

Senzitivita Call a Put

<b>Black-Scholes model</b>									
<b>S</b>	<b>X</b>	<b>r</b>	<b>t</b>	<b>σ</b>			<b>Pákový efe</b>		
1500	1500	0.03	0.25	0.1	35.7443584	<b>Call</b>	23.8972054		
1500	1500	0.03	0.25	0.1	0.56946018	<b>Δ Call</b>			
1500	1500	0.03	0.25	0.1	0.0052384	<b>Γ Call</b>			
1500	1500	0.03	0.25	0.1	2.94660007	<b>K Call</b>			
1500	1500	0.03	0.25	0.1	2.04611479	<b>ρ Call</b>			
1500	1500	0.03	0.25	0.1	0.23190383	<b>Θ Call</b>			
1500	1500	0.03	0.25	0.1	-0.54563061	<b>X Call</b>			
<b>S</b>	<b>X</b>	<b>r</b>	<b>t</b>	<b>σ</b>			<b>Pákový efe</b>		
1500	1500	0.03	0.25	0.1	24.5364406	<b>Put</b>	-26.3204323		
1500	1500	0.03	0.25	0.1	-0.43053982	<b>Δ Put</b>			
1500	1500	0.03	0.25	0.1	0.0052384	<b>Γ Put</b>			
1500	1500	0.03	0.25	0.1	2.94660007	<b>K Put</b>			
1500	1500	0.03	0.25	0.1	-1.67586541	<b>ρ Put</b>			
1500	1500	0.03	0.25	0.1	0.10783782	<b>Θ Put</b>			
1500	1500	0.03	0.25	0.1	0.44689744	<b>X Put</b>			
							<b>Parita Call</b>		
							<b>P+S</b>	1524.53644	

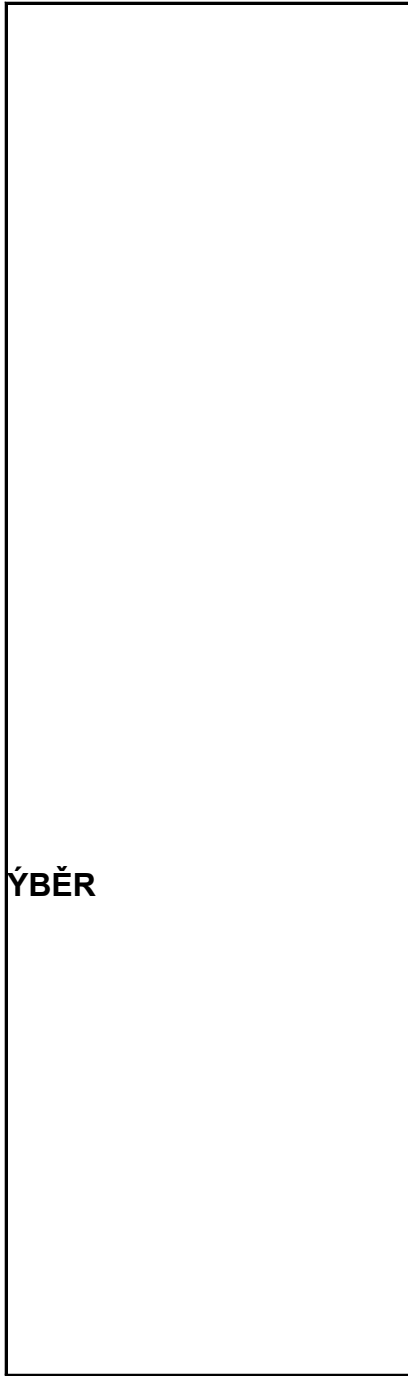
<b>kt Call</b>

<b>kt Put</b>

<b>a Put</b>	
<b><math>C+X \cdot e^{-r \cdot t}</math></b>	
1524.5364	0.000

**VOLATILITA**

Týden	$C_t$	Výnos $\text{LN}(C_t/C_{t-1})$	Výnos <sup>2</sup> $\text{LN}(C_t/C_{t-1})^2$
1	100		
2	104	0.039220713	0.001538264
3	108	0.037740328	0.0014243
4	106	-0.018692133	0.0003494
5	104	-0.019048195	0.0003628
6	105	0.009569451	0.0000916
7	103	-0.019231362	0.0003698
8	102	-0.009756175	0.0000952
9	104	0.019418086	0.0003771
10	105	0.009569451	0.0000916
	$\Sigma$	<b>0.048790164</b>	<b>0.004700065</b>
<b>Průměrný výnos</b>			
Týden	<b>0.0054211</b> $(\text{LN}(C_t/C_{t-1}))/9$		
Rok	<b>0.2818987</b> $((\text{LN}(C_t/C_{t-1}))/9)*52$		
<b>Volatilita</b>			
Týden	<b>0.0235467</b>		<b>0.0235467</b> SMODCH-V
Rok	<b>0.1697975</b>	<b>16.97974943</b>	<b>0.0222000</b> SMODCH



ÝBĚR

## Měnová opce

$T_0$	$T_1$	$S$	$X$	$r_{vm}$	$r_{bm}$	$\sigma$	Výsledek
1/1/2000	4/1/2000	40.00	40.00	4.50%	3.50%	10.00%	0.845200943
							0.530057943
							0.510027756
1/1/2000	4/1/2000	40.00	40.00	4.50%	3.50%	10.00%	0.745107000
							0.469942057
							0.489972244

I

Call  
Nd1  
Nd2  
Put  
N(-d1)  
N(-d2)

## Úrokové opce

Schéma			
Dohoda	$T_0$	1/1/2002	
Zač. úr. ob.	$T_1$	5/13/2002	132
Kon. úr. ob.	$T_2$	8/13/2002	92
Spolu dní			224
$t_f$		92	
$t_z$		132	
$r_z$		4.58%	
$r_x$		4.50%	
$r_c$		4.48%	
$\sigma$		9.62%	
$N$		1,000,000	

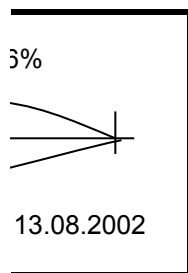
$T_0$	$T_1$	$T_2$	$r_z$	$r_c$	$r_x$	$\sigma$	$N$
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000
1/1/2002	5/13/2002	8/13/2002	4.58%	4.48%	4.50%	9.62%	1,000,000

$$C = \frac{[N(d_1) * r_f - N(d_2) * r_x] * \frac{t_f}{360} * N}{\left(1 + r_z * \frac{t_z}{360}\right) * \left(1 + r_f * \frac{t_f}{360}\right)}$$

$$P = \frac{[-N(-d_1) * r_f + N(-d_2) * r_x] * \frac{t_f}{360} * N}{\left(1 + r_z * \frac{t_z}{360}\right) * \left(1 + r_f * \frac{t_f}{360}\right)}$$

$$d_1 = \frac{\ln \frac{r_f}{r_x} + \frac{\sigma^2}{2} * \frac{t_z}{360}}{\sigma * \sqrt{\frac{t_z}{360}}}$$

$$d_2 = d_1 - \sigma \sqrt{\frac{t_z}{360}}$$



**Výsledek**

61.22	<b>Call</b>
645.74	<b>Put</b>
0.042648999	<b>Forward</b>
0.186105886	<b>Nd1</b>
0.170911186	<b>Nd2</b>
1.027875556	<b>Diskontování</b>
0.813894114	<b>N(-d1)</b>
0.829088814	<b>N(-d2)</b>

$$\frac{\left( \frac{r_x}{2} \right) * r_x \left] * \frac{t_f}{360} * N \right.}{\left. + r_f * \frac{t_f}{360} \right)}$$