Futures

Introduction

- A futures contract is an agreement to buy or sell an asset at a certain time in the future for a certain price. By contrast, in a spot contract, there is an agreement to buy or sell the asset immediately (or within a short period)
- The futures price for a contract is the price at which you agree to buy or sell at a future time
- Exchange traded, settled daily (marked to market)

Convergence of Futures to Spot

- Contango: current spot price < futures price (negative basis)
- Backwardation: current spot price > futures price (positive basis)
- Backwardation occurs when convenience yield is greater than the risk-free rate plus the carrying costs. It is argued that backwardation is abnormal, and implies supply inefficiencies in the corresponding spot market.

Cost of carry model: $F = Se^{(r+s-c)t}$

where F is the future price,

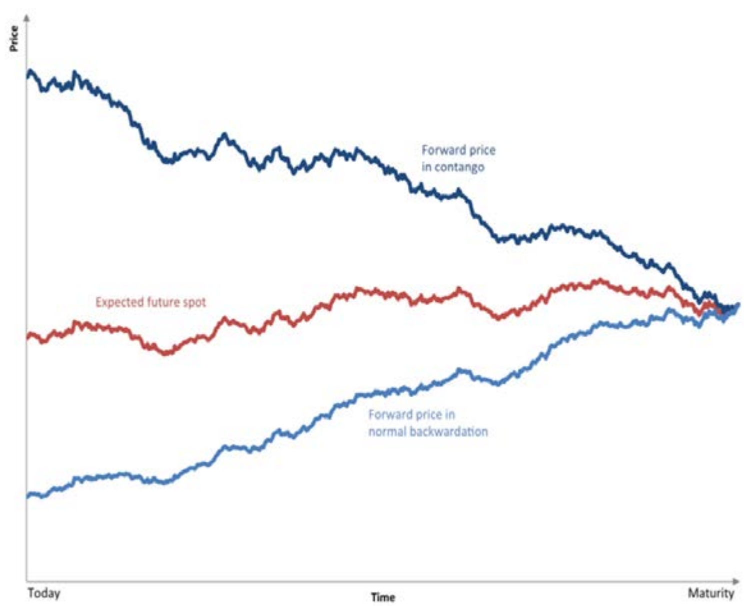
S is the spot price,

r is the risk-free interest rate,

s is the storage cost,

c is the convenience yield,

t is the time to delivery of the future contract



Margin

- Margin is cash or marketable securities (to be sold or redeemed within one year) deposited by an investor with his or her broker
- Retail traders provide **initial margin**, and when the balance in the margin account falls below a **maintenance margin** level, they must provide **variation margin** bringing balance back up to initial margin level
- Margin minimizes the possibility of a loss through default on a contract

Example of a Futures Trade

- Long position in two Dec gold futures contracts
- Contract size: 100 oz
- Futures price: $1250
- Initial margin: $6000, Maintenance margin: $4500

Day	Trade Price	Settle Price	Daily Gain	Cum Gain	Margin Bal	Margin Call
1	1250				12000	
1		1240	-2000	-2000	10000	
2		1230	-2000	-4000	8000	4000
3		1235	1000	-3000	13000	
…		…	…	…	…	…
10	1260		…	2000	18000	

Exchange Clearing House

- The exchange clearing house has members who provide initial margin and daily variation margin
- Brokers who are not members must channel their business through a member. The member will then require margin from the broker

Forward Contracts

- An OTC agreement to buy or sell an asset at a certain time in the future for a certain price
- No daily settlement but collateral may have to be posted
- Popular on currencies and interest rates

Forwards	Futures
Private contract between 2 parties	Exchange traded
Non-standard contract	Standard contract
Usually 1 specified delivery date	Range of delivery dates
Settled at the end of contract	Settled daily
Some credit risk	Virtually no credit risk