

Good Derivatives Cheat Sheet

Derivatives cheat sheet will be your help to easily remember the formulas. If you cannot focus reading the books, then cheat sheet will be your one stop solution.

Best Cheat Sheet Template for you

Derivatives Cheat Sheet

<p>FRA payoff formula:</p> <p>Notional principal:</p> $\left((r_u - r_f) \left(\frac{t}{360} \right) \right) (1 + r_u \left(\frac{t}{360} \right))$ <p>where r_u is the underlying rate at the expiration r_f is the forward contract rate t is the days in the underlying rate</p> <p>Common Derivatives:</p> <p>$\frac{d}{dx} \ln(x) = \frac{1}{x}$ $\frac{d}{dx} \ln(x^2) = \frac{1}{x}$ $\frac{d}{dx} e^x = e^x$ $\frac{d}{dx} \ln(a) = \frac{1}{a}$ $\frac{d}{dx} \ln(x^a) = \frac{a}{x}$ $\frac{d}{dx} 10^x = 10^x \ln(10)$</p>	<p>Price of the Callable Bond:</p> <p>Price of the callable bond equals to price of the option minus free bond minus price of the embedded call option</p> <p>Price of the puttable bond:</p> <p>Price of the puttable bond equals to price of the option minus free bond plus the price of the embedded put option</p> <p>Taxable-equivalent yield: Tax minus exempt yield (1 plus Marginal tax rate)</p> <p>FRA payoff: Floating rate at the expiration minus the FRA rate multiplied by the days in floating rate divide by 360</p> <p>1 plus the Floating rate at the expiration multiplied by the days in floating rate divide by 360</p> <p>Appraisal Price: Appraisal Price=</p> <p>NOI</p> <p>Market Cap Rate</p> <p>Present value of the free cash flows to the equity: $V = \sum \frac{FCFE}{(1+k)^t}$</p>	<p>Derivatives rules:</p> <p>Power rule: $\frac{d}{dx} x^a = a x^{a-1}$ Rule of sum difference: $\frac{d}{dx} (f \pm g) = f' \pm g'$ Constant out: $\frac{d}{dx} c = 0$ Derivative of the constant: $\frac{d}{dx} c = 0$ Chain rule: $\frac{d}{dx} f(g(x)) = f'(g(x)) \cdot g'(x)$ Quotient rule: $\frac{d}{dx} \left(\frac{f}{g} \right) = \frac{f'g - fg'}{g^2}$</p> <p>Intrinsic value of the call option: Intrinsic value of the call equals to $\max[0, (S_t - X)]$ Option Premium: Option premium equals to intrinsic value plus the time value Put-call parity: $C_0 + X(1+RF)^T = P_0 + S_0$ Interest rate of the call holder's payoff: = $\max(0, \text{Underlying rate at expiration} - \text{Exercise rate})$ (Days in underlying Rate) multiplied by NP 360 where: NP is also known as</p>
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FRA payoff formula:

Notional Principal=

$$\left((r_u - r_f) \left(\frac{t}{360} \right) \right) (1 + r_u \left(\frac{t}{360} \right))$$

T

360

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))

(1+ ru*(

360

))

where ru= means underlying rate at the expiration

rf= forward contract rate

t= days in the underlying rate

Put or Call Parity:

Put-call parity= $c_0 +$

X

$(1+r)^t$

$=p_0 + s_0$

Appraisal Price:

Appraisal Price=

NOI

Market Cap Rate

Present Value of the Free Cash Flows to Equity:

$V = \text{SUM}$

(FCFE)

$(1+k)^t$

Justified or Fundamental (P/E):

P

E

=

(DE)

(kg)

calculus derivatives cheat sheet:price description

Price of the Callable Bond

Price of the callable bond equals to Price of the option-free bond – Price of the embedded call option

Price of the Putable Bond

Price of the Putable Bond equals Price of option-free bond + Price of the embedded put option

Tax Equivalent Yield

Tax-exempt yield

$(1 + \text{Marginal tax rate})$

FRA Payoff

Floating rate at expiration – FRA rate \times (days in floating rate \div 360)

$1 + [\text{Floating rate at expiration} \times (\text{days in floating rate} \div 360)]$

Here is another cheat sheet template you can rely with that will guide you in knowing the formula and for more information about derivatives.

Also, don't forget to read about [accounting cheat sheet](#) and how to do it!

Cheat sheet tips: Great Guide

- **Numerator:** In here, the number will be positive if the floating rate will be greater than forward rate. In this case, expects and long benefits in receiving payment from short. Take note that the numerator will be negative if the floating rate will be lower than forward rate. In this case, the expects and short benefits in receiving payments from long.
- **Denominator:** It talks about discount factor in calculating present value of interest savings.

How to do a Cheat Sheet: Guidelines

- Call Option Payoffs

Option Position	Description	Payoffs
Call option holder	The choice in buying underlying asset for the X	$ST - X$
Call option writer	The obligation in selling underlying asset for the X and option holder chooses in exercising the option	$-(ST - X)$

- Intrinsic Value of Call Option

Intrinsic value of call = $\text{Max} [0, (S_t - X)]$

Put Option Payoffs

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Option Position	Description	Payoffs
		STX
Put option holder	The choice in selling underlying asset for the X	$X - S_T \geq 0$
Put option writer	The obligation in buying underlying asset for the X and if option holder chooses in exercising the option	$\max(X - S_T, 0)$

Moneyiness and the Intrinsic Value of Put Option

Moneyiness	The current Market Price (St) vs. the Exercise Price (X)	Intrinsic Value $\max[0, (X - S_T)]$
In-the-money	St is less than X	$X - S_T$
At-the-money	St equals X	0
Out-of-the-money	St is greater than X	0

Option Premium

Option premium equals Intrinsic value plus Time value

Put Call Parity

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$C_0 +$

X

$(1+RF)^T$

$=P_0 + S_0$

It is important to know how to do a cheat because it will help you. What you need is to gather all the information, then sum it up for easy understanding.

Begin to make your own calculus derivatives cheat sheet so that you will have a guide whether you need it on class or serve as your review. Read this cheat sheet to know what you need to remember and consider in reading.

In our website you can find so many cheat sheets on different topics, like [history cheat sheet](#).

Use our derivatives cheat sheet today!