

Chapter 8, Problem 4

AntiquesNow: A Parallel Option

Input Parameters

Present value of future cash flows	\$50	million
Volatility	25%	annual
Risk-free interest rate	5%	annual
Option life for both options	3	years
Exercise price for flagship store	\$50	million
Exercise price for e-business	\$20	million
Time step	1	year(s)

Results

NPV	-\$20
ROV	\$5
Value added	\$25

Calculated Parameters

Up factor (u)	1.284
Down factor (d)	0.779
Risk-neutral probability (p)	0.539

Asset Valuation Lattice

Time period	0	1	2	3
Valuation of underlying asset	\$50	\$64	\$82	\$106
		\$39	\$50	\$64
			\$30	\$39
				\$24

Option Valuation Lattice (for ebusiness)

Time period	0	1	2	3
Valuation of Phase II option	\$33	\$46	\$63	\$86
		\$21	\$31	\$44
			\$11	\$19
				\$4

Option Valuation Lattice (for both ebusiness and flagship store projects)

Time period	0	1	2	3
Valuation of Phase I option	\$5	\$9	\$18	\$36
		\$0	\$0	\$0
			\$0	\$0
				\$0

