaq kept the INET electronic trading platform but spun off the rest of the Instinet businesses)
- **2005**, Archipelago acquired the Pacific Exchange

- **2006**, NYSE merged with Archipelago Exchange (ArcaEx, now NYSE Arca), an exchange on which both stocks and options are traded
- **2007**, Nasdaq merged with OMX, a leading exchange operator in the Nordic countries and renamed itself the NASDAQ OMX Group
- **2007**, BX was purchased by Nasdaq
- **2007**, PHLX was purchased by Nasdaq
- **2007**, Deutsche Börse bought ISE
- **2007**, Knight Capital Group spun off Attain (which it bought two years earlier) and rebranded it as Direct Edge, as an electronic communication network
- **2008**, NYSE Euronext acquired AMEX; AMEX was integrated with the Alternext European small-cap exchange and renamed NYSE Alternext US
- **2008**, Bats Global Markets became an operator of a licensed U.S. stock exchange
- **2009**, NYSE Alternext US rebranded as NYSE Amex Equities
- **2010**, CBOE opened C2 opens as an all-electronic exchange
- **2010**, Direct Edge received approval to operate licensed national securities exchanges
- **2010 Flash Crash**, In May 2010, the U.S. equity markets experienced a severe disruption, as a large number of stock prices suddenly dropped by significant amounts in a very short time period and then equally suddenly reversed to pre-decline levels. This led to a large number of trades being executed at temporarily depressed prices, including many that were more than 60% away from pre-decline prices.
- **2011**, Bats Global Markets acquired Chi-X Europe
- **2012**, Miami International Securities Exchange (MIAX) founded
- **2012**, NYSE Amex Equities changed its name to NYSE MKT
- **2013**, ICE acquired NYSE Euronext
- **2013**, ISE launched Gemini
- **2014**, Direct Edge merged with BATS
- **2013**, ISE launched Mercury
- **2016**, Nasdaq acquired ISE
- **2017**, NYSE MKT renamed NYSE American
- **2017**, CBOE acquired BATS
- **2017**, Trading on MIAX PEARL commenced
- **2017**, BOX trading floor approved
- **2019**, MIAX Emerald launched
- **2023**, MEMX launched an options exchange

Appendix: Options Exchange Landscape



Source: Cboe Global Markets, SIFMA estimates

Appendix: Capital Markets Terms to Know

Statistics	
Y/Y	Year over Year
Q/Q	Quarter over Quarter
M/M	Month over Month
W/W	Week over Week
D/D	Day over day
YTD	Year to Date
QTD	Quarter to Date
MTD	Month to Date
WTD	Week to Date
BPS	Basis Points
PPS	Percentage Points
CAGR	Compound Annual Growth Rate
RHS	Right hand side (for charts)

Other	
AUM	Assets Under Management
DCM	Debt Capital Markets
ECM	Equity Capital Markets

Regulators	
North America	
FINRA	Financial Industry Regulatory Authority (United States)
SEC	Securities and Exchange Commission (United States)
CSC	Canadian Securities Administrators
European Union	
ESMA	European Securities and Markets Authority
AMF	Autorité des marchés financiers (France)
BaFin	Federal Financial Supervisory Authority (Germany)
FINMA	Swiss Financial Market Supervisory Authority (Switzerland)
United Kingdom	
FCA	Financial Conduct Authority
AsiaPac	
ASIC	Australian Securities and Investments Commission
CSRC	China Securities Regulatory Commission
SFC	Securities and Futures Commission (Hong Kong)
SEBI	Securities and Exchange Board of India
FSA	Financial Services Agency (Japan)
MAS	Monetary Authority of Singapore

Trading	
ADV	Average Daily Trading Volume
Algo	Algorithm (algorithmic trading)
ATS	Alternative Trading System
Best Ex	Best Execution
BPS	Basis Points
CLOB	Central Limit Order Book
D2C	Dealer-to-Client
D2D	Dealer-to-Dealer
ECN	Electronic Communication Network
ETP	Electronic Trading Platforms
HFT	High-Frequency Trading
IDB	Inter-Dealer Broker
IOI	Indication of Interest
MM	Market Maker
OTC	Over-the-Counter
SDP	Single-dealer platform
Bid	An offer made to buy a security
Ask, Offer	The price a seller is willing to accept for a security
Spread	The difference between the bid and ask price prices for a security, an indicator of supply (ask) and demand (bid)
NBBO	National Best Bid and Offer
Locked Market	A market is locked if the bid price equals the ask price
Crossed Market	A bid is entered higher than the offer or an offer is entered lower than the bid
Opening Cross	To determine the opening price of a stock, accumulating all buy and sell interest prior to the market open
Closing Cross	To determine the closing price of a stock, accumulating all buy and sell interest prior the market close

Order Types	
AON	All or none; an order to buy or sell a stock that must be executed in its entirety, or not executed at all
Block	Trades with at least 10,000 shares in the order
Day	Order is good only for that trading day, else cancelled
FOK	Fill or kill; must be filled immediately and in its entirety or not at all
Limit	An order to buy or sell a security at a specific price or better
Market	An order to buy or sell a security immediately; guarantees execution but not the execution price
Stop	(or stop-loss) An order to buy or sell a stock once the price of the stock reaches the specified price, known as the stop price

Post Trade	
DTCC	The Depository Trust and Clearing Corporation
CSD	Central Securities Depository
CCP	Central Counterparty Clearing House
CP	Counterparty
IM	Initial Margin
VM	Variation Margin
MPR	Margin Period at Risk
T	Trade Date
T+1	Settlement Date

Investors	
Institutional	Asset managers, endowments, pension plans, foundations, mutual funds, hedge funds, family offices, insurance companies, banks, etc.; fewer protective regulations as assumed to be more knowledgeable and better able to protect themselves
Individual	Self-directed or advised investing

Equities	
EMS	Equity Market Structure
NMS	National Market System
Reg NMS	Regulation National Market System
SIP	Security Information Processor; aggregates all exchange's best quotes, sent back out to the market in one data stream
PFOF	Payment For Order Flow
Tick Size	Minimum quote increment of a trading instrument
CAT	Consolidated Audit Trail
SRO	Self Regulatory Organization

ETFs/Funds	
AP	Authorized Participant
PCF	Portfolio Composition File
NAV	Net Asset Value
IIV	Intraday Indicative Value
ETF	Exchange-Traded Fund
ETP	Exchange-Traded Product
MF	Mutual Fund
OEF	Open-End Fund
CEF	Closed-End Fund
UIT	Unit Investment Trust

Options	
Call	The right to buy the underlying security, on or before expiration
Put	The right to sell the underlying security, on or before expiration
Holder	The buyer of the contract
Writer	The seller of the contract
American	Option may be exercised on any trading day on or before expiration
European	Option may only be exercised on expiration
Exercise	To put into effect the right specified in a contract
Underlying	The instrument on which the options contract is based; the asset/security being bought or sold upon exercise notification
Expiration	The set date at which the options contract ends, or ceases to exist, or the last day it can be traded
Stock Price	The price at which the underlying stock is trading, fluctuates continuously
Strike Price	The set price at which the options contract is exercised, or acted upon
Premium	The price the option contract trades at, or the purchase price, which fluctuates constantly
Time Decay	The time value portion of an option's premium decreases as time passes; the longer the option's life, the greater the probability the option will move in the money
Intrinsic Value	The in-the-money portion of an option's premium
Time Value	(Extrinsic value) The option premium (price) of the option minus intrinsic value; assigned by external factors (passage of time, volatility, interest rates, dividends, etc.)
In-the-Money	For a call option, when the stock price is greater than the strike price; reversed for put options
At-the Money	Stock price is identical to the strike price; the option has no intrinsic value
Out-of-the-Money	For a call option, when the stock price is less than the strike price; reversed for put options

Equity Capital Formation	
IPO	Initial Public Offering; private company raises capital buy offering its common stock to the public for the first time in the primary markets
SPAC	Special Purpose Acquisition Company; blank check shell corporation designed to take companies public without going through the traditional IPO process
Bought Deal	Underwriter purchases a company's entire IPO issue and resells it to the investing public; underwriter bears the entire risk of selling the stock issue
Best Effort Deal	Underwriter only guarantees the issuer it will make a best effort attempt to sell the shares to investors at the best price possible; issuer can be stuck with unsold shares
Secondary	(Follow-on) Issuance of shares to investors by a public company already listed on an exchange
Direct Listing	(Direct placement, direct public offering) Existing private company shareholders sell their shares directly to the public without underwriters. Often used by startups or smaller companies as a lower cost alternative to a traditional IPO. Risks include, among others, no support for the share sale and no stock price stabilization from the underwriter after the share listing.

Underwriting	
Underwriting	Guarantee payment in case of damage or financial loss and accept the financial risk for liability arising from such guarantee in a financial transaction or deal
Underwriter	Investment bank administering the public issuance of securities; determines the initial offering price of the security, buys them from the issuer and sells them to investors.
Bookrunner	The main underwriter or lead manager in the deal, responsible for tracking interest in purchasing the IPO in order to help determine demand and price (can have a joint bookrunner)
Lead Left Bookrunner	Investment bank chosen by the issuer to lead the deal (identified on the offering document cover as the upper left hand bank listed)
Syndicate	Investment banks underwriting and selling all or part of an IPO
Arranger	The lead bank in the syndicate for a debt issuance deal
Greenshoe	Allows underwriters to sell more shares than originally planned by the company and then buy them back at the original IPO price if the demand for the deal is higher than expected, i.e. an over-allotment option

Documentation	
Pitch	Sales presentation by an investment bank to the issuer, marketing the firm's services and products to win the mandate
Mandate	The issuing company selects the investment banks to underwrite its offering
Engagement Letter	Agreement between issuer & underwriters clarifying: terms, fees, responsibilities, expense reimbursement, confidentiality, indemnity, etc.
Letter of Intent	Investment banks' commitment to the issuer to underwrite the IPO
Underwriting Agreement	Issued after the securities are priced, underwriters become contractually bound to purchase the issue from the issuer at a specific price
Registration Statement	Split into the prospectus and private filings, or information for the SEC to review but not distributed to the public, it provides investors adequate information to perform their own due diligence prior to investing
The Prospectus	Public document issued to all investors listing: financial statements, management backgrounds, insider holdings, ongoing legal issues, IPO information and the ticker to be used once listed
Red Herring Document	An initial prospectus with company details, but not inclusive of the effective date of offering price, filed with the SEC
Tombstone	An announcement that securities are available for sale. (Also a plaque awarded to celebrate the completion of a transaction or deal)

Process	
Roadshow	Investment bankers take issuing companies to meet institutional investors to interest them in buying the security they are bringing to market
Non-Deal Roadshow	Research analysts and sales personnel take public companies to meet institutional investors to interest them in buying a stock or update existing investors on the status of the business and current trends
Pricing	Underwriters and the issuer will determine the offer price, the price the shares will be sold to the public and the number of shares to be sold, based on demand gauged during the road show and market factors
Stabilization	Occurs for a short period of time after the IPO if order imbalances exist, i.e. the buy and sell orders do not match; underwriters will purchase shares at the offering price or below to move the stock price and rectify the imbalance
Quiet Period	(Cooling off period) The SEC mandates a quiet period on research recommendations, lasting 10 days (formerly 25 days) after the IPO

SEC Filings	
Reg S-K	Regulation which prescribes reporting requirements for SEC filings for public companies
Reg S-X	Regulation which lays out the specific form and content of financial reports, specifically the financial statements of public companies
Form S-1	Registration statement for U.S. companies (described above)
Form F-1	Registration statement for foreign issuers of certain securities, for which no other specialized form exists or is authorized
Form 10-Q	Quarterly report on the financial condition and state of the business (discussion of risks, legal proceedings, etc.), mandated by the SEC
Form 10-K	More detailed annual version of the 10Q, mandated by the SEC
Form 8-K	Current report to announce major events shareholders should know about (changes to business & operations, financial statements, etc.), mandated by the SEC
EGC	Emerging Growth Company; qualified companies may choose to follow disclosure requirements that are scaled for newly public

Fixed Income	
CUSIP	Committee on Uniform Securities Identification Procedures; a nine character security identifier
FICC	Fixed Income, Currencies and Commodities
FI	Fixed Income
TRS	Total Return Swap

Rates Markets	
UST	U.S. Treasury Securities
FRN	Floating Rate Note
T-Bill	U.S. Treasury Bill
T-Note	U.S. Treasury Note
T-Bond	U.S. Treasury Bond
TIPS	Treasury Inflation Protected Securities
Repo	Repurchase Agreement; also have reverse repos
Agency	Federal Agency Securities
FAMC	Farmer Mac/Federal Agricultural Mortgage Corporation
FCS	Farm Credit System
FHLB	Federal Home Loan Banks
FHLMC	Freddie Mac/Federal Home Loan Mortgage Corporation
FNMA	Fannie Mae/Federal National Mortgage Association
GNMA	Ginnie Mae/Government National Mortgage Association
TVA	Tennessee Valley Authority

Credit Markets	
Corporates	Corporate Bonds
HY	High Yield Bond
IG	Investment Grade Bond
Munis	Municipal Securities
GO	General Obligation Bond
Revenue	Revenue Bond

Securitized Products	
MBS	Mortgage-Backed Security
CMO	Collateralized Mortgage Obligation
CMBS	Commercial MBS
RMBS	Residential MBS
ABS	Asset-Backed Securities (auto, credit card, home equity, student loans, etc.)
CDO	Collateralized Debt Obligation

Money Markets (MM)	
CP	Commercial Paper
ABCP	Asset-Backed Commercial Paper
MMF	Money Market Funds

SIFMA Insights Research Reports

SIFMA Insights: www.sifma.org/insights

- Ad hoc reports on timely market themes
- Annual Market Structure Compendiums: Equity and Fixed Income
- COVID Related Market Turmoil Recaps: Equities; Fixed Income and Structured Products

Monthly Market Metrics and Trends: www.sifma.org/insights-market-metrics-and-trends

- Statistics on volatility and equity and listed options volumes
- Highlights an interesting market trend

Market Structure Primers: www.sifma.org/primers

- Capital Markets: An Overview of Capital Markets and the Role of Financial Institutions
- Global Equity Market Comparison
- Capital Formation & Listings Exchanges
- Equities
- Options
- ETFs
- Fixed Income & Electronic Trading

Conference Debriefs

- Insights from market participants into top-of-mind topics
- Pre-Conference Survey Comparison, compares survey results across various conferences

Equity Market Structure Analysis

- The ABCs of Equity Market Structure: How US Equity Markets Work and Why
- Analyzing the Meaning Behind the Level of Off-Exchange Trading, Part II
- Analyzing the Meaning Behind the Level of Off-Exchange Trading
- Why Market Structure and Liquidity Matter

Top of Mind with SIFMA Insights

- Podcasts with market participants on key market and economic themes, including reference guides defining terms and providing charts on the topics discussed on the podcast

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