

Financial Mathematics

MATH 5870/6870¹
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¹Based on Robert L. McDonald's *Derivatives Markets*, 3rd Ed, Pearson, 2013.

Chapter 2. An Introduction to Forwards and Options

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§ 2.1 Forward contracts

§ 2.2 Call options

§ 2.3 Put options

§ 2.4 Options are insurance

§ 2.5 Summary of forward and option positions

§ 2.6 Problems

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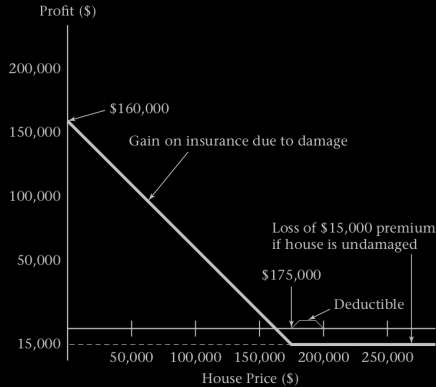
§ 2.6 Problems

Example 2.4-1 Homeowner's insurance is a put option:

Value of house = \$200,000

Deductible = \$25,000

Premium = \$15,000



The premium of the insurance
or
the value of the put option
depends on

- ▶ Riskiness of the underlying asset
 - ▶ The amount of deductible.
-

Difference with options

- ▶ Put option pays off no matter why the index price declines.
- ▶ Insurance pays off only if the house declines in value for for specific reasons.

A put option is
an insurance

1. for an asset we already own.
 2. for a long position.
 3. against an decrease in value.
-

A call option is
an insurance

1. for an asset we plan to own in the future.
2. for a short position.
3. against an increase in price.