

# Weather Futures and Options

MANAGE RISK ASSOCIATED WITH FLUCTUATING GLOBAL TEMPERATURES

## Overview

It is estimated that nearly 30 percent of the US economy is directly affected by the weather. In order to enable businesses to hedge the risk they face from atypical weather conditions – particularly as the onset of climate change precipitates extreme weather events – CME Group offers Weather futures and options. These products are financial tools that provide a means of transferring risk associated with adverse weather events. They are index-based products geared to average seasonal and monthly weather in 12 cities around the world – nine in the US, two in Europe, and one in Asia.

## Key features:

- Access to unique tools for managing exposure to weather
- Stabilized cash flow for hedges participating in these markets
- Centralized clearing and counterparty credit guaranteed by CME Clearing
- Transparent prices on all weather futures and options

## Market participants:

Participants in these markets include companies in a wide range of industries:

- Insurance and reinsurance companies
- Hedge funds
- Energy companies
- Food/agriculture industry
- Pension funds
- State governments
- Retailers
- Utility companies



**Latest weather research white paper (Jan 2021)**

**Managing Climate Risk with CME Group Weather Futures & Options**

[Read more >](#)

- 12 global price points
- Monthly and seasonal strip HDD/CDD/CAT futures and options
- Available for block trading on CME Clearport and electronically on CME Globex
- Block trade minimum of 20

US cities



Cities outside the US



## How weather is traded at CME Group

Weather products quantify weather in terms of how much the temperature deviates from the monthly or seasonal average in a particular city, allowing market participants to trade the weather much like any other commodity index.

The value of a Weather future or option is determined by the value of the underlying weather index, measured in Heating Degree Days (HDD) or Cooling Degree Days (CDD) – the total number of degrees that the average outside air temperature falls or rises below or above the base temperature of 65°F (18°C for non-US cities). The European summer cooling month contracts and all Tokyo contracts are based on a Cumulative Average Temperature (CAT). Each monthly CAT index is simply the accumulation of daily average temperatures recorded in degrees Celsius over a calendar month

For example, if the average of a day's maximum and minimum temperature on a midnight-to-midnight basis is 55° F, that day's HDD is 10 and the CDD is zero. The original futures are based on the cumulative value of HDDs or CDDs during the term of the contract. Assume we are evaluating a monthly contract in which the month had 31 days and each day was like our example, with an average daily temperature of 55°F. Accordingly, the cumulative monthly HDD would equal 310 (10 HDDs x 31 days). Value at settlement for Weather contracts is determined by multiplying the cumulative HDD or CDD by the contract's tick size of \$20. The final value of our example Weather futures contract would equal \$6,200 (310 index points multiplied by \$20).

Using Tokyo to illustrate to CAT index pricing, assume that the month had 30 days and the average daily temperature for each of the first 15 days was 10°C and the average daily temperature for each of the remaining 15 days was 20°C. Accordingly, the cumulative average temperature (CAT) would equal 450 (= (15 days x 10) + (15 days x 20)). The futures contract value would be identified by multiplying that figure by ¥2,500 (Japanese Yen). In this example, the cash value of the contract would be ¥1,125,000 (= ¥2,500 x 450).

## HEATING (HDD) FUTURES AND OPTIONS

	CITY CODE	NOV-MAR STRIP	DEC-FEB STRIP
<b>US</b>			
ATLANTA	H1	H1X	H1Z
CHICAGO	H2	H2X	H2Z
CINCINNATI	H3	H3X	H3Z
DALLAS	H5	H5X	H5Z
LAS VEGAS	H0	H0X	H0Z
MINNEAPOLIS	HQ	HQX	HQZ
NEW YORK	H4	H4X	H4Z
PORTLAND	H7	H7X	H7Z
SACRAMENTO	HS	HSX	HSZ
<b>EUROPE</b>			
AMSTERDAM	D2	D2X	D2Z
LONDON	D0	D0X	D0Z
<b>ASIA</b>			
TOKYO*	G6	G6X	G6Z

## COOLING (CDD) FUTURES AND OPTIONS

	CITY CODE	JUL-AUG STRIP	MAY-SEP STRIP
<b>US</b>			
ATLANTA	K1	K1K	K1N
CHICAGO	K2	K2K	K2N
CINCINNATI	K3	K3K	K3N
DALLAS	K5	K5K	K5N
LAS VEGAS	K0	K0K	K0N
MINNEAPOLIS	KQ	KQK	KQN
NEW YORK	K4	K4K	K4N
PORTLAND	K7	K7K	K7N
SACRAMENTO	KS	KSK	KSN
<b>EUROPE</b>			
AMSTERDAM*	G2	G2K	G2N
LONDON*	G0	G0K	G0N
<b>ASIA</b>			
TOKYO*	G6	G6K	G6N

\*CAT Index used

For more information on Weather futures and options, visit [cmegroup.com/weather](https://cmegroup.com/weather)

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Neither futures trading nor swaps trading are suitable for all investors, and each involves the risk of loss. Swaps trading should only be undertaken by investors who are Eligible Contract Participants (ECPs) within the meaning of Section 1a(18) of the Commodity Exchange Act. Futures and swaps each are leveraged investments and, because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for either a futures or swaps position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles and only a portion of those funds should be devoted to any one trade because traders cannot expect to profit on every trade.

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