

BANGOR UNIVERSITY

Bangor Business School

Module: ASB3525 – Bank Management

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N.B.

Please submit an electronic copy of your answers ONLY via Turnitin. Put your student ID number followed by your name as the file name of the electronic copy uploaded to Turnitin.

Please ensure you mark clearly which question you are answering. You should attempt to answer every question and clearly show your calculations. The contribution of each Part towards the overall assignment mark is given below.

The maximum word limit is 1,500 words.

THIS ASSIGNMENT IS DUE BY 5PM ON FRIDAY 17TH APRIL 2020

ASSIGNMENT 2019/20

Part A (worth 15% of the overall assignment mark)

Table 1 presents the balance sheet of Bank A.

TABLE 1 – BALANCE SHEET OF BANK A (ALL VALUES IN £ MM)

	Assets	Rates	Liabilities	Rates
Rate sensitive	400	5%	600	1%
Fixed rate	450	7%	200	2%
Non-earning/paying	150		100	
Sub-total			900	
Equity			100	
Total	1,000		1,000	

- i. Calculate the **net interest income**, **net interest margin**, and **GAP** of Bank A.
- ii. Assume that there is a parallel shift in rates by +2% (i.e. +200bps). Explain the expected impact of this parallel shift on **net interest income** and **net interest margin** given the GAP calculated in part (A.i)?

- iii. Calculate the new **net interest income** and **net interest margin** given a +1% (i.e. 100 bps) parallel shifts in rates.

Part B (worth 35% of the overall assignment mark)

Table 2 presents the balance sheet of Bank B.

TABLE 2 – BALANCE SHEET OF BANK B (ALL VALUES IN £ MM)

Assets	Market value	Rates
Cash	100	
3-years commercial loan	750	10%
6-years treasury bond	150	6%
Total Assets	1,000	
Liabilities and Equity		
1-year time deposit	500	4%
3-years bond	400	8%
Equity	100	
Total Liabilities and Equity	1,000	

- i. Calculate the **weighted average duration of assets**, the **weighted average duration of liabilities**, **net interest income**, **net interest margin**, and the **DGAP** of Bank B. (*Hint: you will need to calculate the duration for each product first*).
- ii. Assume that there is a parallel shift in rates by +1% (i.e. +100bps). Explain the expected impact of this parallel shift on **net interest income** and **net interest margin** given the DGAP calculated in part (B.i)?
- iii. Calculate the new **net interest income** and **net interest margin** given a +1% (i.e. 100 bps) parallel shifts in rates.

Part C (worth 50% of the overall assignment mark)

- i. Explain what Bank B can do to immunise its portfolio (i.e. what changes should be made to the balance sheet described in Table B so that DGAP is approximately equal to zero).
- ii. Based on your explanation in C.i, calculate the new **net interest income** and **net interest margin** based on this strategy to immunise the portfolio of Bank B. Explain the impact of this immunisation strategy on **net interest income** and **net interest margin**.

Suggested literature to aid your discussion (you should also find additional literature to support your answers).

- Chaudron, R. (2018). **Bank's interest rate risk and profitability in a prolonged environment of low interest rates.** Journal of Banking and Finance. 89, 94-104.
- Frame, S. and White, L. (2005). **Fussing and fuming over Fannie and Freddie; How much smoke, how much fire?** Journal of Economic Perspective. 19, 159-184.
- Gerlach, J., Mora, N. and Uysal, P. (2018). **Bank funding costs in a rising interest rate environment.** Journal of Banking and Finance. 87, 164-186.
- Oberoi, J. (2018). **Interest rate risk management and the mix of fixed and floating rate debt.** Journal of Banking and Finance. 86, 70-86.
- Timothy, G. (2004). **Managing interest rate risk in a rising rate environment.** RMA Journal, Risk Management Association (RMA), November 2004.