NOVA SCHOOL OF BUSINESS & ECONOMICS

Course: Banking [2206] **Fall Semester 2023**

Exam **December 12, 2023**

Student number: ____________________

Instructions for the exam:

- You have 1h30 (one and a half) hours to complete the exam
- The exam is worth 20 points
- You are not allowed to have anything with you except for your computer, drinks/snacks and a non-graphic calculator
- Consequently, you should try your best to express your ideas clearly and concisely, and to highlight key arguments.

Part I [6/20]

In this first part of the exam, you need to select a single answer (identified as a, b, c or d) in each of the 6 questions presented below. You will not be penalized for wrong answers.

1. Which of the following sentences is false?

a) The Single Supervisory Mechanism (SSM) supervises directly all institutions - both the significant and the less significant - in the euro area.

b) The ECB holds the responsibility for monetary policy in the euro area. It sets the key interest rates for the euro area and, if necessary, may decide to use other instruments (e.g. TLTROs, asset purchase programmes).

c) Microprudential supervision concerns the application, monitoring and enforcement of rules that ensure the solvency and financial robustness of each institution.

d) Macroprudential instruments include capital buffers but also other measures (for instance, the borrower-based measures).

2. Concerning credit risk, which of the following sentences is false?

a) The goal of credit risk management is to maximise a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters.

b) The expected loss on credit risk exposures is intended to be covered by provisions and, therefore, immediately impacts P&L.

c) The unexpected loss is intended to be covered by own funds requirements.

d) Banks manage the credit risk inherent in the entire portfolio, but they do not assess the risk of individual credits or transactions (*e.g.* their respective Probability of Defaults (PD) or loss-given-defaults (LGD)).

3. The repricing gap approach calculates the gaps in each maturity bucket by subtracting the:

a) current assets from the current liabilities.

b) long term liabilities from the fixed assets.

c) rate-sensitive assets from the total assets.

d) rate-sensitive liabilities from the rate-sensitive assets.

4. Which term defines the risk related to the uncertainty of a bank's earnings on its trading portfolio caused by changes in market conditions?

a) Market risk.

b) Interest rate risk.

c) Credit risk.

d) Sovereign risk.

5. Regarding the regulatory framework, which of the following sentences is false?

a) The Internal Capital Adequacy Assessment Process (ICAAP) denotes the set of activities and processes that must be undertaken by banks themselves.
b) The Supervisory Review and Evaluation Process (SREP) is a set of procedures carried out by the supervisory.
c) The ICAAP feeds into the SREP assessments/ Pillar 2 capital determination process.
d) The Pillar 2 assessment is relevant just for a small subset of large banks.

6. Concerning stress-test, which of the following sentences is false?

a) The usage of bank stress tests has risen substantially in the years following the global financial crisis and are currently a key part of the supervisory process.
b) Bank stress tests measure the resilience of banks (just to) hypothetical mild scenarios, not using adverse scenarios.
c) According to the bottom-up approach, a stress test is performed by a bank using its own framework as part of a system-wide exercise where authorities may provide banks common scenario(s) and assumptions.
d) According to the top-down approach, a stress test is performed by a public authority using its framework; either bank-level or aggregated data may be used, but always in models with consistent methodology and assumptions.

Part II [9/20]

In this second part of the exam, you must answer **three questions** out of the five presented below. You are free to choose the five that you want to answer to. Each question is worth 1/3 of the 9 points assigned to this group. If you reply to more than five questions, only the first five answered will be considered for grading purposes. Please answer the questions chosen in a maximum of 10 lines per question/150 words.

1. The notion of ***Risk Weighted Asset*** (RWA) has been introduced back in Basel I for banks that operate internationally. Since then, the notion of RWA has evolved and is currently the reference for capital requirements for all banks. In the context of Basel III, please elaborate on the notion of RWAs, including their merits and weakness.

In your answer you may want to explain the concept, the implication of their use for regulatory capital assessment, the banking risks it reflects, the different methodologies to assess it, and its weakness, namely in terms of procyclicality (including a reference on the leverage ratio).

- RWA group assets by risk category, so it reflects the overall risk of the bank;
- Using the RWAs (instead of assets), the minimum capital requirements are matched with the risk level of each asset; for the same asset value, different risks imply different capital requirements;
- It reflects credit, market, and operational risks;
- Standardized and Internal-rated based approach (IRB), according to banks may use their own models.
- One of the weaknesses of the ratio is procyclicality. During booms, as RWA tend to decrease, the required capital will also decrease; hence, with the same capital, additional credit can be granted, fueling the economy cycle. During downturns, the effect is the opposite. As RWA tend to increase, the required capital will also increase. The bank may be obliged to raise additional capital and credit will be restrained.
- The leverage ratio acts as a break. In booms, as the denominator does not change, additional credit would call for more capital.
- The CCyB also aims at counter procyclicality

2. Please describe the capital requirements (micro and macro) that banks must hold according to the current European legislation, also including the combined buffer capital requirement.

Minimum capital requirements known as Pillar 1 requirements: CET1 + CE + TC, with corresponding requirements of 4.5%, 6% e 8%. They just differ on the instruments eligible for the numerator; the denominator is always RWA.

Additional capital requirement, known as the Pillar 2 requirements.

Buffer requirements: (i) Capital conservation buffer (CCoB) that amounts to 2.5% of a bank's total exposures; ii) The countercyclical capital buffer (CCyB) designed to counter procyclicality in the financial system; iii) Global systemically important institutions (G-SIIs) and, subject to national discretion, other systemically important institutions (O-SIIs) must fulfil supplementary requirements concerning the amount of Common Equity Tier 1 capital; iv) The systemic risk buffer (SyRB) aims to address systemic risks that are not covered by other capital requirements.

In addition to these three sets of capital requirements, supervisors expect banks to reserve certain amounts of capital for times of stress, the Pillar 2 guidance.

3. From a prudential point of view, banks must fulfill liquidity requirements. Among them, we have the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NFSR). Please describe them, including their objectives. [you are not expected to list all the items that contribute to the numerator and denominators of the ratios]

LCR aims to ensure that banks maintain an adequate level of high-quality assets to meet liquidity needs for a 30-day time horizon under an acute stress scenario;

It is calculated as the HQLAs (with a possible haircut) over the "cash out" (based on deposits with a possible run-off rate)

NFSR ensures that the bank holds a minimum acceptable amount of stable funding based on the liquidity characteristics of a bank's assets and activities over a 1-year horizon; it aims at strengthening the bank's medium to long-term liquidity profile.

It is calculated as the available stable funding (i.e. the portion of capital and liabilities expected to be reliable over the relevant time horizon) over the required stable funding (that is a function of the liquidity characteristics and residual maturities of the various assets)

Both LCR and NFSR must be higher than 100%;

4. In planning for resolution, authorities select the preferred resolution strategy: a Single Point of Entry (SPE) or Multiple Point of Entry (MPE). Characterize each of these approaches by presenting four characteristics and/or requirements; for each of these four characteristics/requirements, identify their differences between the resolution strategies.

[*possible answer; other possibilities presented in slide 17/resolution*]

Under SPE, resolution measures are applied at the level of the parent undertaking/holding company, while under MPE are applied to more than one resolution entity (parent-undertaking and selected subsidiaries);

Under SPE, the resolution process is conducted by the resolution authority of the parent-undertaking, while under MPE the resolution process is conducted by two or more resolution authorities;

Under SPE, the losses of the subsidiaries are transferred to the parent undertaking, while under MPE losses are absorbed by each resolution entity.

Under SPE, there is an upstreaming of losses and downstreaming of capital and liquidity, while under MPE the parent-undertaking does not support the subsidiary that is a resolution entity.

5. Explain the current challenges for banks concerning the transition to a low carbon economy. In addition, please refer to (and briefly explain) other current main challenges not climate related

Banks must dully consider the climate-related risks involved in granting credit to firms (*i.e.* the physical or transition). In fact, climate change impacts credit institutions through the impact in creditors/firms but also indirectly, through the impact in economic growth.

The existence of reliable and granular data is essential for a proper assessment of creditor risks. Although different legislative initiatives have been adopted there is a gap to fill.

The regulatory landscape is still evolving. The associated uncertainty is also a challenge in itself. The possibility of additional (/weaker) capital requirements to "brown loans" (/ "green loans") is an avenue that would promote banks role in financing he transition to a low carbon economy.

Other risks: digital/innovation and cybersecurity.

May explore the idea of cryptoassets (an unbacked market) and digital payments and also of the importance of cybersecurity that have been exacerbated in the context of geopolitical tensions.

Part III [3/20]

In this third part of the exam, please answer the following questions in a <u>maximum of 11 lines/160 words.</u>

Taking as a reference the article below from the Financial Times, please present the rationale for the recent increase in banks profits, in Europe but also in others jurisdictions.

In addition, please explain why the existence of a positive gap between interest rates (i.e., the gap between the rate charged on loans and the rate paid on deposits) is not a sufficient condition for profits. What other factors have to be considered? In your answer, you may want to consider a specific client and the factors that should be considered in the assessement of his/her economic value to the bank.

- An increase in the reference interest rates along with a different passthrough (speed and magnitude) to active and passive interest rates is the main driver of the increase in banks margins and, consequently, in profits. In fact, the rate charged in credit has increased much faster than the one paid in deposits. (Looking forward, we expect a decrease in the interest rate margin as interest rates paid in deposits increase).
- Positve gap in interest rates is not enough due to the following main items impacting P&L:

Credit risk: the associated PD and LGD needs to be dully reflected in provisions.
Regulatory capital charges: a fraction of granted credit has to be supported by capital that has a higher cost than deposits
Minimum reserves: a fraction of deposits has to be kept as minimum reserves and, therefore, cannot be "alocated" to credit
Maturiy dismatch: demands market liquidity/application management, impacting P&L due to differences in the bid and ask quotes.


European banks

Added

European banks to reveal profit boost from higher rates

Third-quarter earnings will be bolstered by rising net interest income but tailwind will not last

Owen Walker, European Banking Correspondent OCTOBER 23 2023 10

European banks will reveal a boost to profits from higher interest rates when they report results this week, but face pressure to find new engines of growth as central banks' efforts to tighten monetary policy near an end.

The continent's biggest lenders kick off third-quarter earnings with most expected to show a further increase in net interest income, the difference between what banks pay on deposits and what they earn from loans.

Net interest income has been the key driver of profits for banks on both sides of the Atlantic for at least a year, cushioning the blow for some lenders from the still weak volume of mergers and acquisitions.

With the European Central Bank having started lifting rates after the US Federal Reserve and Bank of England, analysts expect European banks to continue to show the benefits from the tightening cycle. The ECB last month raised rates to a record 4 per cent in a bid to bring down inflation.