

Commodity Challenge

Section I: Introduction to Futures and Options Markets

Chapter 7: Carrying charges in grain markets

Learning objectives

- Free stocks and positive carrying charges
- Inverted market or negative carrying charges

Key terms

Carrying charge market or positive carrying charges: Positive carrying charges occur when deferred futures contracts trade at a premium to nearby contracts. Also called a carry market or a market in contango.

Inverted market or negative carrying charges: An inverted market occurs when nearby futures contracts trade at a premium to deferred contracts. Also called a discount market or a market in backwardation.

Carrying Charges in Grain Markets

We've explored the difference between cash and futures contracts. It is time to explore spreads among futures prices in different delivery months. In seasonally produced crops (i.e., crops that can be stored such as wheat, soybeans, and corn), these price differences are known as **carrying charges**.

Carrying charges can be positive or negative:

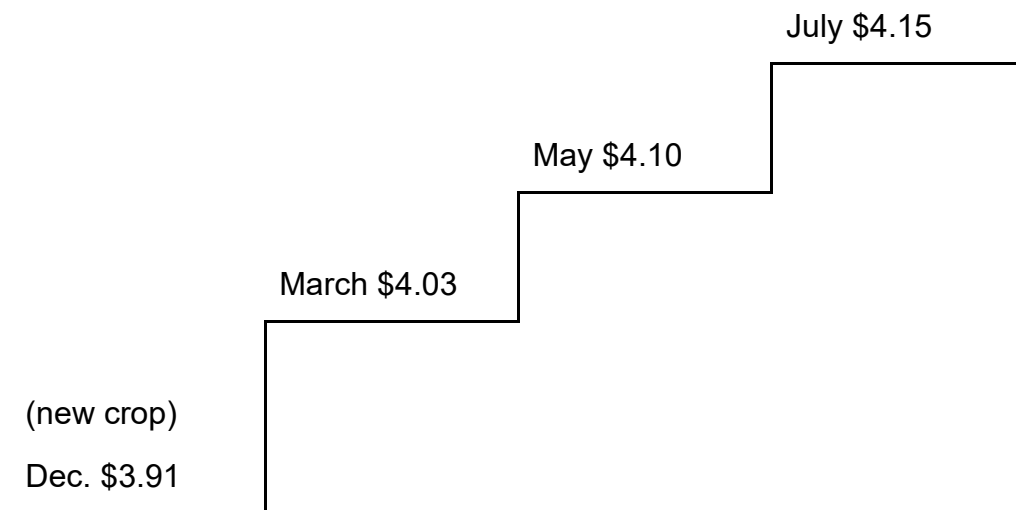
- **Positive carrying charges** occur when deferred futures contracts trade at a premium to nearby contracts.
- **Negative carrying charges (inverted markets)** occur when nearby futures contracts trade at a premium to deferred contracts.

Carrying charges are determined by trading activity in the market and change daily. These changes can signal the market's bullish or bearish tone.

Positive Carrying Charges

The following is an example of a carrying charge market in corn. The price structure shown is representative of many different years.

Market Closes: October 18, 2019



Why the different prices? All contracts reflect the same grade (#2 yellow corn), delivery form, and location. Yet prices differ because of **storage costs**, also known as **carrying charges**.

Positive carrying charges are common when free supplies of grain are large. Carrying charges send signals and incentives to store grain for later sale or to price grain and ship it today.

Calculating Full Carrying Charges

To calculate a full carrying charge in the futures market:

full carry = [(price * interest rate)/12 + (monthly storage rate)] * # of months

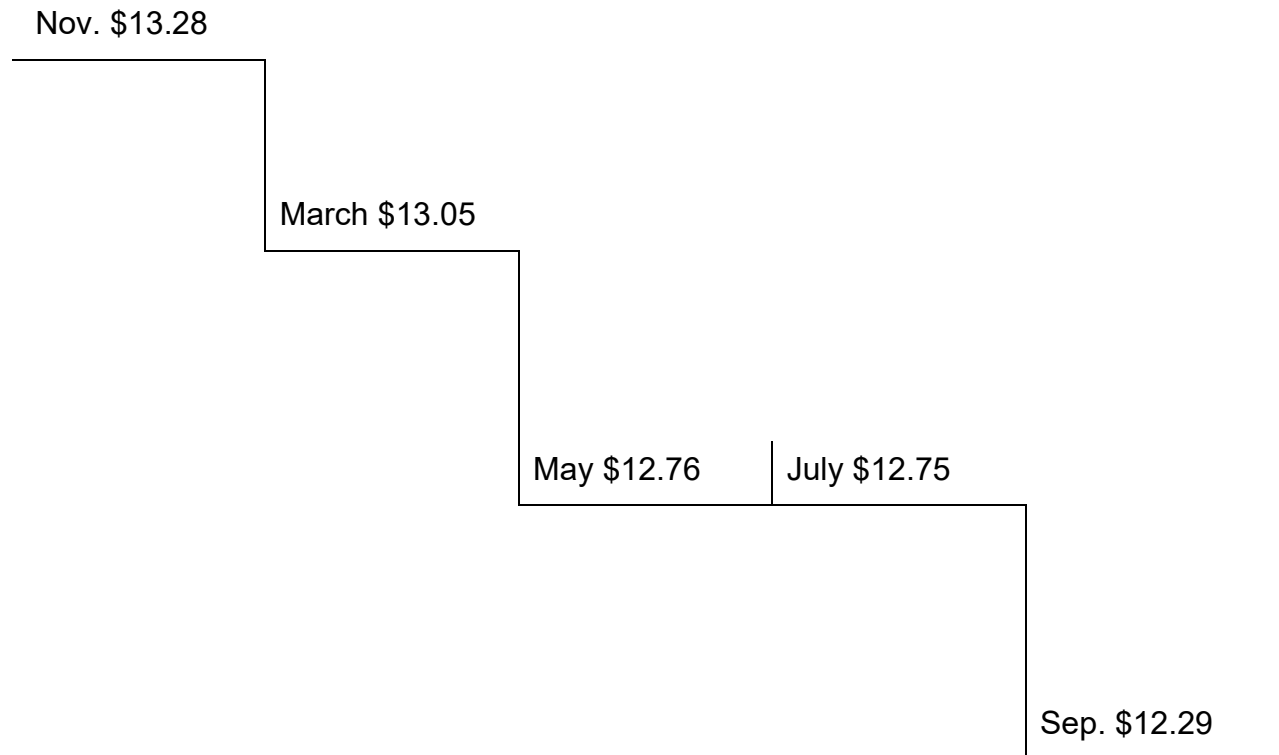
Carrying charges rarely exceed 90% of full carry because commercial elevator owners are willing to store grain for less than the commercial rate.

Large crops → large stocks → lower prices → larger carrying charges.

Inverted (Negative) Carrying Charges

An inverted market occurs when distant futures contracts trade at lower prices than nearby futures.

Market Closes: August 23, 2013



Inverted markets prevail when supplies are small. The market says: **“We will pay a premium if you deliver now!”**

Inverted markets reflect a **negative return to storage**. Unlike carrying charge markets, there is no theoretical maximum for inverses—they can become very large when supplies are short.

Despite the lack of incentive, some grain must still be held in storage. Processors and merchandisers need stocks to operate.

Small crops → small stocks → higher prices → smaller carrying charges or inverses.

Further Readings and Resources from the CME Group

- Learn about futures and options markets:
<https://www.cmegroup.com/education/courses.html#filters=futures,agriculture>
 - Introduction to Grains and Oilseeds:
<https://www.cmegroup.com/education/courses/introduction-to-grains-and-oilseeds.html>
 - Hedging with Grain and Oilseed Futures and Options:
<https://www.cmegroup.com/education/courses/hedging-with-grain-and-oilseed-futures-and-options.html>
-

Exercise #7

1. Log into a [Commodity Challenge](#) game and click on a commodity under the **Futures** tab.
2. Review the recent futures market prices on the CME website.
3. Look at the next few futures contract prices:
 - a. Is the next delivery month priced higher or lower than the first?
4. Continue down the list to determine whether the market is a **carrying charge market** or an **inverted market**.