<u>Question 1:</u> Derivatives and bonds

You have been appointed as Chief Operating Officer (COO) at Cosmos Alternative Bank, a Swiss bank authorized by FINMA.

Cosmos Alternative Bank offers discretionary management mandates and execution services to private, professional and institutional clients according to the FinSA's categorization.

Your first project is to implement an operational process to trade Total Return Swaps (TRS).

A TRS is an OTC derivative contract by which the parties commit to exchange on specific dates, and during a certain period, a payment indexed to the total return of a financial asset against a fixed or variable payment indexed to a benchmark interest rate plus or minus a margin.

Although the underlying asset of a TRS, called reference asset in jargon, can be any financial asset, the most commonly used underlying assets are stocks, stock indices, bonds, a portfolio of loans or mortgages.

TRS can be traded with or without an exchange of the notional amount of the contract between the parties.

Erik, the CEO of the bank, informs you that Cosmos Alternative Bank has never traded this type of derivatives before. However, several institutional clients of the bank seem very interested to use this OTC derivative in their investment strategy. Therefore, this could be a new source of revenue for the bank.

At this time, TRS are not concerned by the regulatory obligation to clear transactions on OTC derivatives. Moreover, according to its current positions in derivatives, Cosmos Alternative Bank is not subject to initial margins. Only variation margins are required on OTC derivatives transactions.

a) Erik explains that TRS must be authorized first by the "new products committee "of the bank. Why does this financial instrument need to be authorized first by this committee? Mention 4 reasons. (8 points)

b) Erik would like to prepare a complete report for the members of this committee. In this context, he asks you to answer to the following questions:

b1) What are the key stages of a transaction on a TRS (OTC derivative) between the bank and a banking counterparty (dealer)? Explain the objective of each of these key stages and the functions (employees) of the bank involved at each key stage. (16 points)

b2) Which Financial Market Infrastructure (FMI) is involved in the clearing process of OTC derivatives transactions? What is its role? Which type of risk is mitigated with the existence of this FMI? Explain. (8 points)

b3) What is the objective of variation margins if the bank trades TRS with a banking counterparty? How are variation margins calculated? Which party will receive variation margins? Explain. (8 points)

b4) What is the objective of initial margins if the bank trades TRS with a banking counterparty? Which approach do you suggest to calculate the initial margin in order to reach this objective? Explain. (8 points)

b5) What are the 4 main steps of a margin call process? What is the objective of each of these steps? Explain. (12 points)

Erik would like to use an example to explain to committee members how a TRS may be used in the investment strategy of institutional clients. He would like to take the example of an institutional client who holds a portfolio replicating the SMI (Swiss Market Index) and sells a TRS on SMI.

He explains that, by selling a TRS (called TRS payer), the client pays the positive increase rate of the reference asset plus all income paid on this asset. In exchange, the client receives a fixed interest rate (plus or less a margin) and the negative increase rate of the reference asset.

c) Draw a schema to illustrate the payment flows between the client and the client's counterparty if the client takes a TRS payer position on SMI. (12 points)