CASE **7**

THE FRACKING OIL INVESTMENT DECISION

Decision Support Using Microsoft Excel

PREVIEW

A very wealthy man has been asked to invest in an oil exploration company. He will invest if the venture is expected to be sufficiently profitable. In this case, you will use Microsoft Excel to analyze the profitability of the investment.

PREPARATION

- Review spreadsheet concepts discussed in class and in your textbook.
- Complete any exercises that your instructor assigns.
- Complete any part of Tutorial C that your instructor assigns. You may need to review the use of If statements and the section called "Cash Flow Calculations: Borrowing and Repayments."
- Review file-saving procedures for Windows programs.
- Refer to Tutorials E and F as necessary.

BACKGROUND

Petroleum deposits can be found in shale rock formations below ground and can be brought to the surface by an exploration process called hydraulic fracking.

In this process, a shaft is first drilled vertically below the water table until a layer of shale rock is encountered. The drilling then continues *horizontally*. As a result, water is forced into the well. The hydraulic pressure fractures the shale rock, which nature lays down in horizontal sheets. The fracturing liberates oil that is trapped in the shale, and the oil is brought to the surface. Oil is released as the horizontal drilling proceeds, for up to 10,000 feet per well.

This type of oil exploration has increased greatly in recent years, so much so that the United States is now producing more oil than Saudi Arabia.

The effective life of a fracking oil well is much shorter than that of a conventional oil well because recoverable oil "depletes" much more quickly. After the first year of drilling in a typical fracking operation, the number of recoverable barrels per day will decrease about 70 percent from initial levels. After the second year of drilling, the number of recoverable barrels per day will decrease about 30 percent from the start of the year. Rapid depletion means that fracking wells have a shorter useful life than traditionally drilled oil wells, which expire in a more orderly way over a longer period.

Prospecting by hydraulic fracking is capital intensive. The prospecting company must first acquire drilling rights from land owners; rights typically cost about $10,000 per acre. There are 640 acres in a square mile, which implies a cost of about $6.4 million per square mile. Up to three wells can fit into a square mile, which means rights to a well can cost $2 million or more. Drilling rights typically expire after 8 to 10 years. Thus, there is every incentive to begin drilling once rights are acquired.

Drilling costs mount up quickly. For example, drilling rigs are expensive to lease. Also, as the shaft is dug, it must be lined with steel casing. The deeper the well is, the more this casing costs. Water is increasingly expensive, due to shortages in many areas of America, and toxic chemicals are put into the water to make the fracturing more effective. These chemicals add to the cost of the water.

There is no guarantee that a well will bring forth oil. It's quite possible that the prospector will locate a large patch of shale, sink the shaft, drill horizontally, force water down the well, and bring up little or no oil. If so, the well must be shut down, and its cost becomes a loss to the prospector. An unlucky prospector who drills too many dry holes can go bankrupt.

The price of oil has fluctuated greatly in recent years. For many years, a barrel of oil sold for more than $100 in America and the rest of the world. In recent years, however, the price has dropped below $50 a barrel at times. Thus, it's possible that a well can produce copious amounts of oil, but at a cost that exceeds the price oil refiners are willing to pay for it. Oil prospectors can go bankrupt in this way as well.

Oil prospectors typically finance their operations with "other people's money"—in other words, by borrowing. In recent years, fracking operations have been financed by high-interest bonds, which are sold to bankers or to investors in the open bond markets. Bonds issued for high-risk ventures at high interest rates are sometimes called "junk bonds" in financial circles. The risk in this case is that the issuing prospector may not be profitable enough to pay back the interest and principal.

A well-known Texas oil prospecting firm has entered your state, which has huge areas of shale in its rural regions. The company has bought drilling rights from the farmers who own the land, sold junk bonds to a gigantic New York City bank, and begun drilling test wells. Already, things look good. The owner of the Texas firm is telling everyone he knows that shale oil is flowing like he has never seen it flow before.

In order to start recovering his investment—and to reduce his risk—the owner wants to sell shares of the business to wealthy individual investors. He offers to sell a share in his venture for $10 million, and proposes that one share will be represented by one well. For the investment, the owner of the share receives the net income after taxes from a designated well for the next eight years, which is the term of the drilling rights. Due to the depletion factor, eight years is also the expected useful life of the company's wells.

A very wealthy man is a good friend of yours in town. He was approached by the Texas oilman during a golf outing at the local country club, and your friend is intrigued. "The net income for eight years from a producing oil well might be a lot more than $10 million," he told you. "But my minimum rate of return for a long-term investment is 15 percent. I need to know if the investment's after-tax cash flows yield a net present value greater than zero, discounted at 15 percent."

You are familiar with the concept of net present value (NPV). For example, assume that your friend invested $1 million up front, then received a return of $1.1 million a year later. Would that be a good investment for him? The answer depends on the rate of return he requires. To a man who wants to earn 15 percent on his investment, receiving $1.1 million one year from now is equivalent to receiving $1.1 million/1.15 on day one, or about $956,000. In other words, dividing $1.1 million by 1.15 states the future amount as a "present value."

In the example, your friend would not want to invest $1 million in order to receive a return of less than $1 million in day-one dollars. In Excel, the NPV function performs this calculation; the formula =NPV(15%, -1000000, 1100000) would evaluate to –$37,807. The negative value indicates that the investment is not a good one at a discount rate of 15 percent. In Excel, the values in the formula need not be hard-coded; they can be represented by cell addresses. Continuing the example, assume that cell B6 holds the value –1000000 and cell C6 holds the value 1100000. These values could then become the following formula in Excel: =NPV (15%, B6, C6). The NPV function is covered more completely in Tutorial E.

Your friend asks you to create a projected eight-year income statement for a fracking oil well. "You'll need to find out what the expected costs are," he said. "Don't just rely on the oilman's prospectus. Your analysis should measure the rate of return at his asking price, but also at others. I might want to offer $5 million, just to see what he says. The spreadsheet should measure the rate of return at different prices for a barrel of oil."

You tell your wealthy friend that you are adept with Excel's Scenario Manager, and that you can handle his request without much trouble.

You familiarize yourself with the projected financial data in the company's prospectus. In addition, you talk to a petroleum engineer at the state university about the business. Most of the accounting and financial fundamentals are clear enough. The effect of depletion rate is the most difficult concept to master.

An oil well has an initial production rate (IPR) at the beginning of its life, and then again at the beginning of each drilling year. A typical beginning IPR is 500 barrels of oil production a day. However, the fracking production rate tails off rapidly. A typical pattern might be 70 percent in year 1, 30 percent in year 2, 20 percent in year 3, and so on. An example will help to illustrate the effect on production.

A 70 percent decline from 500 barrels a day would mean that year 2's beginning IPR would be 500–(70% * 500), or 500–350, which equals 150 barrels a day. In year 2, the decline would be 30% * 150, or 45 barrels, so that the IPR at the start of year 3 would be 150–45, or 105 barrels a day. A 20 percent decline in year 3 from 105 would mean a decline of 21 barrels, to 84 barrels a day. The data is summarized in Figure 7-1.

	Year 1	Year 2	Year 3
Beginning IPR	500 barrels/day	150 barrels/day	105 barrels/day
Decline rate	70%	30%	20%
Production decline	350 barrels	45 barrels	21 barrels
IPR to begin next year	150 barrels/day	105 barrels/day	84 barrels/day

FIGURE 7-1 Example decline rates

The data in the preceding table does not mean that production throughout year 1 is 500 barrels a day, and then falls off a cliff to 150 barrels a day on the first day of year 2. Production would decline ratably during a year. Thus, the average production per day in year 1 is the midpoint between 500 and 150 barrels a day. This amount is 500–(350/2), or 500–175, which equals 325 barrels a day in year 1. Another way to calculate this amount is 500–((.70/2) * 500); in other words, you can use one-half the decline rate in the calculation. Average production per day in year 2 is the midpoint between 150 and 105 barrels per day. Average production per day in year 3 is the midpoint between 105 and 84 barrels per day. Average production data is shown in Figure 7-2.

	Year 1	Year 2	Year 3
Beginning IPR	500 barrels/day	150 barrels/day	105 barrels/day
Average production/day in year	325 barrels	127.5 barrels	94.5 barrels

FIGURE 7-2 Average production per day in year

ASSIGNMENT 1: CREATING A SPREADSHEET FOR DECISION SUPPORT

In this assignment, you will produce a spreadsheet that models the investment opportunity. Then, in Assignment 2, you will use the spreadsheet to gather data about possible investment scenarios and then write a memorandum that documents your analysis and findings. In Assignment 3, you will prepare and give an oral presentation of your analysis and conclusions to the Texas oil company.

First, you will create the spreadsheet model of the decision. The model covers the well's eight productive years from 2017 to 2024. This section helps you set up each of the following spreadsheet components before entering cell formulas:

- Constants
- Inputs
- Summary of Key Results
- Calculations
- Income and Cash Flow Statement
- Debt Owed

A discussion of each section follows. The spreadsheet skeleton for this case is available for you to use; it will save you time. To access the spreadsheet skeleton, go to your data files, select Case 7, and then select **Fracking.xlsx**.

Constants Section

Your spreadsheet should include the constants shown in Figure 7-3. An explanation of the line items follows the figure.

	A	B	C	D	E	F	G	H	I	J
1	Fracking Oil Investment Decision									
2										
3	Constants	2016	2017	2018	2019	2020	2021	2022	2023	2024
4	Income Tax Rate	NA	20%	20%	20%	20%	20%	20%	20%	20%
5	Cash Needed to Start Year	NA	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000
6	Decline Rate	NA	0.70	0.30	0.25	0.25	0.20	0.20	0.20	0.15
7	Initial Production Rate (IPR)	NA	500	NA	NA	NA	NA	NA	NA	NA
8	Interest on Junk Bonds	NA	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000

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FIGURE 7-3 Constants section

- Income Tax Rate—The income tax rate is expected to be 20 percent each year.
- Cash Needed to Start Year—The company wants to have at least $1 million in cash at the beginning of each year to run the well. Assume that the company could borrow in the short-term debt market at the end of a year and begin the new year with the required amount.
- Decline Rate—The decline rate for each year is shown.
- Initial Production Rate (IPR)—The IPR to start 2017 (year 1) would be 500 barrels a day.
- Interest on Junk Bonds—The company financed the entire project with junk bonds. A single well must cover $500,000 in junk bond interest each year.

Inputs Section

The potential investor is concerned about the sale price of a barrel of oil, the requested amount of his investment, and the interest rate he would need to pay on any new bank debt.

Your spreadsheet should include the following inputs for the years from 2017 to 2024, as shown in Figure 7-4.

	A	B	C	D	E	F	G	H	I	J
10	Inputs	2016	2017	2018	2019	2020	2021	2022	2023	2024
11	Price Per Barrel		NA	NA	NA	NA	NA	NA	NA	NA
12	Interest Rate on New Debt	NA								
13	Requested Investment		NA	NA	NA	NA	NA	NA	NA	NA

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FIGURE 7-4 Inputs section

- Price Per Barrel—Enter the dollar value for the price of a barrel of oil. The entry applies to all years.
- Interest Rate on New Debt—Enter the assumed interest rate for each of the eight years of the investment. The oil company may need to borrow from a bank to cover a cash shortfall at the end of the year. The investor thinks that interest rates will probably increase in the coming years.
- Requested Investment—Enter the amount the investor would pay the oil company for a share of the fracking well.

Summary of Key Results Section

Your spreadsheet should include the results shown in Figure 7-5.

	A	B	C	D	E	F	G	H	I	J
15	Summary of Key Results	2016	2017	2018	2019	2020	2021	2022	2023	2024
16	Net Income After Taxes	NA								
17	End-of-the-Year Cash On Hand	NA								
18	End-of-the-Year Debt Owed	NA								
19	Net Present Value of Investment	NA	NA	NA	NA	NA	NA	NA	NA	

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FIGURE 7-5 Summary of Key Results section

For each year, your spreadsheet should compute net income after taxes, cash on hand at the end of the year, debt owed to the bank to cover a cash shortfall at the end of the year, and the expected net present value of the investment. These values are computed elsewhere in the spreadsheet and should be echoed here.

Calculations Section

You should calculate intermediate results (see Figure 7-6) that will be used in the income and cash flow statement that follows. When called for, use absolute referencing properly. Values must be computed by cell formula; hard-code numbers in formulas only when you are told to do so. Cell formulas should not reference a cell with a value of "NA," which stands for "not applicable."

An explanation of each item in this section follows the figure.

	A	B	C	D	E	F	G	H	I	J
21	**Calculations**	2016	2017	2018	2019	2020	2021	2022	2023	2024
22	Initial Production Rate/Day (IPR)	NA	500							
23	Average Production/Day in the Year	NA								
24	Barrels of Oil Produced in the Year	NA								

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FIGURE 7-6 Calculations section

- Initial Production Rate/Day (IPR)—The IPR for 2017 is a constant that can be echoed here. IPRs for succeeding years should be computed using the method discussed at the end of the Background section.
- Average Production/Day in the Year—The production in barrels per day should be computed using the method discussed at the end of the Background section.
- Barrels of Oil Produced in the Year—This value is a function of the average daily production and the number of production days (365). You should hard-code the number of production days in your cell formulas.

Income and Cash Flow Statement

The forecast for net income and cash flow starts with the cash on hand at the beginning of the year. This value is followed by the income statement and the calculation of cash on hand at year's end. For readability, format cells in this section as currency with zero decimals. Values must be computed by cell formula; hard-code numbers in formulas only if you are told to do so. Cell formulas should not reference a cell with a value of "NA." Your spreadsheet section should look like that shown in Figures 7-7 and 7-8. A discussion of each item in the section follows each figure.

	A	B	C	D	E	F	G	H	I	J
26	**Income and Cash Flow Statement**	2016	2017	2018	2019	2020	2021	2022	2023	2024
27	Beginning of-the-Year Cash On Hand	NA								
28										
29	Revenue	NA								
30	Out of Pocket Costs and Expenses	NA								
31	Oil Transport ($12/barrel)	NA								
32	Well Operations ($3/barrel)	NA								
33	General and Administrative	NA	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000
34	Royalties to Land Owners	NA								
35	Severance Taxes	NA								
36	Interest on Junk Bonds	NA								
37	Interest on New Debt	NA								
38	Total Out of Pocket Costs and Expenses	NA								
39	Income Before Taxes	NA								
40	Income Tax Expense	NA								
41	Net Income After Income Tax Expense	NA								

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FIGURE 7-7 Income and Cash Flow Statement section

- Beginning-of-the-Year Cash on Hand—This value is the cash on hand at the end of the prior year.
- Revenue—This amount is a function of the price of a barrel of oil (from the Inputs section) and the number of barrels produced in the year, which is taken from the Calculations section.
- Oil Transport ($12/barrel)—Oil must be trucked to a refinery after it is sold. The cost is $12 a barrel; you should hard-code this factor. The number of barrels produced is taken from the Calculations section.
- Well Operations ($3/barrel)—The cost to operate the well during the year is $3 per barrel produced. This amount is a function of the number of barrels produced (from the Calculations section) and the $3 factor, which you should hard-code in the formulas.
- General and Administrative—This cost is allocated company overhead, which is $200,000 per year. The amount should be hard-coded in the formulas.
- Royalties to Land Owners—Land owners have already been paid for the rights to drill their land. They are also paid a royalty if there is production. The royalty is 12 percent of the earlier Revenue value minus the Oil Transport cost. You can hard-code the 12 percent factor in your formulas, and you should insert a comment in the label to explain the calculation. To insert a comment, select the cell, then right-click it. In the resulting menu, select Insert Comment, then

type the comment into the text box that appears. The presence of a comment is denoted by a small diamond in the upper-right corner of the cell.

- Severance Taxes—Fracking's drilling and transportation process destroys roads in the area. The state taxes the operation in order to maintain the roads. The tax equals 5 percent of the earlier Revenue value minus the Oil Transport cost. You can hard-code the 5 percent factor in your formulas and insert a comment in the label to explain the calculation.
- Interest on Junk Bonds—This value is taken from the Constants section and can be echoed here.
- Interest on New Debt—This amount is the product of short-term debt owed to the bank at the beginning of the year and the interest rate on short-term debt, which is taken from the Inputs section.
- Total Out of Pocket Costs and Expenses—This amount is the sum of oil transport costs, well operation costs, general and administrative costs, royalties, severance taxes, junk bond interest, and interest on new debt.
- Income Before Taxes—This amount is the difference between revenue and total out-of-pocket costs and expenses.
- Income Tax Expense—This amount is zero if income before taxes is zero or negative. Otherwise, income tax expense is the product of the year's tax rate (from the Constants section) and income before taxes.
- Net Income After Income Tax Expense—This amount is the difference between income before taxes and income tax expense.

Line items for the year-end cash calculation are shown in Figure 7-8. In the figure, column B represents 2016, column C is for 2017, and so on. Year 2016 values are NA except for end-of-year cash on hand, which is $1 million.

Values must be computed by cell formula; hard-code numbers in formulas only when you are told to do so. Cell formulas should not reference a cell with a value of "NA." An explanation of each item follows the figure.

	A	B	C	D	E	F	G	H	I	J
43	Net Cash Position (NCP) Before Borrowing and Repayment of Debt	NA								
44	Add: Increase in Borrowing	NA								
45	Less: Repayment of Debt	NA								
46	End-of-the-Year Cash On Hand	$ 1,000,000								

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FIGURE 7-8 End-of-year cash on hand section

- Net Cash Position (NCP) Before Borrowing and Repayment of Debt—The NCP at the end of a year equals the cash at the beginning of the year plus the year's net income after income taxes.
- Increase in Borrowing—Assume that the bank can borrow enough cash in the short-term market at the end of the year to reach the minimum cash needed to start the next year. If the NCP is less than this minimum, the bank must borrow enough to start the next year with the minimum. Borrowing increases cash on hand, of course.
- Repayment of Debt—If the NCP is more than the minimum cash needed and some short-term debt is owed to the bank at the beginning of the year, you must pay off as much short-term debt as possible, but not take cash below the minimum amount required to start the next year. Repayments reduce cash on hand, of course.
- End-of-the-Year Cash on Hand—This amount is the NCP plus any short-term borrowing and minus any repayments.

Debt Owed Section

This section shows a calculation of short-term debt owed to the bank to cover cash shortages at year's end, as shown in Figure 7-9. Year 2016 values are NA except for end-of-year debt owed, which is $1 million. (Assume that the company has already had to borrow this amount from the bank to have the minimum cash on hand.)

The section also calculates the investment's net present value, which is echoed to the Summary of Key Results section.

Values must be computed by cell formula; hard-code numbers in formulas only when you are told to do so. Cell formulas should not reference a cell with a value of "NA." An explanation of each item follows the figure.

	A	B	C	D	E	F	G	H	I	J
		2016	2017	2018	2019	2020	2021	2022	2023	2024
48	Debt Owed									
49	Beginning-of-the-Year Debt Owed	NA								
50	Add: Increase in Borrowing	NA								
51	Less: Repayment of Debt	NA								
52	End-of-the-Year Debt Owed	$ 1,000,000								
53										
54	Net Present Value Data									
55										
56	Net Present Value @ 15%		NA	NA	NA	NA	NA	NA	NA	NA

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FIGURE 7-9 Debt Owed section

- Beginning-of-the-Year Debt Owed—Debt owed at the beginning of a year equals the debt owed at the end of the prior year.
- Increase in Borrowing—This amount has been calculated elsewhere and can be echoed to this section. Borrowing increases the amount of debt owed.
- Repayment of Debt—This amount has been calculated elsewhere and can be echoed to this section. Repayments reduce the amount of debt owed.
- End-of-the-Year Debt Owed—In 2017 through 2024, this value is the amount owed at the beginning of a year, plus borrowing during the year, and minus repayments during the year.
- Net Present Value Data—Certain data is needed to compute NPV, and it is convenient to have the data in one place. In the 2016 cell, echo the amount of the requested investment from the Inputs section. In your formula, multiply the value by minus 1: The NPV formula needs this value to be represented as a negative amount. In the 2017–2024 cells, echo the amounts for net income after taxes.
- Net Present Value @ 15%—This value is the investment opportunity's NPV calculation. The NPV formula's inputs are the discount rate (15 percent in this case, a value you can hard-code) and a series of values for the investment and its returns. In this case, the series of values is shown in the Net Present Value Data cells. These values are reduced by the NPV function to a single number in the cell for the 2016 column. A positive NPV value represents a potentially good investment. A negative value represents an unacceptable investment at a 15 percent minimum rate of return.

ASSIGNMENT 2: USING THE SPREADSHEET FOR DECISION SUPPORT

Complete the case by (1) using the spreadsheet to gather data about possible investment scenarios and (2) documenting your findings in a memo.

The wealthy investor wants to know the NPVs at per-barrel oil prices of $50, $70, $90, and $110, using the company's $10 million investment requirement and his counteroffer of $5 million. For now, the investor assumes that interest rates will be 4 percent a year during the eight-year period. Therefore, you have eight scenarios to test; "His" denotes the Texas oilman's requested investment, and "Yours" denotes the wealthy investor's offer.

1. His 50—The investment is $10 million, the price per barrel is $50, and the interest rate is 4 percent each year from 2017 to 2024.
2. His 70—The investment is $10 million, the price per barrel is $70, and the interest rate is 4 percent each year from 2017 to 2024.
3. His 90—The investment is $10 million, the price per barrel is $90, and the interest rate is 4 percent each year from 2017 to 2024.
4. His 110—The investment is $10 million, the price per barrel is $110, and the interest rate is 4 percent each year from 2017 to 2024.
5. Yours 50—The investment is $5 million, the price per barrel is $50, and the interest rate is 4 percent each year from 2017 to 2024.
6. Yours 70—The investment is $5 million, the price per barrel is $70, and the interest rate is 4 percent each year from 2017 to 2024.
7. Yours 90—The investment is $5 million, the price per barrel is $90, and the interest rate is 4 percent each year from 2017 to 2024.
8. Yours 110—The investment is $5 million, the price per barrel is $110, and the interest rate is 4 percent each year from 2017 to 2024.

The wealthy investor wonders if any of the NPVs are positive with the $10 million investment, and he wants to know which NPVs are positive with a $5 million investment. He would consider an NPV within $100,000 of zero to be a break-even proposition. Thus, he would consider an investment with an NPV of –$100,000.

Assignment 2A: Using the Spreadsheet to Gather Data

You have built the spreadsheet to model the fracking investment decision. For each of the eight scenarios, you want to know whether the NPV is positive at a 15 percent required rate of return.

You will run "what-if" scenarios with the eight sets of input values using Scenario Manager. (See Tutorial C for details on using Scenario Manager.) Set up the eight scenarios. Your instructor may ask you to use conditional formatting to make sure your input values are proper; conditional formatting is discussed in Tutorial E. Note that in Scenario Manager you can enter noncontiguous cell ranges, such as C19, D19, C20:F20.

The relevant output cell is the NPV calculation in the Debt Owed section. Run Scenario Manager to gather the data into a report. When you finish, print the spreadsheet with the input for any of the scenarios, print the Scenario Manager summary sheet, and then save the spreadsheet file for the final time.

Assignment 2B: Documenting Your Results in a Memo

Use Microsoft Word to write a brief memo that documents your analysis and results. You can address the memo to your wealthy friend. Observe the following requirements:

- Set up your memo as described in Tutorial E.
- In the first paragraph, briefly state the business situation and the purpose of your analysis.
- Next, describe the eight scenarios tested and indicate which represent acceptable investments.
- State your conclusions: Which scenarios should your friend consider an investing opportunity? Looking forward to negotiations, do you think a fair investment is closer to $10 million or to $5 million? State your opinion and reasoning.
- Support your statements graphically, as your instructor requires. Your instructor may ask you to return to Excel and copy the Scenario Manager summary sheet results into the memo. You should include a summary table built in Word based on the Scenario Manager summary sheet results. (The process of creating a Word table is described in Tutorial E.)

Your table should be in the format shown in Figure 7-10.

Scenario	Investment	Oil Price	Interest Rate	NPV @ 15%
His 50	$10,000,000	$50	4%	
His 70	$10,000,000	$70	4%	
His 90	$10,000,000	$90	4%	
His 110	$10,000,000	$110	4%	
Yours 50	$5,000,000	$50	4%	
Yours 70	$5,000,000	$70	4%	
Yours 90	$5,000,000	$90	4%	
Yours 110	$5,000,000	$110	4%	

FIGURE 7-10 Format of table to insert in memo

ASSIGNMENT 3: GIVING AN ORAL PRESENTATION

Your instructor may ask you to explain your analysis and results in an oral presentation. If so, assume that the wealthy investor wants you to explain your work to the Texas oilman in 10 minutes or less. Use visual aids or handouts that you think are appropriate. See Tutorial F for tips on preparing and giving an oral presentation.

DELIVERABLES

Your completed case should include the following deliverables for your instructor:

- A printed copy of your memo
- Printouts of your spreadsheet and scenario summary
- Electronic copies of your memo and Excel DSS model

Hints for Case 7:

In the Inputs Section, the interest rate on new debt is 4%

In Summary of Key Results Section, the NPV is
=NPV(15%,B54:J54)

In Income and Cash Flow Statement
Revenue =B11*C24
Oil Transport =12*C24
Well Operations =3*c24
Royalties .12*(c29-c31)
Severance =.05*(c29-c31)
Interest on new debt =C49*C12
Income before taxes =C29-C38
Income tax expense =IF(c39<=0,0,C39*c4)

Page 124 Net Cash Position =c27+c41
Increase in borrowing =IF(C43>C5,0,C5-C43)
Repayment of debt =IF(C49=0,0,IF(C43<C5,0,IF((C43-C5)>=C49,C49,C43-C5)))

* At the very end, Net Present Value (2,681,381.17)