THAKUR INSTITUTE OF MANAGEMENT STUDIES & RESEARCH

MMS Finance Sem- III

Derivatives and Risk Management

(100 Marks)

INDEX

Semester	:	**III Core**			
Title of the Subject / Course	:	**Derivatives and Risk Management**			
Course Code	:				
Credits	:	**4**	**Duration in Hrs.**	:	**40**

Learning Objectives

1	To understand the concepts related to derivatives markets and gain in-depth knowledge of functioning of derivatives markets.
2	To learn the derivatives pricing and application of strategies for financial risk management.
3	To acquaint learners with the trading, clearing and settlement mechanism in derivatives markets.

Prerequisites if any	Financial management, mathematics and statistics.
Connection with subjects in the current or Future courses	SAPM, Corporate Valuation, Investment Banking, Commodity Markets and International Finance.

Sr. No	Content	Activity	Learning outcomes
1	**Introduction to Derivatives** Economic functions of derivatives, application of derivatives – for risk management and speculation (Leveraging), basic terms and properties of options, futures and forwards.	Classroom discussion	Understanding the basics of derivatives markets
2	**Forwards and Futures** Pricing and valuation - futures and forwards, Risk management using futures, introduction to currencies, commodity and interest rate futures.	Classroom discussion and problem solving	Understanding the process of pricing and valuation of forwards and futures
3	**Mechanics and Properties of Options** Co-relation with underlying assets, boundary conditions for options, Put-call parity and its interpretation, synthetic options and risk free arbitrage.	Classroom discussion and problem solving	Understanding mechanics of options and creating synthetic options
4	**Option Trading Strategies** Directional strategies (Bull call spread, Bear put spread, Ladder, Ratio spreads), Non-directional strategy (butterfly, condor), Volatility based strategies (Straddle, Strangle, Calendar Spread), Hedging strategies (Protective put, covered call).	Classroom discussion/ problem solving/drawing graph and live trading	To understand pay off of each strategy

5	**Introduction to Options Valuation** Binominal Model for valuation, risk neutral probabilities and their interpretation, binomial model's application for American options where the underlying pays the dividend, Black and Scholes Model, log – normal distribution, interpreting the B & S formula, seeing options sensitivity to different variable.	Classroom discussion and problem solving	Valuations of options and creating scenario analysis using Excel
6	**Risk Management** Options sensitivity to the underlying, volatility, strike price, interest rate, time to expiration. Scenario analysis. Risk management using Greeks- Delta, Theta, Vega and Gamma risks of options, understanding options Greeks for various trading strategies (volatility and directional spreads), delta / dynamic hedging and relating the cost of Delta.	Classroom discussion	Understanding risk assessment methods and Options Greeks
9	**Options Volatility** Historical and implied volatility, volatility smile, term structure of volatility, some advance models of volatility estimation, value at risk, historical simulation, model building approach, stress testing and back testing.	Classroom discussion and problem solving	Understanding volatility and its relation to demand and supply of options
10	**Trading, Clearing and Settlement in Derivatives Markets** Meaning and concept, SEBI guidelines, Trading mechanism, learning mechanism- role of NSCCL, settlement mechanism, types of settlement, accounting and taxation aspect of derivatives trade.	Classroom discussion	Understanding the process of trading, clearing and settlement

Text Books

1	Redhead Keith, Financial Derivatives - An introduction to futures, forwards, options and swaps
2	Yadav Surendra S, Jain PK, Foreign exchange markets: understanding derivatives and other instruments
3	Hull John C. - Options, Futures and other derivatives

Reference Books

1	Bhaskar P Vijaya, Mahapatra B - Derivatives simplified: An introduction to risk management
2	Bhalla V K - Financial derivatives (risk management)

Assessment

Internal	40%
Semester-end	60%

Academic Year 2019-20

Program MMS

Specialization Finance

Semester III

Course Derivatives and Risk Management

Course Objectives

- To understand the concepts of Derivative markets and gain in-depth knowledge of functioning of derivative market
- To learn derivatives pricing and strategies of risk management
- To understand the trading and settlement of derivatives market.

Program Outcomes

1. Apply knowledge of management theories, practices & technological skills to solve business problems
2. Ability to understand, analyze critically and communicate global, economic, legal and ethical aspects of business for decision making.
3. Foster development & team spirit, analytical & critical thinking
4. To develop value based leadership.

Course Outcome

- Understanding the basics of derivatives markets
- Understanding the process of pricing and valuation of forwards and futures
- Understanding mechanics of options and creating synthetic options
- To understand pay off of each strategy
- Valuations of options and creating scenario analysis using Excel

CO-PO MAPPING				
	PO 1	PO 2	PO 3	PO 4
CO 1	S	S	S	M
CO2	S	S	M	S
CO 3	S	S	S	M
CO 4	M	S	S	M
CO 5	S	M	M	S

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SEMESTER PLAN - MMS(2019-2021)

REVISION: B

Program: MMS
Course: Derivatives and Risk Management
Semester : III

Duration from: July-Nov 2020

Evaluation Criteria	Marks
Attendance & Participation	10
Mid Term	10
Project on future trading strategy	10
Presentation	10
Semester End Exam	60
Total	**100**

Session No.	Topics to be Covered: Session Details (session wise details to be mentioned)	Planned Date	Implemented Date	K/S/A	Pedagogy/Methodology adopted to execute K/S/A	*e-learning tools used*	Faculty's Signature	HOD / HOI Signature
1	**Awareness Session on PO, CO, Vision, Mission, PEOs and disseminate Semester Plan**	20.07.2020	20.07.2020	K	Interactive Session	Ppt		
2	Introduction to Derivatives	22.07.2020	22.07.2020	K,S	Concept clarity	ppt		
3	Application of Derivatives – for Risk Management & Speculation (Leveraging)	23.07.2020	23.07.2020	K,S	Classroom Lecture	ppt		
4	Basic Terms & properties of Options / Futures / Forwards	24.07.2020	24.07.2020	K	Classroom Lecture	ppt		
5	Futures & Forwards differences	27.07.2020	27-07-2020	K,S,A	Classroom Lecture	ppt		
6	Pricing & Valuation of Futures/Forwards · Risk Management using Futures	29.07.2020	29-07-2020	K,S,A	Classroom Lecture& practical problems	Excel& Online Calculators		
7	Pricing & Valuation of Futures/Forwards · Risk Management using Futures	30.07.2020	30-07-2020	K,S,A	Classroom Lecture & practical problems	excel		

8	Basis Risk · Introduction to Currencies /Commodity/Interest rate futures	31.07.2020	31.07.2020	K	Classroom Lecture & practical problems	excel		
9	Basis Risk · Introduction to Currencies /Commodity/Interest rate futures	03.08.2020	03.08.2020	K,S	Concept clarity			
10	Basis Risk · Introduction to Currencies /Commodity/Interest rate futures	05.08.2020	05.08.200	K,S	Concept clarity			
11	**CCE1:Project on future trading**	06.08.2020	06.08.2020	K,S,A	Classroom Lecture & practical problems	NSE Portal		
12	Mechanics & Properties of Options	17.08.2020	17.08.2020	K	Classroom Lecture & practical problems	NSE Portal		
13	Boundary Conditions for options · Put-call parity and its interpretation	20.08.2020	21.08.2020	K	Classroom Lecture	ppt		
14	Boundary Conditions for options · Put-call parity and its interpretation	24.08.2020	24.08.2020	K	Classroom Lecture& practical problems	NSE Portal		
15	Options sensitivity to the Underlying: Volatility, Strike price, Interest rate, Time to expiration	26.08.2020	26.08.2020	K	Classroom Lecture	ppt		
16	Options sensitivity to the Underlying: Volatility, Strike price, Interest rate, Time to expiration	27.08.2020	27.08.2020	K,S	Classroom Lecture	NSE portal		
17	**Mid – Term Exam**	16.09.2020	03.10.2020	K	EXAM			
18	Basic Option strategies Directional Strategies (A Call/Put/Bull Call/Spread	07.09.2020	07.09.2020	K,S,A	Classroom Lecture & practical problems	NSE Portal		
19	Directional Strategies (A Call/Put/Bull Call/Spread	09.09.2020	09.09.2020	K,S,A	Classroom Lecture & practical problems	NSE Portal		
20	Volatility based strategies (Straddle/Strangle /Calendar Spread)	14.09.2020	13.09.2020	K,S,A	Classroom Lecture & practical problems	NSE Portal		
21	**Remedial Session for week students**	20.09.2020	18.10.2020	K	Problem Solving and Classroom Lecture			
22	Protective Put · Covered Call Introduction to Option Valuation · Binomial Model for Valuation	21.09.2020	21.09.2020	K,S,A	Classroom Lecture & practical problems	NSE Portal		
23	Protective Put · Covered Call Introduction to Option Valuation · Binomial Model for Valuation	23.09.2020	23.09.2020	K,S	Classroom Lecture & practical problems	NSE Portal		

24	Introduction to Option Valuation · Binomial Model for Valuation	28.09.2020	28.09.2020	K,S	Classroom Lecture & practical problems	NSE Portal	
25	Black & Scholes Model	30.09.2020	30.09.2020	K	Classroom Lecture & practical problems	Excel	
26	Black & Scholes Model	07.10.2020	07.10.2020	K	Classroom Lecture & practical problems	Excel	
27	Understanding Options Greeks · Delta/Theta/Vega & Gamma risks of options	16.10.2020	16.10.2020	K,S	Classroom Lecture	NSE Portal	
28	Options Volatility · Historical & Implied Volatility · Volatility Smile ·	19.10.2020	18.10.2020	K	Classroom Lecture	NSE Portal	
29	Term Structure of Volatility · Some advance Models of volatility estimation · Value At Risk · Historical Simulation · Model Building Approach · Stress Testing & Back Testing. Trading and Settlement of Derivatives Market	27.10.2020	27.10.2020	K	Classroom Lecture	ppt	
30	**CCE2: Student Presentation**	04.11.2020	4.11.2020	K,S,A	Student Presentation	ppt	
31	Swaps- Interest rate Swap	09.11.2020	9.11.2020	K,S,A	Student Discussion		
32	Currency Swap	11.11.2020	11.11.2020	K	Classroom Lecture	ppt	
33	**Gap Identified if any -** **Swaps Interest rate and currency Swap**	14.11.2020	14.11.2020	K	Classroom Lecture & practical problems	Excel	

Note: Please include experiential learning, participative learning and problem solving methodologies adopted

Sr. No	Books referred as teaching aid	Dissemination of Knowledge to students
A.	Reference Books could taken from books given to students as book bank (Sem 1,2 &3)	Yes
1	Options, Future & Other Derivatives – by John. C.Hull	Yes
2	Applied Derivatives – Richard .J. Rendleman, Jr	Yes
3	Option Volatility & Pricing – Sheldon Naten Berg	Yes
B.	Suggested Videos ,Case studies, Articles ,HBR Articles	Yes
1	Youtube: Introduction to forwards and futures, Swaps, Put-call Parity https://www.youtube.com/watch?v=udmboMFp_14	Yes

	https://www.youtube.com/watch?v=JKdcips9vPU	Yes
2	Case Study: Subprime mortgage 2008 crises	Yes
3	HBR Article: Derivatives instrument	Yes

Dissemination of KSA (Knowledge, Skill and Attitude)

Knowledge	Skill	Attitude
1.Introduction to types of derivatives contracts	1.Articulation	1.Growth oriented
2.Pricing of Forwards and futures contract	2.Critical Thinking	2.Descipline
3.options trading strategies	3.Ability to analyse	3.Focus
4.option pricing	4. Time Management	4. Resilient
5.option Greeks	5. Excel proficiency	
6. volatility	6. Decision Making	
7. Swaps		
We have acquired and developed the above mentioned Knowledge, Skills and Attitude while undergoing this course, required to attain the programme outcomes and be industry ready.		
Signature of Student representative		

Syllabus Completion: Confirmation by Student Representative

Sr. No.	Particulars	Yes / No	Name of Student Representative	Signature & Date
1	**40% Syllabus Completion Before Mid-Term Examination**	Yes	Saurabh Rai	SRai
2	**100% Syllabus Completion Before Semester End Examination**	Yes	Saurabh Rai	SRai

Remark by HOD		**Signature of HOD**	
Remark by HOI		**Signature of HOI**	

INTERNAL ASSESSMENT RECORD

Programme : MMS **Semester : III**

Course : Derivatives and Risk Management A.Y (20-21)

Roll No	Attendance & Participation [10]	Periodical Test (Mid Term) [10]	Project [10]	Presentation [10]	Internal Total (Max/Min) [40/20]
CO	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3	CO1, CO2	CO1, CO2, CO3, CO4, CO5	
M1921001	7	7	7	6	27
M1921003	8	8	7	7	30
M1921004	8	7	7	7	29
M1921008	8	9	8	8	33
M1921010	7	8	7	6	28
M1921011	7	9	7	7	30
M1921013	7	8	7	7	29
M1921014	7	10	7	7	31
M1921015	5	9	7	7	28
M1921016	8	9	8	8	33
M1921018	6	5	6	6	23
M1921020	7	7	6	6	26
M1921021	8	10	9	9	36
M1921022	6	6	6	6	24
M1921023	8	8	7	7	30
M1921024	9	8	8	8	33
M1921025	7	8	7	7	29
M1921027	7	6	7	7	27
M1921029	7	10	7	7	31
M1921031	6	7	8	7	28
M1921033	6	8	6	6	26
M1921035	7	8	7	7	29
M1921037	7	7	7	7	28
M1921044	7	5	7	7	26
M1921046	7	7	8	8	30
M1921047	7	6	7	7	27
M1921048	7	9	7	7	30
M1921049	8	9	7	7	31
M1921050	8	7	8	8	31
M1921051	7	6	7	7	27

Examiner Name :
Dr. Charu Upadhyaya

Examiner's Sign

Date : 16/12/2020

Controller of Examinat

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INTERNAL ASSESSMENT RECORD

Programme : MMS **Semester : III**

Course : Derivatives and Risk Management

Roll No	Attendance & Participation [10]	Periodical Test (Mid Term) [10]	Project [10]	Presentation [10]	Internal Total (Max/Min) [40/20]
M1921053	7	8	8	7	30
M1921054	7	9	7	7	30
M1921060	7	6	8	7	28
M1921062	8	6	7	7	28
M1921065	8	7	7	7	29
M1921066	7	7	8	7	29
M1921067	6	9	7	7	29
M1921068	7	7	7	7	28
M1921069	9	8	9	8	34
M1921070	7	8	7	7	29
M1921071	7	6	8	8	29
M1921072	9	9	8	8	34
M1921074	7	8	7	7	29
M1921075	7	6	7	7	27
M1921078	5	6	5	5	21
M1921082	6	9	7	6	28
M1921083	6	7	8	7	28
M1921084	6	8	7	7	28
M1921085	5	6	5	5	21
M1921087	7	5	7	7	26
M1921090	8	6	8	8	30
M1921091	7	10	7	7	31
M1921101	7	9	7	7	30
M1921102	8	9	7	7	31
M1921105	7	6	7	7	27
M1921106	6	6	6	6	24
M1921107	7	7	7	7	28
M1921109	5	8	5	5	23
M1921111	8	9	8	8	33
M1921112	6	8	7	7	28
M1921114	9	7	7	7	30
M1921115	5	6	7	7	25
M1921116	9	9	8	8	34
M1921117	6	7	7	7	27

Examiner Name :
Dr. Charu Upadhyaya

Examiner's Sign

Date : 16/12/2020

Controller of Examination

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INTERNAL ASSESSMENT RECORD

Programme : MMS **Semester : III**

Course : Derivatives and Risk Management

Roll No	Attendance & Participation [10]	Periodical Test (Mid Term) [10]	Project [10]	Presentation [10]	Internal Total (Max/Min) [40/20]
M1921118	7	8	8	7	30
M1921119	9	9	8	8	34
M1921120	7	10	7	7	31

Thakur Institute of Management Studies & Research
T.I.M.S.R.
Kandivali (E)
Mumbai-101.

Examiner Name :
Dr. Charu Upadhyaya

Examiner's Sign

Date : 16/12/2020

Controller of Examination

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Mapping of Course Outcomes with Question Papers

Academic Year	2020-21
Batch	2019-21
Program	MMS
Specialization	Finance
Semester	III
Course	**Derivatives and Risk Management**
Faculty	Dr.Charu Upadhyaya

Course Outcome

1. Understanding the basics of derivatives markets
2. Understanding the process of pricing and valuation of forwards and futures
3. Understanding mechanics of options and creating synthetic options
4. To understand pay off of each strategy
5. Valuations of options and creating scenario analysis using Excel

Question Number	CO 1	CO 2	CO 3	CO 4	CO 5
Q1 a	*	*			
Q1 b	*	*			
Q1 c	*	*			
Q2 a		*			
Q2 b			*		
Q3 a			*	*	
Q3 b			*	*	
Q4 a			*	*	
Q4 b			*	*	

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Mapping of MCQs with Course Outcome

Programme	**MMS**
Semester	**III**
Batch	**2020-22**
Academic Year	**2021-22**
Course	**Derivatives and Risk Management**
Specialization	**III**
Name of Faculty	**Dr.Charu Upadhyaya**

Course Outcome

CO 1	Understanding the basics of derivatives markets
CO 2	Understanding the process of pricing and valuation of forwards and futures
CO 3	Understanding mechanics of options and creating synthetic options
CO 4	To understand pay off of each strategy
CO 5	Valuations of options and creating scenario analysis using Excel

Mid Term Examination

Mode of Exam	Type of Questions	Syllabus covered for Mid Term Exam	Number of Questions Covered	Number of Questions Assigned	Syllabus covered for Mid Term Exam	CO Mapped
Online Mode	**Objective**	**40 %**	**36**	**20**	**Module 1**	**CO 1**
					Module 2	**CO 2**
					Module 3	**CO 3**

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Semester End Examination

Mode of Exam	Type of Questions	Syllabus covered for Mid Term Exam	Number of Questions Covered	Number of Questions Assigned	Syllabus covered for Mid Term Exam	CO Mapped
Online Mode	Objective	100 %	40	40	Module 1	CO 1
					Module 2	CO 2
					Module 3	CO 3
					Module 4	CO 5
					Module 5	CO 4
					Module 6	CO 3
					Module 7	CO 3
					Module 8	CO 1

Dr. Charu Upadhyaya

Name of Faculty and Sign

Thakur Institute of Management Studies & Research
T.I.M.S.R.
Kandivali (E)
Mumbai-101.

TIMSR

Program : MMS(F) **Semester : III** **Seat No:_____**

Duration : 2 hours **Month & Year : November2020**

Course: Derivatives and Risk Management **Marks: 40**

Co Mapping (CO1, CO2, CO3, CO4)

Instructions:-
Attempt any two from the following caselets. Each question carries 20 marks.

Q1 Consider the following information related to

Following information is available on HUL
Current Spot Price: 1260
Lot Size: 700

Day	Settlement Price
1	1263
2	1281
3	1301
4	1270
5	1250
6.	1290

The investor must deposit margin to enter the future contract.
Consider the following scenarios:

A Evaluate the position of a trader who has gone 3 long HUL futures (5 marks)

B Evaluate the position of a trader who has gone 2 short HUL futures (10 marks)

C Assume the position open on last day. Discuss the components of determination of future prices. (5marks)

Calculate the theoretical future price on HUL, if the time to

Q2	A	maturity is 1 month assuming no dividends are to be paid and risk-free rate of interest is 3.6%. Explain cash and carry arbitrage. (10 marks)	
	B	An investor who wishes to set up a trade is facing a dilemma as the market turns out to be highly volatile. Suggest and compare appropriate strategies for the investor where he can benefit considering the given market scenario. Following is the data available	

Bank Nifty.	SPOT	8000
	Call premium @ 8000EP	257
	Put premium @8000EP	136
	Call premium @8200 EP	145
	Put premium @ 7800 EP	140

Q3	A	Discuss the role of options Greek in measuring the sensitivity of options pricing. Which of the Greeks has affected the option value given the global pandemic? Formulate two strategies with the given data which the investor can adopt for the given scenario assuming Bank Nifty to be at following levels at expiry 7600,7700,7800,7900,8000,8100,8200,8300,8400 and 8500 (10 marks)	
	B	Compare the payoff of both the strategies in terms of net position, payoff matrix diagram and break even point. Elaborate from the above the benefits and limitations of each strategy.(10 marks)	

In the period of current market turmoil companies are finding alternative ways to manage risk or make money. Many foreign

Q4

lenders have been eager to acquire US dollars. These companies have been entering currency swap agreement with American companies. One such case is of a Australian company GM inc.wants to secure loan in US market and at the same time a US based company QA intl wants to finance a Australian project. Both the companies face the following borrowing term:

	USD RATE	AUD RATE
QA intl	6.0%	13.6%
GM inc	8.0%	14%

A financial institution proposes the following swap condition:
QA pays 12.8% AUD to the financial institution in return for 6% USD
GM pays 7.5% USD to the financial institution in return for 14.0% AUD.

A What are the criteria of entering into a swap agreement? Can the two companies enter into a SWAP agreement based on the above data. (10 marks)

B Evaluate the proposal of the financial institution and calculate the net benefit to each party from this arrangement. What are the different types of currency swap agreement that a party can enter into and which one of the types is discussed in this case? (10 marks)

Q.1 (A)

⇒

position	Lot Size	Price	CV	Span (10%.)	Exposure (6%.)	Total (Initial)
3 Lot Long on HUL fut.	2100	1260	2646000	264600	158760	423360

Day	Settlement Price	Daily P&L	A/c Balance	Margin Call	Daily	Cum. P&L
0	1260		423360			
1	1263	3	429660		6300	
2	1281	18	467460		37800	44100
3	1301	20	509460		42000	86100
4	1270	-31	444360		-65100	21000
5	1250	-20	402360		-42000	-21000
6	1290	40	486360		84000	63000

(B) ⇒

Position	Lot size	Price	CV	Span (10%)	Exposure (6%)	Total (Initial)
2 Lot Short on HUL fut.	1400	1260	1764000	176400	105840	282240

Day	Settlement Price	Daily P&L	A/c Balance	Margin Call	Daily	Cum P&L
0	1260		282240			
1	1263	-3	278040		-4200	
2	1281	-18	252840		-25200	-29400
3	1301	-20	224840		-28000	-57400
4	1270	31	268240		43400	-14000
5	1250	20	296240		28000	14000
6	1290	-40	240240		-56000	-42000

A/c Balance never gone below the SPAN So, no need to maintain the margin

Q.4 (A) ⇒ Australian company GM inc. wants to secure loan in U.S. Market and at the same time a U.S. Based company QA intl wants to finance a Australian project. Both the companies faces the following borrowing term:

	USD Rate	AUD Rate
QA intl	6.0 %	13.6 %
GM inc.	8.0 %	14 %

In the above table, we can see that QA intl is paying 2 % less to borrow in USD ~~than GM inc.~~ and 0.4 % less to borrow in AUD than GM inc.

So, ~~QA intl~~ we can see that QA intl has an absolute advantage i.e QA intl is more credit worthy.

whereas,

GM inc is paying 2 % more to borrow in USD while paying only 0.4 % more to borrow in AUD than QA intl. So, GM inc has a comparative advantage in the AUD rate Market.

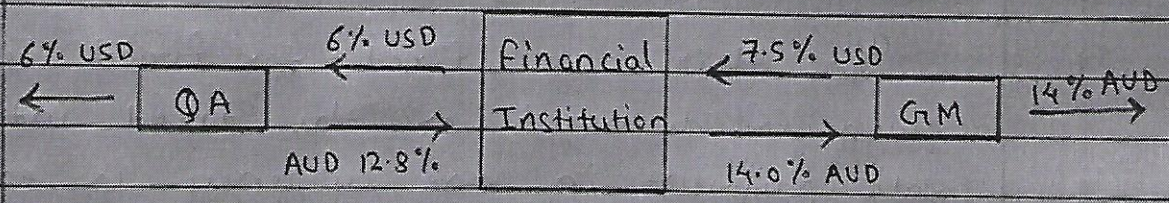
Similarly, QA intl also has an comparative advantage in the USD rate market.

So, the two companies can enter into the SWAP agreement based on their comparative advantage so that there will be gain for both parties

(B) The financial institution purposes the following SWAP:

QA pays 12.8% in AUD and recieves 6% in USD

GM Pays 7.5% in USD and recieves 14.0% in AUD



SWAP + Domestic borrowing produces the following cost of borrowing:

QA intl:

6% in USD − 6% in USD + 12.8% in AUD

= 12.8% in AUD < 13.6%

So, Benefit of QA intl

= 13.6% − 12.8%

= 0.8%

GM inc :

14% in AUD - 14% in AUD + 7.5% in USD

= 7.5% in USD < 8%

So, Benefit of GMC inc

= 8 - 7.5

= 0.5 %

There are two main type of currency swaps:

① fixed-for-fixed currency swap

② fixed-for-floating currency swap.

The party can enter into both the type of swaps

In this case, fixed-for-fixed currency swap is discussed as the fixed interest rate payment in one currency is exchanged for fixed ~~pay~~ interest payment in another

——— o ———

Thakur Institute of Management Studies and Research

Course: Derivatives and Risk Management Batch: MMS Sem III(19-21)

Remedial Session on 18.10.2020

Serial No.	Roll No	Full Name	Remedial Session
1	M1921018	Nishant Chauhan	Concept clarity & Problem Solving on Forwards and Futures Contracts
2	M1921051	Milind Mehta	
3	M1921060	Kushal Pagdhare	
4	M1921062	Shruti Pandey	
5	M1921105	Nimesh Tamka	

Thakur Institute of Management Studies

Exam :Derivatives and Risk Management_MMS_F_Mid term &

List of Slow learner

Serial No.	RollNo	FullName	TotalScore
1	M1921001	Geet Agrawal	14
2	M1921003	Mayur Agrawal	15
3	M1921004	Meetesh Agrawal	14
4	M1921008	Mangesh Bandarkar	17
5	M1921010	Anish Belekar	15
6	M1921011	Priyank Bhandari	18
7	M1921013	Sneha Carval	16
8	M1921014	Asha Chaganti	20
9	M1921015	Prasad Chandak	18
10	M1921016	Hetal Chandapa	18
11	M1921018	Nishant Chauhan	9
12	M1921020	Rakesh Chipte	13
13	M1921021	Gauri Churi	19
14	M1921022	Divya Dabi	12
15	M1921023	Darshita Daliya	15
16	M1921024	Jhanvi Darji	15
17	M1921025	Divya Dasouni	15
18	M1921027	Regina D'silva	12
19	M1921029	Vaibhav Dwivedi	19
20	M1921031	Krishna Goenka	14
21	M1921033	Anup Gupta	16
22	M1921035	VIBHUTI GUPTA	15
23	M1921037	Aanchal Jaluka	14
24	M1921044	Shubham Kolge	10
25	M1921046	Devang Kukreti	14
26	M1921047	Vikrant Kupavadekar	12
27	M1921048	Ashish Loke	17
28	M1921049	ABHISHEK MANJREKAR	17
29	M1921050	Aarzoo Mehta	14
30	M1921051	Milind Mehta	5
31	M1921053	Akash Mishra	16
32	M1921054	Kunal Mistry	17
33	M1921060	Kushal Pagdhare	Absent
34	M1921062	Shruti Pandey	8
35	M1921065	Harsh Patel	13
36	M1921066	Vrushik Patel	13
37	M1921067	Akshay Pathak	17

38	M1921068	Smruti Patil	13
39	M1921069	Smith Pereira	15
40	M1921070	Sakshi Prahladka	16
41	M1921071	Zalak Prajapati	11
42	M1921072	Saurabh Rai	18
43	M1921074	Keshav Rander	15
44	M1921075	Ketan Rane	11
45	M1921078	Onkar Salvi	11
46	M1921082	Ayesha Shaikh	17
47	M1921083	Aditya Shanbuag	14
48	M1921084	Abhishek Sharma	15
49	M1921085	Harsh Sharma	12
50	M1921087	Naveen Kumar Sharma	10
51	M1921090	Kamal Shetty	12
52	M1921091	Mihir Shetye	19
53	M1921101	Vikas Singh	17
54	M1921102	Yachana Singh	17
55	M1921105	Nimesh Tamka	Absent
56	M1921106	Sahil Tanwar	11
57	M1921107	Shivani Tawde	13
58	M1921109	Devanand VERMA	16
59	M1921111	Kiran Yadav	18
60	M1921112	Rahul Yadav	16
61	M1921114	Priyanka Salunkhe	13
62	M1921115	Kartikey Rai	12
63	M1921116	Akash Singh	17
64	M1921117	Vishal Thakur	14
65	M1921118	Danish Kapadia	15
66	M1921119	Shradha Agarwal	17
67	M1921120	Yash Lad	19

Total No. of Records = 67

TIMSR
INTERNAL ASSESSMENT RECORD

Programme : MMS **Semester : III** **Specialisation : FIN**

Course : Derivatives and Risk Management **Year : 2020-21**

Roll No	Attendance & Participation [10]	Periodical Test (Mid Term) [10]	Project [10]	Presentation [10]	Internal Total (Max/Min) [40/20]	MCQ [10/20]	Case Study [20/40]	Semester End Exam (Max/Min) [60/30]	Total Marks [100]
CO	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3	CO1, CO2	CO1, CO2, CO3, CO4, CO5				CO1, CO2, CO3, CO4, CO5	
M1921001	7	7	7	6	27	18	30	48	75
M1921003	8	8	7	7	30	8	33	41	71
M1921004	8	7	7	7	29	15	30	45	74
M1921008	8	9	8	8	33	16	29	45	80
M1921010	7	8	7	6	28	13	31	44	72
M1921011	7	9	7	7	30	13	33	46	76
M1921013	7	8	7	7	29	18	31	49	80
M1921014	7	10	7	7	31	12	31	43	74
M1921015	5	9	7	7	28	15	30	45	73
M1921016	8	9	8	8	33	13	33	46	80
M1921018	6	5	6	6	23	7	33	40	63
M1921020	7	7	6	6	26	13	29	42	68
M1921021	8	10	9	9	36	11	32	43	80
M1921022	6	6	6	6	24	14	31	45	69
M1921023	8	8	7	7	30	13	32	45	75
M1921024	9	8	8	8	33	12	32	44	80
M1921025	7	8	7	7	29	18	32	50	80
M1921027	7	6	7	7	27	11	34	45	72
M1921029	7	10	7	7	31	14	32	46	77
M1921031	6	7	8	7	28	16	32	48	76
M1921033	6	8	6	6	26	15	28	43	69
M1921035	7	8	7	7	29	15	31	46	75
M1921037	7	7	7	7	28	17	29	46	74
M1921044	7	5	7	7	26	10	29	39	65
M1921046	7	7	8	8	30	13	29	42	72
M1921047	7	6	7	7	27	17	28	45	72
M1921048	7	9	7	7	30	18	32	50	80
M1921049	8	9	7	7	31	15	32	47	78
M1921050	8	7	8	8	31	13	32	45	76
M1921051	7	6	7	7	27	17	31	48	75

Examiner Name :
Dr. Charu Upadhyaya

Institute of Management Studies & Research Thakur T.I.M.S.R. Kandivali (E) Mumbai-101.

Examiner's Sign

Date : 16/12/2020

Controller of Examinations

TIMSR/FRM/IP-04-06-B

TIMSR

REVISION: A

INTERNAL ASSESSMENT RECORD

Programme : MMS **Semester : III** **Specialisation : FIN**

Course : Derivatives and Risk Management **Year : 2020-21**

Roll No	Attendance & Participation [10]	Periodical Test (Mid Term) [10]	Project [10]	Presentation [10]	Internal Total (Max/Min) [40/20]	MCQ [10/20]	Case Study [20/40]	Semester End Exam (Max/Min) [60/30]	Total Marks [100]
M1921053	7	8	8	7	**30**	18	30	**48**	80
M1921054	7	9	7	7	**30**	10	31	**41**	71
M1921060	7	6	8	7	**28**	15	32	**47**	75
M1921062	8	6	7	7	**28**	14	32	**46**	74
M1921065	8	7	7	7	**29**	16	32	**48**	80
M1921066	7	7	8	7	**29**	18	30	**48**	80
M1921067	6	9	7	7	**29**	16	29	**45**	74
M1921068	7	7	7	7	**28**	12	31	**43**	71
M1921069	9	8	9	8	**34**	12	34	**46**	80
M1921070	7	8	7	7	**29**	17	35	**52**	81
M1921071	7	6	8	8	**29**	11	30	**41**	70
M1921072	9	9	8	8	**34**	11	31	**42**	76
M1921074	7	8	7	7	**29**	16	30	**46**	75
M1921075	7	6	7	7	**27**	16	28	**44**	71
M1921078	5	6	5	5	**21**	16	29	**45**	66
M1921082	6	9	7	6	**28**	14	30	**44**	72
M1921083	6	7	8	7	**28**	17	28	**45**	73
M1921084	6	8	7	7	**28**	12	29	**41**	69
M1921085	5	6	5	5	**21**	17	26	**43**	64
M1921087	7	5	7	7	**26**	15	30	**45**	71
M1921090	8	6	8	8	**30**	17	32	**49**	79
M1921091	7	10	7	7	**31**	17	28	**45**	76
M1921101	7	9	7	7	**30**	15	29	**44**	74
M1921102	8	9	7	7	**31**	14	32	**46**	80
M1921105	7	6	7	7	**27**	16	28	**44**	71
M1921106	6	6	6	6	**24**	18	30	**48**	72
M1921107	7	7	7	7	**28**	14	30	**44**	72
M1921109	5	8	5	5	**23**	11	28	**39**	62
M1921111	8	9	8	8	**33**	10	34	**44**	80
M1921112	6	8	7	7	**28**	13	34	**47**	75
M1921114	9	7	7	7	**30**	13	31	**44**	74
M1921115	5	6	7	7	**25**	15	29	**44**	69
M1921116	9	9	8	8	**34**	15	35	**50**	84
M1921117	6	7	7	7	**27**	16	29	**45**	72

Examiner Name :
Dr. Charu Upadhyaya

Examiner's Sign

Date : 16/12/2020

Controller of Examination

TIMSR
INTERNAL ASSESSMENT RECORD

Programme : MMS **Semester : III** **Specialisation : FIN**

Course : Derivatives and Risk Management **Year : 2020-21**

Roll No	Attendance & Participation [10]	Periodical Test (Mid Term) [10]	Project [10]	Presentation [10]	Internal Total (Max/Min) [40/20]	MCQ [10/20]	Case Study [20/40]	Semester End Exam (Max/Min) [60/30]	Total Marks [100]
M1921118	7	8	8	7	30	19	33	52	82
M1921119	9	9	8	8	34	11	29	40	74
M1921120	7	10	7	7	31	17	28	45	76

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Examiner Name :
Dr. Charu Upadhyaya

Examiner's Sign

Date : 16/12/2020

Controller of Examination

Academic Year 2019-20 (20-21) **Program Outcomes - MMS**
Program MMS
Specialization Finance Batch (19-21)
Semester III
Course Derivatives and Risk Management
Faculty (Who is calculating)

Course Outcome -

Note

Table - 1 (CO-PO Mapping)					
	PO 1	**PO 2**	**PO 3**	**PO 4**	
CO 1	S	S	S	M	
CO 2	S	S	M	S	
CO 3	S	S	S	M	
CO 4	M	S	S	M	
CO 5	S	M	M	S	

Table - 2					
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**
CO 1	3.00	3.00	3.00	2.00	
CO 2	3.00	3.00	2.00	3.00	
CO 3	3.00	3.00	3.00	2.00	
CO 4	2.00	3.00	3.00	2.00	
CO 5	3.00	2.00	2.00	3.00	
Average	**2.80**	**2.80**	**2.60**	**2.40**	

Table - A (Mapping CCEs with Cos)					
	Course Outcome (CO)				
CCEs	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Attendance and Participation	*	*	*	*	*
Presentation	*	*	*	*	*
Project	*	*	*	*	*
Mid Term	*	*	*	*	*
Semester End Exam	*	*	*	*	*

Table - B					
Course Outcome (CO)					
CCEs	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Attendance and Participation	2.00	2.00	2.00	2.00	2.00
Presentation	3.00	3.00	3.00	3.00	3.00
Project	3.00	3.00	3.00	3.00	3.00
Mid Term	3.00	3.00	3.00	3.00	3.00
Semester End Exam	3.00	3.00	3.00	3.00	3.00
Average	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**

Table - 3 (Product of CO & PO)					
CO's	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**
CO 1	7.84	7.84	7.28	6.72	
CO 2	7.84	7.84	7.28	6.72	
CO 3	7.84	7.84	7.28	6.72	
CO 4	7.84	7.84	7.28	6.72	
CO 5	7.84	7.84	7.28	6.72	
Average	**7.84**	**7.84**	**7.28**	**6.72**	
Attainment %	**0.87**	**0.87**	**0.81**	**0.75**	**0.00**
Normalization	**2.61**	**2.61**	**2.43**	**2.24**	**0.00**

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Fax : 2887 3869
Email : timsr@thakureducation.org
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Mapping of Course Outcomes with Continuous Concurrent Evaluation

Academic Year	2020-21
Batch	2019-21
Program	MMS
Specialization	Finance
Semester	III
Course	**Derivatives and Risk Management**
Faculty	Dr.Charu Upadhyaya

Course Outcome

1. Understanding the basics of derivatives markets
2. Understanding the process of pricing and valuation of forwards and futures
3. Understanding mechanics of options and creating synthetic options
4. To understand pay off of each strategy
5. Valuations of options and creating scenario analysis using Excel

Component for CCE	Topic	Description	Course Outcome
Project	Future trading	1. Create a Future portfolio for Long and Short position for any U.A for any size and maturity of the contract. 2. Estimate the margin requirements for the positions taken for both long and short(refer to online calculators/ lay down assumptions) 3. prepare mark to market account for both long and short positions for 25 days on a regular basis. 4.Assuming the positions to be open on the last day estimate the profit/loss on both the trades. 5. submit the excel file as a part	CO1, CO2

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Mumbai-101.

		of project along-with the subsequent information. a) why a particular underlying is selected for both long and short position. b) what factors have contributed in the price movement of the underlying for the said period. c) how far has the market view in line with your(traders) view. d) at which point would you have closed your position before the maturity of the contract and why? e) what is the effect of lot size in future trading? (Point 5 a-e can be submitted as a separate word/excel sub sheet document) 6. Make graphical representation for both long and short position and explain the same. 7. Write the conclusion for the positions taken.	
Mid Term	Covered 50% of Syllabus	Question paper based written exam	CO1, CO2, CO3
Presentation	Presentation on	Students were are to formulate a group and work on a topic of their choice. They were further asked to give a presentation on the same.	CO4,CO5

	Course Outcome (CO)				
CCEs	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Attendance & Participation	*	*	*	*	*
Periodical Test	*	*	*		
Project	*	*			
Presentation	*	*	*	*	*
Semester End Exam	*	*	*	*	*

Program: MMS **Sem: III** **Batch: 2019-2021**

Course Name: Derivatives and Risk Management **Faculty: Dr. Charu Upadhyaya**

Concurrent Evaluation: Project (CCE 1)

Objective

- Understanding the process of pricing and valuation of forwards and futures
- To understand pay off of each strategy.

Description

Following are the project requirements:

1. Create a Future portfolio for Long and Short position for any U.A for any size and maturity of the contract.

2. Estimate the margin requirements for the positions taken for both long and short(refer to online calculators/ lay down assumptions)

3. Prepare mark to market account for both long and short positions for 25 days on a regular basis.

4. Assuming the positions to be open on the last day estimate the profit/loss on both the trades.

5. Submit the excel file as a part of project along-with the subsequent information.

a) why a particular underlying is selected for both long and short position.
b) what factors have contributed in the price movement of the underlying for the said period.
c) how far has the market view in line with your(traders) view.
d) at which point would you have closed your position before the maturity of the contract and why?
e) what is the effect of lot size in future trading? (Point 5 a-e can be submitted as a separate word/excel sub sheet document)

6. Make graphical representation for both long and short position and explain the same.

7. Write the conclusion for the positions taken.

Learning Outcome

- Apply knowledge of concepts, practices & technological skills to solve business problems.
- Apply analytical and critical thinking.

Following are the project requirements:

1. Create a Future portfolio for Long and Short position for any U.A for any size and maturity of the contract.

2. Estimate the margin requirements for the positions taken for both long and short(refer to online calculators/ lay down assumptions)

3. prepare mark to market account for both long and short positions for 25 days on a regular basis.

4.Assuming the positions to be open on the last day estimate the profit/loss on both the trades.

5. submit the excel file as a part of project along-with the subsequent information.

a. why a particular underlying is selected for both long and short position.

b. what factors have contributed in the price movement of the underlying for the said period.

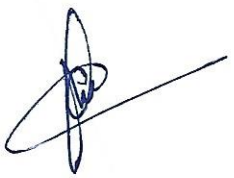
c. how far has the market view in line with your(traders) view.

d. at which point would you have closed your position before the maturity of the contract and why?

e. what is the effect of lot size in future trading? (Point 5 a-e can be submitted as a separate word/excel sub sheet document)

6. Make graphical representation for both long and short position and explain the same.

7. Write the conclusion for the positions taken.



Annexure: Rubrics of CCE 1

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Fax : 2887 3869
Email : timsr@thakureducation.org
Website : www.timsrmumbai.in • www.thakureducation.org

MMS - Batch 2019-21			
Academic Year: 2020-21			
Subject: Derivatives and Risk Management			
Rubric for Project			
We assume one rubric for Viva / presentation/ Group work irrespective of specialization			
We assume the activity is of 20 marks. Please use percentage in case of any deviation			
	Marks Awarded Weightage		
Parameter	**4**	**2-3**	**0-1**
Create Future Trading Portfolio & Margin requirement estimation	Future trading portfolio created for Long and Short Position margin requirement estimated	Future trading portfolio created for Long or Short Position Margin Requirement estimated	Future trading portfolio created margin requirement not estimated
Mark to Mark Position Calculation	Mark to Mark Position Calculation maintained for both positions	Mark to Mark Position Calculation maintained for one position	Mark to Mark Position Calculation not maintained attempt made
Data Analysis	All relevant data analysis done and questions are answered	Few questions are answered	Questions are not answered but attempt made
Graphical Presentation	Graphical Presentation present with data labels	Graphical Presentation present without data labels	Graphical Presentation not present but attempt made
Conclusion	Conclusion present with all relevant points	Conclusion present with few relevant points	Conclusion present without relevant points

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Name: Smith Pereira M1921069

Symbol	RELIANCE 27AUG2020
Current Future Price (Strike Price)	2157.20
Lot Size	505
Contract Value (Lot size*Strike price)	10,89,386
SPAN Margin @ 23.54%	2,56,419
EXPOSURE Margin @ 3.50%	38,085
Total Initial Margin	2,94,504

LONG POSITION

DATE	RELIANCE 27AUG2020	Daily Profit & Loss	A/C Balance	Margin Call	Cumulative P/L	P/L
25/07/2020	2157.2		2,94,504			
27/07/2020	2154.9	-2.3	2,93,343		-1161.5	-1161.5
28/07/2020	2177.4	22.5	3,03,543.50		10,201	11,362.50
29/07/2020	2092	-85.4	2,70,617.50		-32,926	-43,127
30/07/2020	2078.85	-13.15	2,63,976.75		-39,567	-6640.75
31/07/2020	2070	-8.85	2,59,507.50		-44,036	-4469.25
01/08/2020	2007.65	-62.35	2,28,020.75	66,483.25	-75,523	-31486.8
			2,94,504.00			
04/08/2020	2161.95	154.3	3,72,425.50		2,398.75	77,921.50
05/08/2020	2143.4	-18.55	3,63,057.75		-6,969.00	-9367.75
06/08/2020	2147.8	4.4	3,65,279.75		-4,747.00	2222
07/08/2020	2131.55	-16.25	3,52,326.50		-12,953.25	-8206.25
10/08/2020	2132.65	1.1	3,52,882.00		-12,397.75	555.5
11/08/2020	2137.7	5.05	3,55,432.25		-9,847.50	2550.25
12/08/2020	2136.8	-0.9	3,54,977.75		-10,302.00	-454.5
13/08/2020	2133.1	-3.7	3,53,109.25		-12,170.50	-1868.5

Symbol	AXISBANK 27AUG2020
Current Future Price (Strike Price)	447.90
Lot Size	1200
Contract Value (Lot size*Strike price)	5,37,480
SPAN Margin @ 81.16%	4,39,083
EXPOSURE Margin @ 10.58%	56,882
Total Initial Margin	4,95,965

SHORT POSITION

DATE	AXISBANK 27AUG2020	Daily Profit & Loss	A/C Balance	Margin Call	Cumulative P/L	P/L
26/07/2020	447.9		4,95,965			
27/07/2020	431.9	16	5,15,165		19,200	19,200
28/07/2020	437	-5.1	5,09,045		13,080	-6,120
29/07/2020	441.5	-4.5	5,01,365		7,680	-5400
30/07/2020	432.9	8.6	5,11,685		18,000	10320
31/07/2020	433.75	-0.85	5,10,665		16,980	-1020
01/08/2020	419	14.75	5,28,365		34,680	17700
04/08/2020	429.95	-10.95	5,15,225		21,540	-13140
05/08/2020	435.35	-5.4	5,08,745		15,060	-6480
06/08/2020	433.9	1.45	5,10,485		16,800	1740
07/08/2020	433.4	0.5	5,11,085		17,400	600
10/08/2020	434	-0.6	5,10,365		16,680	-720
11/08/2020	451.85	-17.85	4,88,945		-4,740	-21420
12/08/2020	451.2	0.65	4,89,725		-3,960	780
13/08/2020	451.8	0.6	4,90,445		-3,240	720

Explanation:

5. a)

- When the project on Futures Derivatives was allotted to us at that time we were told to take a long and a short position taking a particular company in to consideration.
- When we were told to do this the date was 25th July 2020. During that time I decided to take a long position on Reliance, because on 23rd July Reliance market cap crossed Rs 13Lakh crore at which the stock jumped to 134% in 4 months.
- That was the time I believed that it was a right time to take a long position. Also, on 24th July Reliance hits it all time high.
- Talking about the short position why I preferred Axis for it taking a bearish view because on 23rd July Axis banks banking operation head Naveen Tahilyani quits within a month which hits it operational function.
- Considering the report on 22nd of July Sharekhan said to keep a target of 585 then HDFC securities came and said to keep a target of 565 after that Emkay Global finance recommends for 520. We can see that view of company on Axis bank. That was the time I decided to take a short position.

b)

- Mukesh Ambani Chairmen of Reliance had a moto of make his company a debt free. So he started procuring investments from foreign companies. There were very big companies like Facebook, Google Vista Equity partner etc were some factors to affect the price.
- Axis banks deal with Max life expected certain change and the major factor affected the price was the time when Axis bank allege or claimed Rs1204 crore fraud by cox and kings may be we can say because tourism sector was majorly affected in the pandemic.

c)

- During a long position it gave a negative start but after I came in my favour but it went totally opposite because the investment and public demand made it to high that at a point it slumps to 2092 from 2152. It was a drastic tragedy at that time also oil refiners' cuts run as fuel demands dipsandmargin faded.
- At the start of short position, it was totally all in my favour because the fraud which bank claimed against cox and kings made the price to fall down.

d)

- During long position I had made a decision to close the contract because I got a margin call. Oil refiners factor deal of Saudi Aramco got delayed Saudi Aramco which was the world's first Trillion Dollar company.
- I didn't have such a view on closing the short position contract because it was giving pe a good profit. Yes at the end during 11th August I had a view on closing the contract because it apparently started giving me loss. It was obviously affected the cox and king's fraud.

Explanation:

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- When the project on Futures Derivatives was allotted to us at that time we were told to take a long and a short position taking a particular company in to consideration.
- When we were told to do this the date was 25th July 2020. During that time I decided to take a long position on Reliance, because on 23rd July Reliance market cap crossed Rs 13Lakh crore at which the stock jumped to 134% in 4 months.
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M1921016 : Hetal Chandapa

1. Consider the following information related to

An Following information is available on HUL

Price: 1263

Lot Size: 700

Day	Settlement Price
1	1273
2	1281
3	1301
4	1210
5	1229
6.	1240

1. The investor has to deposit margin money to enter into futures contract explain. Evaluate the position of a trader who has gone 3 long HUL futures,(5 marks)
2. Evaluate the position of a trader who has gone 2 short HUL futures
   Assume the position open on last day. What factors determine future prices. (5marks)

Position	Lot Size	Price	CV	SPAN(10%)	Exposure	Total (INITIAL)
3 Lot long on HUL Futures	2100	1263	2652300	265230	159138	424368

Day	SETTELMENT P	Daily Profit/Loss	A/C Balance	Margin Call	DAILY	CUM P&L
0	1263		424368			
1	1273	10	445,368		21000	
2	1281	8	462168		16800	37800
3	1301	20	504168		42000	79800
4	1210	-91	313068		-191100	-111300
5	1229	19	352968		39900	-71400
6	1240	11	376068		23100	-48300

Position	Lot Size	Price	CV	SPAN(10%)	Exposure	Total (INITIAL)
2 Lot SHORT on	1400	1263	1768200	176820	106092	282912

Day	ETTELMENT Pri	Daily	A/C Balance	Margin Call	DAILY	CUM P&L
0	1263		282912			
1	1273	-10	268,912		-14000	
2	1281	-8	257712		-11200	-25200
3	1301	-20	229712		-28000	-53200
4	1210	91	357112		127400	74200
5	1229	-19	330512		-26600	47600
6	1240	-11	315112		-15400	32200

Program: MMS **Sem: III** **Batch: 2019-2021**

Course Name: Derivatives and Risk Management **Faculty: Dr.Charu Upadhyaya**

Concurrent Evaluation: Presentation (CCE 2)

Objective

- Understanding mechanics ofoptions and creatingsynthetic options
- To understand the trading and settlement of Derivatives
- To understand the OTC and Exotic derivatives.

Description:

S.NO	Topic	Group (Roll Numbers)
1	Value at Risk & swaption	13,15,23,25,33,51,85
2	Forward Start options, Chooser options and barrier options	62,72,82,87,109,118
3	Binary, lookback, Asian and basket options	27,18,84,112,117,83
4	Structured products	20,65,66,74,105,106
5	Commodity derivative	10,31,37,24,70,22
6	Currency derivatives	14,16,35,46,50,54
7	equity OTC derivative	47,75,91,120,11,29
8	credit default swap	44, 68, 107, 114, 21, 01
9	Clearing and settlement system	03, 04, 08, 48, 49, 60
10	OTC derivatives market in India	67, 69, 78, 90, 115, 116
11	Interest rate derivatives	71,53,101,102,111,119

Learning Outcome:

- Presentation skills
- Ability to develop team spirit and collaborative research.

Annexure: Rubrics of CCE 2

Laxmi Singh Charitable Trust's (Regd.)
THAKUR INSTITUTE OF MANAGEMENT STUDIES & RESEARCH
(Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai)
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• Accredited with A+ Grade by National Assessment and Accreditation Council (NAAC)

C - Block, Thakur Educational Campus,
Shyamnarayan Thakur Marg, Thakur Village,
Kandivali (East), Mumbai - 400 101.
Tel.: 6730 8201 / 2, 2884 7147 / 445
Fax : 2887 3869
Email : timsr@thakureducation.org
Website : www.timsrmumbai.in • www.thakureducation.org

MMS - Batch 2019-21			
Academic Year: 2020-21			
Subject: Derivatives and Risk Management			
Rubric for Presentation			
We assume one rubric for Viva / presentation/ Group work irrespective of specialization			
We assume the activity is of 20 marks. Please use percentage in case of any deviation			
	Marks Awarded Weightage		
Parameter	**4**	**2-3**	**0-1**
Professional appearance	Proper Professional attire	Moderate attention to professional attire	No attention to professional attire
Content is relevant to the topic	All relevant points have been covered	Few relevant points have been covered	Points covered were not relevant
Able to answer the queries	Student demonstrates full knowledge, answering all questions	Student attempts to answer but uncomfortable with information	Student does not have grasp of information and not able to answer
Communication skills	Excellent English language, articulation & pronunciations	Satisfactory English language ,articulation& pronunciations	Poor English language , articulation & pronunciations
Quality of Presentation	Excellent Quality use of smart art and animations, all relevant information covered	Satisfactory quality, all relevant information covered	Poor Quality, all relevant information not coevred

Thakur Institute of Management Studies & Research
T.I.M.S.R.
Kandivali (E)
Mumbai-101.

OTC Derivatives Market in India.

By:-
Akshay Pathak M1921067
Smith Pereira M1921089
Onkar Salvi M1921078
Kamal Shetty M1921090
Kartikey Rai M1921115
Akash Singh M1921116

9/10
8/10
9/10
8/10
7/10
8/10

Dr. Charu Upadhyaya

INTRODUCTION TO OTC DERIVATIVES MARKET IN INDIA.

- Government ban on options and cash settlement in futures in 1952.
- Futures trading in several commodities started after the ban was lifted in 2000.
- In Equity, OTC derivative trading was prevalent in Pre-independence period in India.
- The Securities Contract Regulation Act, 1956 banned all kinds of derivative trading in equities.
- In 1999, the Securities Contracts (Regulation) Act of 1956, was amended so that derivatives could be declared "securities."
- In January 1994, the RBI started permitting Indian banks to write "cross-currency" options including barrier options and other innovations.

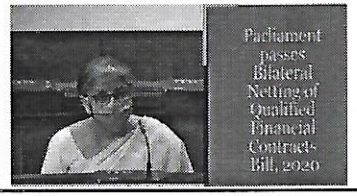
ADVANTAGES

The following arguments are generally given in support of importance of this market:

- OTC market provides Liquidity.
- OTC market promotes the price discovery process in the financial market.
- It helps in risk management.
- It is important in monetary policy.
- Benefits of competition between OTC and exchange traded.

BILATERAL NETTING

- Bilateral netting is when two parties combine all their swaps into one master swap, creating one net payment, instead of many, between the parties.
- Bilateral netting reduces accounting activity, complexity, and fees associated with more trades and payments.
- In the event of a bankruptcy, bilateral netting assures that the bankrupt company can't only take payments while opting not to pay-out on out-of-the-money swaps.



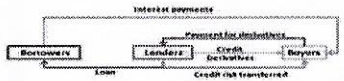
CATEGORIES

- **Interest Rate derivatives:** An interest rate derivative is a financial instruments with a value that is linked to the movements of an interest rate or rates.

- **Foreign Exchange derivatives:** A foreign exchange derivative is a financial derivative whose payoff depends on the foreign exchange rates of two currencies. For example, EUR/USD at 1.2500 and purchase $5,000 worth of currency. Later that day the price has increased to 1.2550. The trader is up $25 (5000 * 0.0050). If the price dropped to 1.2430, the trader would be losing $35 (5000 * 0.0070).

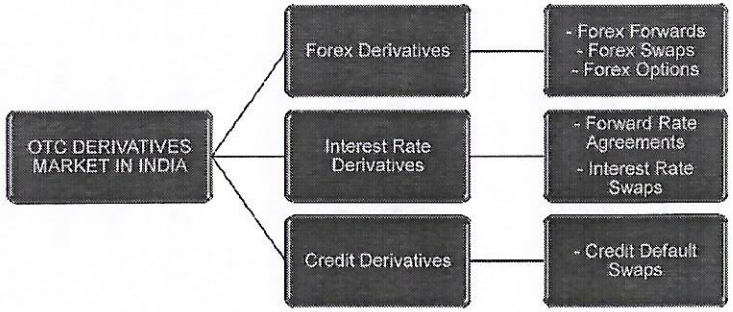
CATEGORIES

- **Credit derivatives:** A credit derivative allows the creditor to transfer the risk of the debtor's default to a third party, paying it a fee to do so.



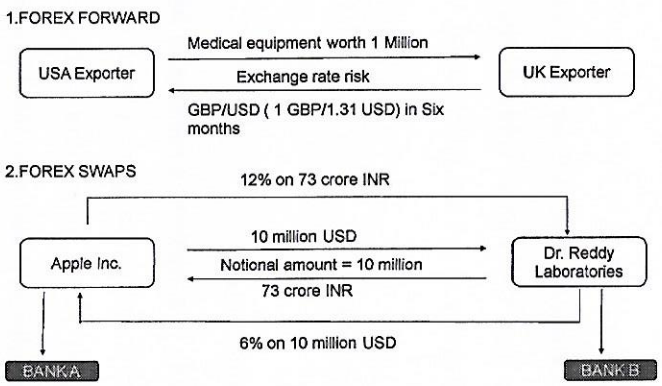
- **Equity linked derivatives:** An equity derivative is a financial instrument whose value is based on equity movements of the underlying asset.
- **Commodity derivatives:** Commodity derivatives are investment tools that allow investors to profit from certain commodities without possessing them

OTC FINANCIAL DERIVATIVES MARKET IN INDIA



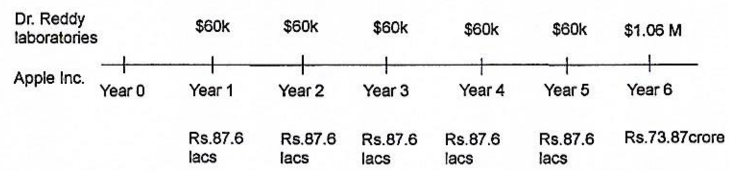
OTC FOREX DERIVATIVES MARKET IN INDIA

- **Forex forward:** A currency forward is essentially a customizable hedging tool that does not involve an upfront margin payment.
- **Forex Swaps:** A foreign exchange swap, forex swap, or FX swap is a simultaneous purchase and sale of identical amounts of one currency for another with two different value dates (normally spot to forward) and may use foreign exchange derivatives.
- **Forex Options:** Forex options are derivatives based on underlying currency pairs. Trading forex options involves a wide variety of strategies available for use in forex markets.



For example, if a swap sees Dr. Reddy give company Apple Inc. $10 million in exchange for Rs. 73 crore, this implies a INR/USD exchange rate of 73 . If the agreement is for 6 years, at the end of the 6 years these companies will exchange the same amounts back to each other, usually at the same exchange rate. The exchange rate in the market could be drastically different in 10 years, which could result in opportunity costs or gains. That said, companies typically use these products to hedge or lock in rates or amounts of money, not speculate.

The companies may also agree to mark-to-market the notional amounts of the loan. This means that as the exchange rate fluctuates small amounts of money are transferred between the parties to compensate. This keeps the loan values the same on a marked-to-market basis.



OTC INTEREST RATE DERIVATIVES MARKET IN INDIA

- **Forward Rate Agreement (FRA):** An FRA is a cash-settled OTC **contract** between two counterparties, where the buyer is borrowing (and the seller is lending) a notional sum at a fixed interest **rate** (the **FRA rate**) and for a specified period of time starting at an agreed date in the future.
- **Interest Rate Swap:** An interest rate swap is a forward contract in which one stream of future interest payments is exchanged for another based on a specified principal amount. Interest rate swaps usually involve the exchange of a fixed interest rate for a floating rate, or vice versa.

OTC INTEREST RATE DERIVATIVES MARKET IN INDIA

- The Reserve Bank of India allowed OTC interest rate derivatives in 1999.
- Table 3 shows that even after so many years the turnover of interest rate derivatives has not picked up the momentum.

Table 3: Turnover of OTC Single Currency Interest Rate Derivatives
(Net-gross basis, April 1995-2016, daily averages, in billions of U.S. Dollars)

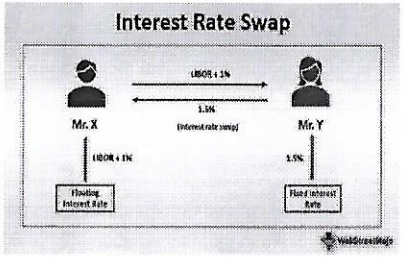
	1995	1998	2001	2004	2007	2010	2013	2016
India	--	--	0(0)	1(0)	3(0)	3(0)	3(0)	2(0)
world	209	334	676	1330	2173	2649	2702	3059

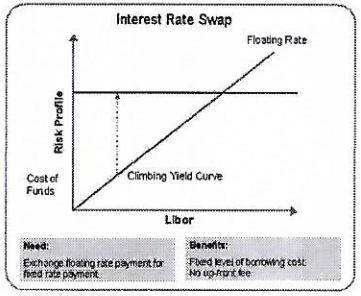
- Table 4 shows that OTC derivatives market was dominated by interest rate swaps. The volume of interest rate forwards was negligible.

Table 4: India: OTC Interest Rate Derivatives
(Net-gross, daily averages, in millions of U.S. Dollars)

Instrument	2013	2016
Forward rate agreement	34.5	4.7
Swaps	3213.2	1831.3
Total	3247.7	1836.0

INTEREST RATE SWAP





CREDIT DERIVATIVES

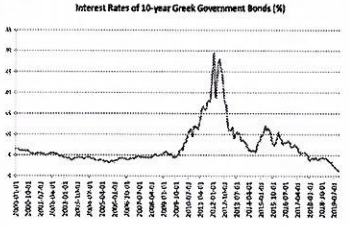
- **Credit Default Swap (CDS):**
- CDS is a financial derivative or contract that allows an investor to "swap" or offset his or her credit risk with that of another investor.
- Credit default swaps, or CDS, are credit derivative contracts that enable investors to swap credit risk on a company, country, or other entity with another counterparty.
- Credit default swaps are the most common type of OTC credit derivatives and are often used to transfer credit exposure on fixed income products in order to hedge risk.
- Credit default swaps are customized between the two counterparties involved, which makes them opaque, illiquid, and hard to track for regulators.

CREDIT DEFAULT SWAPS (CDS)

- A owns £1 million corporate bond issued by B. If there is a risk the B may default on repayments, A may buy a CDS from a hedge fund.
- The CDS is worth £1 million.
- A will pay interest on this credit default swap of say 3%. This could involve payments of £30,000 a year for the duration of the contract.
- If B doesn't default, the hedge fund gains the interest from A and pays nothing out. It is simple profit.
- If B does default, then the hedge fund has to pay compensation to A of £1 million – the value of the credit default swap.

GREEK GOVERNMENT DEBT CRISIS

- The crisis led to loss of confidence in Greek economy due to rising cost of risk insurance on credit default swaps compared to Germany.
- Government enacted 12 rounds of tax increases, spending cuts from 2012 to 2016 but by 2019, it still became the first developed country to fall to make an IMF loan repayment on time.

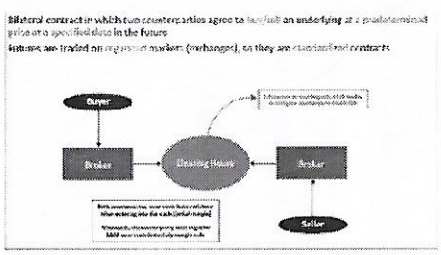


TIMSR BEST PRACTICE

"Focus on Leadership – Early is on Time, On Time is Late, and Late is Unacceptable"

Future contract

- It is a contract to buy or sell the U A on or before a future date at a price specified today. Futures contract is a standardized contract written by a clearing house that operates an exchange where the contract can be bought and sold



Mark to Market

- 23.07.2020
- CMP OF ABC LTD 1200
- BULLISH VIEW– PRICE TO GO UP BY 1400
- BUY I FUTURE @1200– LOT SIZE 1000 SHARES
- MARGIN DEPOSITED 2,00,000 150,000 SPAN 50,000 EXPOSURE
- MATURITY 1 MONTH LONG

Day	Settlement PRICE	CHANGE	LEDGER BAL
1	1250	50*1000= 50000	250000
2	1270	20*1000=20000	270000
3	1260	10*1000=10000	260000
4	DURING THE DAY 1300	40*1000=40000	300000

Margin

Span + Exposure = Initial Margin (Total Margin)

Span margin of a contract is calculated by a standardized portfolio analysis of risk (SPAN) for F&O strategies developed by CME.

- The Span margin for a security keeps on changing based on volatility.

Exposure Margin: For Index options and Index futures contracts: 3% of the notional value of a futures contract.

- For option contracts and Futures Contract on individual Securities: Ranges between (5-6)%
- HIGHER VALUE OF (5% OR 1.5 SD)
- Online Calculators

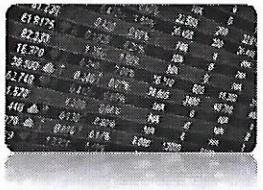
REGULATORY FRAMEWORK

- The RBI Amendment Act, 2006, was a key milestone in explicitly laying down the regulatory framework for OTC interest rate, forex and credit derivatives.
- The underlying rationale for key stipulations is explained below:-

1. RBI regulated entity
2. Distinction between the roles of market makers and users
3. Transacting in derivatives to hedge risk exposure
4. Condition regarding derivative structured products

REGULATORY FRAMEWORK

5. Responsibility for assessment of customer suitability
6. Exposures of banks to central counterparties (CCPs)
7. Derivative transactions required to be contracted at market rates
8. Regulations for participation by non-residents



Thank You!

MTM Calculation

Position	Lot Size	Price	CV	SPAN(10.96%)	Exposure(6.23%)	Total
1 Lot long on XYZ Futures	4000	182	Rs. 728,000	Rs. 79,788	Rs.45,354	Rs, 125,142

MTM Calculation

Position	Lot Size	Price	CV	SPAN(10.96%)	Exposure	Total (INITIAL)
1 Lot long on XYZ Futures	4000	182	Rs. 728,000	79,788	45,354	1,25,142
Day	SETTELMENT Price	Daily Profit/Loss	A/C Balance	Margin Call	Cumulative Profit/Loss	
1	182		1,25,142			
2	179	(3*4000)= (12000)	113142		-12000	
3	171	(8*4000) = (32000)	81142		-44000	
4	174	12000	93142		-32000	
5	169	-20000	73142	Y	-52000	(125142-73142) here the margin call will be received by the broker to replenish the account back to initial margin level.
EOD 5			125142			

Estd. 2002

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Thakur Institute of Management Studies and Research

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TIMSR BEST PRACTICE

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Finance Specialization

Derivatives and Risk Management
Core Subject
MMS Sem III

Key Concepts to be covered

- Introduction and overview of Derivatives Market
- Forward and Future contracts
- Mechanics of options
- Options trading strategies
- Options Valuation
- Risk Management
- Swaps

Derivatives Market

Derivatives are financial contracts which derive their value from value of Underlying Asset(U.A)

STOCKS COMMODITY CURRENCY

INDEX INTEREST RATES

Example

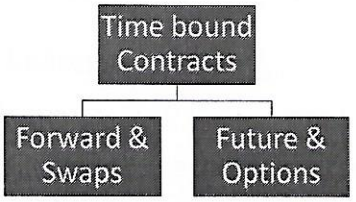
Time bound contracts --- 1month 2 month 3 month view on U.A
Bullish View
Reliance Share Price: 1910
Reliance Future expiring on 27th August (2 month view)

Action taken on 20.07.2020

Nature of Contracts

- Time Bound Contracts
- Fix a price today to buy/sell at a future date
- No initial investment in (Forward and Swaps)
- Margin in Futures
- Premium in Options
- Lot Size in F&O

Derivatives



BULL CALL Spread

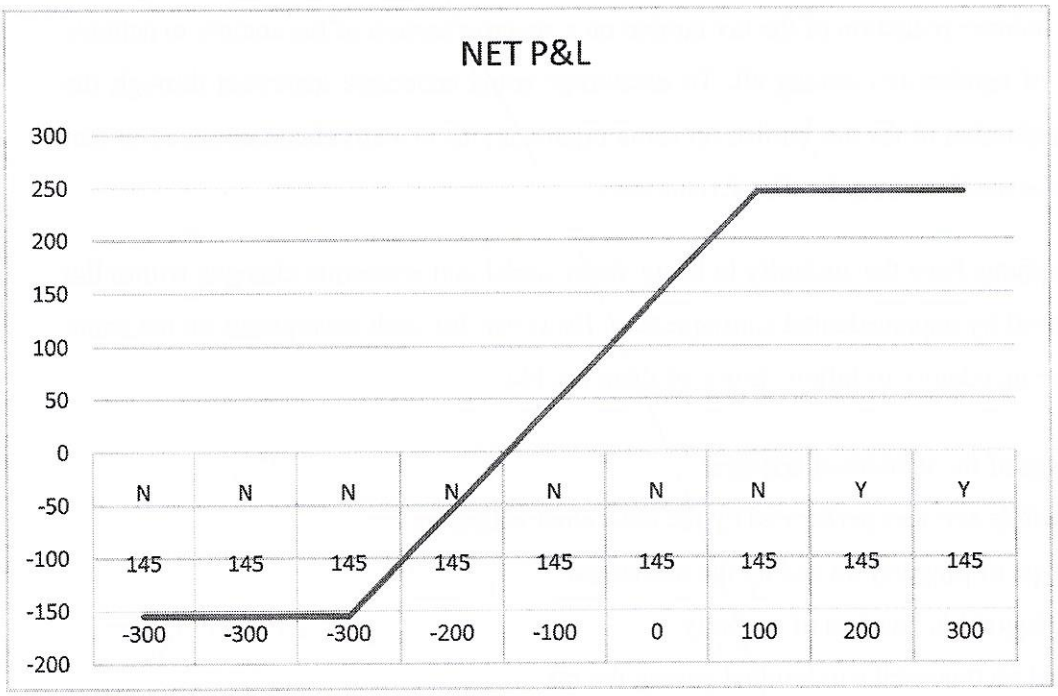
This strategy is an alternative to buying a long call. Selling a cheaper call with higher-strike helps to offset the cost of the call you buy at strike A. That ultimately limits your risk

A Bull Call Spread strategy involves Buy ITM Call Option and Sell OTM Call Option.

spot	6000			NET PREMIUM
long (buy)	5800	ITM	300(P)	155
short (short)	6200	OTM	145(P)	DEBIT SPREAD

	LONG CALL (buyer)			SHORT CALL (writer)			LONG+SHORT
MP @ EXPIRY	P	EX(Y/N)	P&L	P	EX(Y/N)	P&L	NET P&L
5600	-300	N	-300	145	N	145	-155
5700	-300	N	-300	145	N	145	-155
5800	-300	Y/N	-300	145	N	145	-155
5900	-300	Y	-200	145	N	145	-55
6000	-300	Y	-100	145	N	145	45
6100	-300	Y	0	145	N	145	145
6200	-300	Y	100	145	N	145	245
6300	-300	Y	200	145	Y	45	245
6400	-300	Y	300	145	Y	-55	245

Net Debit	Premium paid-premium received
Maxi profit	Spread-net Premium * lot size
Maxi loss	net debit * lot size
BEP	LOWER STRIKE + NET DEBIT


NET P&L
300
250
200
150
100
50
0
-50
-100
-150
-200
N N N N N N N Y Y
145 145 145 145 145 145 145 145 145
-300 -300 -300 -200 -100 0 100 200 300

TIMSR/FRM/IP-13-01 | TIMSR | REVISION: D

REVIEW OF PROGRAM / COURSE CONTENT

Date : 20/11/2020

Batch: 2019-2021

Programme & Semester: MMS, Sem III

Name of the Course: Derivatives and Risk Management

1. Review and suggestion of existing programme structure / course content:

   Addition: SWAPS

   Deletion: ____---_____

   _____

2. Suggestion on teaching pedagogies: Option strategies in EXCEL
3. Suggestion on changes in evaluation criteria: _____--_____

   _____

4. Recommended Reference Books: Financial Derivatives- John .C.Hull

   _____

Respondent : Faculty [✓] / Student [ ] / Alumni [ ] / Corporate [ ] / Employer [ ]

Personal Details* :

Alumni / Corporate / Parents Employer	Faculty	Students
Name : _____	Name: Dr.Charu Upadhyaya	Name:_____
Designation: _____	Designation :Asst. Professor	Roll No. _____
Organization : _____	Department: Finance	Programme & Semester:_____

Signature

**The information provided here will be kept confidential and will be used only for academic purpose. Please write NA in case not applicable*

Swaps

Dr.Prof.Charu Upadhyaya

- To give in exchange or to exchange one for another
- Swaps is a private agreement between two parties to exchange cash flows in the future to a pre-arranged formula

Interest rate swap

- Financial agreement between two parties who wish to change the interest payments or receipts agreed upon a notional principal
- Notional principal here refers to no exchange of principal amount, it is used only to calculate interest.
- In most cases, interest rate swaps include the exchange of a fixed interest rate for a floating rate.
- Similar to other types of swaps, interest rate swaps are not traded on public exchanges – only over-the-counter (OTC).

- A fixed interest rate is an interest rate on a debt or other security that remains unchanged during the entire term of the contract, or until the maturity of the security. In contrast, floating interest rates fluctuate over time, with the changes in interest rate usually based on an underlying benchmark index.
- Floating interest rate bonds are frequently used in interest rate swaps, with the bond's interest rate based on the London Interbank Offered Rate (LIBOR). Briefly, the LIBOR rate is an average interest rate that the leading banks participating in the London interbank market charge each other for short-term loans.
- The LIBOR rate is a commonly used benchmark for determining other interest rates that lenders charge for various types of financing.

- The "swap rate" is the fixed interest rate that the receiver demands in exchange for the uncertainty of having to pay the short-term LIBOR (floating) rate over time.

Comparative Rate Advantage

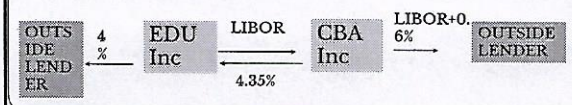
- let's assume that the EDU Inc. and CBA Inc. have their own borrowing capacities in both fixed as well as a floating market (as mentioned in the table below).

Company	Fixed Market Borrowing	Floating Market Borrowing
EDU Inc.	4.00%	One year LIBOR-0.1%
CBA Inc.	5.20%	One year LIBOR+0.6%

EDU wants to pay floating rate and CBA wants to pay fixed rate

Company	Fixed Market Borrowing	Floating Market Borrowing
EDU Inc.	4.00%	One year LIBOR-0.1%
CBA Inc.	5.20%	One year LIBOR+0.6%

In the above table, we can see that EDU Inc. has an absolute advantage in both the market, whereas CBA Inc. has a comparative advantage in the floating rate market (as CBA Inc. is paying 0.5% more than EDU Inc.).
EDU wants to pay floating rate and CBA wants to pay fixed rate
Assuming both the parties have entered into a Swap agreement with the condition that EDU Inc. will pay one year LIBOR and receive 4.35% p.a.



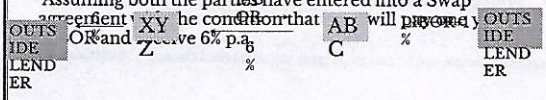
The cash flows for this agreement are described in the table below for both the parties.

Cash Flows for EDU Inc.	
Receivable in a Swap agreement	4.35%
Payable in a Swap agreement	LIBOR
Payable in fixed market borrowing	4.00%
Net Effect	LIBOR-0.35%
Cash Flows for CBA Inc.	
Receivable in the Swap agreement	LIBOR
Payable in the Swap agreement	4.35%
Payable in floating market borrowing	LIBOR+0.6%
Net Effect	4.95%

Looking at the above cash flows, we can say that EDU Inc. has a net cash flow of LIBOR – 0.35% per annum giving it an advantage of 0.25%, which EDU Inc. had to pay if it went directly in the floating market i.e. LIBOR – 0.1%.
In the second scenario for CBA Inc., the net cash flow is 4.95% per annum giving it an advantage of 0.25% in the fixed borrowing market, if it had gone directly i.e. 5.20%.

Company	Fixed Market Borrowing	Floating Market Borrowing
XYZ	6.00%	LIBOR + .5%
ABC	7.5%	LIBOR+ 1%

In the above table, we can see that XYZ has an absolute advantage in both the market(XYZ is more credit worthy), whereas ABC has a comparative advantage in the floating rate market (as ABC is paying 0.5% more than XYZ).
XYZ wants to pay floating rate and ABC wants to pay fixed rate
Assuming both the parties have entered into a Swap agreement with the condition that XYZ will pay one year LIBOR and receive 6% p.a.



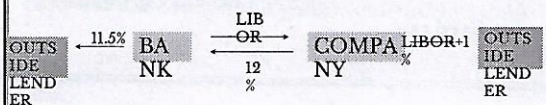
The cash flows for this agreement are described in the table below for both the parties.

Cash Flows for XYZ	
Receivable in a Swap agreement	6%
Payable in a Swap agreement	LIBOR
Payable in fixed market borrowing	6.00%
Net Effect	LIBOR (< LIBOR +.5%)
Cash Flows for ABC	
Receivable in the Swap agreement	LIBOR
Payable in the Swap agreement	6%
Payable in floating market borrowing	LIBOR+ 1%
Net Effect	7%(<7.5%)

Looking at the above cash flows, we can say that XYZ has a net cash flow of LIBOR per annum giving it an advantage of 0.5%, which Xyz had to pay if it went directly in the floating market i.e. LIBOR +.5%.
In the second scenario for ABC the net cash flow is 7% per annum giving it an advantage of 0.5% in the fixed borrowing market, if it had gone directly i.e. 7.5%.

Company	Fixed Market Borrowing	Floating Market Borrowing
BANK	11.5%	LIBOR
COMANY	14%	LIBOR+ 1%

BANK wants to pay floating rate and COMPANY wants to pay fixed rate
Assuming both the parties have entered into a Swap agreement with the condition that BANK will pay LIBOR and receive 12% p.a.



The cash flows for this agreement are described in the table below for both the parties.

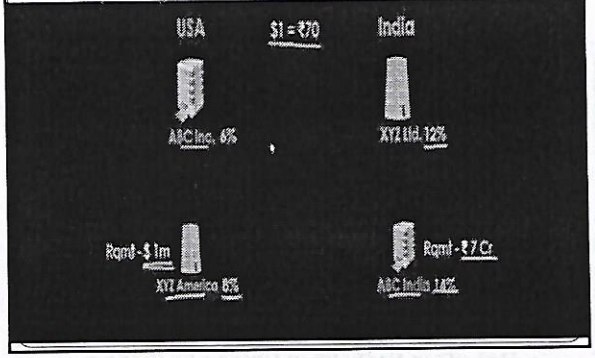
Cash Flows for Bank	
Receivable in a Swap agreement	12%
Payable in a Swap agreement	LIBOR
Payable in fixed market borrowing	11.50%
Net Effect	LIBOR-.5% (< LIBOR)
Cash Flows for Company	
Receivable in the Swap agreement	LIBOR
Payable in the Swap agreement	12%
Payable in floating market borrowing	LIBOR+ 1%
Net Effect	13%(<14%)

Looking at the above cash flows, we can say that Bank has a net cash flow of LIBOR-.5% per annum giving it an advantage of 0.5%, which Bank had to pay if it went directly in the floating market i.e. LIBOR.
In the second scenario for company the net cash flow is 13% per annum giving it an advantage of 1% in the fixed borrowing market, if it had gone directly i.e. 14%.

Currency Swap

- Currency Swaps (also known as Cross Currency Swaps) is a derivative contract to exchange certain cash flows at a predetermined time. The basic difference here is, under currency swaps, the principal is exchanged (not obligatory) at inception as well as at maturity of the contract and cash flows are in the different currencies, therefore, generate a larger credit exposure.
- Another difference between these types of swaps are, in Interest Rate swap, cash flows are netted at the time of settlement whereas, in the currency swap, the same is not netted but exchanged in actual between parties.

EG:



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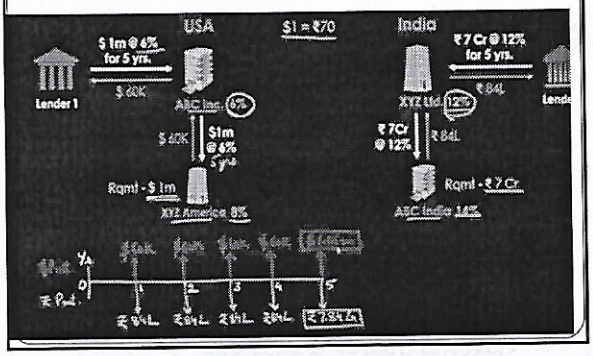
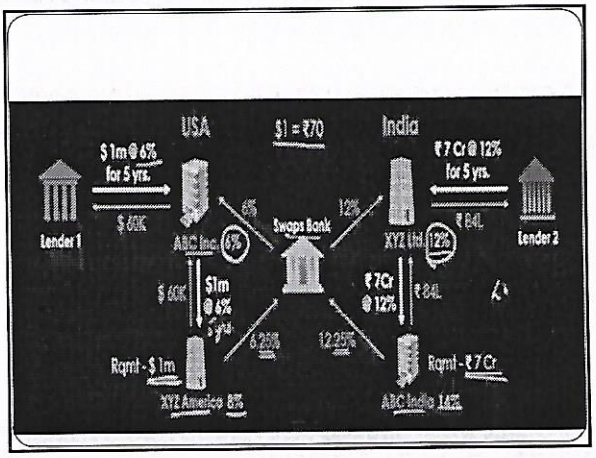




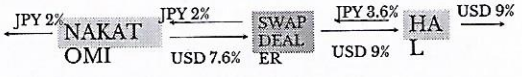
- Example: Comparative Advantage. Nakatomi, a Japanese company, wants to finance a US project in USD. HAL, a US company, wants to finance a Japanese [illegible]he

	USD RATE	JPY RATE
HAL	9%	4%
NAKATOMI	8%	2%

Nakatomi is the more credit-worthy: It has an absolute advantage.
-HAL pays 1% more to borrow in USD than Nakatomi.
- HAL pays 2% more to borrow in JPY than Nakatomi.
-HAL has a comparative advantage in the USD rate market.
If they borrow according to their comparative advantage and then swap, there will be gains for both parties.

	USD RATE	JPY RATE
HAL	9%	4%
NAKATOMI	8%	2%

A Swap Dealer proposes the following swap:
Nakatomi pays 7.6% in USD and receives 2% in JPY
HAL pays 3.6% in JPY and receives 9% in USD



- A Swap Dealer proposes the following swap:

Nakatomi pays 7.6% in USD and receives 2% in JPY

HAL pays 3.6% in JPY and receives 9% in USD

- Swap + Domestic borrowing produces the following cost of borrowing:
- Nakatomi: 2% in JPY - 2% in JPY + 7.6% in USD = 7.6% in USD < 8%
- HAL: 9% in USD - 9% in USD + 3.6% in JPY = 3.6% in JPY < 4%

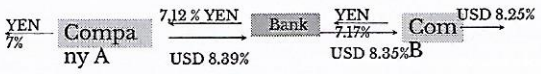
Currency Swap

- Company A wants 5 tear fixed rate dollar funding while company B wants 5 year fixed rate Japanese yen funding. Company A's direct borrowing all-in-cost is 9.50% in dollars and 7% in Japanese yen. Company B direct borrowing all in cost is 8.5% in dollars and 8% in Japanese yen.

	A	B
DOLLAR	9.5%	8.25%
YEN	7%	8%

A has comparative advantage in ¥ borrowing; B has comparative advantage in $ borrowing.
A desires $ funding; B desires ¥ funding; Effective costs and savings:

A Bank proposes the following swap:
A pays 8.39% in USD and receives 7.12% in YEN
B pays 7.17% in YEN and receives 8.35% in USD



- A: Pays to bank -8.39% USD
- Pays to ¥ debt -7.00%
- Receives from bank 7.12% YEN => -8.27%
- Direct borrowing cost 9.50% Effective cost 8.27% ==> Saving: 1.23%

- B: Pays to bank -7.17% YEN
- Pays to $ debt -8.25%
- Receives from bank 8.35% USD ==> -7.07%
- Direct borrowing cost 8.00%
- Effective cost 7.07% ==> Savings: 0.93%

The Bank benefits from swap:

- $ spread: 8.39% - 8.35% = .04%
- ¥ spread: 7.17% - 7.12% = .05% ==> Total .09%
- 1.23% + .93% + .09% = 2.25% maximum gain for all parties