

Case-1: Calculation of Standard Gap on the basis of changes in interest rate

International Bank has the following re- pricing assets and liabilities:

- Call money. - Rs.500 cr
- Cash credit loans. - Rs.400 cr
- Cash in hand. - Rs.100 cr
- Saving bank. - Rs.500 cr
- Fixed Deposits. - Rs.500 cr
- Current deposits - Rs.200 cr

There is reduction in rate of interest by 0.5% in call rates, 1% for cash credit, 0.1% for saving bank and 0.8% for FD.

On the basis of above information, answer the following questions:

01 What is the adjusted gap in repricing assets and liabilities?

- a Rs.200 cr positive
- b Rs.200 cr negative
- c Rs.100 cr positive
- d Rs.100 cr negative

Que-1: Adjusted gap = (SB + FD) - (Call money +CC) = (500 + 400) -
(500

+ 500) = Rs.100 cr (assets are less than liabilities - Hence negative gap). The cash in hand and current account deposits are not subject to re- pricing, hence these have been ignored.

02 Taking into account, the change in interest rate, calculate the amount of repricing assets as per the standard gap method in repricing assets and liabilities?

- a Rs.700 Cr

b Rs.650
Cr

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- c Rs.600 cr
- d inadequate information

Que-2: Call money $500 \times 0.5\% = \text{Rs.}250 \text{ cr}$ + Cash credit $400 \times 1\% = 400 \text{ cr}$ Total = 650 cr

03 Taking into account, the change in interest rate, calculate the amount of repricing liabilities as per the standard gap method in repricing assets and liabilities?

- a Rs450 cr
- b Rs.400 Cr
- c Rs.300 Cr
- d insufficient information

Que-3: Explanation
Total = 450 cr

04 What is the standard gap method in repricing liabilities?

- a Rs.150 cr negative
- b Rs.175 cr positive
- c Rs.200 cr positive
- d Rs.250 cr negative

Que-4: Explanation: Assets - Call money $500 \times 0.5\% = \text{Rs.}250 \text{ cr}$ + Cash credit $400 \times 1\% = 400 \text{ cr}$ Total = 650 cr

Liabilities - SB $500 \times 0.1\% = 50 \text{ cr}$ + FD $500 \times 0.8\% = 400 \text{ cr}$

Total = 450 cr

Net change = $650 - 450 = \text{Rs.}200 \text{ cr}$ positive

Case – 2 Effect of change in rate of interest on Net Interest Income.

International Bank raised funds by way of 91 days term deposit at 6% rate of interest. It has following options to invest these funds:

- (a) 91 days treasury bills @ 8%
- (b) 91 days floating rate loan @ 8% with monthly re-pricing.
- (c) 3-year term loan @ 8%.

01 If bank makes investment in 91 days treasury bills @ 8% and during the 91 days interest rate rises to 9%, what will be change in net interest income after 91 days?

- a 1%
- b 0.5%
- c no change
- d inadequate information

Que-1: Existing cost of deposit = 6% and rate of return on treasury bills = 8%.

NII

$$= 8 - 6 = 2\%$$

New cost of deposit = 6 + 1 = 7%. New return on treasury bills :

$$= 8 + 1 = 9\%. \text{ NII} = 9 - 7 = 2\%$$

Hence no change in NII. It will continue to be 2%.

02 If bank invests the funds in 91 days floating rate loan @ 8% with monthly repricing and there is interest rate rise, what will be impact on net interest income of the bank.

- a NII will increase
- b NII will decrease
- c No change in NII
- d information is inadequate.

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Que-2: Bank is asset sensitive because change in rate of interest on loan will take place twice in 91 days period due to monthly repricing of the loan while the deposit rate will not change during this period. Hence if interest rate increases, the interest income will increase and the NII will increase.

03 If bank invests the funds in 91 days floating rate loan @ 8% with monthly repricing and there is a rate to fall, what will be impact on net interest income.

- a NII will increase
- b NII will decrease
- c No change in NII
- d information is inadequate.

Que-3: Bank is asset sensitive because change in rate of interest on loan will take place twice in 91 days period due to monthly repricing of the loan while the deposit rate will not change during this period. Hence if interest rate increases, the interest income will increase and the NII will decline.

04 If bank invests these funds in 91 days floating rate loan @8%, what will be impact on net interest income of the bank, if there is increase in interest rates.

- a NII will increase
- b NII will decrease
- c No change in NII
- d information is inadequate.

Que-4: Bank is liability sensitive because change in rate of interest on deposit will take place after each period of 91 days, as deposits have to be rolled over. On the other hand, the interest on loan will not

change during this period. Hence if interest rate increases, the cost of deposits to the bank will increase and there will be no change in interest income. Hence NII will decrease.

05 If bank invests these funds in a 3 -year term loan @8%, what will be impact on net interest income of the bank, if there is fall in interest rates.

- a NII will increase
- b NII will decrease
- c No change in NII
- d information is inadequate

Que-5: Bank is liability deposit will take place to be rolled over. Change during this period **deposits to the bank interest income. Hence**

Case-3 Calculation of Net Interest Income on Standard Approach for

The assets side of balance sheet of International Bank provides the following information:

Fixed Assets - 500 cr, Investment in Central govt. securities - Rs. 5000 cr.

In standard loan accounts, the Retail loans - Rs.3000 cr, House Loans - Rs.2000 cr (all individual loans below Rs.30 lac and fully secured by mortgage), Other loans - Rs.10000 cr. Sub-standard secured loans - Rs.500 cr, sub-standard unsecured loans Rs.150 cr, Doubtful loans Rs.800 cr (all DF-1 category and fully secured) and other assets - Rs.200 cr.

Based on this information, by using Standard Approach for credit risk, answer the following questions.

01 What is the amount of risk weighted assets for retail loans?

- a Rs.3000 Cr
- b Rs.2500
- Cr c Rs.2250
- cr
- d Zero, as retail loans are risk free

Que-1: RW is 75% on retail loans. Amount of retail loans is Rs.3000 Cr. RW value = 3000 × 75% = 2250 Cr

02 What is the amount of risk weighted assets for home loans?

- a Rs.2000 cr
- b Rs.1800
- cr c Rs.1500
- Cr d
- Rs.1000 cr

Que-2: RW is 50% on home loans. Amount of home loans is Rs.2000 lac. RW value = 2000 × 50% = 1000 Cr

03 What is the amount of risk weighted assets for investment in govt. securities

- a Rs.5000 cr
- b Rs.2500
- cr c Rs.1000
- Cr d nil

Que-3: On claims against Central govt., the risk weight is zero. 5000 × 0% = 0

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04 What is the amount of risk weighted assets for sub-standard secured accounts?

- a Rs.250 cr
- b Rs.500 cr
- c Rs.750 cr
- d Rs.1000 cr

Que-4: RW is 150%, if the provision is less than 20% and 100%, if the provision is 20% and 50%, while the provision is 50% of the outstanding balance. In sub-standard secured account, the provision being 15%, RW is 150%. Hence RWA = 150 × 100 = 150 Cr

05 What is the amount of risk weighted assets for sub-standard unsecured accounts?

- a Rs.75 cr
- b Rs.112.50 cr
- c Rs.150 Cr
- d Rs.225 cr

Que-5: RW is 150%, if the provision is less than 20% and 100%, if the provision is 20% and 50%, while the provision is 50% of the outstanding balance. In sub-standard unsecured account, the provision being 25%, RW is 100%. Hence RWA = 150 × 100% = 150 Cr

06 What is the amount of risk weighted assets for doubtful accounts?

- a Rs.400 Cr
- b Rs.600 cr
- c Rs.800 Cr
- d Rs.1600 Cr

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Que-6: RW is 150%, if the provision is less than 20% and 100%, if the provisions is 20% and 50%, where the provision is 50% of the outstanding balance. In doubtful up to one year category (DF-1) account, the provision being 25%, RW is 100%. Hence RWA = $800 \times 100\% = 800$ cr

Case-4 Asset Liability Management:

The bank-wise maturity profile of select deposit category of banks in %age terms of select maturity buckets as on 31, 2010 is as under: (figures in %age)

Liability / Asset
Deposits
Up to 1 year
Over 1 yr to 3 years
Over 3 yrs to 5 years
Over 5 years.

On the basis of given information, answer the following questions?

01 There is decline in rate of interest of 2% for a period up to 1 year. The bank group which will gain most is:

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-1: Old private banks are dependent up to 54% deposits in up to 1 year category. Hence, they gain most.

02 There is decline in rate of interest of 2% for a period up to 1 year. The bank group which will gain least is:

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-2: Public sector banks have the lowest amount of deposit in this category 33%. Hence, they gain least.

03 There is increase in rate of interest of 2% for a period above 1 year to 5 years. The bank group which is most affected adversely is:

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-3: PSU banks have the highest amount of deposit in this category which is highest in all the 4 bank groups.

04 There is increase in rate of interest of 2% for a period above 1 year to 5 years. The bank group which will be least affected adversely is:

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-4: Old private banks have 39% of their deposits in this category which lowest. Hence, they are least affected.

05 The bank group which is more relying on long term deposits above 3 years.

a PSU Banks

b Old Private Banks

c New Private Banks

d Foreign Banks

Que-5: PSU banks are having 30% of their deposits in this category, which is highest.

CASE 5 Asset Liability

The bank-wise maturity structure of select maturity banks (in %age)

Liability / Asset				
Deposits	100			
Up to 1 year	81			
Over 1 yr to 3 years	15	3		
Over 3 yrs to 5 years	2	6	2	3
Over 5 years.	2	7	2	2

On the basis of given information, answer the following questions?

01 There is increase in rate of interest of 2% for a period over 5 years. The bank group which will lose most is:

a PSU Banks

b Old Private Banks

c New Private Banks

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d Foreign Banks

Que-1: Old private banks carry the largest %age borrowing of 7% in this bucket. Hence highest cost increase.

02 There is increase in rate of interest of 2% for a period over! years up to 3 years. The bank group which will lose most is:

a PSU Banks

b Old Private Banks

c New Private Banks

d Foreign Banks

Que-2: New private banks carry the largest %age borrowing in this bucket. Hence highest cost increase.

03 There is decrease in rate of interest of 0.5% for a period over 3 years to 5 years. The bank group which will gain least is:

a PSU Banks

b Old Private Banks

c New Private Banks

d Foreign Banks

Que-3: Old private banks carry the largest %age borrowing of 6% in this bucket. Hence highest cost decrease.

04 There is decrease in rate of interest of 0.5% for a period of up to 1 year. The bank group which will gain least is:

a PSU Banks

b Old Private Banks

c New Private Banks

d Foreign Banks

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Que-4: New private banks carry the smallest %age borrowing of 51% in this bucket. Hence lowest cost decline.

05 The bank group which is depending most on over 3 years' borrowing is:

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-5: Old private banks carry the smallest %age borrowing of 13% in this bucket.

Case-6 Asset Liability Maturity

The bank-wise maturity distribution of deposits and loans as in %age terms of securities is given below as under: (figures in %age)

Liability / Asset	PSU Banks	Old Private Banks	New Private Banks	Foreign Banks
Deposits	100	100	100	100
Up to 1 year	39	42	42	54
Over 1 yr to 3 years	37	32	31	18
Over 3 yrs to 5 years	11	6	12	4
Over 5 years.	13	20	15	24

01 There is increase in rate of interest of 0.5% for a period of up to 1 year. The bank group which will gain most is:

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- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-1: Foreign banks carry the largest %age loans and advances of 54% in this bucket. Hence highest interest increase on loans.

02 There is increase in rate of interest of 0.5% for a period of up to 1 year. The bank group which will

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-2: PSU banks carry the smallest %age loans and advances of 18% in this bucket. Hence lowest interest increase on loans.

03 There is decrease in rate of interest of 1.5% for a period of above 1 year to 3 years. The bank group which will

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

Que-3: Foreign banks carry the smallest %age loans and advances of 18% in this bucket. Hence lowest interest decreases on loans.

04 There is decrease in rate of interest of 1.5% for a period of above 1 year to 3 years. The bank group which will lose most

- a PSU Banks
- b Old Private Banks
- c New Private Banks
- d Foreign Banks

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Que-4: PSU banks carry the highest %age loans and advances of 37% in this bucket. Hence highest loss of interest.

05 If there is upward movement in interest rate scenario for loans the bank group having highest %age of loans due for repricing for up to one year term is:

a PSU Banks

b Old Private Banks

c New Private Banks

d Foreign Banks

Que-5: Foreign banks are highest in this category.

Case-7: Case study

The VaR of a Govt. security is 0.70% and the yield is 8.10%.

1. In the worst- case

a buyer of the security can expect the yield to rise to 8.80% by next day

b buyer of the security can expect the yield to fall to 7.40% by next day

c seller of the security can expect, the yield to fall to 7.40% by next day

d none of the above

Explanations:

1. VaR of 0.70% means that the maximum change in the yield can be 0.70%. Hence in a worst-case scenario, the buyer of the security can

expect, the yield to fall to 7.40% ($8.10 - 0.70\%$) by next day and the seller can expect the yield to rise to 8.80% ($8.10 + 0.70\%$).

2. In the worst- case scenario, the prospective:

a seller of the security can expect, the yield to fall to 7.40% by next day

b buyer of the security can expect, the yield to rise to 8.80% by next day

c of the security can expect, the yield to rise to 8.80% by next day

d none of the above

2. VaR of 0.70% means that the maximum loss that can be expected in a year is 0.70%. Hence in a worst case scenario, the yield can expect, the yield to fall to 7.40% by next day and the seller can expect the yield to rise to 8.80% by next day.

3. In the above case:

a there is 5% possibility for the yield to fall to 7.40% or more

b 1% possibility for the yield to fall to 7.40% or more

c there is 5% possibility of adverse change in yield higher than 0.70%

d inadequate information to draw any conclusion

3. At 95% confidence level, the possibility for an adverse change in yield being higher than 0.70% is only to the extent of 5% (i.e. loss being higher than 0.70%). At 99% confidence, this possibility is to the extent of 1% only.

Case 8 study on Capital Conservation Buffer in Basel III

Bank-A earned a net profit after tax and provisions of Rs.3000 and Bank-B of Rs.1200 cr. Common Equity Tier I capital ratio of Bank-A is 6.75% after including the current period retained profits. This ratio for Bank-B is 7%. Both the banks propose to mobilize fresh capital through public issue and to make the issue attractive, want to pay highest dividend.

RBI rules regarding CCR provide as follows:

Ratio after including the current period retained earnings	Maximum Dividend Payout Ratios
5.5% - 6.125%	0%
>6.125% - 6.75%	25%
>6.75% - 7.375%	50%
>7.375% - 8.0%	75%
>8.0%	100%

Based on the given information, answer the following questions:

01 What is the amount of net profit which the Bank-A is required not to distribute to ensure compliance of Basel III prescription.

- a Rs.3000 cr
- b Rs.2400 cr
- c Rs.1600 cr
- d Rs.600 cr

Que-1. Ratio of Bank-A is now due to which it is required to conserve 80% of its earning. Hence amount to be conserved = $3000 \times 80\% = 2400$ cr. The max amount that can be distributed = $3000 - 2400 = \text{Rs.}600$ cr.

02 What is the maximum amount which the Bank-A can distribute as dividend to ensure compliance of Basel III prescription.

- a Rs.3000 cr
- b: Rs.2400-cr
- c Rs.1600 cr
- d: Rs.600 cr

Que-2. Ratio of Bank-B is now due to which it is required to conserve 80% of its earning. Hence amount to be conserved = $1200 \times 80\% = 960$ cr. The max amount that can be distributed = $1200 - 960 = \text{Rs.}240$ cr.

03 What is the maximum amount which the Bank-B can distribute as dividend to ensure compliance of Basel III prescription.

- a: Rs.1200 cr
- b: Rs.720 cr
- c Rs.480 cr
- d: Rs.240 cr

Que-3. Ratio of Bank-B is 7% due to which it is required to conserve 60% of its earning. Hence amount to be conserved = $1200 \times 60\% = 720$ cr. The max amount that can be distributed = $1200 - 720 = \text{Rs.}480$ cr.

04 What is the maximum amount which the Bank-A can distribute as dividend to ensure compliance of Basel III prescription.

- a: Rs.1200 Cr
- b: Rs.720 cr

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c : Rs.480 cr

d Rs.240 cr

Que-4. Ratio of Bank-B is 7% due to which it is required to conserve 60% of its earning. Hence amount to be conserved = $1200 \times 60\% = 720$ cr. The max amount that can be distributed = $1200 - 720 = \text{Rs.}480$ cr.

Case 9 Study on Credit Risk Mitigation under Basel III

Popular Bank granted a loan of Rs.10 cr to ABC Limited repayable over 3 years with 10% interest. The value of collateral in form of Government Bonds issued by another bank is Rs.10 cr.

As per RBI guidelines, the risk weight for such loans is 50%.

The haircut on such exposure is zero. The haircut of collateral being 6%, the value of collateral = $10 \text{ cr} - 0.60 \text{ cr}$.

Based on this information,

Q1 What is the value of RWA for such exposure after haircut.

a: Rs.10 cr

b: Rs.9.40 cr

c Rs.0.60 cr

d Rs.0.30 cr

Que-1. As per RBI guidelines, the risk weight for such loans is 50%. The haircut for such exposure is zero. The haircut of collateral being 6%, the value of collateral = 9.40 cr ($10 \text{ cr} - 0.60 \text{ cr}$). Hence, the net exposure = $\text{Rs.}0.60 \text{ cr}$. With 50% risk weight the value of RWA = $0.60 \text{ cr} \times 50\% = \text{Rs.}0.30 \text{ cr}$.

02 What is the value of net exposure after credit risk mitigation taking into account the collateral security with prescribed haircut.

- a: Rs.10 cr
- b: Rs.9.40 cr
- c: Rs.0.60 Cr
- d Rs.0.30 cr

Que-2. As per RBI guidelines, the risk weight for such loans is 50%. The haircut for such exposure is zero. The haircut of collateral being 6%, the value of collateral = 9.40. Hence, the net exposure = Rs.0.60 cr. With $WA = 0.60$ cr x 50% = Rs.0.30 Cr.

