

Assignment 10

Present Value and Discounting

Educational Objective (EO)

Calculate the present value of a future payment.

Instructions

Activity 1—Computing the Present Value of a Single Future Amount

Divide participants into small groups and ask them to complete the worksheet in **Activity 1—Computing the Present Value of a Single Future Amount**.

When all groups have completed the worksheet, have each group compare their answers with the other group answers. If there are discrepancies, have the groups to try to resolve them.

Debrief:

Review the calculations with the groups. For discussion, you may ask the participants one or more of the following discussion questions:

- Can you think of some examples where this type of calculation is used?
- How much would you be willing to pay today for a single sum of \$10,000 to be received one year from today?

Activity 1—Computing the Present Value of a Single Future Amount

Calculate the present values of each of these future amounts using the present value table or a calculator. Show your answer to the nearest dollar.

\$10,000 to be received in 8 years at an interest rate of 4%

\$50,000 to be received in 5 years at an interest rate of 4%

\$10,000 to be received in 10 years at an interest rate of 5%

\$30,000 to be received in 7 years at an interest rate of 3%

\$10,000 to be received in 1 years at an interest rate of 2%

\$10,000 to be received in 8 years at an interest rate of 5%

\$30,000 to be received in 7 years at an interest rate of 1%

\$10,000 to be received in 1 years at an interest rate of 3%

\$10,000 to be received in 2 years at an interest rate of 1%

\$30,000 to be received in 7 years at an interest rate of 5%

Present value of a single sum of \$1 to be received in the future

Period (n)	Interest Rate				
	1%	2%	3%	4%	5%
1	\$0.9901	\$0.9804	\$0.9709	\$0.9615	\$0.9524
2	\$0.9803	\$0.9612	\$0.9426	\$0.9246	\$0.9070
3	\$0.9706	\$0.9423	\$0.9151	\$0.8890	\$0.8638
4	\$0.9610	\$0.9238	\$0.8885	\$0.8548	\$0.8227
5	\$0.9515	\$0.9057	\$0.8626	\$0.8219	\$0.7835
6	\$0.9420	\$0.8880	\$0.8375	\$0.7903	\$0.7462
7	\$0.9327	\$0.8706	\$0.8131	\$0.7599	\$0.7107
8	\$0.9235	\$0.8535	\$0.7894	\$0.7307	\$0.6768
9	\$0.9143	\$0.8368	\$0.7664	\$0.7026	\$0.6446
10	\$0.9053	\$0.8203	\$0.7441	\$0.6756	\$0.6139

Answers to Activity 1— Computing the Present Value of a Single Future Amount

Calculate the present values of each of these future amounts using the present value table or a calculator. Show your answer to the nearest dollar.

\$10,000 to be received in 8 years at an interest rate of 4%	\$7,307
\$50,000 to be received in 5 years at an interest rate of 4%	\$41,096
\$10,000 to be received in 10 years at an interest rate of 5%	\$6,139
\$30,000 to be received in 7 years at an interest rate of 3%	\$24,393
\$10,000 to be received in 1 years at an interest rate of 2%	\$9,804
\$10,000 to be received in 8 years at an interest rate of 5%	\$6,768
\$30,000 to be received in 7 years at an interest rate of 1%	\$27,982
\$10,000 to be received in 1 years at an interest rate of 3%	\$9,709
\$10,000 to be received in 2 years at an interest rate of 1%	\$9,803
\$30,000 to be received in 7 years at an interest rate of 5%	\$21,320

Present value of a single sum of \$1 to be received in the future

Period (n)	Interest Rate				
	1%	2%	3%	4%	5%
1	\$0.9901	\$0.9804	\$0.9709	\$0.9615	\$0.9524
2	\$0.9803	\$0.9612	\$0.9426	\$0.9246	\$0.9070
3	\$0.9706	\$0.9423	\$0.9151	\$0.8890	\$0.8638
4	\$0.9610	\$0.9238	\$0.8885	\$0.8548	\$0.8227
5	\$0.9515	\$0.9057	\$0.8626	\$0.8219	\$0.7835
6	\$0.9420	\$0.8880	\$0.8375	\$0.7903	\$0.7462
7	\$0.9327	\$0.8706	\$0.8131	\$0.7599	\$0.7107
8	\$0.9235	\$0.8535	\$0.7894	\$0.7307	\$0.6768
9	\$0.9143	\$0.8368	\$0.7664	\$0.7026	\$0.6446
10	\$0.9053	\$0.8203	\$0.7441	\$0.6756	\$0.6139

Present Value of an Annuity

Educational Objective (EO)

Calculate the present value of an annuity, given the applicable rate of return and number of periods.

Instructions

Activity 1—Computing the Present Value of an Annuity

Divide participants into small groups and ask them to complete the worksheet in **Activity 1—Computing the Present Value of an Annuity**.

When all groups have completed the worksheet, have each group compare their answers with the other group answers. If there are discrepancies, have the groups to try to resolve them.

Debrief:

Review the calculations with the groups.

Activity 1—Computing the Present Value of an Annuity

Calculate the present values of each of these annuities using the present value table or a calculator. Show your answer to the nearest dollar.

\$5,000 per year over the next 10 years at an interest rate of 2%

\$2,000 per year over the next 4 years at an interest rate of 4%

\$3,000 per year over the next 8 years at an interest rate of 6%

\$4,000 per year over the next 9 years at an interest rate of 10%

\$5,000 per year over the next 4 years at an interest rate of 8%

\$1,000 per year over the next 3 years at an interest rate of 4%

\$3,000 per year over the next 7 years at an interest rate of 6%

\$1,000 per year over the next 6 years at an interest rate of 10%

\$2,000 per year over the next 2 years at an interest rate of 2%

Present value of an annuity of \$1 per period for n Periods

Period (n)	Interest Rate				
	2%	4%	6%	8%	10%
1	\$0.9804	\$0.9615	\$0.9434	\$0.9259	\$0.9091
2	\$1.9416	\$1.8861	\$1.8334	\$1.7833	\$1.7355
3	\$2.8839	\$2.7751	\$2.6730	\$2.5771	\$2.4869
4	\$3.8077	\$3.6299	\$3.4651	\$3.3121	\$3.1699
5	\$4.7135	\$4.4518	\$4.2124	\$3.9927	\$3.7908
6	\$5.6014	\$5.2421	\$4.9173	\$4.6229	\$4.3553
7	\$6.4720	\$6.0021	\$5.5824	\$5.2064	\$4.8684
8	\$7.3255	\$6.7327	\$6.2098	\$5.7466	\$5.3349
9	\$8.1622	\$7.4353	\$6.8017	\$6.2469	\$5.7590
10	\$8.9826	\$8.1109	\$7.3601	\$6.7101	\$6.1446

Answers to Activity 1—Computing the Present Value of an Annuity

Calculate the present values of each of these annuities using the present value table or a calculator. Show your answer to the nearest dollar.

\$5,000 per year over the next 10 years at an interest rate of 2%	\$44,913
\$2,000 per year over the next 4 years at an interest rate of 4%	\$7,260
\$3,000 per year over the next 8 years at an interest rate of 6%	\$18,629
\$4,000 per year over the next 9 years at an interest rate of 10%	\$23,036
\$5,000 per year over the next 4 years at an interest rate of 8%	\$16,561
\$1,000 per year over the next 3 years at an interest rate of 4%	\$2,775
\$3,000 per year over the next 7 years at an interest rate of 6%	\$16,747
\$1,000 per year over the next 6 years at an interest rate of 10%	\$4,355
\$2,000 per year over the next 2 years at an interest rate of 2%	\$3,883

Present value of an annuity of \$1 per period for n Periods

Period (n)	Interest Rate				
	2%	4%	6%	8%	10%
1	\$0.9804	\$0.9615	\$0.9434	\$0.9259	\$0.9091
2	\$1.9416	\$1.8861	\$1.8334	\$1.7833	\$1.7355
3	\$2.8839	\$2.7751	\$2.6730	\$2.5771	\$2.4869
4	\$3.8077	\$3.6299	\$3.4651	\$3.3121	\$3.1699
5	\$4.7135	\$4.4518	\$4.2124	\$3.9927	\$3.7908
6	\$5.6014	\$5.2421	\$4.9173	\$4.6229	\$4.3553
7	\$6.4720	\$6.0021	\$5.5824	\$5.2064	\$4.8684
8	\$7.3255	\$6.7327	\$6.2098	\$5.7466	\$5.3349
9	\$8.1622	\$7.4353	\$6.8017	\$6.2469	\$5.7590
10	\$8.9826	\$8.1109	\$7.3601	\$6.7101	\$6.1446

Present Value of Unequal Payments

Educational Objective (EO)

Calculate the present value of unequal payments, given the applicable rate of return and number of periods over which the payments will be spread.

Instructions

Activity 1—Calculating the Present Value of Unequal Payments

Group Activity Followed by Group Discussion

Divide the participants into two groups. Ask participants to read the example in **Activity 1—Calculating the Present Value of Unequal Payments** and using the present value table, work together to calculate the NPV for the transportation vehicle maintenance project.

Once both groups have shared their answers, lead the class in a discussion on whether the organization should or should not make this investment.

Debrief:

Review the answers and revisit any corresponding course materials if necessary with the group.

Activity 1—Calculating the Present Value of Unequal Payments

Assume an individual is offered \$325 one year from now, \$450 two years from now, \$600 three years from now, and \$850 four years from now. Assume a 2 percent rate of return. The present value of this future stream of payments can be calculated using the present value table. Complete the table below.

Present Value of \$1 to Be Received After n Periods = $1 \div (1 + r)^n$										
Period (n)	Interest rate (r)									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7988	0.7722	0.7513
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209

Present Value of a Stream of Unequal Payments

(1) Year	(2) Payments	(3) Present Value Factor	(4) = (2) x (3) Present Value
1			
2			
3			
4			

Answers for Activity 1—Calculating the Present Value of Unequal Payments

Assume an individual is offered \$325 one year from now, \$450 two years from now, \$600 three years from now, and \$850 four years from now. Assume a 2 percent rate of return. The present value of this future stream of payments can be calculated using the present value table.

The table shows how the present value of this stream of unequal payments can be calculated. The present value of each individual payment is calculated by multiplying it by the corresponding present value factor from the present value table and then summing the individual present values.

Present Value of a Stream of Unequal Payments

(1) Year	(2) Payments	(3) Present Value Factor	(4) = (2) x (3) Present Value
1	\$325	0.9804	\$318.63
2	450	0.9612	432.54
3	600	0.9423	565.38
4	850	0.9238	785.23
			\$2,101.78

Net Present Value

Educational Objective (EO)

Calculate the net present value of a series of cash outflows and inflows, given the applicable rate of return and number of periods.

Instructions

Activity 1—Calculating Net Present Value

Group Activity Followed by Large Group Discussion

Divide the participants into two groups. Ask participants to read the example in **Activity 1—Calculating Net Present Value** and using the present value table, work together to calculate the NPV for the transportation vehicle maintenance project.

Once it is complete, lead the participants in a discussion on whether the organization should not make this investment.

Debrief:

Review the answers and review any course material if necessary with the group.

Activity 1—Calculating Net Present Value

Assume that a risk management professional is determining whether to invest \$15,000 today in a three-year transportation vehicle maintenance project. The company requires a rate of return of 5 percent. Further assume that it expects to save breakdown expenses of \$3,000 at the end of the first year, \$3,200 at the end of the second year, and \$4,100 at the end of the third year.

Use the present value table in the determination of NPV.

Present Value of \$1 to Be Received After n Periods = $1 \div (1 + r)^n$										
Period (n)	Interest rate (r)									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209

Net Present Value of Proposed Investment

Year	Payment	Present Value Factor	Present Value (Payment x Present Value Factor)
0			
1			
2			
3			
Net Present Value (NPV)			

Answers for Activity 1—Calculating Net Present Value

Assume that a risk management professional is determining whether to invest \$15,000 today in a three-year transportation vehicle maintenance project. The company requires a rate of return of 5 percent. Further assume that it expects to save breakdown expenses of \$3,000 at the end of the first year, \$3,200 at the end of the second year, and \$4,100 at the end of the third year.

Net Present Value of Proposed Investment

Year	Payment	Present Value Factor	Present Value (Payment x Present Value Factor)
0	-\$15,000	1.0000	-\$15,000
1	\$3,000	0.9524	\$2,857
2	\$3,200	0.9070	\$2,902
3	\$4,100	0.8638	\$3,542
Net Present Value (NPV)			-\$5,699

$$\begin{aligned}
 NPV &= -C_0 + [C_1 \div (1 + r)_1] + [C_2 \div (1 + r)_2] + [C_3 \div (1 + r)_3] \\
 &= -\$15,000 + [\$3,000 \div (1 + .05)_1] + [\$3,200 \div (1 + .05)_2] + [\$4,100 \div (1 + .05)_3] \\
 &= -\$15,000 + [\$2,857] + [\$2,902] + [\$3,542] \\
 &= -\$5,699
 \end{aligned}$$

Evaluating Capital Investment Proposals

Educational Objective (EO)

Evaluate capital investment proposals using the net present value method.

Instructions

Activity 1—Using NPV

Ask the participants to read **Case Study—Brantley Accounting Services**.

Divide participants into small groups and ask them to fill the blank spaces in the worksheet in **Activity 1—Using NPV**.

When all groups have completed the worksheet, have each group compare their answers with the other group answers. If there are discrepancies, have the groups to try to resolve them.

Debrief:

Review the calculations with the groups. For discussion, you may ask the participants one or more of the following discussion questions:

- Are there other considerations that might increase or decrease the desirability of one investment over another investment?
- If a lower discount rate were used in the calculations, what would happen to the NPV?

Activity 1—Using NPV

Compute the net present value of each alternative from the information provided **Case Study—Brantley Accounting Services**. Identify the preferred choice based on the NPV results.

	Option A	Option B	Option C
Required Initial Investment	(\$120,000)	(\$70,000)	(\$30,000)
Annual After-tax Cost Savings	\$50,000	\$30,000	\$15,000
Present Value Factor			
Present Value of Savings			
Net Present Value			

Answers to Activity 1—Calculating NPV

Compute the net present value of each alternative from the information provided **Case Study—Brantley Accounting Services**. Identify the preferred choice based on the NPV results.

	Option A	Option B	Option C
Required Initial Investment	(\$120,000)	(\$70,000)	(\$30,000)
Annual After-tax Cost Savings	\$50,000	\$30,000	\$15,000
Present Value Factor (3 years @ 8%)	2.5771	2.5771	2.5771
Present Value of Savings	\$128,855	\$77,313	\$38,656
Net Present Value	\$8,855	\$7,313	\$8,656

Based on the net present value analysis, Option A should be selected because it has the highest NPV.

Case Study—Brantley Accounting Services

Brantley Accounting Services is evaluating three tax preparation software packages for its business. Although each package would have a useful life of 3 years, each alternative has a unique initial investment requirement and generates different annual cost savings.

These are the three alternatives:

	Option A	Option B	Option C
Required Initial Investment	(\$120,000)	(\$70,000)	(\$30,000)
Annual After-tax Cost Savings	\$50,000	\$30,000	\$15,000

Brantley uses a discount rate of 8 percent when conducting net present value analysis on this type of investment.

The present value of an annuity of \$1 per year is shown in the table below for a variety of time periods and discount rates.

		Discount Rates				
		8%	9%	10%	11%	12%
Years	1	0.9259	0.9174	0.9091	0.9009	0.8929
	2	1.7833	1.7591	1.7355	1.7125	1.6901
	3	2.5771	2.5313	2.4869	2.4437	2.4018
	4	3.3121	3.2397	3.1699	3.1024	3.0373
	5	3.9927	3.8897	3.7908	3.6959	3.6048
	6	4.6229	4.4859	4.3553	4.2305	4.1114
	7	5.2064	5.0330	4.8684	4.7122	4.5638
	8	5.7466	5.5348	5.3349	5.1461	4.9676
	9	6.2469	5.9952	5.7590	5.5370	5.3282
	10	6.7101	6.4177	6.1446	5.8892	5.6502

Evaluating Cash Flows from Treating Hazard Risk

Educational Objective (EO)

Calculate the net present value of a capital investment proposal, taking into account accidental losses and loss prevention.

Instructions

Activity 1— Evaluating Alternatives Using NPV Analysis

Ask the participants to read **Case Study—Henley Construction Company**.

Divide participants into small groups and ask them to fill in the blank spaces in the worksheet in **Activity 1—Evaluating Alternatives Using NPV Analysis**.

When all groups have completed the worksheet, have each group compare their answers with the other group answers. If there are discrepancies, have the groups to try to resolve them.

Debrief:

Review the calculations with the groups. For discussion, you may ask the participants one or more of the following discussion questions:

- Are there other considerations that might increase or decrease the desirability of this investment?
- Should project proposals with positive net present values always be accepted? Why or why not?

Activity 1— Evaluating Alternatives Using NPV Analysis

Complete the calculation worksheet from the information provided **Case Study—Henley Construction Company**.

Cost of replacement automated alarm system

Benefit of replacement alarm system:

Annual insurance premium savings	
Reduction in expected loss costs	
Additional maintenance expenses	
Before-tax Net Cash Flow	

Income tax effects:

Before-tax Net Cash Flow			
Annual depreciation expenses			
Annual increase in taxable income			
Annual additional taxes @ 40%			
After-tax Net Cash Flow			

Net Present Value Calculations:

Present Value of NCFs (5 years @ 10%)	
Initial Investment	
Net Present Value (NPV)	

Answers to Activity 1— Evaluating Alternatives Using NPV Analysis

Complete the calculation worksheet from the information provided **Case Study—Henley Construction Company**.

Cost of replacement automated alarm system	(\$120,000)
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Benefit of replacement alarm system:

Annual insurance premium savings	\$17,000
Reduction in expected loss costs	\$30,000
Additional maintenance expenses	(\$10,000)
Before-tax Net Cash Flow	\$37,000

Income tax effects:

Before-tax Net Cash Flow	\$37,000
Annual depreciation expenses	(\$24,000)
Annual increase in taxable income	\$13,000
Annual additional taxes @ 40%	(\$5,200)
After-tax Net Cash Flow	\$31,800

Net Present Value Calculations:

Present Value of NCFs (5 years @10%)	\$120,547
Initial Investment	(\$120,000)
Net Present Value (NPV)	\$547

Based on the net present value analysis, the project should be accepted.

Case Study—Henley Construction Company

Henley Construction Company is considering a plan to replace the automated alarm system at its storage site. The risk management professional is preparing a net present value analysis of the cost and benefits of the investment. He has gathered the following financial information:

- The new automated alarm system would cost \$120,000, have a useful life of 5 years, and incur \$10,000 per year in additional operating and maintenance costs
- The efficiency of the new alarm system is expected to save an average of \$30,000 in loss costs and would qualify for an insurance premium reduction of \$17,000 per year
- The new equipment would be depreciated over five years using the straight-line method
- The required rate of return on this type of investment is 10 percent
- The effective tax rate is 40 percent

The risk management professional prepared a table showing the present value of an annuity of \$1 at various interest rates and time periods.

		Discount Rates				
		8%	9.00%	10.00%	11.00%	12.00%
Years	1	0.9259	0.9174	0.9091	0.9009	0.8929
	2	1.7833	1.7591	1.7355	1.7125	1.6901
	3	2.5771	2.5313	2.4869	2.4437	2.4018
	4	3.3121	3.2397	3.1699	3.1024	3.0373
	5	3.9927	3.8897	3.7908	3.6959	3.6048
	6	4.6229	4.4859	4.3553	4.2305	4.1114
	7	5.2064	5.0330	4.8684	4.7122	4.5638
	8	5.7466	5.5348	5.3349	5.1461	4.9676
	9	6.2469	5.9952	5.7590	5.5370	5.3282
	10	6.7101	6.4177	6.1446	5.8892	5.6502

Using Call Options to Limit Financial Risk

Educational Objective (EO)

Calculate the effect on net income of a call option that offsets input price risk.

Instructions

Activity 1—Hedging with Call Options

Ask the participants to read **Case Study—Mellford Construction**.

Divide participants into small groups and ask them to fill the blank spaces in the worksheet in **Activity 1—Hedging with Call Options**.

When all groups have completed the worksheet, have each group compare their answers with the other group answers. If there are discrepancies, have the groups to try to resolve them.

Debrief:

Review the calculations with the groups.

Activity 1—Hedging with Call Options

Compute the profit after hedging for each level of lumber cost based on the information found in Case Study—Mellford Construction.

	Lumber Cost Falls to \$200/mbf	Lumber Cost Falls to \$240/mbf	Expected Lumber Cost of \$280/mbf	Lumber Cost Rises to \$320/mbf	Lumber Cost Rises to \$360/mbf
Contract Revenue	\$1,450,000	\$1,450,000	\$1,450,000	\$1,450,000	\$1,450,000
Cost of Lumber	-\$214,286	-\$257,143	-\$300,000	-\$342,857	-\$385,714
Other Costs	-\$900,000	-\$900,000	-\$900,000	-\$900,000	-\$900,000
Construction Profit	\$335,714	\$292,857	\$250,000	\$207,143	\$164,286

Options Cost					
Options Profit					

Profit After Hedging					
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Answers to Activity 1—Hedging with Options

Compute the profit after hedging for each level of lumber cost based on the information found in Case Study—Mellford Construction.

	Lumber Cost Falls to \$200/mbf	Lumber Cost Falls to \$240/mbf	Expected Lumber Cost of \$280/mbf	Lumber Cost Rises to \$320/mbf	Lumber Cost Rises to \$360/mbf
Contract Revenue	\$1,450,000	\$1,450,000	\$1,450,000	\$1,450,000	\$1,450,000
Cost of Lumber	-\$214,286	-\$257,143	-\$300,000	-\$342,857	-\$385,714
Other Costs	-\$900,000	-\$900,000	-\$900,000	-\$900,000	-\$900,000
Construction Profit	\$335,714	\$292,857	\$250,000	\$207,143	\$164,286

Options Cost	-\$13,000	-\$13,000	-\$13,000	-\$13,000	-\$13,000
Options Profit	\$0	\$0	\$0	\$39,600	\$79,200

Profit After Hedging	\$322,714	\$279,857	\$237,000	\$233,743	\$230,486
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The profit after hedging is equal to the sum of the construction profit and the options profit less the cost of purchasing the options.

Case Study—Mellford Construction

Mellford Construction has contracted with a client to build a warehouse three months from now. The contract price is \$1,450,000 and that price anticipates lumber costs of \$300,000. However, the price of lumber can increase or decrease in the next several months by as much as \$80 per thousand board feet (mbf). Increases in the price of lumber will reduce profits on this project, while decreases will increase profits.

The financial officer has constructed a following table to illustrate the potential effects of variations in the price of lumber.

	Lumber Cost Falls to \$200/mbf	Lumber Cost Falls to \$240/mbf	Expected Lumber Cost of \$280/mbf	Lumber Cost Rises to \$320/mbf	Lumber Cost Rises to \$360/mbf
Contract Revenue	\$1,450,000	\$1,450,000	\$1,450,000	\$1,450,000	\$1,450,000
Cost of Lumber	-\$214,286	-\$257,143	-\$300,000	-\$342,857	-\$385,714
Other Costs	-\$900,000	-\$900,000	-\$900,000	-\$900,000	-\$900,000
Construction Profit	\$335,714	\$292,857	\$250,000	\$207,143	\$164,286

Mellford can purchase call options to protect itself from price increases. The total premium that is required to hedge their risk is \$13,000. The payoff from the options contracts depends on the future cost of lumber, but the financial officer has estimated the payoffs in another table.

	Lumber Cost Falls to \$200/mbf	Lumber Cost Falls to \$240/mbf	Expected Lumber Cost of \$280/mbf	Lumber Cost Rises to \$320/mbf	Lumber Cost Rises to \$360/mbf
Options Payoff	\$0	\$0	\$0	\$39,600	\$79,200