

	CALL	PUT
$K > S_0$	out of the money	in the money
$K < S_0$	in the money	out of the money
$K = S_0$	at the money	at the money

K = The Exercise Price.

S_0 = Price of the underlying asset (stock) at $t = 0$

$S_0 \neq S_T$

$t = 0$

S_0 Maturity
(ST)

money

Ex:

Call ($S_0 = 50 \$$, $K = 30 \$$,
 $c = 2 \$$ ($T = 1 \text{ month}, x$).

$K < S_0 \Rightarrow$ call is in
the money.

buying a call \rightarrow increase
expectations

When Expectations are
"correct" the in the money
call will make large
profits.

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• If $S_T = 60 \$$.

We use the option.

$$\pi = (60 \$ - 30 \$) - 2 \$$$
$$= 28 \$$$

• If $S_T = 70 \$$.

$$\pi = (70 \$ - 30 \$) - 2 \$$$
$$= 38 \$$$

if $S_T \uparrow \rightarrow \pi(\text{call}) \uparrow \uparrow$

$$\text{Profit} = \text{Option}$$
$$\text{Rate} = \text{Profitability} = \frac{28 \$}{2 \$}$$

$$= 14 = 1400\%$$
$$= 14 - 44 -$$

$$\pi = (S_T - K) - C$$

$$\pi = \left(S_T - \frac{K}{1+R_F} \right) - C$$

$$\text{If } R_F \nearrow \rightarrow \frac{K}{1+R_F} \searrow$$

$$\Rightarrow \pi \nearrow$$

\Rightarrow Premium \nearrow
Option

We invest 2\$ to buy the call, and when expectations are correct, The fall

profitability rate equals

1400%



Invest more
in calls

Profitability



More useful to borrow money
in order to invest more
in options

Borrow
Money

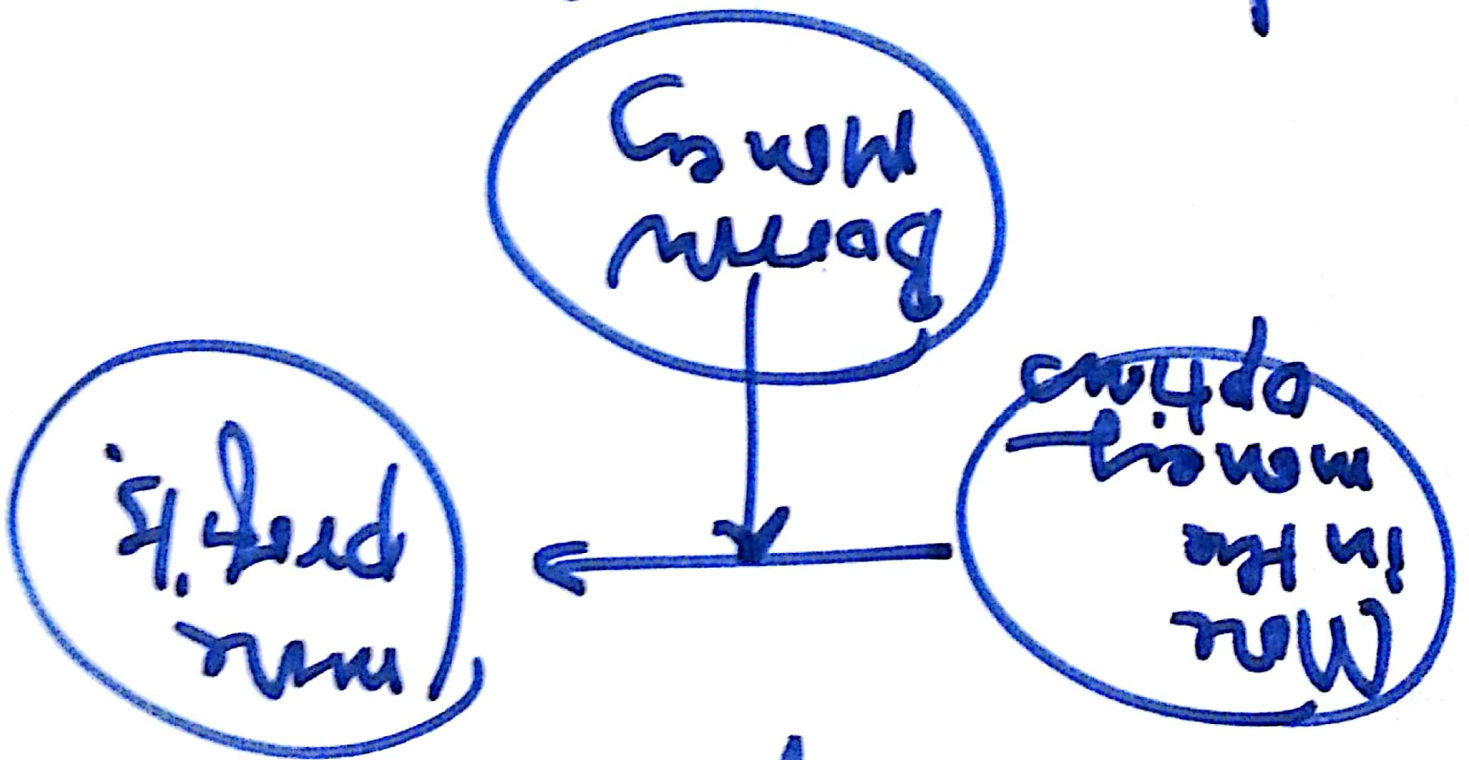
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Profit



-45-

deeper in the money
 $K = 30\$$
 $G = 50\$$
 $K < G$



With in the money things
it is possible to make
high leverage effect

$$S_0 = 50 \$$$

$K = 30 \$$ $K = 50 \$$ $K = 60$

call

in

at

out

$$S_T =$$

$$60 \$$$

$$50 \$$$

$$60 \$$$

c

$$5 \$ / \text{call}$$

$$3 \$ / \text{call}$$

$$1 \$ / \text{call}$$

Π

$$25 \$$$

$$7 \$$$

$$-1 \$$$

60-30-5 60-50-3 60-60-1

buy a call \rightarrow we expect an increase

$$S_0 = 50 \$$$

increasing

$$S_T = 60 \$$$

The highest profit is obtained -47- for in the money option.

$$\text{Profit} = \frac{\pi}{\text{Invest}} = \frac{\pi}{\text{option premium}}$$

out of the money = $\frac{-1\$}{1\$} = -100\%$

at the Money = $\frac{7\$}{7\$} = 100\%$

in the money = $\frac{25\$}{5\$} = 500\%$

Profitability:

Options Traded on Listed Markets:

Asset: Stock \times , 24/10/2017

K	K=50	K=40	K=60
FL	out	in	
Dec. 2017	2#	5#	1#
M 2018	2.25	5.7	1.5
1 2018	2.5	5.3	2
Oct 2018	3.7	5.5	2.25

• Motivity \nearrow → Pressure \nearrow

• Where in the country

(67)

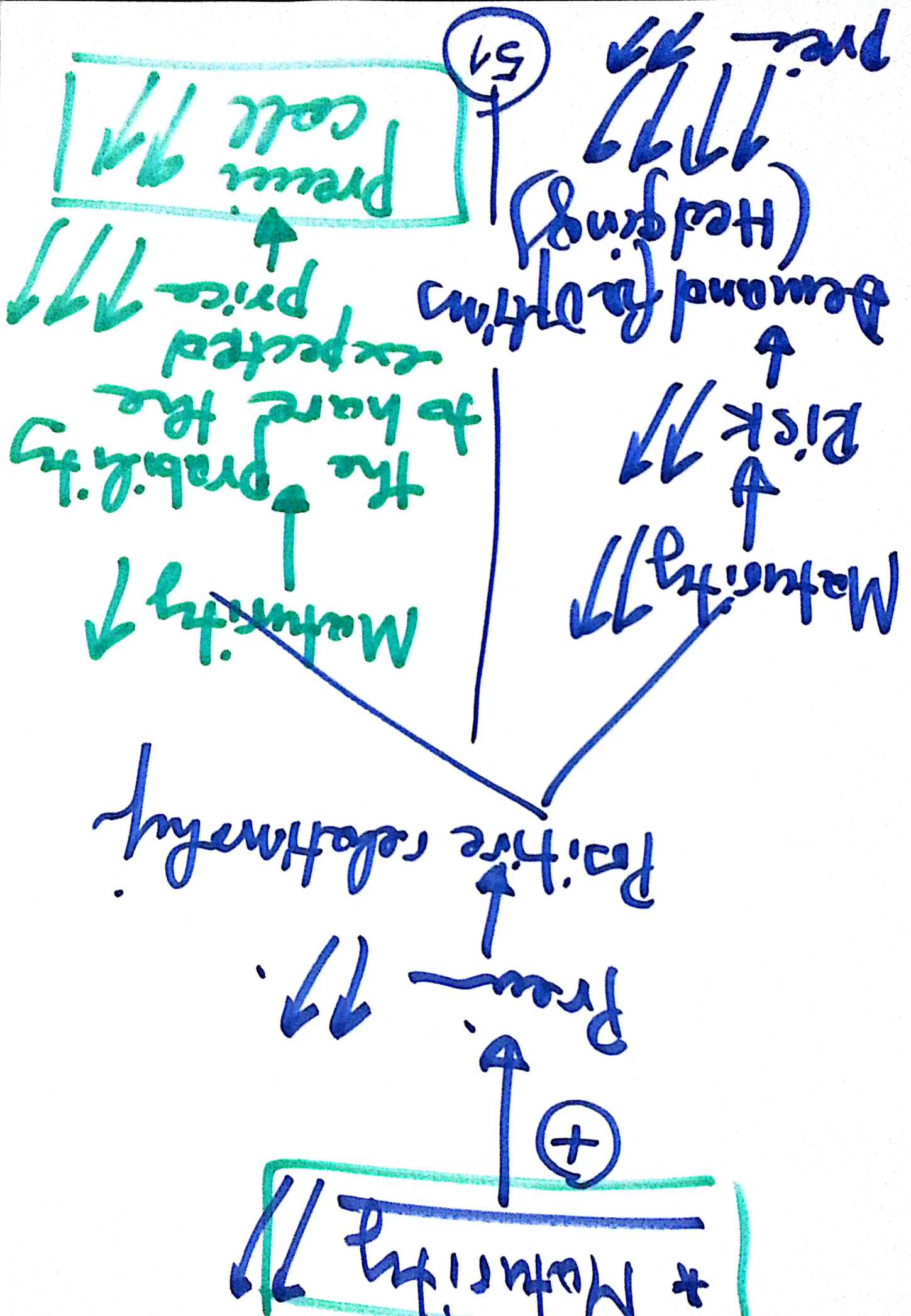
Pressure

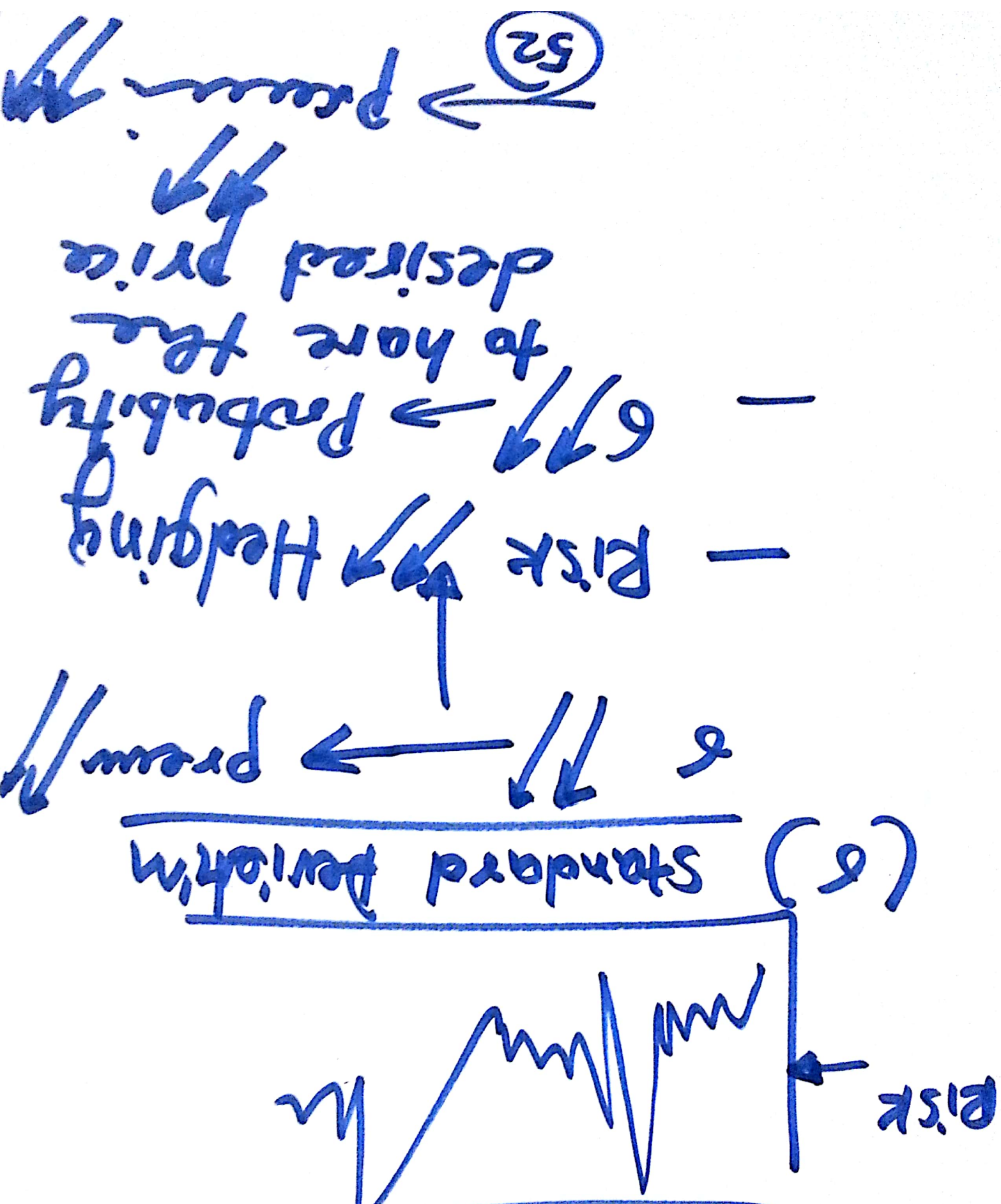
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There 5 factors are affecting the premium of the option

- CALL PUT Premium
- * S: The underlying stock price
 - * T: Maturity
 - * K: Strike Price
 - * Volatility (Risk)
 - * Risk Free Rate

Determinants of the option premium





in the
Money
option

Highest
Premium

The Premium of the option
depends on the relationship
between K and S_0
(in, out, at) \rightarrow Premium

Exercise Price (K)
 S_0

call: buying the right to
buy at K at the
maturity.

$-C$

$$C = 0 \quad RF = 5\%$$

$$\frac{K}{1 + RF}$$

$$50\$ \frac{1 + 5\%}{1 + 5\%} = 47.6\$$$

$$\pi = (S - K) - P$$

(SV)

To buy
pay $-K$

57

T