Introduction

Dawei Wang

January 30, 2020

1 Definition

A derivative can be define as a financial instrument whose value depends on the values of other, more basic, underlying variables. Very often the variables underlying derivatives are the price of traded assets.

2 Forward contract(OTC)

It's an agreement to buy or sell an asset at a certain future time for a certain price.

3 future(Exchanges)

A call option gives the holder the right to buy the underlying asset by a certain date for a certain price.
A put option gives the holder the right to sell the underlying asset by a certain date for a certain price.
American option can be exercised at any time up to the expiration date. European option can be exercised only on the expiration date itself.

4 Specification of a future contract

The exchange specify the asset, the contract size, where delivery will be made, and when delivery will be made.
Sometimes alternatives are specified for the grade of the asset that will be delivered or for the delivery location.

4.1 The exchange specify:

1.The Asset
2.The Contract Size
3.Delivery Arrangements

4.Delivery Months
5.Price Quotes
6.Price Limits and Position Limits

For most contracts, daily movement limits are specified by the exchange.
Normally, trading ceases for the day once the contract is limit up or limit down. However, in some instance the exchange has the authority to step in and change the limits.
Position limits are the maximum number of contracts that a speculator may hold.

5 Convergence of future price to spot price

As the delivery period for a futures contract is approached, the futures price converge to the spot price of the underlying asset. When the delivery period is reached, the futures price equals-or is very close to-the spot price.

6 The operation of margin

6.1 Daily settlement

Margin account:
The account that must be deposited at the time the contract is entered into is known as initial margin.
A trade is first settled at the close of the day on which it take place. It is then settled at the close of trading on each subsequent day.

Maintenance margin:
The investor is entitled to withdraw any balance in the margin account in excess of the initial margin. Maintenance is somewhat lower than initial margin.
If the balance in the margin account falls below the maintenance margin, the investor receives a margin call and is expected to top up the margin account to the initial margin level by the end of next day.
The extra funds deposited are known as a variation margin. If the investor does not provide the variation margin, the broker closes out the position.