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RESEARCH AND PRODUCT DEVELOPMENT

Comparing E-minis and ETFs

John W. Labuszewski, Research and Product Development
Brett Vietmeier, Equity Products
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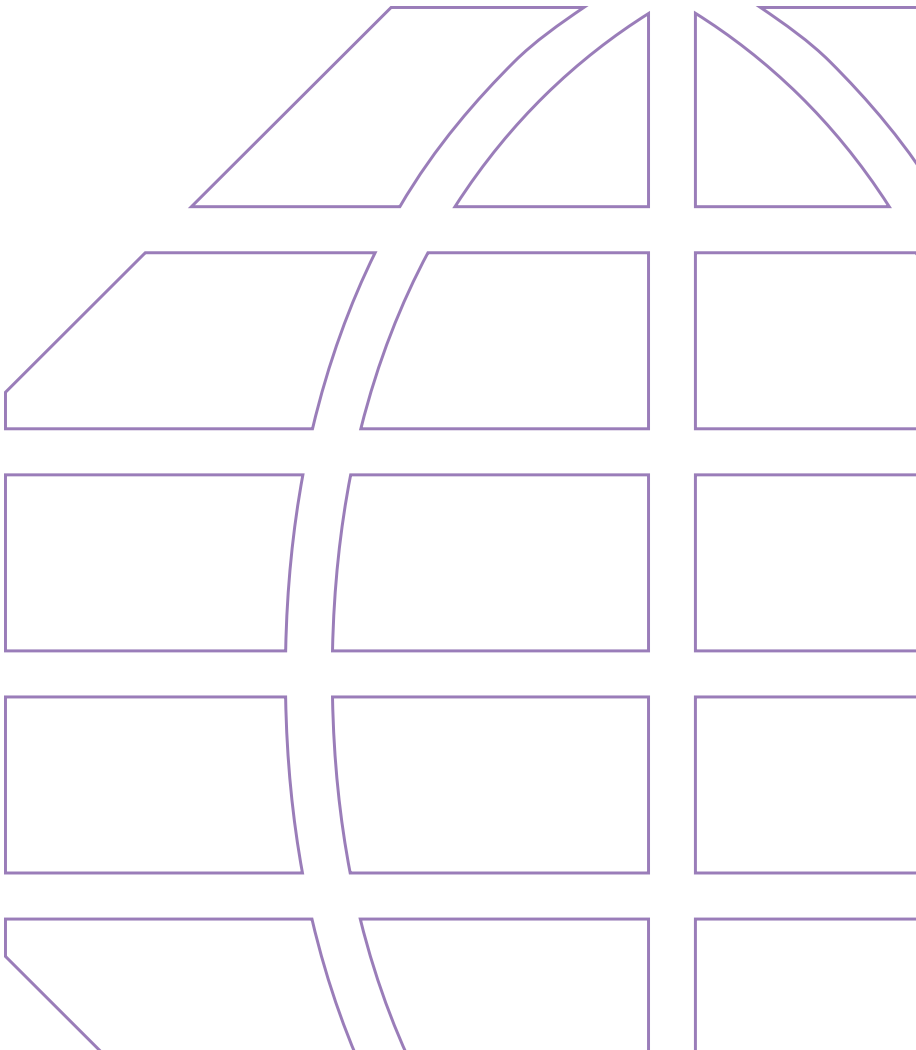


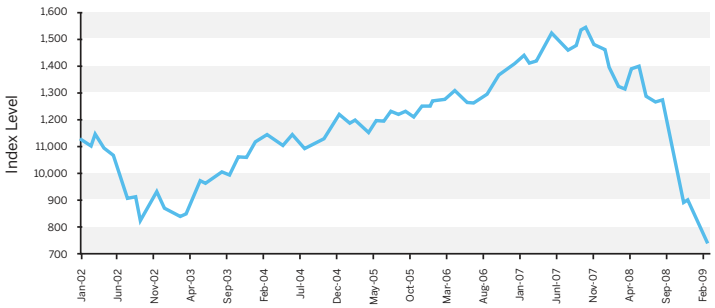
In this paper we will compare and contrast the benefits of trading E-mini stock index futures and Exchange Traded Funds.

E-mini stock index futures and Exchange Traded Funds (ETFs) were both introduced in the 1990s. Both of these product lines are based upon major or "benchmark" stock indexes representing broad equity market movements. Both of these product lines allow traders or investors to capitalize on the anticipated movement in these benchmark indexes. Finally, both product lines are available on major exchanges that are subject to regulatory oversight by U.S. government agencies, and a full array of financial safeguards. Still, there are some important differences between the two trading or investment approaches.

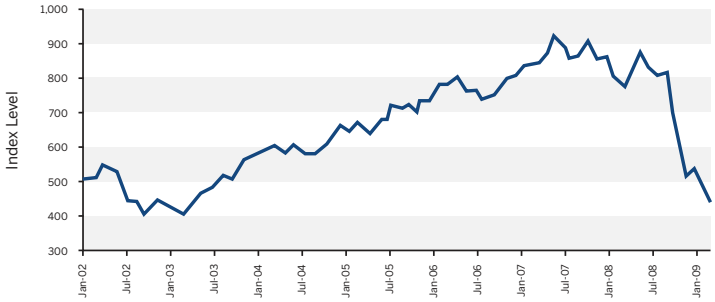
Our intent is to compare and contrast the advantages and disadvantages of these investment vehicles. Specifically, we focus on several of the most significant benchmark stock indexes, along with the E-mini futures and ETFs that are listed based upon these indexes. This includes:

- Venerable **Standard & Poor's 500 (S&P 500) Index**
- High-tech **NASDAQ-100 Index**
- Blue-chip **Dow Jones Industrial Average (DJIA)**
- **S&P MidCap 400** representing smaller capitalized stocks

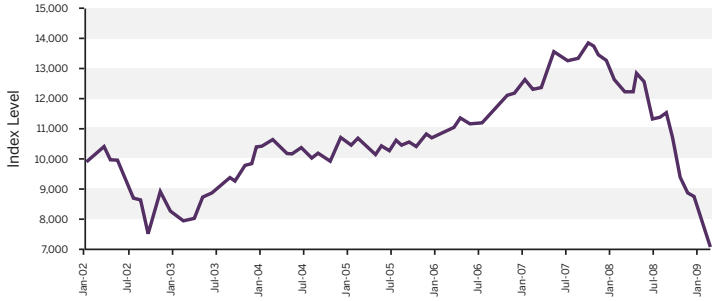
S&P 500



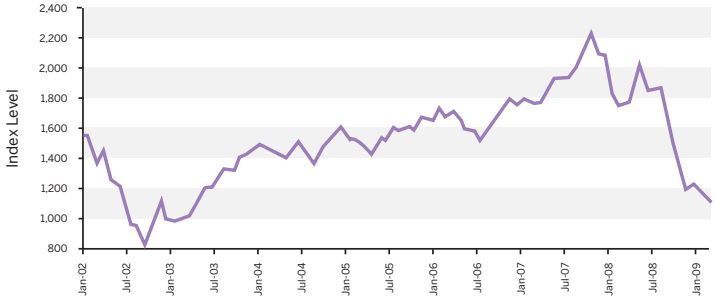
S&P MIDCAP 400



DOW JONES INDUSTRIAL AVERAGE



NASDAQ-100



Basic Concepts

Before we discuss those differences, however, let's review a few basic concepts associated with E-mini stock index futures and ETFs.

E-mini stock index futures generally may be thought of as one-fifth-sized versions of the standard stock index futures offered at CME. Like our other stock index futures, they are settled in cash to the spot value of the index. E-mini contracts are offered exclusively on the CME Globex electronic trading platform.

While stock index futures date back to 1982, E-minis were originally introduced in 1997 in response to the fact that equity values had risen steadily over the prior 15 years and the notional dollar value of many stock index futures had risen to very high levels. Thus, the concept was to develop a futures contract that might be accessible to active individual traders and traded exclusively via computer as opposed to the traditional pit or "open-outcry" venue.

As of March 17, 2009, the value represented by one E-mini S&P 500 futures contract was $38,940, calculated as the contract multiplier of $50 x the futures settlement price of 778.80 on that date. On the same date, the value represented by one E-mini NASDAQ-100 contract was $23,825, calculated as the contract multiplier of $20 x the futures price of 1,191.25. Likewise, the values represented by one E-mini Dow ($5) and one E-mini S&P MidCap 400 futures contracts were $37,035 and $46,905, respectively.

An ETF represents ownership in a unit investment trust patterned after an underlying index, and is a mutual fund that is traded much like any other fund. Unlike most mutual funds, ETFs can be bought or sold throughout the trading day, not just at the closing price of the day. ETFs generate dividends but also are subject to annual management fees, in addition to the commissions and other transaction costs associated with their purchase or sale. ETFs on the S&P 500, NASDAQ-100, Dow Jones Industrial Average (DJIA) and the S&P MidCap 400 indexes are offered on various stock exchanges, including the AMEX, NASDAQ and the NYSE.

Standard & Poor's 500 Depositary Receipts, or "SPDRs," are valued at approximately 1/10th the value of the Index. Thus, a single SPDR was quoted at $78.18, or approximately 1/10th the value of the S&P 500 at 778.12, on March 17, 2009. On the same day, the NASDAQ-100 Tracking Stock, commonly referred to by its ticker symbol "QQQQ," traded at approximately 1/40th the value of the Index. Thus, a single QQQQ was quoted at $29.33, approximately 1/40th the value of the NASDAQ-100 at 1,192.17.

E-mini futures are settled in cash vs. the value of the underlying index on the final settlement day. ETFs represent ownership in unit trusts designed to parallel the underlying index. As such, both futures and ETFs closely parallel movement in the underlying stock index.

Rapid Growth

Both E-mini stock index futures and ETFs have experienced remarkable growth in the relatively short periods that they have been available. The first ETFs were introduced in 1992. But it took until the mid- to late-90s to achieve a good deal of market penetration. SPDRs now trade on average $33.98 billion daily while QQQQs post some $6.73 billion.

E-mini stock index futures debuted in 1997 with the introduction of the E-mini S&P 500 futures contract and have become the fastest-growing futures products in history. The dollar value of average daily trading volume is a remarkable $138.41 billion for E-mini S&P futures, while E-mini NASDAQ-100 futures post $12.81 billion in daily volume.

Thus, one might safely conclude that both product lines are quite attractive and actively traded by a wide variety of institutional, professional and individual market participants. Still, E-mini futures based on the most significant stock indexes tend to trade quite a bit more heavily than their ETF counterparts. Further, there are other distinctions that can be considered significant for the trading and investing public, as discussed below.

COMPARING S&P 500 E-MINIS & ETFS

	E-mini S&P 500 Futures[3]	SPDR Trust	iShares S&P 500
Underlying Index	S&P 500	S&P 500	S&P 500
Unit Size	$50 x Index	~1/10th of Index	~1/10th of Index
Unit Dollar Value[1]	$38,940 (1 futures = ~500 ETFs)	$78.18	$78.37
Value of Average Daily Volume[2]	$138.41 billion	$33.98 billion	$0.60 billion
Open Trade Value[1]	$153.00 billion	$62.70 billion	$12.95 billion
Trading Venue	CME Globex	AMEX, NYSE, ECNs	AMEX, NYSE, ECNs
Ticker Symbol	ES	SPY	IVV
Minimum Capital Requirements[1]	Minimum initial spec margin of $6,188 per contract or ~15.9%	50% Reg T margin requirements apply	50% RegT margin requirements apply
24-Hour Trading	Yes	No	No
Operating Expenses	None	0.09% per annum	0.09% per annum

(1) Data sampled on March 17, 2009
(2) Data compiled from March 2008 through February 2009
(3) Traded at CME

COMPARING NASDAQ-100 E-MINIS & ETFS		
	E-mini NASDAQ-100 Futures[3]	**PowerShares QQQ Trust**
Underlying Index	NASDAQ-100	NASDAQ-100
Unit Size	$20 x Index	~1/40th of Index
Unit Dollar Value[1]	$23,825 (1 futures ~800 ETFs)	$29.33
Value of Average Daily Volume[2]	$12.88 billion	$6.73 billion
Open Trade Value[1]	$9.5 billion	$10.26 billion
Trading Venue	CME Globex	AMEX, NYSE, ECNs
Ticker Symbol	NQ	QQQQ
Minimum Capital Requirements[1]	Minimum initial spec margin = $4,000 or ~16.8%	50% Reg T margin requirements apply
24-Hour Trading	Yes	No
Operating Expenses	None	0.20% per annum

COMPARING DJIA E-MINIS & ETFS		
	E-mini Dow ($5) Futures[4]	**Diamonds**
Underlying Index	Dow Jones Industrial Average (DJIA)	Dow Jones Industrial Average (DJIA)
Unit Size	$5 x Index	~1/100th of Index
Unit Dollar Value[1]	$37,035 (1 futures ~500 ETFs)	$74.08
Value of Average Daily Volume[2]	$11.18 billion	$2.59 billion
Open Trade Value[1]	$7.7 billion	$7.27 billion
Trading Venue	CME Globex	AMEX, NYSE, ECNs
Ticker Symbol	YM	DIA
Minimum Capital Requirements[1]	Minimum initial spec margin = $5,500 or ~14.9%	50% Reg T margin requirements apply
24-Hour Trading	Yes	No
Operating Expenses	None	0.17% per annum

(1) Data sampled on March 17, 2009
(2) Data compiled from March 2008 through February 2009
(3) Traded at CME
(4) Traded at CBOT

Flexibility

ETFs may be attractive to the smaller, individual investor in that they are sized in very small unit sizes. For example, a SPDR was recently quoted at $78.18, while an E-mini S&P 500 futures contract had a much higher nominal (cash equivalent) value of $38,940 (as of March 17, 2009).

To illustrate this point, consider that it would require 500 SPDRs to equate to the value of one E-mini S&P 500 contract, and 800 QQQQs to equate to the value of one E-mini NASDAQ-100 contract. Clearly, ETFs permit one to trade in smaller unit sizes with greater flexibility than do E-mini futures.

Still, SPDRs typically tend to be transacted in 100-lot (or "round-lot") increments, like most other equities. Thus, if a single unit of SPDRs was valued at $78.18, it implies that a 100-lot unit of SPDRs was valued at $7,818.

Leverage

The capital requirements or margin rules are applied very differently in the context of ETFs and E-mini futures. Like other equity securities, ETFs are subject to the Fed's Regulation T margin requirements. This means that one must margin a security holding with an initial minimum deposit of 50 percent of the purchase price, the balance of which may be borrowed at interest from one's broker. When a customer shorts an ETF, he must put up 50% of the sale price and retain the short sale proceeds in his account.

By contrast, futures traders post a margin deposit or performance bond to secure the transaction, not the amount implied by the nominal value of the futures contract. The performance bond or margin requirements associated with E-mini futures are designed to reflect the maximum anticipated risk associated with the position from day-to-day, i.e., one day's worth of price risk. While the Exchange minimum initial speculative performance bonds, or margin requirements, are subject to adjustment, as of this writing, they were at $6,188 or ~15.9% of the $38,940 nominal contract value for an E-mini S&P 500 futures. Similarly, E-mini NASDAQ-100 futures had an initial speculative performance bond requirement of $4,000 or ~16.8% of the contract value of $23,825. E-mini Dow ($5) and S&P MidCap 400 contracts offered leverage of ~14.9% and ~17.6%, respectively.

Consider the implications of this leverage feature on the purchase of an E-mini S&P futures contract relative to the purchase of 500 SPDRs. Assume that an investor buys one futures contract at a price of 780.00, which equates to a value of $39,000, on margin of $6,188. The market rallies by 40 index points to 820.00 and the investor sells the contract for a profit of $2,000 – which equates to a profit of 32.3% on the initial margin of $6,188 (not counting fees and commissions).

Buy 1 E-mini @ 780.00	$39,000 (= $50 x 780.00)
Sell @ 820.00	$41,000 (= $50 x 820.00)
Profit (Loss)	$2,000 (= $41,000 - $39,000)
Initial Margin	$6,188
Percentage Profit	32.3% (= $2,000 ÷ $6,188)

Now, assume that the investor buys the rough equivalent of that E-mini contract by purchasing 500 SPDRs at a price of $78.40, subsequently selling at $82.40, for a profit of $2,000. Per Reg T, the initial margin requirement is 50% of the $39,200 purchase price, or $19,600, which equates to a profit of 10.2% on initial margin. And, of course, the investor still owes interest to his broker which accrues on the unpaid balance of 50% during the course of the transaction.

Buy 500 SPDRs @ $78.40	$39,200 (= 500 x $78.40)
Sell @ $82.40	$41,200 (= 500 x $82.40)
Profit (Loss)	$2,000 (= $41,200 - $39,200)
Initial Margin	$19,600 (= 50% of $39,200)
Percentage Profit	10.2% (= $2,000 ÷ $19,600)

Thus, E-mini futures provide the opportunity to leverage capital to a greater extent than ETFs. Of course, care must be taken when applying such leverage to control one's risk exposure and avoid overextending financial resources. Leverage cuts both ways. It can be used to enhance percentage returns when a trade becomes profitable, but likewise increases percentage losses in unfavorable market circumstances.

Trading Venue

As the "E" in E-mini implies, E-mini stock index futures have always been traded on an electronic trading platform, specifically, on the CME Globex system. The system provides for fast, efficient order entry and reporting of resulting fills to the customer without favoritism or regard to the identity of the customer.

Customers have "open access" to the system. That means that any trader can participate directly in the trading process through a computer link-up provided the trader's transactions are intermediated by an Exchange clearing member who acts as broker. Access is often facilitated through the brokers' proprietary trading systems or through commercial available links or internet software vendors (ISVs) who offer links to the electronic trading environments of many exchanges through a single system.

ETFs were pioneered on the floor of the American Stock Exchange (AMEX). But the popularity of the concept was such that other exchanges, notably including the New York Stock Exchange (NYSE) and most other major domestic and international stock exchanges took steps to offer a trading forum for ETFs. Further, many Electronic Communication Networks (ECNs) offer trading in ETFs through their electronic trading platforms.

Originally, the traditional exchanges such as AMEX had utilized a specialist system such that orders would be routed to the floor of the exchange and flow through the hands of the designated specialist. Increasingly, however, orders tend to flow through electronic matching mechanism. Of course, CME originated the concept of E-mini futures on the CME Globex trading platform.

COMPARING S&P MIDCAP 400 E-MINIS & ETFS

	E-mini S&P MidCap 400 Futures[3]	MidCap SPDR Trust	iShares S&P MidCap 400
Underlying Index	S&P MidCap 400	S&P MidCap 400	S&P MidCap 400
Unit Size	$100 x Index	~2/11th of Index	~1/10th of Index
Unit Dollar Value[1]	$46,905 (1 futures = ~550 MDYs or ~1,000 IJHs)	$85.03	$46.71
Value of Average Daily Volume[2]	$2.300 billion	$0.959 billion	$0.071 billion
Open Trade Value[1]	$6.40 billion	$5.11 billion	$3.17 billion
Trading Venue	CME Globex	AMEX, NYSE, ECNs	AMEX, NYSE, ECNs
Ticker Symbol	EMD	MDY	IJH
Minimum Capital Requirements[1]	Minimum initial spec margin = $8,250 or ~17.6%	50% Reg T margin requirements apply	50% Reg T margin requirements apply
24-Hour Trading	Yes	No	No
Operating Expenses	None	0.25% per annum	0.20% per annum

(1) Data sampled on March 17, 2009
(2) Data compiled from March 2008 through February 2009
(3) Traded at CME

E-mini futures provide opportunity to leverage capital to a greater extent than ETFs.

Contract Structure

ETFs are distinguished from futures in that they entitle the holder to the periodic receipt of dividends accrued associated with all the stocks in the underlying index. Futures prices, however, will tend to trade to levels that reflect the value of the underlying stock index, plus finance charges, less anticipated dividends. This is referred to as "cost of carry" or "fair value." Often one sees major financial newscasts display the expected difference between the spot index value and the futures price as the day's "fair value." Because futures prices tend to be discounted to reflect the lack of dividend receipts, there is no reason to believe that ETFs are superior in this respect.

ETFs are charged ordinary expenses, or a management fee, by the firm that administers the underlying unit investment trust. SPDRs entail a management fee of 9 basis points (0.09%), and QQQQs a fee of 20 basis points (0.20%).

While futures are not subject to annual fees as such, there is an implicit cost in maintaining a futures position for an extended period of time. Typically, futures are most actively traded in the lead or most current contract month, e.g., in June 2009, most trading volume and open interest is in the June 2009 contract. But traders will typically "roll" forward their positions by liquidating (for example) June futures in favor of establishing a position in September futures as the June expiration approaches. The costs associated with the roll are reflected in the spread between the nearby and deferred futures contract and in any additional commissions associated with the transaction.

Holding Period Considerations

Thus, a trader considering a long-term "buy and hold" strategy must consider the perpetual nature of an ETF vs. the somewhat more transitory nature of a futures contract. Futures contracts are traded for cash settlement on a quarterly basis in the "March quarterly cycle" of March, June, September and December. And while one might trade futures for a deferred delivery month, the nearby futures contracts are typically the most liquid and, therefore, the trading vehicle of choice.

Because futures expire, they must be "rolled over" in order to maintain a "buy and hold" strategy. In other words, the expiring contract must be liquidated and the position reestablished in a deferred futures month, at least on a quarterly basis. This implies certain trading costs, such as commissions and bid/offer spreads. A position in ETFs, by contrast, can be held indefinitely with the management fees representing the only costs.

We note, however, that the average holding period in SPDRs is currently only 1.8 days. (This can be estimated by comparing the dollar value of outstanding positions divided by the dollar value of average daily volume. Or, $62.70 billion divided by $33.98 billion.) By comparison, the average holding period for E-mini S&P 500 futures is also very short at 1.1 days. The average holding period for NASDAQ-100 QQQQs is 1.5 days; for DJIA DIA or "Diamonds" is 2.8 days. Thus, the supposed advantage that ETFs offer in this respect may be more theoretical than practical.

Finally, when adding up the respective advantages and disadvantages, the value implied by average daily trading volume in E-mini futures tends to be some multiple of the value associated with ETFs. Specifically, $138.41 billion in E-mini S&P 500 futures vs. $33.98 billion in SPDRs. While both investment vehicles have unique merits, we suggest that this figure is most telling.

In some cases there may be a tax advantage associated with trading E-mini stock index futures over ETFs.

Tax Considerations

Securities such as ETFs are taxed on a very different basis than are E-mini stock index futures. This is not intended to be the final word on tax treatment and we advise that you consult your tax attorney or accountant for information that is applicable to your situation.

As a general rule, gains on ETFs are treated as capital gains. Unlike a mutual fund, which may generate capital gains or losses whenever assets in the fund are liquidated, capital gains or losses on ETFs are only realized when the ETF itself is liquidated by the investor.

The tax on capital gains and losses varies depending on the holding period. As of this writing, capital gains tax on assets held for more than one year (long-term capital gains) is 15% for those taxpayers in higher marginal tax brackets (25%, 28%, 33% and 35% brackets) and 5% for taxpayers in lower marginal tax brackets (0%, 10% and 15% brackets).

But, if one holds an ETF for less than a year (short-term capital gains), one is taxed at the less favorable personal income tax rate (which includes earned income plus capital gains) of up to 35%. Of course, if one holds an investment in SPDRs for as little as the 1.8 days average holding period, that would generally qualify for short-term capital gains tax treatment.

In some cases, trading E-mini stock index futures may result in more favorable tax treatment than trading in ETFs. Like other futures contracts, stock index futures typically fall under Section 1256 of the tax code. This means that gains and losses on these contracts are marked-to-market at the conclusion of the tax year regardless of whether they are liquidated or remain open. Some 60% of the gains are treated as long-term capital gains and 40% of the gains are treated as short-term capital gains. This treatment does not depend on the holding period of the contracts at all.

Assume you had an equivalent gains on SPDRs and on E-mini S&P 500 futures after holding the positions for one week and you are in the highest marginal tax bracket of 35%. The capital gains on the SPDR position might be taxed as short-term capital gains or 35%. By contrast, the gain on E-mini futures might be taxed at 23%. (This is calculated as 60% of 15% + 40% of 35%.)

In other words, if you are trading these products over a horizon of less than one year, there may be a tax advantage associated with trading E-mini stock index futures over ETFs. Again, please consult with your tax attorney or accountant for tax advice specific for your situation.

For more information visit the Equity Index Research Center at www.cmegroup.com/equityindexresearch or contact:

John W. Labuszewski
Managing Director
Research and Product Development
312 466 7469
jlab@cmegroup.com

Brett Vietmeier
Director
Equity Products
312 930 3394
brett.vietmeier@cmegroup.com

CME GROUP HEADQUARTERS

20 South Wacker Drive
Chicago, Illinois 60606
cmegroup.com

info@cmegroup.com
800 331 3332
312 930 1000

CME GROUP GLOBAL OFFICES

Chicago
312 930 1000

New York
212 299 2000

Houston
713 658 9292

Washington D.C.
202 638 3838

Hong Kong
852 3101 7696

London
44 20 7796 7100

Singapore
65 6322 8595

Sydney
61 2 9231 7475

Tokyo
81 3 5403 4828

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