Adam

DEPARTMENT OF MANAGEMENT
UNIVERSITY OF TORONTO MISSISSAUGA

MGT339H5S LEC0101 - Business Finance II
Summer 2014

Instructor: ADAM KADAR

QUIZ II – August 12, 2014

Duration: 35 minutes

Aid Allowed: Non-programmable calculator

Instructions:

a) Answer all questions and write the answers in the spaces provided below.
b) Please show your work, where applicable.

LAST NAME: _____ FIRST NAME: _____

STUDENT NUMBER: _____

Question	Mark
Q1 [10]	
Q2 [10]	
Q3 [20]	
Total [out of 40]:	

QUESTION I: WORKING CAPITAL MANAGEMENT [10 marks]

Would each of the following increase or decrease the break-even sales growth rate? [6 marks] – Circle your choice next to each question. [6 marks]

a) An increase in the amount of inventory held — INCREASE / DECREASE

b) An increase in the proportion of invoices that are paid immediately — INCREASE / DECREASE

c) A decrease in the amount of inventory held — INCREASE / DECREASE

d) A decrease in the proportion of invoices that are paid immediately — INCREASE / DECREASE

e) An increase in the proportion of sales for cash — INCREASE / DECREASE

f) Increase in the percentage of sales collected at the end of one month — INCREASE / DECREASE

What can you conclude if a firm's planned sales growth rate exceeds its break-even sales growth rate? [2 marks]

(1) causes cash flow problems as investment in net working capital > cash generated from incremental sales

(2) may need external funding

What can you conclude if a firm's planned sales growth rate is less than its break-even sales growth rate? [2 marks]

The firm isn't growing as fast as it can; excessive liquidity can be good or bad.

Firms can decide to grow slowly for

- increasing returns to scale as growth increases
- already have mature product
- sustainable market penetration

QUESTION II: FUTURES/FORWARDS [10 marks]

A Canadian company, Bombardier, will deliver on a contract which includes several subway cars, to the New York City Transit Authority. The contract calls for the subway cars to be delivered in 9 months, and for Bombardier to be paid $140 million USD upon delivery. Suppose the current (spot) exchange rate is $1.05 CAD = $1.00 USD, and the 9 month forward exchange rate is $1.02 CAD = $1.00 USD.

a) Briefly explain two risks faced by Bombardier in relation to this contract (the contract to deliver subway cards) – namely credit risk and currency risk [4 marks]

Credit: New York Transit Authority may default on $140M USD due in 9mths

Currency: the more volatile the USD/CAD exchange rate the harder it is to predict firms domestic currency (CAD) cash flows.

b) How can Bombardier hedge its currency risk, using the forward rate mentioned above? [2 marks]

enter into forward contract to sell $140m USD for $142.8m CAD in 9mths.

c) If the spot rate in 9 months is $1.08 CAD = $1.00 USD, what will be the profit/loss on the hedge described in ii)? [2 marks]

Loss of $151.2 - $142.8 = 8.4m CAD

d) If the spot rate in 9 months is $0.95 CAD = $1.00 USD, what will be the profit/loss on the hedge described in ii)? [2 marks]

Profit of 142.8m - 133m = 9.8m CAD

SWAPS: [20 marks]

Mariya and Johanna are in the process of renewing their mortgages. Each mortgage is interest-only (i.e. the borrower pays only and has a single balloon payment at the end) for $250,000.

Mariya, having an excellent credit history, is offered the choice between a fixed rate mortgage at 3% and a floating rate mortgage at Prime + 1% ("Prime" is the Canadian version of LIBOR). Johanna is offered the choice between a fixed rate mortgage of 7% and a floating rate mortgage of Prime + 3%.

Assume Mariya chose a fixed rate mortgage and Johanna chose a floating rate mortgage.

Suppose that while Mariya chose a fixed rate mortgage she actually wants to borrow floating and Johanna wants to borrower fixed.

a) What is Mariya's likely view on future interest rates (Prime rates)? [2 marks]

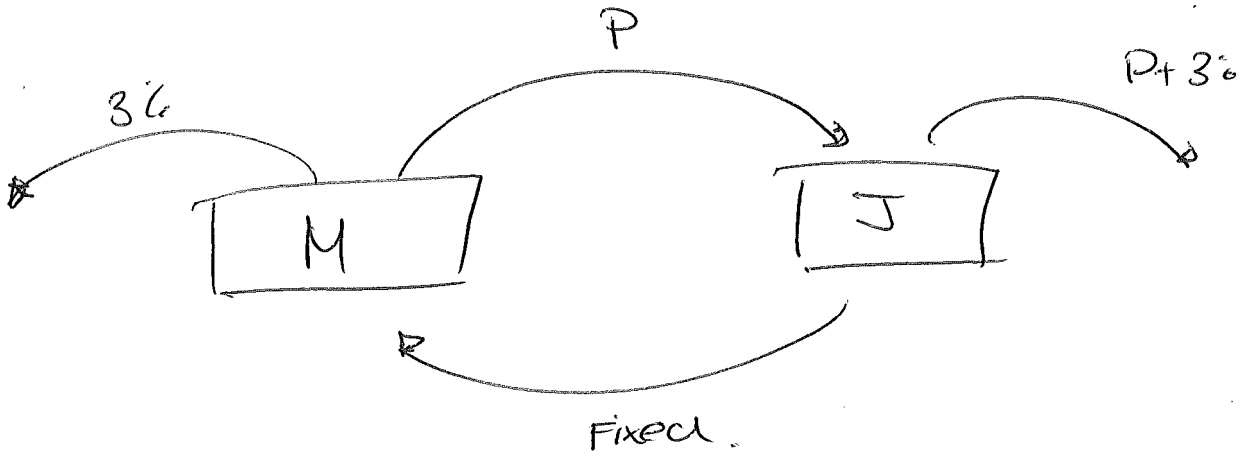
Mariya likely expects future interest rates (prime) to go down or at least remain constant.

b) What is the total net benefit available to Mariya and Johanna if they were to enter into a SWAP? [2 marks]

	Fixed	Floating
Mariya	3%	P+1
Johanna	7%	P+3

$\frac{7 - 3}{2} = 2\%$ net benefit

c) Explain in detail and show graphically how Mariya and Johanna can enter into a SWAP agreement where Mariya gets 60% of the possible benefit and Johanna gets the remainder. [6 marks]



M gets $0.6(2) = 1.2\%$ ∴ will borrow @ $P+1-1.2$
$= P-0.2\%$

M: $-3\% + \text{Fixed} - P = -(P-0.2\%)$

$-3\% + \text{Fixed} - P = -P + 0.2\%$

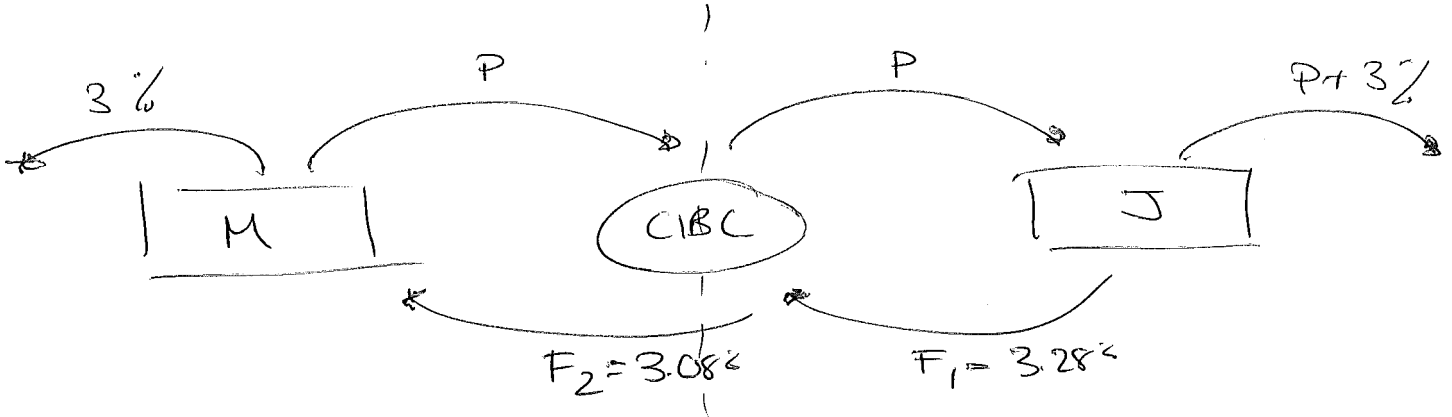
$\text{Fixed} = 3.2\%$

Mariya – borrows from Bank @ 3%
– pays Johanna prime
– gets 3.2% from Johanna.

d) What is this type of swap called and what is the main risk associated with it? [4 marks]

- Plain vanilla interest rate swap
- credit risk = risk of counterparty defaulting on debt payment.

e) Suppose instead that Mariya and Johanna used a financial intermediary (say CIBC) to facilitate their arrangement. In return for providing this service CIBC charges 20bps (0.2%). This fee is taken off the fixed rate portion of the swap (i.e. CIBC receives a fixed rate from party 1, CIBC passes on that fixed rate – 0.2% to party 2).
Explain in detail and show graphically how Mariya and Johanna can enter into swap agreements with CIBC where the final result would see them split the remaining net benefits in the same proportions as previously [remaining net benefits = benefits you calculated in part (b) – 0.2% paid to CIBC]. [6 marks]



net benefit = 2% − 0.2 = 1.8%

0.6 Mariya = 1.08%
0.4 Sharma = 0.72%

∴ Mariya → P + 1 − 1.08 = P − 0.08%

$-3 - P + Fixed_2 = -(P - 0.08)$

$-3 - P + Fixed_2 = -P + 0.08$

$Fixed_2 = +3.08\%$

$Fixed_1 = 3.08 + 0.2 = 3.28\%$

Check

J = 7% before should be 7% − 0.72 = 6.28% using $F_2 = 3.28\%$

J: $-(P+3\%) - 3.28\% + P = ?$

$-P - 3 - 3.28 + P = -6.28\%$ Ok

M: pays CIBC P, gets 3.08 from CIBC and borrows @ 3% from bank

J: pays CIBC 3.28%, gets P from CIBC and borrows @ P+3% from bank.