

**PD 303**

# **Case: Occupy Mall Street**

# Stock Options

Série	Preço de Exercício
PETRJ13	13,00
PETRJ14	14,00
PETRJ15	15,00
PETRJ16	16,00
PETRJ17	17,00

**Stock option (IFRS 2/CPC 10):** a contract that gives the holder the right, but not the obligation, to subscribe to the entity's shares at a fixed or determinable price for a specified period of time.

**Asset:** PETR4 (Petro PN)

**Call Option:** PETRJ20; PETRJ21etc.

**Strike Price** 13, 14 etc.

**Month:** 10 (J)

**Date:** 21 (third monday of the month)

# Stock Options

**Option** = Intrinsic value (in the money) + Extrinsic value (expectation)

**Ex. prices 06/09/2013**

PETR4 (Petro PN): **R\$ 17,75**

PETRJ17: **R\$ 1,36**

**PETRJ18: R\$1,17**

PETRJ19: **R\$ 0,61**

**In the money:** Exercise Price < Stock Price

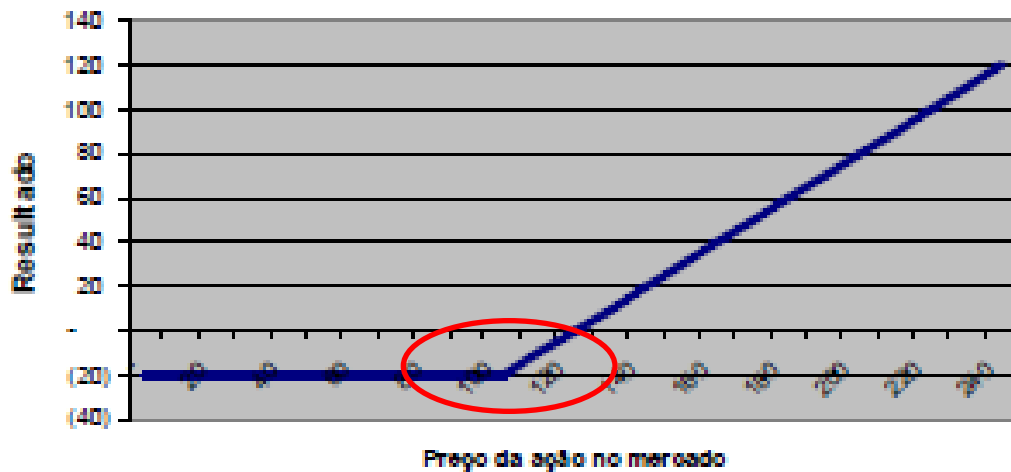
**Out of the money:** Exercise Price > Stock Price

**At the money:** Exercise Price =(close) Stock Price

# How to Price a Stock Options

Ex. Price \$20 e Strike \$100.

Compra de opção de compra



I can calculate the future value (spread) of your employee stock options!

- Stock Options Calc



free-online-calculator-use.com

# How to Price a Stock Options

**Black–Scholes Model:** The Value of a Call Option is influenced by the following:

<b>Increase</b>	<b>Value of the Option</b>
<b>Price of the underlying asset</b>	<b>Increases</b>
<b>Strike Price</b>	<b>Decreases</b>
<b>Volatility</b>	<b>Increases</b>
<b>Time to maturity</b>	<b>Increases</b>
<b>Risk Rate of return</b>	<b>Increases</b>

# Mensuração do Valor das Opções: Black – Scholles - Merton

$$C = N(d_1)S - N(d_2)Ee^{-rt}$$

$$d_1 = \frac{\ln(S/E) + (r + \sigma^2/2)T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

Exemplo:

(S) = \$ 100 reais

(E) = \$ 110 reais

(T) = 1 ano

(s) = 0,2 (20 % ao ano)

r = 0,1 (10% ao ano)

**Call price = 8,1831**

Where,

C = Call Price

S = Spot price of the underlying asset

E = Strike Price

r = risk free rate of return

T = Time to maturity

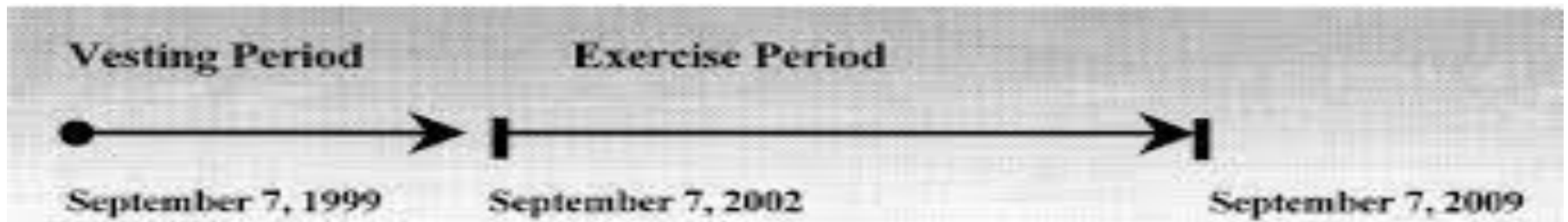
s = volatility (standard deviation)

e = 2,7182

$N(d)$  = the cumulative distribution function of the standard normal distribution.

# Vesting Conditions

*Vest means to become entitlement*



*Vest immediately:*

# Modifications (BC 43 – IFRS 2)

- (a) if the modification increases the fair value of the equity instruments granted (eg by reducing the exercise price), measured immediately before and after the modification, the entity shall include the incremental fair value granted in the measurement of the amount recognised for services received as consideration for the equity instruments granted. The incremental fair value granted is the difference between the fair value of the modified equity instrument and that of the original equity instrument, both estimated as at the date of the modification. If the modification occurs during the vesting period, the incremental fair value granted is included in the measurement of the amount recognised for services received over the period from the modification date until the date when the modified equity instruments vest, in addition to the amount based on the grant date fair value of the original equity instruments, which is recognised over the remainder of the original vesting period. If the modification occurs after vesting date, the incremental fair value granted is recognised immediately, or over the vesting period if the employee is required to complete an additional period of service before becoming unconditionally entitled to those modified equity instruments.



# Option Expired (not exercise)

BC219 The lapse of a share option at the end of the exercise period **does not change the fact that the original transaction occurred**, ie goods or services were received as consideration for the issue of an equity instrument (the share option).

**The lapsing of the share option does not represent a gain to the entity**, because there is no change to the entity's net assets. In other words, although some might see such an event as being a benefit to the remaining shareholders, it has no effect on the entity's financial position. In effect, one type of equity interest (the share option holders' interest) becomes part of another type of equity interest (the shareholders' interest). **The Board therefore concluded that the only accounting entry that might be required is a movement within equity, to reflect that the share options are no longer outstanding (ie as a transfer from one type of equity interest to another).**

# Desmontagem: Após a data de Aquisição

**Assim, temos que:**

**Após o vesting:**

Não há reversão após o prazo de aquisição (vesting): pois os serviços foram prestados.

**Já durante o vesting:**

Caso a contraparte tivesse deixado a empresa durante o período (uma condição de serviço não teria sido atendida) e conseqüentemente os valores reconhecidos seriam revertidos.

Isso porque uma condição de serviço é levada em consideração ajustando-se o valor da transação para os números de instrumentos que eventualmente irão se tornar exigíveis.