

Duration and Convexity

1

Examinator *online*

© ExecutiveKnowledge

Go to Examinator.online for practice questions

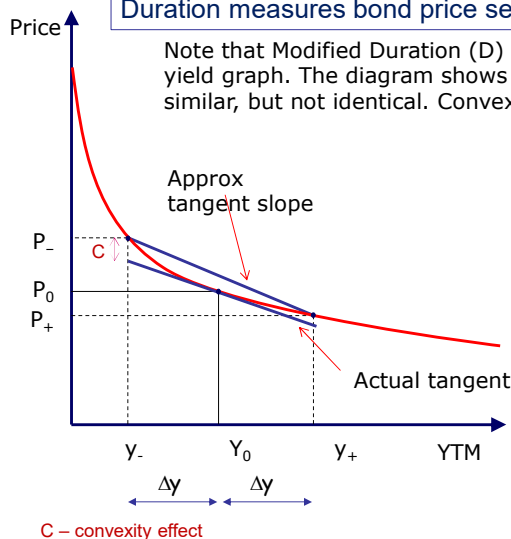


Duration and Convexity

2

Duration measures bond price sensitivity for a 1% change in yield

Note that Modified Duration (D) is similar to the gradient of the price vs yield graph. The diagram shows that D and the gradient are very similar, but not identical. Convexity allows for a price adjustment.



Formulae

% change = $-D \times \Delta y$

\$ change = $-D \times \Delta y^* \times \text{price}$

D = modified duration
y = yield (*in decimals)

Longer the time to maturity
Lower the yield
Lower the coupon

Higher the Duration



© ExecutiveKnowledge

Go to Examinator.online for practice questions

Duration and Convexity

3

Example

A 10-year bond has a modified duration of 6 years and is currently trading at HK\$9,850. What will the bond price be if the yield decreases by 0.1%?

$$\begin{aligned}\$ \text{ change} &= -D \times \Delta y \times \text{price} \\ &= -6 \times -0.001 \times 9,850 \\ &= 59.1\end{aligned}$$

Therefore, new bond price will be HK\$9,909.10

© ExecutiveKnowledge

Go to Examinator.online for practice questions

Duration and Convexity

4

Examinator *online*

© ExecutiveKnowledge

Go to Examinator.online for practice questions