

Bank for International Settlements
Financial Stability Institute
Asset Liability Management Workshop

Bank for International Settlements

Financial Stability Institute

Asset Liability Management Workshop

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A. The Current Situation

The Financial Controller of the FSI Bank has provided the following balance sheet for your reference as on 30 June 2004:

Amounts in CHF million

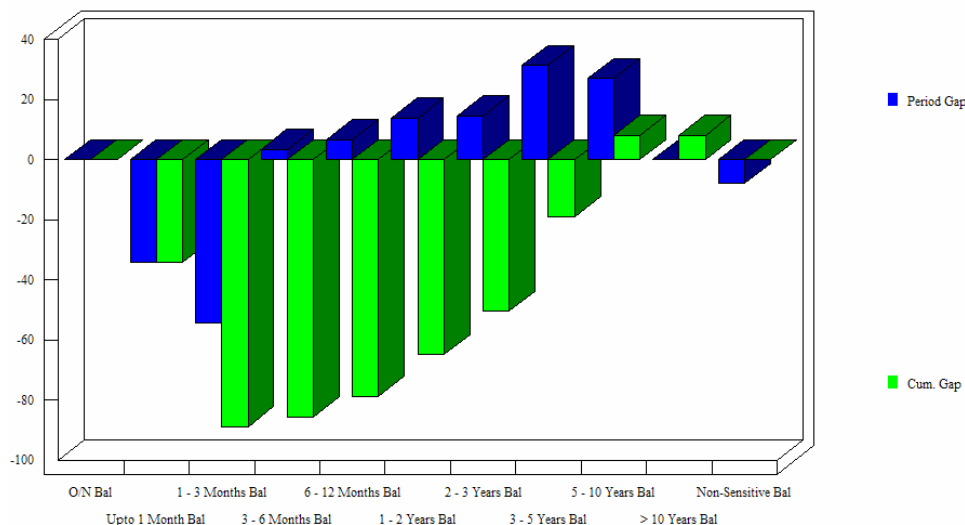
Balance Sheet as on 30 June 2004							
Liabilities	Balance	Rate	WAM (Months)	Assets	Balance	Rate	WAM (Months)
Customer Deposits (3-month repricing)	92	3.25%	7	Fixed Rate Loans	100	4.875%	80
Share Capital	6						
Retained Earnings	2						
	100				100		

- a. Based on this balance sheet, what immediate comments can you make about the net interest income of this organisation, under the following rate structures?
 1. Flat Rates
 2. Rising Rate Environment
 3. Falling Rate Environment

- b. What do you think will be the liquidity and repricing gap structures for this bank?

- c. Based on the repricing gap structure provided below, can we hedge this exposure so that the bank becomes risk-neutral?

Repricing Gap



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A. The current situation - Flat Rates

	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul2004- Jun2005	Jul2005- Jun2006	Jul2006- Jun2007	Jul2007- Jun2008
Income Statement																
Interest Income:																
Overnight Placements	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Rate Loans	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Total Interest Income	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Interest Expense:																
Overnight Borrowings	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.24	0.30	0.22	0.15
Customer Deposits	0.21	0.13	0.07	0.04	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.55	0.00	0.00	0.00
Total Interest Expense	0.21	0.14	0.08	0.06	0.05	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.78	0.30	0.22	0.15
Off-Balance:																
Total Off Balance Sheet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Interest Income	0.20	0.26	0.31	0.34	0.33	0.34	0.34	0.31	0.34	0.33	0.34	0.32	3.77	3.60	2.98	2.33

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A. The current situation - Rates Up 50 bps

	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul2004- Jun2005	Jul2005- Jun2006	Jul2006- Jun2007	Jul2007- Jun2008
Income Statement																
Interest Income:																
Overnight Placements	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Rate Loans	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Total Interest Income	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Interest Expense:																
Overnight Borrowings	0.01	0.02	0.03	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.53	0.66	0.51	0.35
Customer Deposits	0.21	0.14	0.08	0.05	0.04	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.60	0.00	0.00	0.00
Total Interest Expense	0.22	0.16	0.11	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.06	1.13	0.66	0.51	0.35
Off-Balance:																
Total Off Balance Sheet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Interest Income	0.19	0.25	0.28	0.31	0.30	0.31	0.31	0.28	0.31	0.29	0.30	0.29	3.42	3.23	2.70	2.13

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A. The current situation - Rates Up 100bps

	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul2004- Jun2005	Jul2005- Jun2006	Jul2006- Jun2007	Jul2007- Jun2008
Income Statement																
Interest Income:																
Overnight Placements	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Rate Loans	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Total Interest Income	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Interest Expense:																
Overnight Borrowings	0.01	0.03	0.04	0.06	0.06	0.07	0.08	0.08	0.09	0.09	0.10	0.09	0.82	1.04	0.80	0.56
Customer Deposits	0.22	0.15	0.10	0.07	0.05	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.71	0.00	0.00	0.00
Total Interest Expense	0.23	0.18	0.14	0.13	0.12	0.12	0.11	0.10	0.11	0.10	0.10	0.10	1.53	1.04	0.80	0.56
Off-Balance:																
Total Off Balance Sheet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Interest Income	0.18	0.22	0.25	0.27	0.26	0.27	0.27	0.24	0.27	0.26	0.27	0.25	3.02	2.86	2.41	1.92

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A. The current situation - Rates Down 50bps

	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul2004- Jun2005	Jul2005- Jun2006	Jul2006- Jun2007	Jul2007- Jun2008
Income Statement																
Interest Income:																
Overnight Placements	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Rate Loans	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Total Interest Income	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Interest Expense:																
Overnight Borrowings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Customer Deposits	0.21	0.13	0.07	0.04	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.55	0.00	0.00	0.00
Total Interest Expense	0.21	0.13	0.07	0.04	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.55	0.00	0.00	0.00
Off-Balance:																
Total Off Balance Sheet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Interest Income	0.20	0.27	0.32	0.36	0.35	0.36	0.37	0.33	0.37	0.35	0.36	0.35	4.00	3.90	3.20	2.48

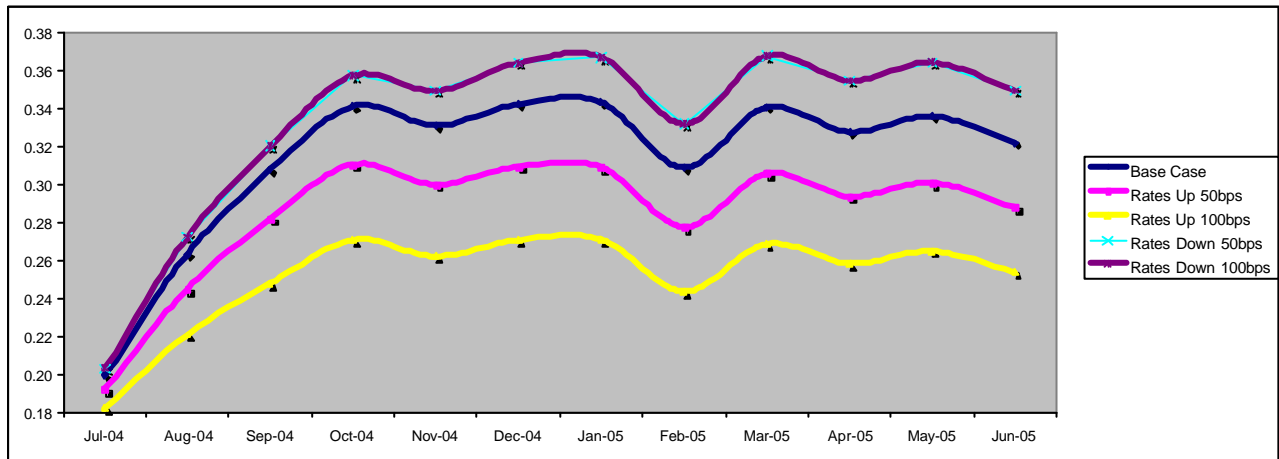
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A. The current situation - Rates Down 100bps

	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul2004- Jun2005	Jul2005- Jun2006	Jul2006- Jun2007	Jul2007- Jun2008
Income Statement																
Interest Income:																
Overnight Placements	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Rate Loans	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Total Interest Income	0.41	0.41	0.39	0.40	0.38	0.39	0.38	0.34	0.38	0.36	0.37	0.35	4.55	3.90	3.20	2.48
Interest Expense:																
Overnight Borrowings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Customer Deposits	0.21	0.13	0.07	0.04	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.55	0.00	0.00	0.00
Total Interest Expense	0.21	0.13	0.07	0.04	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.55	0.00	0.00	0.00
Off-Balance:																
Total Off Balance Sheet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Interest Income	0.20	0.27	0.32	0.36	0.35	0.36	0.37	0.33	0.37	0.35	0.36	0.35	4.00	3.90	3.20	2.48

Net Interest Income Comparison

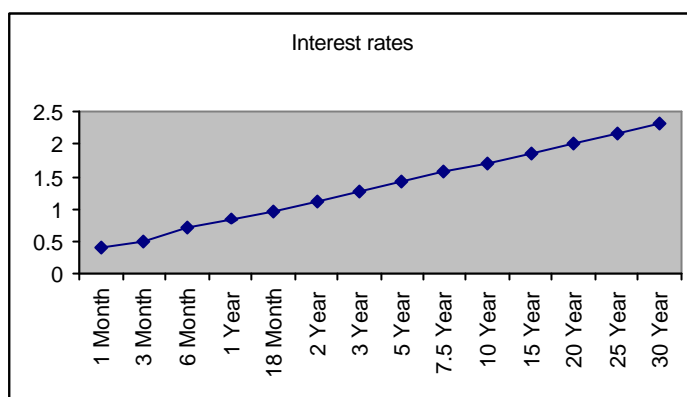
	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05
Base Case	0.20	0.26	0.31	0.34	0.33	0.34	0.34	0.31	0.34	0.33	0.34	0.32
Rates Up 50bps	0.19	0.25	0.28	0.31	0.30	0.31	0.31	0.28	0.31	0.29	0.30	0.29
Rates Up 100bps	0.18	0.22	0.25	0.27	0.26	0.27	0.27	0.24	0.27	0.26	0.27	0.25
Rates Down 50bps	0.20	0.27	0.32	0.36	0.35	0.36	0.37	0.33	0.37	0.35	0.36	0.35
Rates Down 100bps	0.20	0.27	0.32	0.36	0.35	0.36	0.37	0.33	0.37	0.35	0.36	0.35



B. Incorporation of Dynamic Variables – Basis Risk

Currently, the loans, linked to the Swiss Franc yield curve, have a maturity profile of 10, 15, 20, and 25 years. The curve currently looks like this:

Period	Value
1 Month	0.41
3 Month	0.5
6 Month	0.6983
1 Year	0.8417
18 Month	0.9783
2 Year	1.12915
3 Year	1.27698
5 Year	1.42481
7.5 Year	1.57264
10 Year	1.72047
15 Year	1.8683
20 Year	2.01613
25 Year	2.16396
30 Year	2.31179



The deposits are linked to the same yield curve, but all upward movements are immediate whilst all downward movements have a lag of 3 months. Furthermore, the loans are assigned with spreads of 2% - 2.5%, whereas the deposits are typically priced with spreads ranging from 1% - 1.25%. There is also an explicit floor on the deposit accounts of 1%.

1. Is there basis risk in this structure?
2. If yes, how is it reflected in the modelling horizon?
3. What happens to net interest income when rates go up, come down, or stay constant?
4. Does the structure of the repricing gap change from scenario 1 above, in your opinion?

	Net Int Inc	diff	% diff
Decision Matrix			
Start Date: 7/2004			
Months Forecast: 12			
Baseline Result: Spreads			
Spreads	SFr.3.77	SFr.0.00	0.0000
Spreads DN 100	SFr.4.00	SFr.0.24	6.2892
Spreads DN 50	SFr.4.00	SFr.0.24	6.2892
Spreads UP 100	SFr.3.02	[SFr.0.75]	[19.8361]
Spreads UP 50	SFr.3.42	[SFr.0.35]	[9.2575]

C. Incorporation of Dynamic Variables – New Business

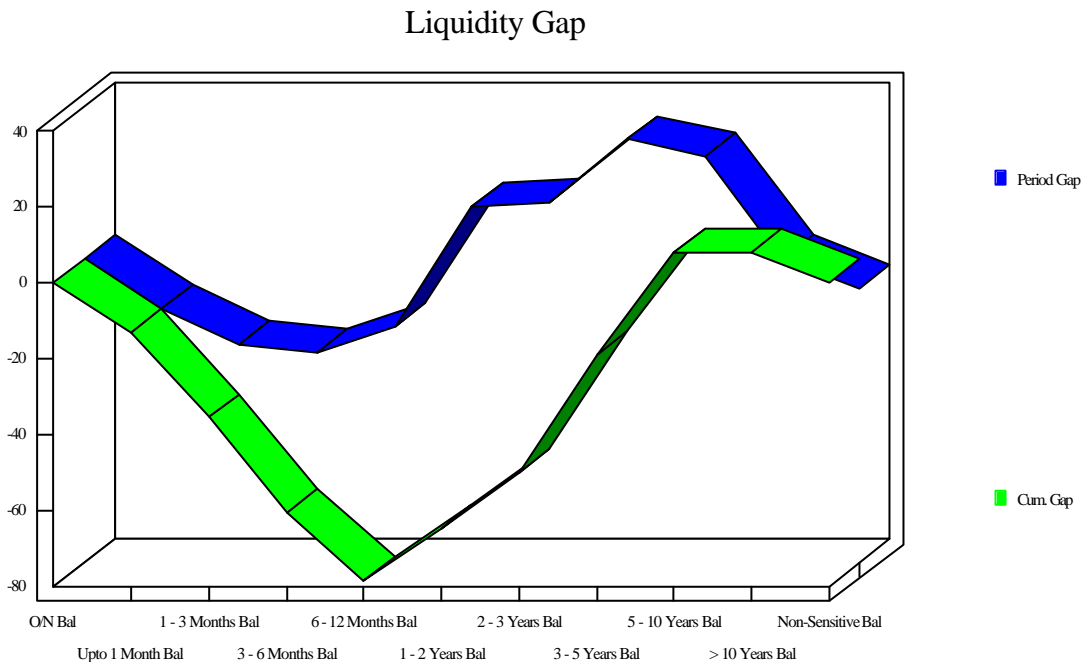
The Financial Controller informs you that new business ventures are likely to increase both the loan and the deposit portfolios by 25%. Does this have any ramifications on the organisation's capital structure?

Do you think that this strategy of dynamic growth is viable?

What do you think are the considerations that must be placed before ALCO before embarking on such a strategy?

If you were advising the bank, what would your views be on the maturity profile that you would seek to achieve in the new business structure? Would you advocate the continuation of the existing maturity profile (as shown in the graph below)?

Would you recommend an alternative? If it were the latter, what would it be?

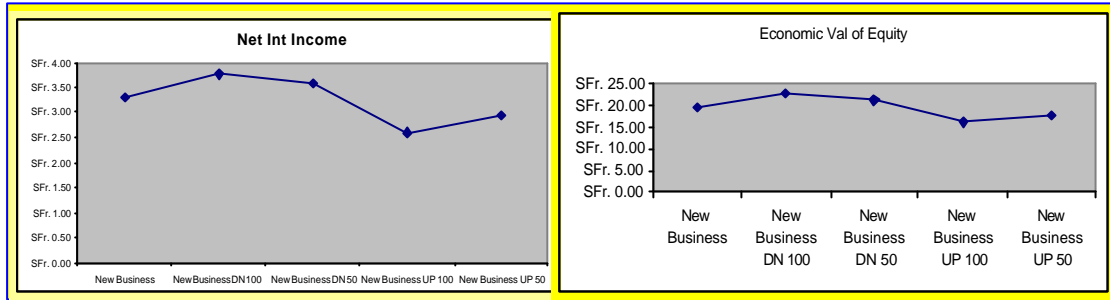


Decision Matrix

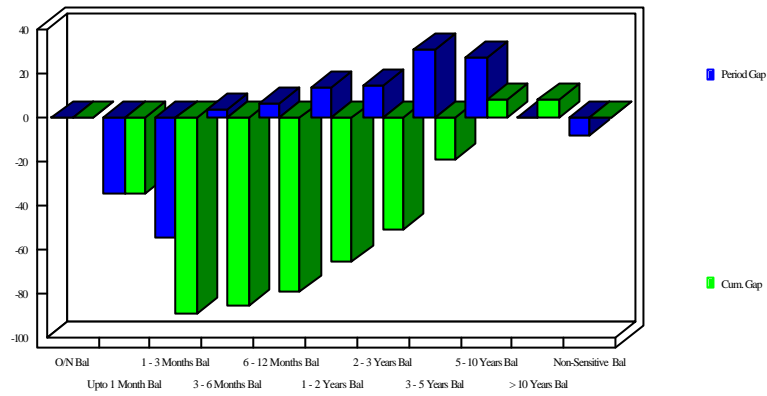
Start Date: July 2004
Months Forecast: 12
EV Point: Static

Baseline Result: New Business

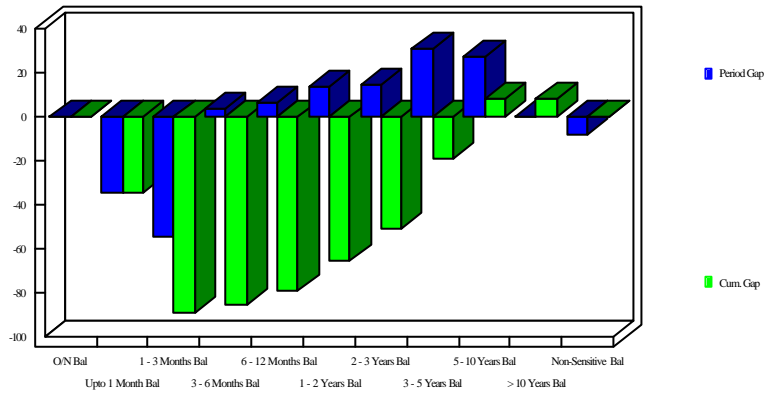
	Net Int Income	Difference	% Difference	Net Int Margin	diff	% diff	Economic Val of Equity	diff	% diff	Duration of Equity	diff	% diff	ROE	diff	% diff
New Business	SFr. 3.30	SFr. 0.00	0.0000	2.8964	0.0000	0.0000	SFr. 19.51	SFr. 0.00	0.0000	16.9983	0.0000	0.0000	31.8434	0.0000	0.0000
New Business DN 100	SFr. 3.76	SFr. 0.46	14.0151	3.2977	0.4013	13.8543	SFr. 22.82	SFr. 3.31	16.9788	15.2051	(1.7932)	(10.5492)	35.7510	3.9077	12.2715
New Business DN 50	SFr. 3.58	SFr. 0.27	8.3173	3.1344	0.2380	8.2159	SFr. 21.19	SFr. 1.69	8.6497	16.0166	(0.9817)	(5.7753)	34.1401	2.2968	7.2127
New Business UP 100	SFr. 2.59	SFr. (0.72)	(21.7126)	2.2740	(0.6224)	(21.4885)	SFr. 16.08	SFr. (3.42)	(17.5505)	19.6668	2.6685	15.6988	25.7371	(6.1063)	(19.1761)
New Business UP 50	SFr. 2.95	SFr. (0.35)	(10.5750)	2.5937	(0.3028)	(10.4528)	SFr. 17.78	SFr. (1.72)	(8.8324)	18.2103	1.2120	7.1304	28.9097	(2.9337)	(9.2128)



Repricing Gap
New Business - Flat Rates



Repricing Gap
Rates Down 100bps

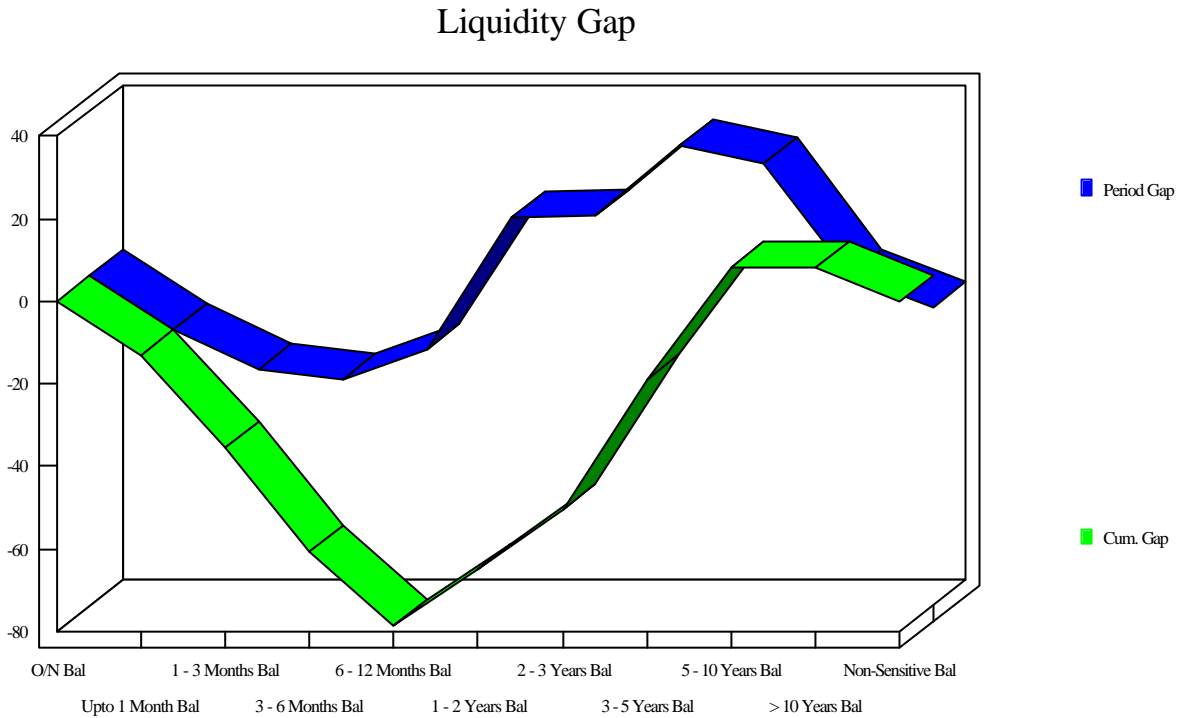


	Jun-04	Jun-05	Qtr Jul2005- Sep2005	Qtr Oct2005- Dec2005	Qtr Jan2006- Mar2006	Qtr Apr2006- Jun2006	Yr Jul2006- Jun2007	Yr Jul2007- Jun2008
Ending Balance Sheet								
Assets:								
Overnight Placements		SFr. 2.80	SFr. 3.51	SFr. 4.21	SFr. 4.88	SFr. 5.55	SFr. 8.61	SFr. 12.24
Fixed Rate Loans	SFr. 100.00	SFr. 125.00	SFr. 131.25	SFr. 137.50	SFr. 143.75	SFr. 150.00	SFr. 175.00	SFr. 200.00
Total Assets	SFr. 100.00	SFr. 127.80	SFr. 134.76	SFr. 141.71	SFr. 148.63	SFr. 155.55	SFr. 183.61	SFr. 212.24
Liabilities:								
Overnight Borrowings		SFr. 0.00	SFr. 0.00	SFr. 0.00	SFr. 0.00	SFr. 0.00	SFr. 0.00	SFr. 0.00
Customer Deposits	SFr. 92.00	SFr. 115.00	SFr. 120.75	SFr. 126.50	SFr. 132.25	SFr. 138.00	SFr. 161.00	SFr. 184.00
Total Liabilities	SFr. 92.00	SFr. 115.00	SFr. 120.75	SFr. 126.50	SFr. 132.25	SFr. 138.00	SFr. 161.00	SFr. 184.00
Equity:								
Share Capital	SFr. 6.00	SFr. 7.50	SFr. 7.88	SFr. 8.25	SFr. 8.63	SFr. 9.00	SFr. 10.50	SFr. 12.00
Retained Earnings	SFr. 2.00	SFr. 5.30	SFr. 6.13	SFr. 6.96	SFr. 7.75	SFr. 8.55	SFr. 12.11	SFr. 16.24
Capital and Reserves	SFr. 8.00	SFr. 12.80	SFr. 14.01	SFr. 15.21	SFr. 16.38	SFr. 17.55	SFr. 22.61	SFr. 28.24
Total Equity	SFr. 8.00	SFr. 12.80	SFr. 14.01	SFr. 15.21	SFr. 16.38	SFr. 17.55	SFr. 22.61	SFr. 28.24
Total Liabilities & Equity	SFr. 100.00	SFr. 127.80	SFr. 134.76	SFr. 141.71	SFr. 148.63	SFr. 155.55	SFr. 183.61	SFr. 212.24
Capital Adequacy	8.000%	10.017%	10.395%	10.734%	11.020%	11.282%	12.315%	13.305%

ECONOMIC VALUE	Static	Dec-2004	Dec-2005	Dec-2006	Dec-2007	Dec-2008
New Business						
Assets:						
Overnight Placements	0.00	1.39	4.21	7.06	10.39	14.20
Fixed Rate Loans	111.86	127.48	158.98	190.92	222.87	254.89
Other Assets	0.00	0.00	0.00	0.00	0.00	0.00
Total Assets	111.86	128.87	163.20	197.99	233.26	269.09
Liabilities:						
Overnight Borrowings	0.00	0.00	0.00	0.00	0.00	0.00
Customer Deposits	92.35	104.39	127.62	150.83	174.03	197.23
Other Liabilities	0.00	0.00	0.00	0.00	0.00	0.00
Total Liabilities	92.35	104.39	127.62	150.83	174.03	197.23
Equity:						
Total Equity	19.51	24.48	35.58	47.15	59.23	71.85

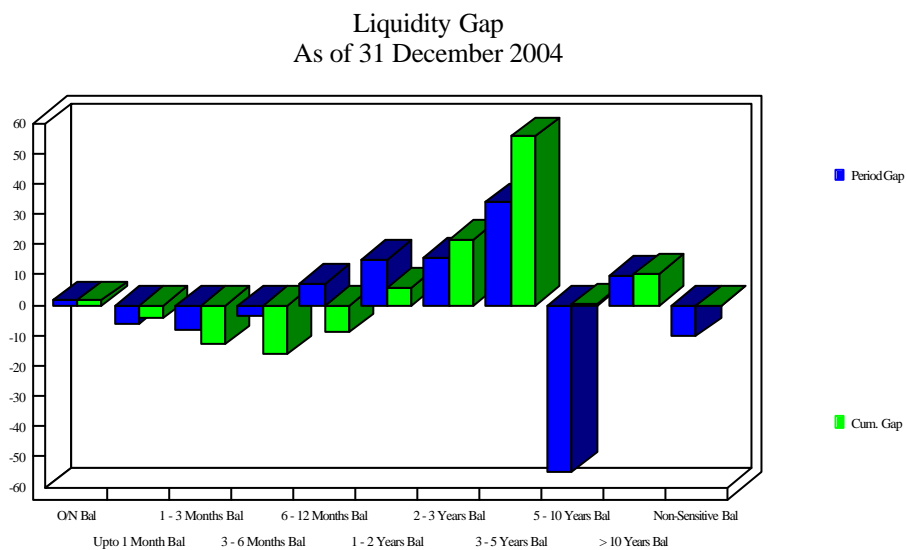
D. Incorporation of Dynamic Variables – Alternative Business Strategies

If the bank decides to fund its long-term asset portfolio with an alternative funding structure, what should it do? The current liquidity gap structure looks like this:

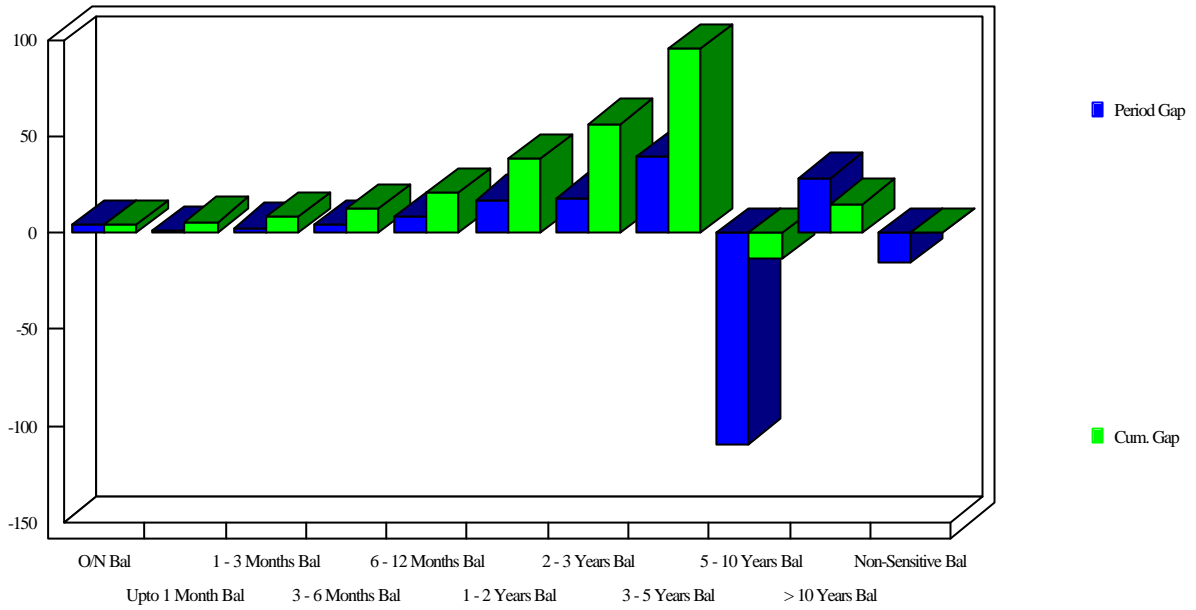


Can you think of any on-balance sheet funding structure that you can incorporate to ensure that this organisation becomes cash flow gap-neutral?

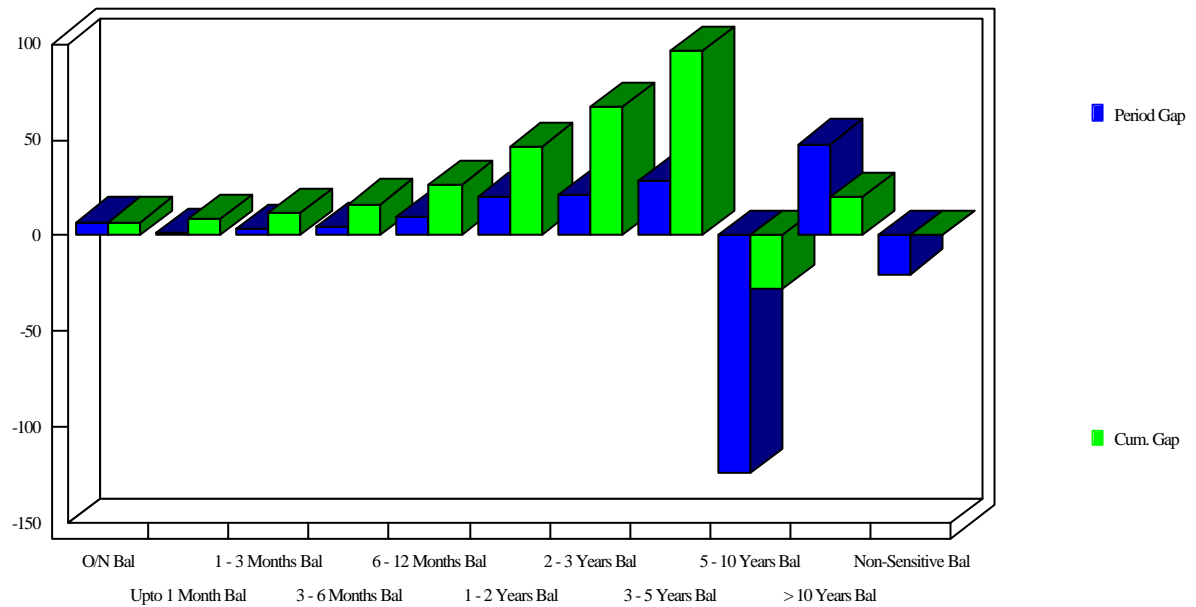
What would you recommend to this bank to ensure that it has optimised its risk-profile?



Liquidity Gap As of 31 December 2005



Liquidity Gap As on 31 December 2006



E. Optionality

How do you recommend that ALCO legislate for the vagaries in customer behaviour? An empirical study conducted in the bank reveals that if the difference between the market rates and the interest rates quoted by the bank are even at 25bps, there is bound to be a prepayment, and this in turn will be based on the age of the debt and the difference between the market rates and coupon. If the difference is favourable to the customer i.e., the customer rates quoted by the bank are lower than, or at least equal to what the market is offering, there is no incentive to prepay. Otherwise, the following prepayment speeds (based on a constant prepayment rate) is expected:

	A:0 to 3 Mo	B:4 to 6 Mo	C:7 to 9 Mo	D:10 to 12 Mo	E:13 to 15 Mo	F:16 to 18 Mo	G:19 to 21 Mo	H:22 to 24 Mo	I:25 to 27 Mo
1:Customer Behaviour									
2:Defeasance BS									
3:Coupon - Market									
4:									
5:Prepayment Behaviour									
6:-99 to 0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7:0.0001 to 0.25	3.0000	4.0000	5.0000	6.0000	7.0000	8.0000	9.0000	10.0000	10.0000
8:0.2501 to 0.5	5.0000	6.0000	7.0000	8.0000	9.0000	10.0000	11.0000	12.0000	12.0000
9:0.5001 to 0.75	7.0000	8.0000	9.0000	10.0000	11.0000	12.0000	13.0000	14.0000	14.0000
10:0.7501 to 1	9.0000	10.0000	11.0000	12.0000	13.0000	14.0000	15.0000	16.0000	16.0000
11:1.0001 to 2	11.0000	12.0000	13.0000	14.0000	15.0000	16.0000	17.0000	18.0000	18.0000
12:2.0001 to 3	13.0000	14.0000	15.0000	16.0000	17.0000	18.0000	19.0000	20.0000	20.0000
13:3.0001 to 5	15.0000	16.0000	17.0000	18.0000	19.0000	20.0000	21.0000	22.0000	22.0000
14:5.0001 to 99.9999	17.0000	18.0000	19.0000	20.0000	21.0000	22.0000	23.0000	24.0000	24.0000

What will happen to net interest income and economic value when rates are falling?

What will happen to net interest income and economic value in a rising rate environment?

Given the fact that existing mortgages are fixed rate instruments, what would your recommendation to the bank be to optimise option risk?

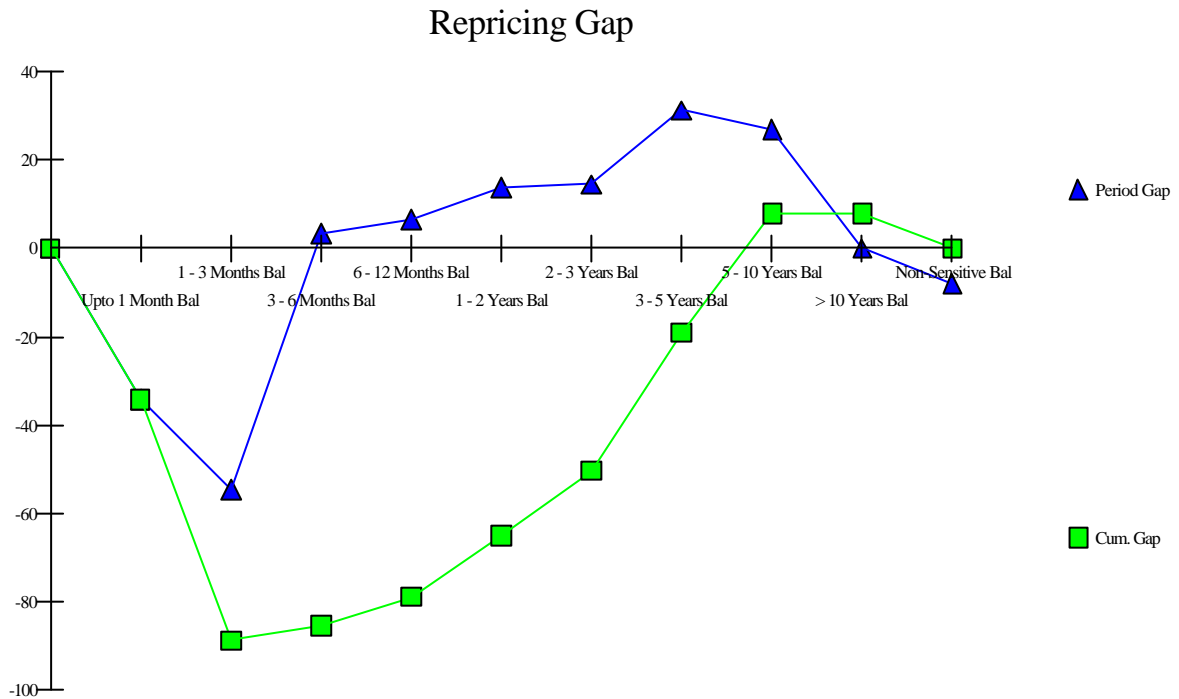
	Total	Jul-2004	Aug-2004	Sep-2004	Oct-2004	Nov-2004	Dec-2004	Jan-2005	Feb-2005	Mar-2005	Apr-2005	May-2005	Jun-2005
Current Prepayment													
Institution: FSI Bank													
Chart: FSI Chart													
Model: Prepayment Tables													
Prepay Component: Customer Behaviour													
Rate Scenario Component: BIS IMP FWD 7/04													
Start Date: Jul-04													
Fixed Rate Loans													
Prepayment Behaviour													
Swiss Franc 12 Month													
Beg Bal	100.00	97.97	95.96	93.98	91.94	89.92	87.94	85.90	83.89	81.91	79.89	77.90	
Cont RO	50.77	1.08	1.07	1.06	1.06	1.05	1.04	1.04	1.03	1.02	1.01	1.01	1.00
Prepayment	36.78	0.96	0.94	0.92	0.98	0.96	0.94	1.00	0.98	0.96	1.01	0.99	0.96
Mod RO	87.55	2.03	2.01	1.98	2.04	2.01	1.99	2.04	2.01	1.98	2.02	1.99	1.96
Unmod Cont RO	72.95	1.08	1.08	1.08	1.09	1.09	1.10	1.10	1.11	1.11	1.12	1.12	1.13
CPR		11.00	11.00	11.00	12.00	12.00	12.00	13.00	13.00	13.00	14.00	14.00	14.00
SMM		0.97	0.97	0.97	1.06	1.06	1.06	1.15	1.15	1.15	1.25	1.25	1.25

Decision Matrix	Prepayment Tables	Prepayment Tables DN 100	Prepayment Tables DN 50	Prepayment Tables UP 100	Prepayment Tables UP 50
Start Date: 7/2004					
Months Forecast: 12					
Baseline Result: Prepayment Tables					
Net Int Inc	3.28	3.68	3.53	2.60	2.96
diff	0.00	0.40	0.25	(0.68)	(0.32)
% diff	0.0000	12.0353	7.4847	(20.7299)	(9.8455)
Net Int Margin	2.8807	3.2235	3.0936	2.2898	2.6004
diff	0.0000	0.3428	0.2130	(0.5909)	(0.2803)
% diff	0.0000	11.8997	7.3934	(20.5116)	(9.7293)
Economic Val of Eq	16.59	18.41	17.51	15.69	15.87
diff	0.00	1.82	0.91	(0.91)	(0.72)
% diff	0.0000	10.9405	5.5136	(5.4633)	(4.3452)
Duration of Eq	14.1033	12.5023	13.1613	19.0522	15.7241
diff	0.0000	(1.6010)	(0.9421)	4.9488	1.6208
% diff	0.0000	(11.3521)	(6.6797)	35.0898	11.4921
ROA	2.8807	3.2235	3.0936	2.2898	2.6004
diff	0.0000	0.3428	0.2130	(0.5909)	(0.2803)
% diff	0.0000	11.8997	7.3934	(20.5116)	(9.7293)
ROE	31.6874	35.0343	33.7437	25.9010	28.9781
diff	0.0000	3.3469	2.0562	(5.7865)	(2.7094)
% diff	0.0000	10.5622	6.4891	(18.2611)	(8.5503)

F. Hedging Strategies

Given the sensitivity (repricing) gap direction of the bank, what would you recommend they do in the form of off-balance sheet structures to nullify their exposure?

The sensitivity gap report is as follows:



What instrument would you use to hedge this exposure against a rise or a fall in interest rates?

What characteristics would this instrument have?

Will this eliminate the sensitivity in the balance sheet? What is the cost of such elimination, if there is such elimination?

Rate Swap - Interest Rate Swaps

Input Area

Description: Interest Rate Hedge Notional Principal: 100.00

Maturity Date: 31/12/2009 Start Date: 31/05/2004

Initial Payment Month/Year: Pay: ##/#### Receive: ##/####

Initial Reprice Date: Pay: Receive: 31/08/2004

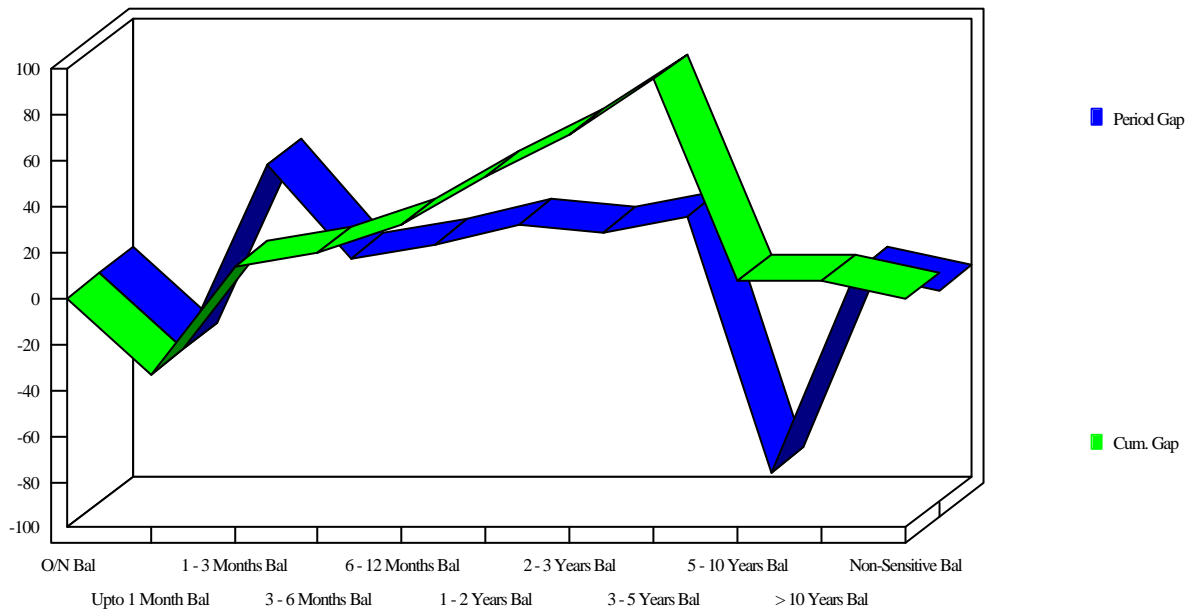
Current Rate: Pay: 3.750 Receive: 2.50

Spread: Pay: 0.00 Receive: 0.00

Accrued Interest: Pay: 0.00 Receive: 0.00

Description	Notional Amount	Maturity Date	Start Date	Initial Reprice Date	Current Rate	
				PAY REC	PAY REC	
Interest Rate H	100.00	31/12/09	31/05/04	31/08/04	3.75 2.50	

Repricing Gap Swaps



Swaps Swaps DN 100 Swaps DN 50 Swaps UP 100 Swaps UP 50

Decision Matrix

Start Date: 7/2004
Months Forecast: 12
EV Point: 0
Baseline Result: Swaps

Net Int Inc	0.66	0.36	0.50	0.81	0.75
diff	0.00	(0.30)	(0.16)	0.15	0.09
% diff	0.0000	(45.8086)	(24.8842)	22.0015	13.4444
Net Int Margin	0.5876	0.3188	0.4417	0.7167	0.6665
diff	0.0000	(0.2688)	(0.1459)	0.1291	0.0789
% diff	0.0000	(45.7466)	(24.8340)	21.9658	13.4183
Economic Val of E	4.61	0.97	2.76	9.01	6.58
diff	0.00	(3.64)	(1.85)	4.40	1.97
% diff	0.0000	(78.8810)	(40.0730)	95.3241	42.6574
Duration of Eq	(10.8145)	(9.5167)	(10.1351)	(9.6934)	(11.1099)
diff	0.0000	1.2978	0.6794	1.1211	(0.2954)
% diff	0.0000	(12.0005)	(6.2824)	(10.3668)	2.7314
ROA	0.5876	0.3188	0.4417	0.7167	0.6665
diff	0.0000	(0.2688)	(0.1459)	0.1291	0.0789
% diff	0.0000	(45.7466)	(24.8340)	21.9658	13.4183
ROE	7.2545	3.9877	5.4946	8.8187	8.2064
diff	0.0000	(3.2668)	(1.7599)	1.5642	0.9520
% diff	0.0000	(45.0318)	(24.2590)	21.5618	13.1224

	Base Case	Swaps DN 100 #2	Diff. (2 - Ref.)	% Diff.	Swaps DN 50 #3	Diff. (3 - Ref.)	% Diff.	Swaps UP 100 #4	Diff. (4 - Ref.)	% Diff.	Swaps UP 50 #5	Diff. (5 - Ref.)	% Diff.
Income Comparisons													
Interest Income:													
Overnight Placements	0.00	0.00	(0.00)	(99.68)	0.00	(0.00)	(73.08)	0.01	0.00	145.73	0.00	0.00	75.16
Fixed Rate Loans	5.39	5.14	(0.26)	(4.77)	5.27	(0.12)	(2.29)	5.62	0.23	4.18	5.52	0.12	2.24
Total Interest Income	5.40	5.14	(0.26)	(4.81)	5.27	(0.13)	(2.32)	5.63	0.23	4.24	5.52	0.12	2.27
Interest Expense:													
Overnight Borrowings	0.00	0.00	0.00	N/A	0.00	0.00	N/A	0.00	0.00	N/A	0.00	0.00	N/A
Customer Deposits	2.12	1.46	(0.67)	(31.35)	1.75	(0.38)	(17.72)	3.04	0.92	43.07	2.57	0.45	21.14
Total Interest Expense	2.12	1.46	(0.67)	(31.35)	1.75	(0.38)	(17.72)	3.04	0.92	43.07	2.57	0.45	21.14
Off-Balance:													
Total Off Balance Sheet	(2.61)	(3.32)	(0.71)	27.22	(3.03)	(0.42)	15.94	(1.78)	0.83	(31.88)	(2.19)	0.42	(15.94)
Net Interest Income	0.66	0.36	(0.30)	(45.81)	0.50	(0.16)	(24.88)	0.81	0.15	22.00	0.75	0.09	13.44