

Chapter 8, Problem 3

Hybrid Hydrogen: Option to Wait

Input Parameters

Present value of future cash flows	\$600	million
Volatility	30.0%	annual
Risk-free interest rate	6.0%	annual
Option life for simple option	1	year(s)
Investment cost for simple option	\$800	million
Time step	1	year(s)

Results

NPV	-\$200
ROV	\$5
Value added	\$205

Calculated Parameters

Up factor (u)	1.350
Down factor (d)	0.741
Risk-neutral probability (p)	0.527

Asset Valuation Lattice

Time period	0	1	2	3	4	5
Valuation of underlying asset	\$600	\$810	\$1,093	\$1,476	\$1,992	\$2,689
		\$444	\$600	\$810	\$1,093	\$1,476
			\$329	\$444	\$600	\$810
				\$244	\$329	\$444
					\$181	\$244
						\$134

Option Valuation Lattice (as a Simple Option)

Time period	0	1
Valuation of wait option	\$5	\$10
		\$0

