

# Solution: Risk averse VC

## Initial data

Project:

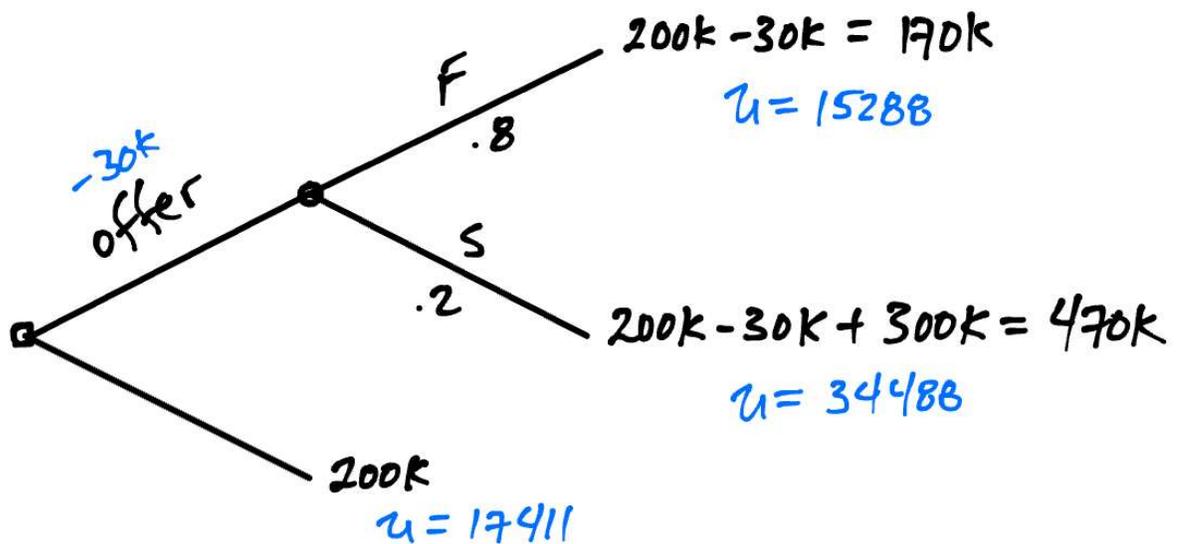
State	Probability
Failure (F)	80%
Success (S)	20%

Contract:

- Fixed payment **to** Founder: \$30,000
- Payments **from** Founder:

State	Payment
F	\$0
S	\$300,000

## VC's decision tree:



Evaluation:

a.  $EV = 0.8 * (\$170,000) + 0.2 * (\$470,000) = \$230,000$

b.  $EU = 0.8 * (15,288) + 0.2 * (34,488) = 19,128$

c.  $EU > 17,411$  so the VC **would** offer the contract

d.  $CE = (EU)^{\frac{1}{0.8}} = EU^{1.25} = \$224,956$

Net gain to VC =  $\$225k - \$200k = \$25k$

e. Risk premium =  $EV - CE = \$230,000 - \$224,956 = \$5,044$

Carrying the analysis further to calculate overall gains:

Founder:	\$9k
VC:	\$25k
<b>Gain from contract:</b>	<b>\$34k</b>

Remaining risk premium: \$5k

**Total potential gains: \$39k**

### Key results:

- Gains from risk sharing **do not** require risk neutral agents
- However, won't capture all of the potential gains