

Andreas Krause

Hedging with options

Option types

Option types

- ▶ Options give the purchaser the **right** to buy or sell the underlying asset

Option types

- ▶ Options give the purchaser the right (**but not the obligation**) to buy or sell the underlying asset

Option types

- ▶ Options give the purchaser the right (but not the obligation) to buy or sell the underlying asset **in the future**

Option types

- ▶ Options give the purchaser the right (but not the obligation) to buy or sell the underlying asset in the future at a **given price**

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- ▶ Options give the purchaser the right (but not the obligation) to buy or sell the underlying asset in the future at a given price (**strike price**)

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- ▶ Options give the purchaser the right (but not the obligation) to buy or sell the underlying asset in the future at a given price (strike price)
- ▶ The seller of the option has to sell or buy the underlying asset **on demand of the purchaser**

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- ▶ **European options** give the right to exercise the option at maturity only

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European call option payments at maturity

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- ▶ If at maturity the underlying asset is worth less than the strike price, the option will **not be exercised**

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- ▶ $\Pi_T = S - K$

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European call option payments at maturity

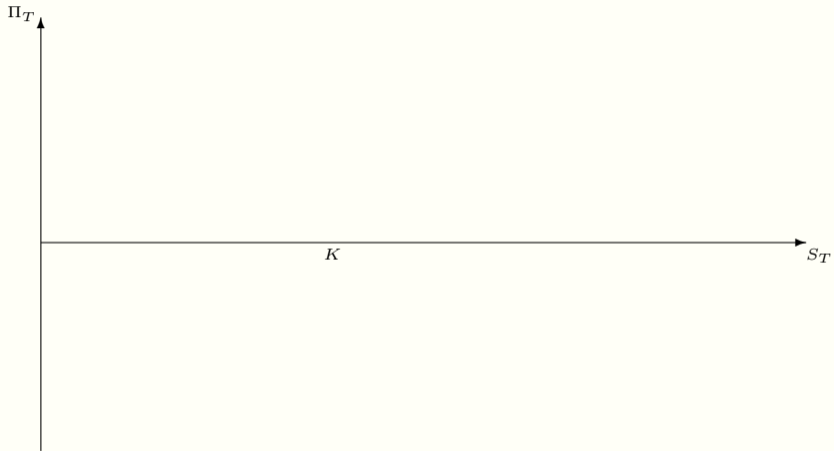
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Call option payoffs

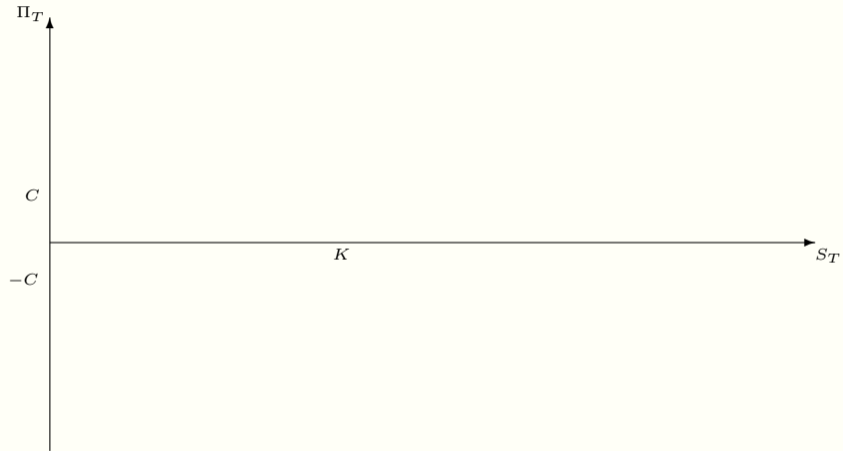
Call option payoffs



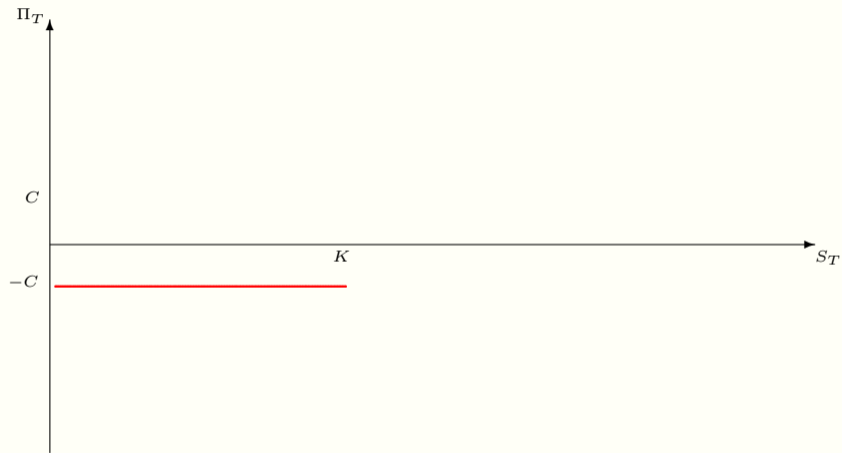
Call option payoffs



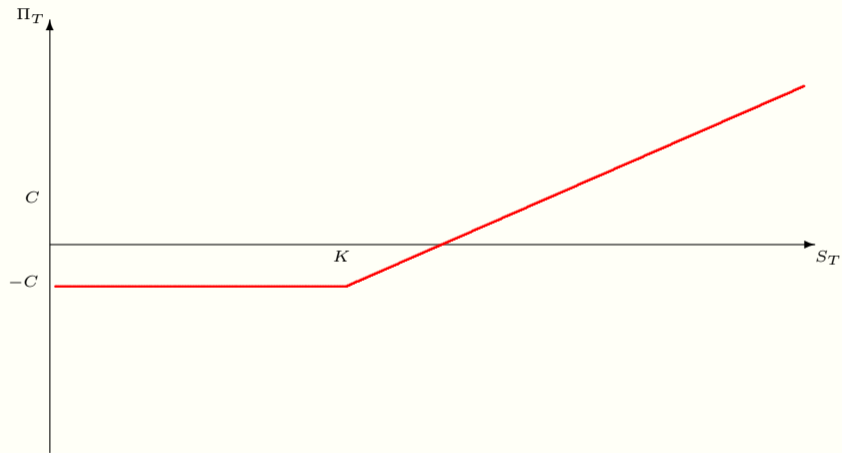
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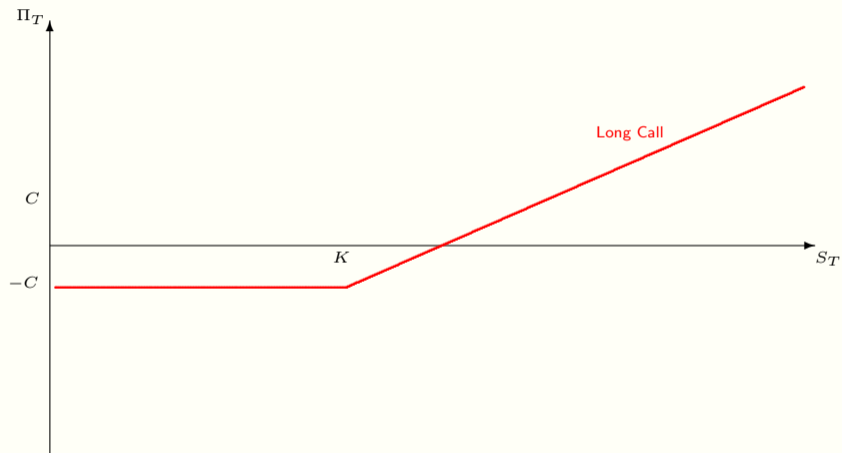
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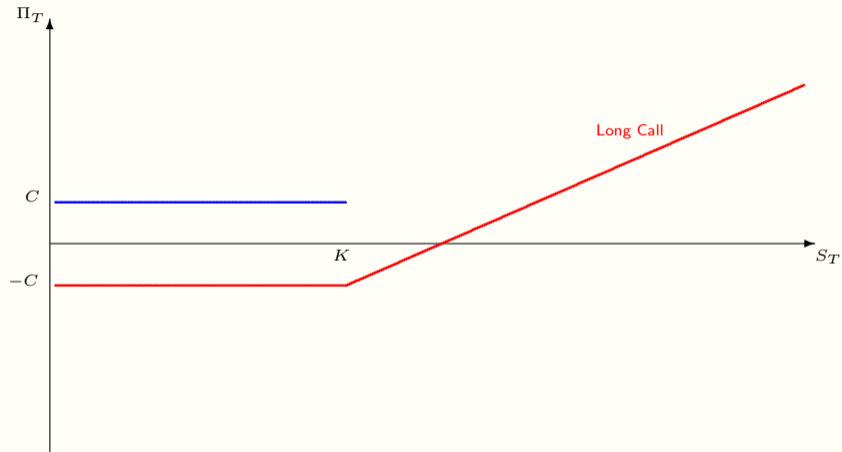
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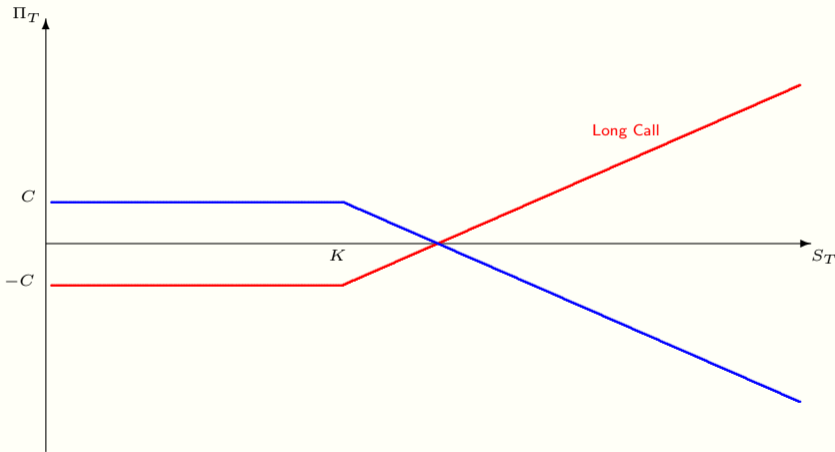
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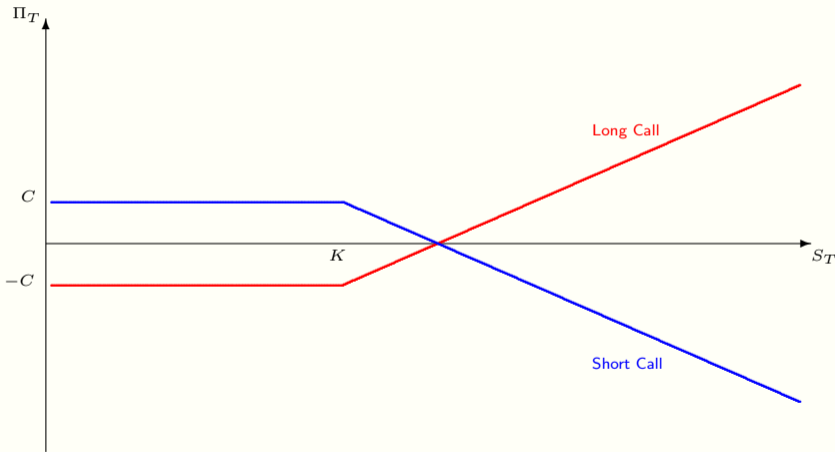
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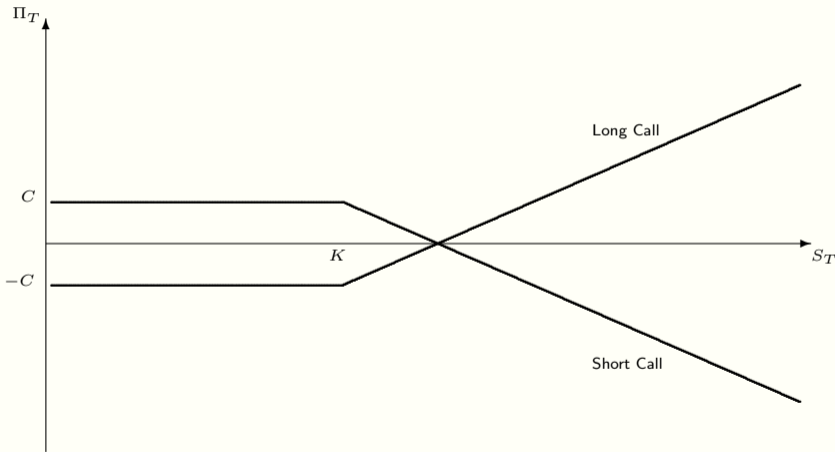
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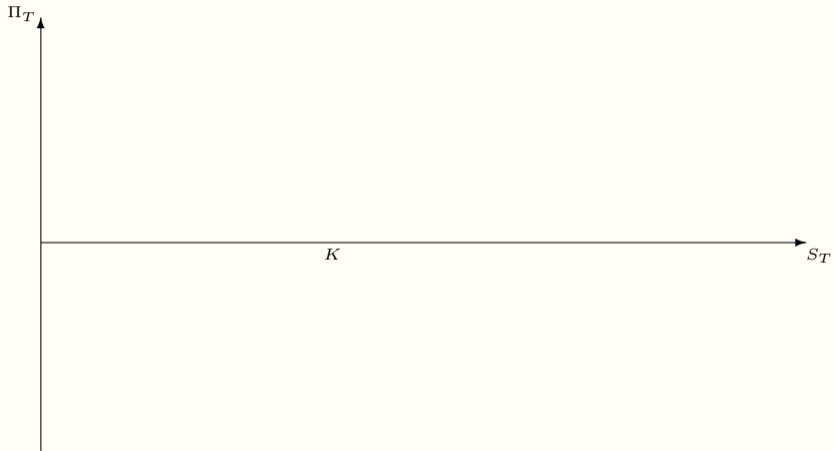
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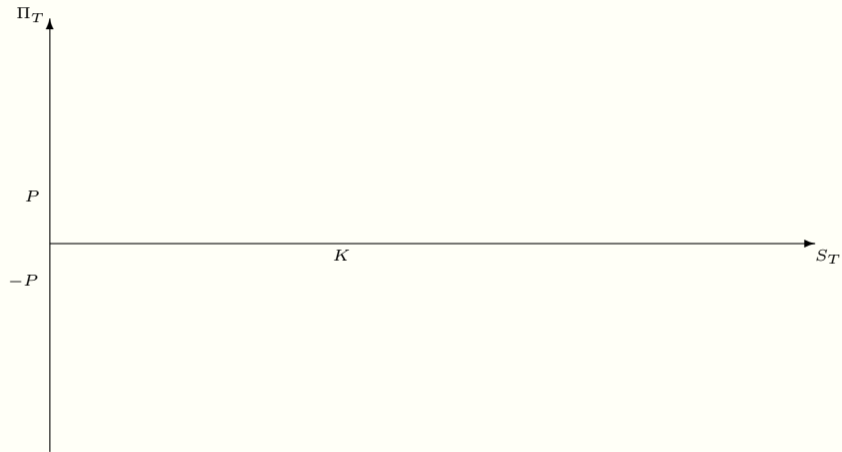
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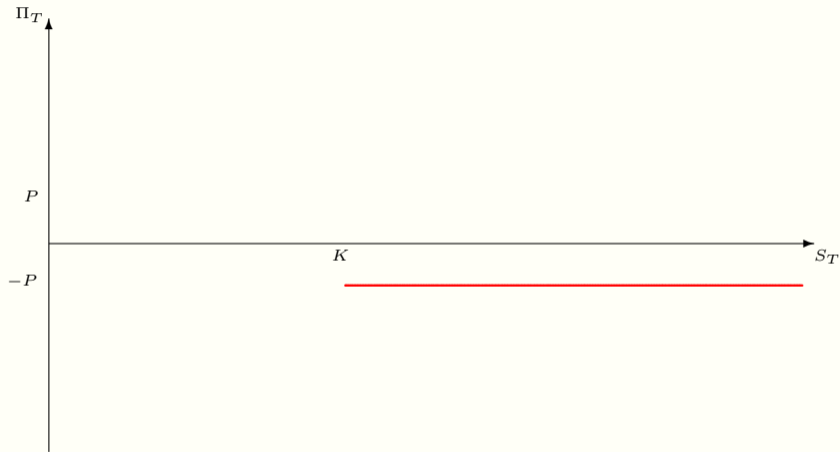
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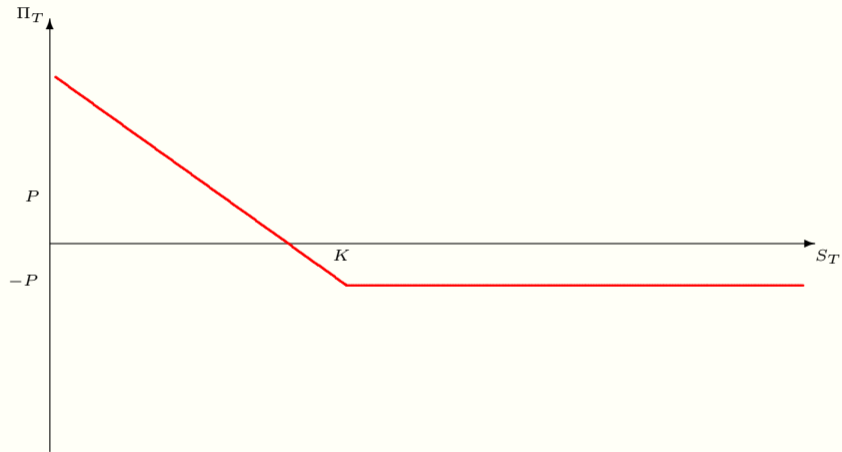
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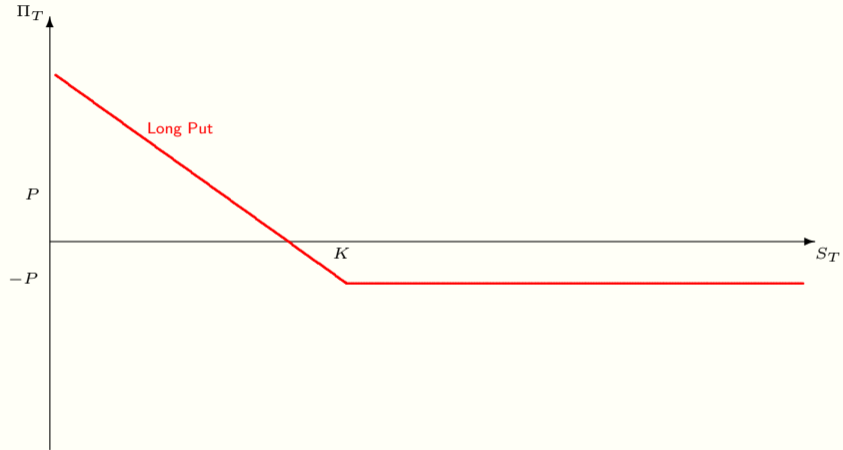
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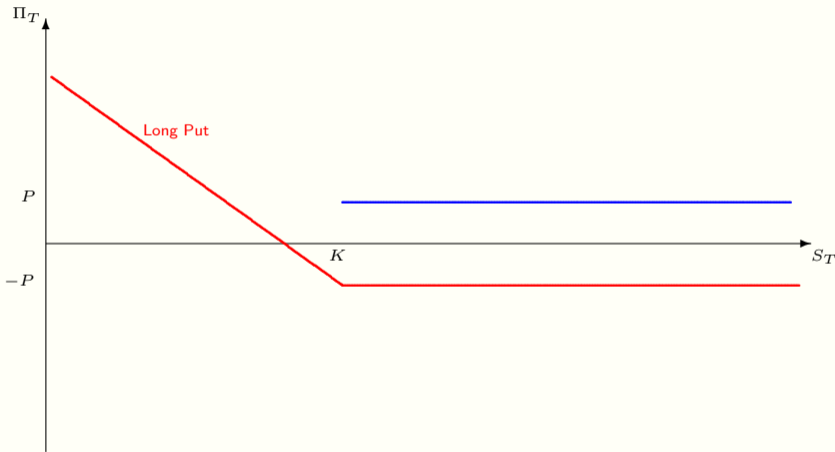
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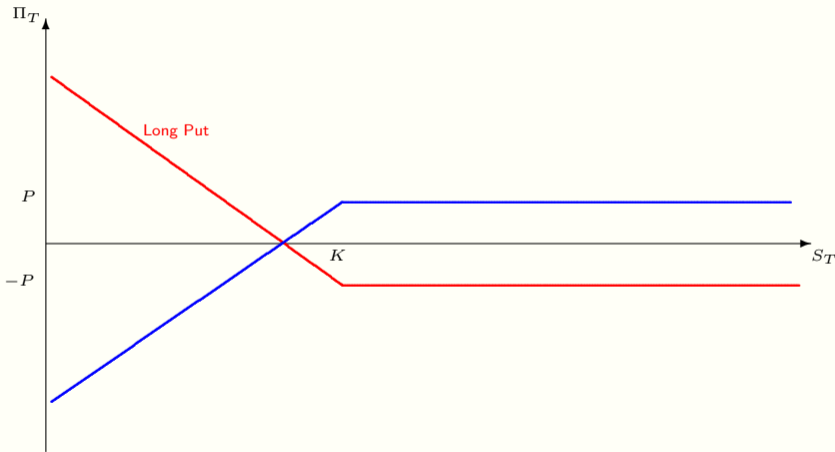
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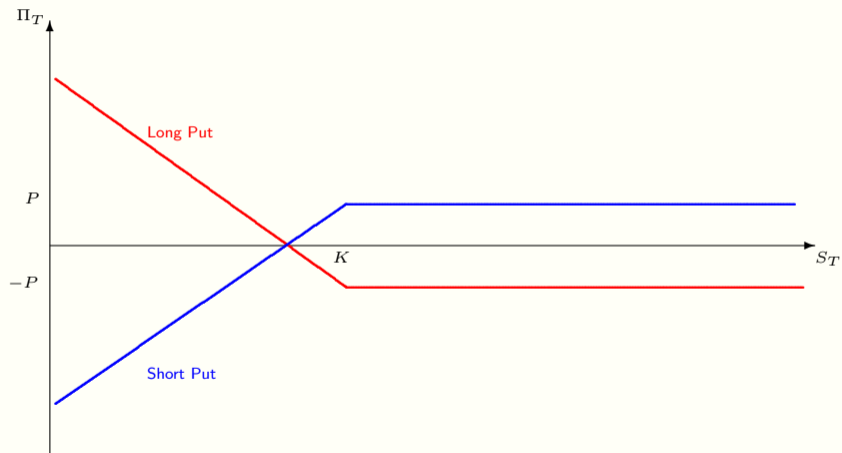
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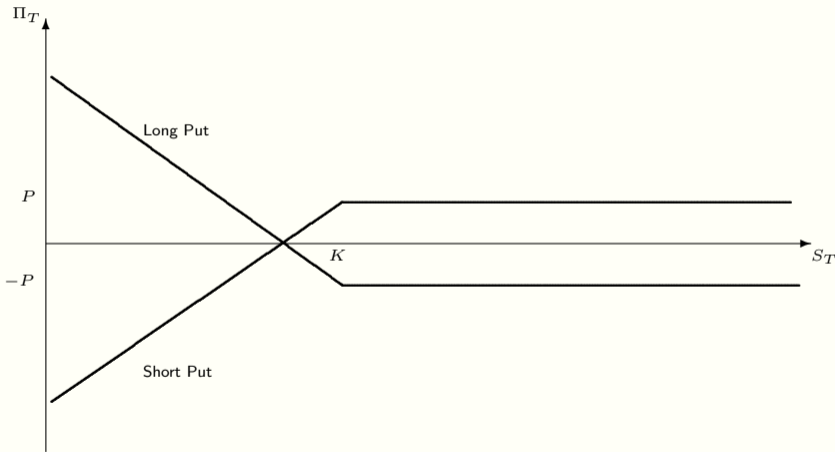
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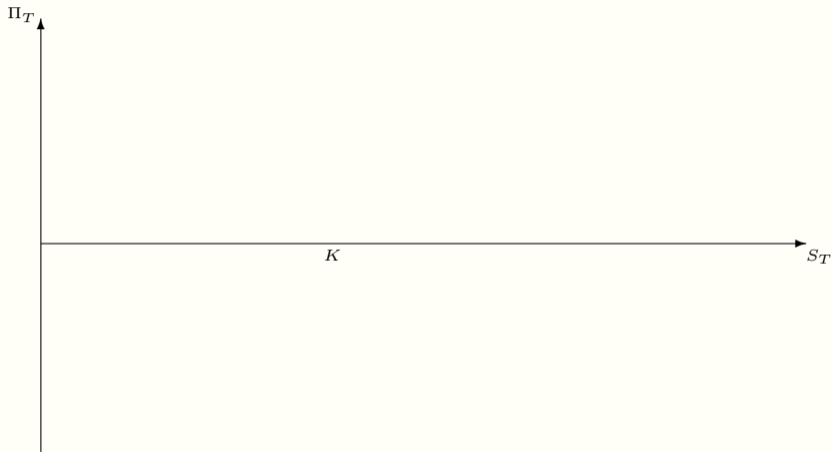
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Hedging a long position in the underlying asset

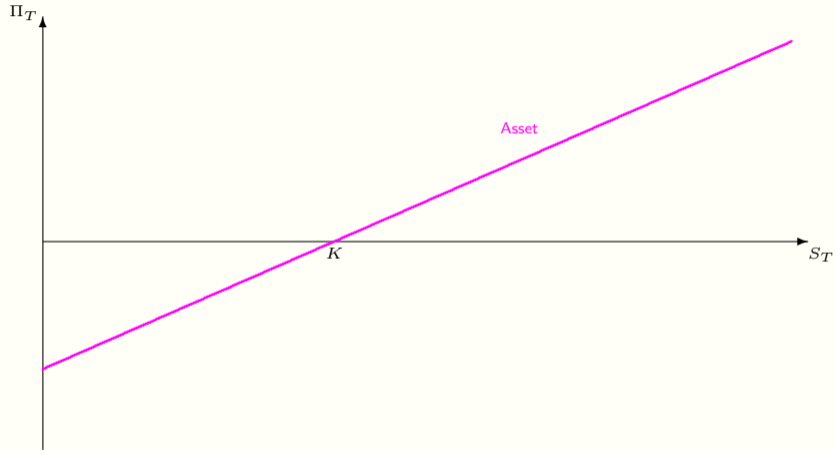
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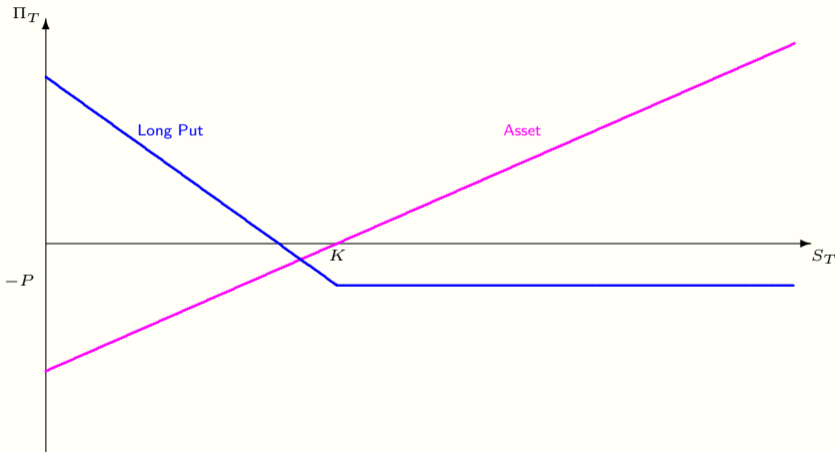
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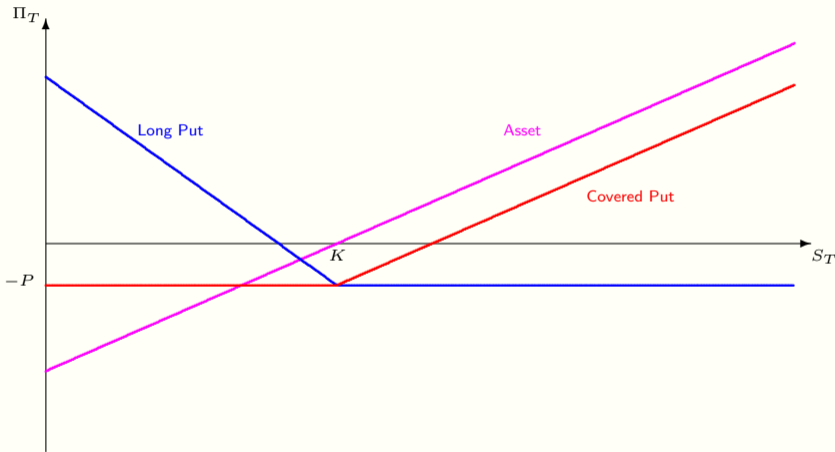
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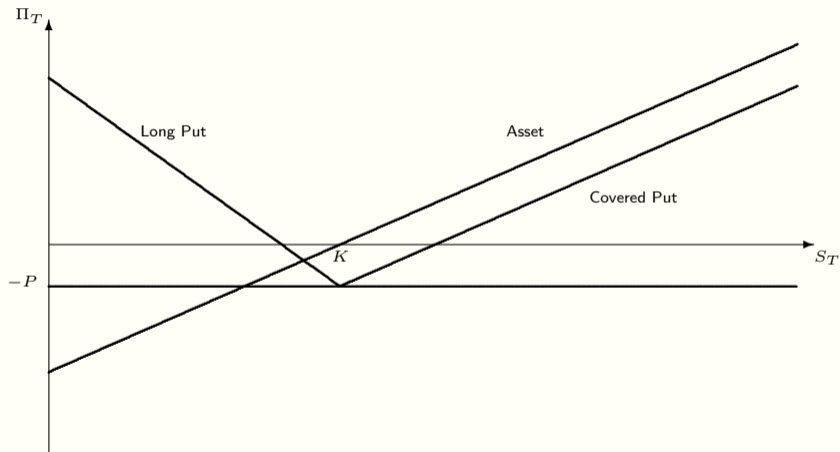
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Hedging a long position in the underlying asset



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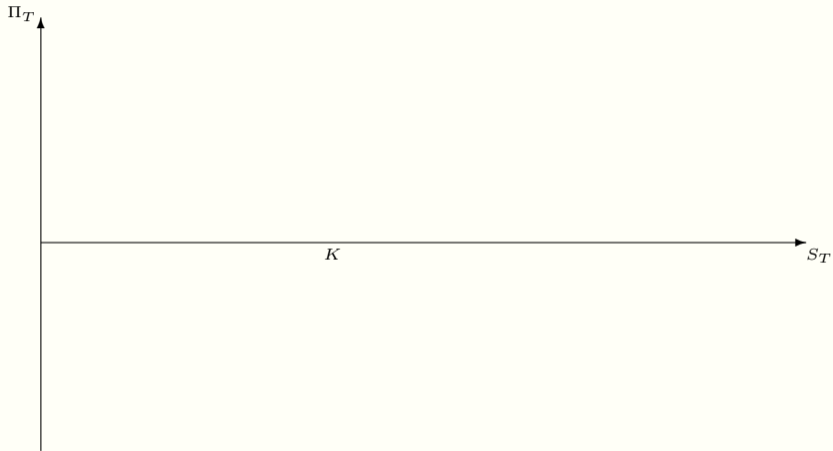


Hedging a short position in the underlying asset

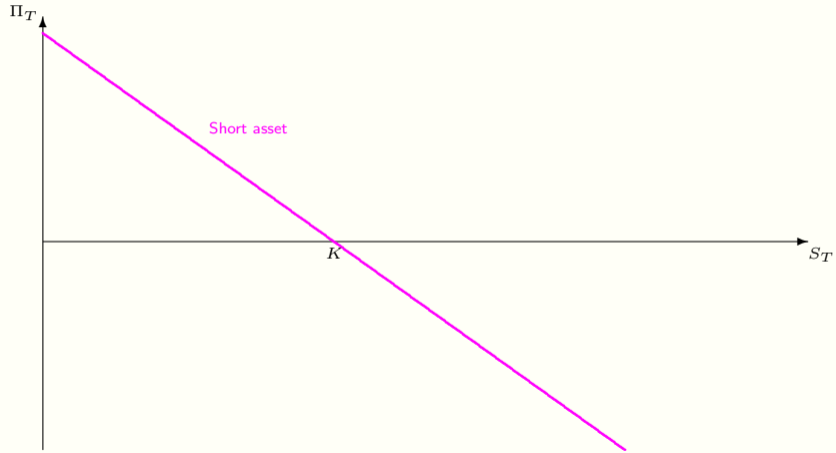
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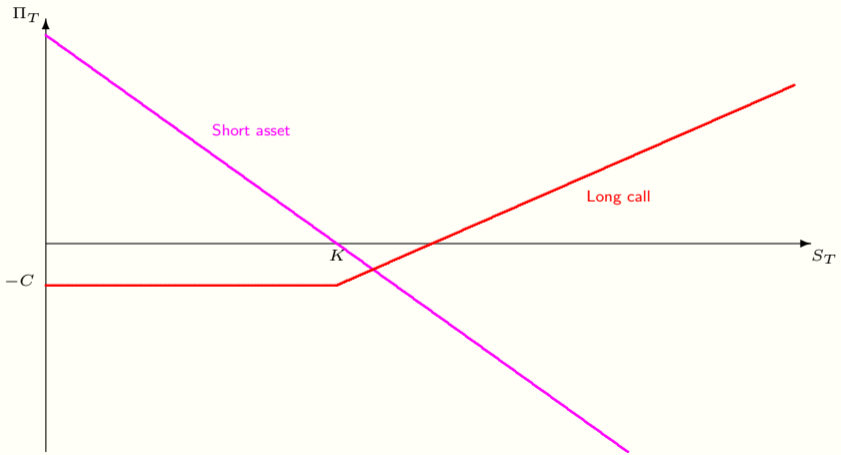
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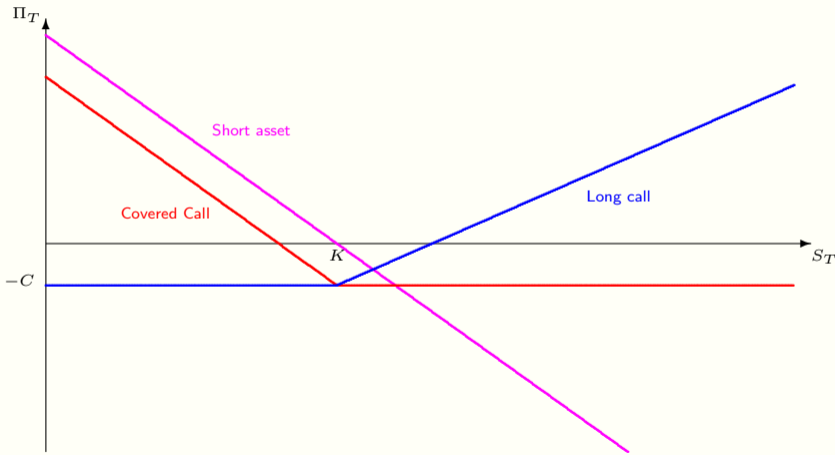
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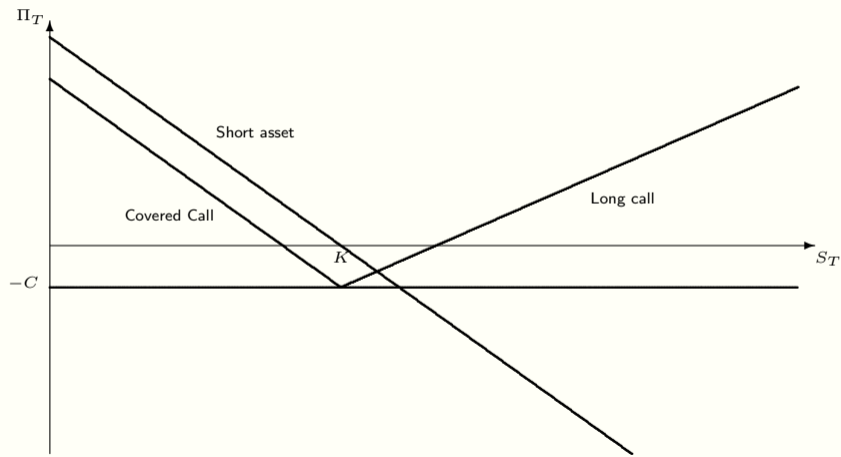
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Hedging a short position in the underlying asset



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