

## HOMEWORK #7a

PLEASE WRITE YOUR FULL NAME AND THEN SUBMIT YOUR HOMEWORK

Name:

Answers

### Textbook Problems 14.3a-14.3b

#### QUESTION 1

Company A and Company B are in the process of borrowing \$100 million for 5 years. The banks have given the following terms including a floating or fixed interest option. An Investment bank (SWAP house) has advise each company to take the opposite view what interest rates are expeted to rise or fall and proposed a swap after each company engages with their respective banks. Calculate the net pay after the Swap is in place as well as the benefits of entering in a SWAP agreement

Company A	
Fixed Rate	7.00%
Float (SOFR +)	0.75%
Years	5
Interest Rate View:	Low
Choose (Float or Fixed?):	Fixed

#### Cash Flow (use negative for Expenses)

Cash Flows to Bank	
Pay to Bank (Spread)	-7.00%
SOFR	
Net to Bank	-7.00%

#### SWAP AGREEMENT - TERMS

Notional Amount \$ 100.0 million  
Swap Rate (Fixed): 6.50%  
Years 5

Cash Flow (inflow and outflow) to SWAP House	
Pay Swap contract	6.50%
Receive Swap Contraxt	- SOFR

a SOFR (+/-)	- SOFR
Net Pay Spread %	-0.50%

b Benefits (Savings)	0.25%
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Company B	
Fixed Rate	8.25%
Float (SOFR +)	1.50%
Years	5
Interest Rate View	High
Choose (Float or Fixed?):	Float

#### Cash Flow (use negative for Expenses)

Cash Flows to Bank	
Pay to Bank Spread	-1.5%
SOFR	- SOFR
Net to Bank	-(SOFR + 1.5%)

Cash Flow (inflow and outflow) to SWAP House	
Pay Swap contract	-6.50%
Receive Swap Contraxt	+ SOFR

SOFR (+/-)	0.00%
Net Pay Spread %	-8.00%

Savings	0.25%
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#### QUESTION 2

Following question 1, assuming SOFR starts at 4.0% and increases every year by 1.0%, calculate Company A and Company B annual Net interest Cash flows assuming the loan principal is fully paid on the 5th year (no amortization)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
SOFR	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%
SOFR Increase		1.00%	1.00%	1.00%	1.00%	1.00%

#### Company A

Outstanding Debt (million)	\$ 100.0 million					
Interest Rate to Bank %		7.00%	7.00%	7.00%	7.00%	7.00%
Interest Expense (million)	Use negative	(7.00)	(7.00)	(7.00)	(7.00)	(7.00)
Interest Rate to SWAP %		6.50%	6.50%	6.50%	6.50%	6.50%
Swap Pay (million)	Use negative	(5.00)	(6.00)	(7.00)	(8.00)	(9.00)
Swap Receive (million)	use positive	6.50	6.50	6.50	6.50	6.50
Net Expense Hedged (million)	Use negative	(5.50)	(6.50)	(7.50)	(8.50)	(9.50)

#### Company B

Outstanding Debt (million)	\$ 100.0 million					
Interest Rate to Bank %		6.50%	7.50%	8.50%	9.50%	10.50%
Interest Expense (million)	Use negative	(6.50)	(7.50)	(8.50)	(9.50)	(10.50)
Interest Rate to SWAP %		6.50%	6.50%	6.50%	6.50%	6.50%
Swap Pay (million)	Use negative	(6.50)	(6.50)	(6.50)	(6.50)	(6.50)
Swap Receive (million)	use positive	5.00	6.00	7.00	8.00	9.00
Net Expense Hedged (million)	Use negative	(8.00)	(8.00)	(8.00)	(8.00)	(8.00)