Semester notes for Bank 6003:

Contents

Financial Stability

Key principles for financial stability

- The term “financial system” can be seen as encompassing both the monetary system with its official understandings, agreements, conventions, and institutions as well as the processes, institutions, and conventions of private financial activities. Given the tight interlinkages between all of these components of the financial system, (expectations of) disturbances in any of the individual components can undermine the overall stability, requiring a systemic perspective.
- financial stability not only implies that finance adequately fulfils its role in allocating resources and risks, mobilizing savings, and facilitating wealth accumulation, development, and growth; it should also imply that the systems of payment throughout the economy function smoothly (across official and private, retail and wholesale, and formal and informal payments mechanisms).
- financial stability relates not only to the absence of actual financial crises but also to the ability of the financial system to limit, contain, and deal with the emergence of imbalances before they constitute a threat to itself or economic processes.
- Disturbances in financial markets or at individual financial institutions need not be considered threats to financial stability if they are not expected to damage economic activity at large.

Definition of Financial system stability

- A financial system is in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalances that arise endogenously or because of significant adverse and unanticipated events.

Risks to the financial system

Reduced transparency:

- Because many of banking activities take place off-balance sheet, investors and bank supervisors do not have access to information about them.

Market dynamics:

- The globalization of finance and the growing reliance of many firms on securities markets rather than on banks for raising funding have dramatically altered market dynamics. Transaction costs have been reduced to a minimum, and a huge volume of transactions can be carried out in a very short time. Massive and persistent selling or buying, as occurs with so-called herding behaviour, can exacerbate price movements. Herding can also cause problems to spread from a troubled market to a yet untroubled market.

Moral hazard:

- Some of the most important market participants are vital parts of national and international payments systems, and allowing them to fail could have dire consequences for the entire financial system. To guard against this risk, policymakers have put financial safety nets in place for depositors (deposit insurance), financial institutions (lender-of-last resort facilities), and markets (government injections of liquidity). However, the presumption that the public sector will step in to defuse a crisis undermines market discipline and creates moral hazard, in that it weakens the incentive for market participants to act prudently.

Systemic risk:

- Because of the multifaceted nature of financial stability, a single quantitative indicator cannot capture a change; contagion effects and nonlinear relationships between the different parts of the financial system add to the difficulty of predicting financial crises. Thus, assessing the stability of the financial system requires both a systemic and a global perspective.
- Different kinds of risks require different policy actions. The financial authorities through regulation, supervision, or crisis management can typically influence the size and likelihood of endogenous imbalances. By contrast, external disturbances are harder to control, except through macroeconomic policies subject to long and uncertain time lags. The scope for policy in the event of an external disturbance is limited mostly to reducing the impact on the financial system, for instance, by maintaining the system's ability to absorb shocks and activating back-up systems to protect vital information.
- **Endogenous risks** may arise in any of the financial system's three main components—institutions, markets, and infrastructure.
- **Exogenous risks** stem from problems outside the financial system. Financial stability is susceptible to external shocks—for example, natural catastrophes, changes in a country's terms of trade, political events, etc.
- Financial stability analysis needs to take account not only of potential disturbances but also of the degree to which these can be absorbed by the financial system. In particular, the different factors that can cushion or contain a shock need to be taken into account. These

include the size of capital buffers, the reliability of (re)insurance facilities, and the adequacy of firewalls, safety nets, and back-up systems.

- The ultimate goal of policymakers should be to put in place mechanisms designed to prevent financial problems from becoming systemic or threatening the stability of the financial system and the real economy—but without undermining the economy's ability to sustain growth or perform its other functions. The goal is not necessarily to prevent all financial problems from arising.
    - First, it is unrealistic to expect that a dynamic, effective financial system will never experience market volatility or turbulence, or that all financial institutions will be capable, all of the time, of perfectly managing all of the uncertainties and risks involved in providing financial services and maintaining—if not increasing—the value of stakeholders' assets.
    - Second, the creation of mechanisms that are overly protective of market stability and that discourage any risk taking is undesirable.
- **Prevention:**
    - In a healthy financial system, the main instruments to prevent the potential build-up of imbalances that could trigger a crisis are market discipline; official regulation, supervision, surveillance, and communication; and sound macroeconomic policies.
- **Remedial measures:**
    - In practice, this second, intermediate stage is the most ambiguous of the three. Vulnerabilities that have not yet manifested themselves are inherently difficult to assess, and it is harder to identify or implement the appropriate remedial instruments and motivate participants to be more prudent in the absence of clear-cut financial instability. However, policymakers should try to influence or correct developments in this stage by using moral suasion and intensifying surveillance and supervision. They may need to strengthen safety nets to avoid bank runs and contagion or adjust macroeconomic policies.
- **Resolution:**
    - Stronger policies aimed at restoring stability and, if necessary, resolving the crisis, would be appropriate at this stage. Surveillance and supervision would be further intensified, while more activist policies may be needed to restore the system's capacities and to boost confidence.

Commercial banking

- **Commercial banking** can be classified as retail banking or wholesale banking.
    - **Retail banking**, as its name implies, involves taking relatively small deposits from private individuals or small businesses and making relatively small loans to them.
    - **Wholesale banking** involves the provision of banking services to medium and large corporate clients, fund managers, and other financial institutions.
    - Both loans and deposits are much larger in wholesale banking than in retail banking.
    - The spread between the cost of funds and the lending rate is smaller for wholesale banking than for retail banking. However, this tends to be offset by lower costs. (When a certain dollar amount of wholesale lending is compared to the same dollar amount of retail lending, the expected loan losses and administrative costs are usually much less).
- Commercial banking in virtually all countries has been subject to a great deal of regulation as most national governments consider it important that individuals and companies have confidence in the banking system. Among the issues addressed by regulation is the capital that

banks must keep, the activities they are allowed to engage in, deposit insurance, and the extent to which mergers and foreign ownership are allowed.

- On the balance sheet of a bank:
    - **Net interest income** is the excess of the interest earned over the interest paid. It is important for the bank to be managed so that net interest income remains roughly constant regardless of movements in interest rates.
        - It is very important for management to quantify credit risks and manage them carefully.
        - However carefully a bank assesses the financial health of its clients before making a loan, it is inevitable that some borrowers will default. This is what leads to **loan losses**. The percentage of loans that default will tend to fluctuate from year to year with economic conditions. It is likely that in some years default rates will be quite low, while in others they will be quite high.
    - **Non-interest income** consists of income from all the activities of a bank other than lending money. This includes fees for the services the bank provides for its clients.
    - **Non-interest expense** consists of all expenses other than interest paid. It includes salaries, technology related costs, and other overheads. As in the case of all large businesses, these have a tendency to increase over time unless they are managed carefully.
- One measure of the performance of a bank is **return on equity (ROE**). If the ROE of a bank is considered unsatisfactory, then one way the bank might consider improving its ROE is by buying back its shares and replacing them with deposits so that equity financing is lower and ROE is higher.
    - How much equity capital does DLC need? One approach to answering this question is to hypothesize an extreme scenario and consider whether the bank will survive.
- To maintain confidence in banks, government regulators in many countries have introduced guaranty programs. These typically insure depositors against losses up to a certain level. However, some bank failures occurred due to the existence of deposit insurance, as it allowed banks to follow risky strategies that would not otherwise be feasible. For example, they could increase their deposit base by offering high rates of interest to depositors and use the funds to make risky loans. Without deposit insurance, a bank could not follow this strategy because their depositors would see what they were doing, decide that the bank was too risky, and withdraw their funds. With deposit insurance, it can follow the strategy because depositors know that, if the worst happens, they are protected under FDIC. This is an example of what is known as **moral hazard**.

Investment banking

- The main activity of **investment banking** is raising debt and equity financing for corporations or governments. This involves originating the securities, underwriting them, and then placing them with investors. There are a number of different types of arrangement between the investment bank and the corporation.
- Sometimes the financing takes the form of a **private placement** in which the securities are sold to a small number of large institutional investors such as life insurance companies or pension funds and the investment bank receives a fee.
- On other occasions, it takes the form of a **public offering**, where securities are offered to the public on a best efforts or firm commitment basis.
    - In the case of a **best efforts** public offering, the investment bank does as well as it can to place the securities with investors and is paid a fee that depends to some extent on its success.

Basel 3 summary chart

BASEL III:

Aim of new framework:

- Increase the quality of banks capital
- Significantly raise the required level of their capital
- Provide a macroprudential overlay to better deal with systemic risk
- Allow sufficient time for a smooth transition

Motivations:

- In addition to the increase in capital for market risk by Basel 2.5, The Basel Committee also wanted to increase capital requirements for credit risk as well.
- Regulations needed to address liquidity risk.

Capital Conservation Buffer:

-In normal times, it consists allocating a further amount of core Tier 1 equity capital equal to 2.5% of risk-weighted assets.
-Designed to ensure that banks build up capital during normal times so that it can be run down when losses are incurred during periods of financial difficulties.
-If total common equity is less than 7% (4.5% + 2.5%) then dividends are restricted.

Capital Definition and Requirements

3 types:

Tier 1 equity capital:

- Core capital (includes share capital and retained earnings) must be at least 4.5% of RWA at all times
- Does not include goodwill or deferred tax assets.
- Changes in retained earnings arising from securitized transactions and bank's own credit risk are not counted as part of capital for regulatory purposes.

Additional Tier 1 capital:

- Includes noncumulative preferred stock, that were previously Tier 1 but are not common equity
- **Total Tier 1 capital** (Tier 1 equity capital + additional Tier 1 capital) must be at 6% of RWA at all times.

Tier 2 capital:

- Includes debt that is subordinated to depositors with an original maturity of five years.
- Tier 2 capital is referred to as "going-concern capital"
- When the bank is a going concern (i.e. has positive equity capital), common equity absorbs losses.
- When the bank is no longer a going concern (i.e., has negative capital) losses have to be absorbed by Tier 2 capital.
- Total capital (total Tier 1 + Tier 2) must be at least 8% of RWA at all times.

Countercyclical Buffer:

- Intended to provide protection for the cyclicality of bank earnings.
- Set between 0% and 2.5% of total RWA and must be met with Tier 1 equity capital.
- Extent to which it is implemented in a particular country is left to the discretion of national authorities.
- dividends restricted when capital is below required level.

Leverage Ratio:

- requires holding a ratio of Tier 1 capital to total exposure (not RWA) above 3%.

Total exposure includes all items on the balance sheet (without any risk weighting) and some off-balance-sheet items such as loan commitments.

-designed to prevent excess leverage in good times and reduce deleveraging in stress periods.

Systemically important financial institutions (SIFIs)

- Requires identified SIFIs to hold additional loss absorbing Tier 1 capital (1% - 2.5%) than other banks.
- Ensures SIFIs have sufficient capital to absorb losses rather than rely on govt bail out.

Capital for Credit Value Adjustment (CVA) risk:

- CVA is the adjustment to the value of a derivative transaction with a counterparty to allow for counterparty credit risk.
- it is the expected loss because of the possibility of a default by the counterparty
- The CVA for counterparty can change because either:

(a) the market variables underlying the value of the derivatives entered into with the counterparty change, or
(b) the credit spreads applicable to the counterparty's borrowing change.

- Basel III requires the CVA risk arising from changing credit spreads to be incorporated into market-risk VaR calculations

Enhanced risk management & Disclosure

adds supplementary pillar 2 requirements and revises pillar 3 disclosure requirements to help regulatory and supervisory parties to better understand financial institutions incentives for regulatory arbitrage.

Liquidity Standards:

Liquidity risks arise because there is a tendency for banks to finance long-term needs with short-term funding such as commercial paper.

2 liquidity ratios designed to ensure that banks can survive liquidity pressures. are:

Liquidity Coverage Ratio (LCR):

Maintain sufficient stock of high quality liquid assets that can be considered into cash to meet all cash outflow under a 30 day hypothetical stress scenario.

$$\frac{\text{High Quality Liquid Assets}}{\text{Net Cash Outflows in a 30-Day Period}}$$

Net Stable Funding Ratio (NSFR):

Ensures te stability of medium to long term funding (minimum amounts of liquidity over a 12 month period of extended stress).

- each category of funding capital is multiplied by an available stable funding factor (ASF) to form numerator.
- each category of required funding (assets, off balance sheet exposures) is multiplied by a required stable funding factor (RSF) to form denominator.

$$\frac{\text{Amount of Stable Funding}}{\text{Required Amount of Stable Funding}}$$