

Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps: Problem Handouts



This work by Philip Cottell is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

As an open educational resource, feel free to modify and distribute this work under the conditions stated by the Creative Commons license. Originally developed as a part of the [PBL Clearinghouse](https://pblclearinghouse.org/) at the University of Delaware.



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

Part 1

Surface construction is an extremely capital intensive industry. In order to keep up with demands for its services, Gearding has had to purchase the heavy equipment-bulldozers, graders, rollers, and son on necessary to accomplish its road building jobs. Gearding has financed these acquisitions using a series of variable rate, long-term notes from the Second National Bank.

The CFO of Gearding is concerned about the possibility of rising interest rates in the future. He has asked for your advice about ways his company could protect itself from increasing interest costs in the future should this occur. In particular, he read an article in *The Cincinnati Enquirer* about the use of derivatives for hedging that mentioned interest rate swaps and wonders if this would be something Gearding could use.

Questions:

1. What is hedging and how are derivatives used to accomplish it?
2. What is an interest rate swap?
3. How could an interest rate swap protect Gearding from the risk that concerns the CFO?
4. Construct an example of an interest rate swap to better explain these instruments to your client.
5. What kind of hedge does your example represent?
6. Could an interest rate swap represent another type of hedge? How?



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

Part 2

Currently Gearding has a note outstanding for \$58 million with the Second National Bank. This note is renewed on January 5, 2001. The note has a variable interest rate equal to the 30-day LIBOR (London Inter-Bank Offering Rate), which is paid on the fifth date of each month. The note has a balloon payment that calls for the principal to be paid in full at the end of ten years.

On January 5, 2001, Gearding executed an interest rate swap with Wild Ride Finance Company for the purpose of hedging the exposure to interest rate volatility to variable rate debt. The swap has a notional amount of \$58 million and a term of ten years. From Gearding's perspective, the swap is a receive-variable, pay-fixed swap. The fixed leg of the swap is 6.25% and the variable leg is equal to 30-day LIBOR. The swap settles on the fifth day of each month. The client has indicated that it would prefer to use hedge accounting for its derivative.

Questions:

1. How does this swap protect Gearding? Give an example to demonstrate the financial effects should the 30-day LIBOR fall below 6.25% and one to demonstrate the effects should it rise above 6.25%.
2. What additional information do you need to properly account for this interest rate swap? Where would you seek this information?



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

Part 3

When you examine the records of the client, you discover that the LIBOR on the fifth day of the month during the prior year were as follows:

Date	30-Day LIBOR Rate
February 5, 2001	6.30%
March 5, 2001	6.25%
April 5, 2001	6.10%
May 5, 2001	6.00%
June 5, 2001	6.05%
July 5, 2001	6.20%
August, 2001	6.35%
September 5, 2001	6.45%
October 5, 2001	6.60%
November 5, 2001	6.40%
December 5, 2001	6.20%

Questions:

1. What journal entries should the client have made for the swap settlements?
2. What ledger balances should you find in the accounts relating to the interest rate swap?
3. What additional entries would Gearding make with respect to the loan?



4. What is the total effect of the interest rate swap with respect to the loan activity?
5. What entry would Gearding make at year-end with respect to the loan?
6. What entry should the client make at year-end with respect to this derivative?



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

Part 4

You contact the Wild Ride Finance Company seeking confirmation of the fair value of the swap. They respond that they estimate the valuation of the swap to be \$2,777,942. This is an asset to Wild Ride.

Questions:

1. What year-end entry must Gearding make at year-end with respect to the swap and the related loan?
2. What facts must be true for Gearding to be able to utilize hedge accounting?
3. Why would Gearding desire to use hedge accounting?



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

Part 5

Along with the estimate of the fair value of the swap, Wild Ride sent a lengthy legal document describing the details of the swap. When you examine the swap documentation, you discover two non-standard provisions:

- Early termination Provision—If Wild Ride Finance Company ceases to be a party to the company's \$300 million credit agreement, Wild Ride Finance Company is entitled to designate an early termination date for the swap. Based on the swap agreement, it appears there would be a net settlement payment for an amount approximation the fair value of the contract in the event of such early termination.
- Knockout Feature—If the LIBOR rate equals or exceeds 7.75% for any given month, the swap requires that no payment be made by either party to the agreement for that month.

Questions:

1. How does this additional information affect the accounting for the swap instrument?
2. Is the early termination agreement in Gearding's best interest? Why or why not?
3. Is the knockout provision in Gearding's best interest? Why or why not?
4. Speculate as to why Gearding would agree to the either provision.
5. With the additional information, record the journal entry that Gearding must now record at year end for the swap.



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

Part 6

In the following year you send a confirmation to Wild Ride. They report that the fair value of the swap at the end of that year is \$2,596,265. Interest rates rose substantially during the latter part of the year. On January 5 the 30-day LIBOR was 6.3%. On October 5 the 30-day LIBOR was 7.60%. On November 5 it was 7.80%

Questions:

1. What was the cash flow of Gearding for the debt and the swap on January 5?
2. What journal entry should Gearding make for the payment on the note and for the interest rate swap on January 5?
3. What was the cash flow of Gearding for the debt and the swap on October 5?
4. What was the cash flow of Gearding for the debt and the swap for November 5?
5. Provide the year-end journal entry for the swap.



Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

PBL Worksheet: Pertinent, Known Information

Group: _____

Date: _____

What do we know?	How will what we know help us solve this problem?





Gearding Construction Company: Accounting for Derivatives - Interest Rate Swaps

PBL Worksheet: Additional Information Required

Group: _____

Date: _____

What do we need to know?	How will what we need to know help us solve this problem?



What have we learned?	

