Managing Risk

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Outline

- **Risk of Financial Intermediation**
- **Technology and Operational Risk**
- **Liquidity Risk and Insolvency Risk**
- **Techniques of Managing Risk**

Objectives

- Understand the risks associated with financial Intermediaries
- Understand the techniques and stages of managing Risks.

Risk of Financial Intermediation

A major objective of Financial Intermediary management is to increase the its returns for its owners. This often comes, however, at the cost of increased risk. The risks that Financial Intermediaries faces include:

- **Interest rate Risk**: This is the risk incurred by a financial intermediary when the maturities of its assets and liabilities are mismatched. This is the risk associated to the maturity transformation function of a financial intermediary like bank. This risk also open doors to other risks such as:

  - **Refinancing Risk**: This is the risk that the cost of rolling over or re-borrowing funds will rise above the returns being earned on asset investments.

  - **Reinvestment Risk**: This is the risk that the returns on funds to be reinvested will fall below the cost of funds.

Risk of Financial Intermediation

- **Market Risk:** The risk incurred in the trading of assets and liabilities due to changes in interest rates, exchange rates, and other asset prices. Market risk arises when a financial intermediary actively trade assets and liabilities (and derivatives) rather than hold them for longer-term investment, funding, or hedging purposes.

- **Credit Risk**: The risk that the promised cash flows from loans and securities held by financial intermediary may not be paid in full. Credit risk arises because of the possibility that promised cash flows on financial claims held by FIs, such as loans or bonds, will not be paid in full.

  - **Firm-specific credit risk**: This is the risk of default of the borrowing firm associated with the specific types of project risk taken by that firm. Such as risk of holding Enron Bond.

  - **Systematic credit risk**: This is the risk of default associated with general economy wide or macro conditions affecting all borrowers

Risk of Financial Intermediation

- **off-balance-sheet Risk:** This is the risk incurred by a financial intermediary due to activities related to contingent assets and liabilities. Remember that banks' off-balance-sheet activities include; Loan commitments (including overdrafts), Financial guarantees (including letters of credit), Securities underwriting and others.

- **Foreign exchange risk:** This is the risk that exchange rate changes can affect the value of a financial intermediary's assets and liabilities denominated in foreign currencies.

- **Country or sovereign risk:** This is the risk that repayments from foreign borrowers may be interrupted because of interference from foreign governments. A foreign company may be unable to repay the principal or interest on a loan even if it would like to. Most commonly, the government of the country in which the company is headquartered may prohibit or limit debt payments because of foreign currency shortages and adverse political reasons.

Technology and Operational Risk

Technology and operational risks are closely related with each other, and in recent years have caused great concern to financial intermediary's managers and regulators alike.

The major objectives of technological expansion in financial intermediaries are to lower operating costs, increase profits, and capture new markets. In current terminology, the objective is to allow the financial intermediary to exploit, to the fullest extent possible, better potential ***economies of scale*** and ***economies of scope*** in selling its products.

- **Economies of scale**: This is the degree to which a financial intermediary's average unit costs of producing financial services fall as its outputs of services increase.

- **Economies of scope**: This is the degree to which an FI can generate cost synergies by producing multiple financial service products.

Technology and Operational Risk

- **Technology Risk:** This is the risk incurred by an financial intermediary when technological investments do not produce the cost savings anticipated in the form of economies of either scale or scope.

- Operational Risk: This is the risk that existing technology or support systems may malfunction or break down. Operational risk is partly related to technology risk and can arise whenever existing technology malfunctions or back-office support systems break down. For example, a failure of a back-office system occurred in September 2001 when Citibank's ATM system crashed for an extended period of time.

Operational risk is not exclusively the result of technological failure. For example, employee fraud and errors constitute a type of operational risk that often negatively affects the reputation of a financial Intermediary

Liquidity Risk and Insolvency Risk

- **Liquidity Risk:** The risk that a sudden surge in liability withdrawals may leave a financial intermediary in a position of having to liquidate assets in a very short period of time and at low prices. Liquidity risk arises when a financial intermediary's liability holders, such as depositors or insurance policyholders, demand immediate cash for the financial claims they hold with the financial intermediary or when holders of off-balance-sheet loan commitments (or credit lines) suddenly exercise their right to borrow (draw down their loan commitments).

- **Insolvency Risk**: This is the risk that a financial intermediary may not have enough capital to offset a sudden decline in the value of its assets relative to its liabilities. Insolvency risk is a consequence or outcome of one or more of the risks described above: interest rate, market, credit, off-balance-sheet, technology, foreign exchange, sovereign, and liquidity risks. Technically, insolvency occurs when the capital or equity resources of an financial intermediary owners are driven to, or near to, zero because of losses incurred as the result of one or more of the risks described above.

Techniques of Managing Risk

Techniques for managing risk can be classified broadly as ***either risk control*** or ***risk financing***.

❖**Risk Control**: Risk control is a generic term to describe techniques for reducing the frequency or severity of losses. Major risk-control techniques include the following:

- Avoidance
- Loss prevention
- Loss reduction
- Duplication
- Separation
- Diversification

Techniques of Managing Risk

- **Avoidance:** Avoidance is one technique for managing risk. For example, you can avoid the risk of being mugged in a high-crime area by staying away from high-crime rate areas; you can avoid the risk of divorce by not marrying; and business firms can avoid the risk of being sued for a defective product by not producing the product.

- **Loss Prevention**: Loss prevention is a technique that reduces the probability of loss so that the frequency of losses is reduced. Auto accidents can be reduced if motorists take a safe-driving course and drive defensively. The number of heart attacks can be reduced if individuals control their weight, stop smoking, eat healthy diets, and follow an exercise program. The goal of loss prevention is to reduce the probability that losses will occur.

Loss prevention is also important for business firms. For example, strict security measures at airports and aboard commercial flights can reduce acts of terrorism; occupational accidents can be reduced by the elimination of unsafe working conditions and by strong enforcement of safety rules; and fires can be prevented by forbidding workers to smoke in a building where highly flammable materials are used.

Techniques of Managing Risk

- **Loss Reduction**: Strict loss prevention efforts can reduce the frequency of losses; however, some losses will inevitably occur. Thus, another objective of loss control is ***to reduce the severity of a loss after it occurs***. For example, a financial intermediary can install a sprinkler system so that a fire will be promptly extinguished, thereby reducing the severity of loss; an office can be constructed with fire-resistant materials to minimize fire damage; and a community warning system can reduce the number of injuries and deaths from an approaching tornado.

- **Duplication**: Losses can also be reduced by duplication. This technique refers to having back-ups or copies of important documents or property available in case a loss occurs. For example, back-up copies of key business records (e.g., accounts receivable) are available in case the original records are lost or destroyed.

- **Separation**: Another technique for reducing losses is separation. The assets exposed to loss are separated or divided to minimize the financial loss from a single event. For example, a manufacturer may store finished goods in two warehouses in different cities. If one warehouse is damaged or destroyed by a fire, tornado, or other peril, the finished goods in the other warehouse are unharmed.

Techniques of Managing Risk

- **Diversification:** Losses can be reduced by diversification. This technique reduces the chance of loss by spreading the loss exposure across different parties. Risk is reduced if a manufacturer has a number of customers and suppliers. For example, if the entire customer base consists of only four domestic purchasers, sales will be impacted adversely by a domestic recession. However, if there are foreign customers and additional domestic customers as well, this risk is reduced.

- **Risk Financing**: Risk financing refers to techniques that provide for the payment of losses after they occur. Major risk-financing techniques include the following:

    - Retention
    - Noninsurance transfers
    - Insurance

Techniques of Managing Risk

- **Retention:** Retention is an important technique for managing risk. Retention means that an individual or a business firm retains part of all of the losses that can result from a given risk. Risk retention can be ***active or passive***.

  - **Active Retention**: Active risk retention means that an individual is consciously aware of the risk and deliberately plans to retain all or part of it. For example, a motorist may wish to retain the risk of a small collision loss by purchasing an auto insurance policy with a $500 or higher deductible. A business firm may deliberately retain the risk of petty thefts by employees, shoplifting, or the spoilage of perishable goods by purchasing a property insurance policy with a sizeable deductible.

  - **Passive Retention**: Risk can also be retained passively. Certain risks may be unknowingly retained because of ignorance, indifference, laziness, or failure to identify an important risk. Passive retention is very dangerous if the risk retained has the potential for financial ruin. For example, many workers with earned incomes are not insured against the risk of total and permanent disability.

Techniques of Managing Risk

- **Self-Insurance:** Self-insurance is a special form of planned retention by which part or all of a given loss exposure is retained by the firm. Another name for self-insurance is ***self-funding***, which expresses more clearly the idea that losses are funded and paid for by the firm.

In summary, risk retention is an important technique for managing risk, especially in modern corporate risk management programs. Risk retention is more appropriate for high-frequency, low-severity risks where potential losses are relatively small. Except under unusual circumstances, risk retention should not be used to retain low-frequency, high severity risks, such as the risk of catastrophic medical expenses, long-term disability, or legal liability.

- **Noninsurance Transfers**: Noninsurance transfers are another technique for managing risk. The risk is transferred to a party other than an insurance company. A risk can be transferred by several methods, including:

Techniques of Managing Risk

- Transfer of risk by contracts
- Hedging price risks
- Incorporation of a business firm

- **Transfer of risk by contracts**: Undesirable risks can be transferred by contracts. For example, the risk of a defective television or stereo set can be transferred to the retailer by purchasing a service contract, which makes the retailer responsible for all repairs during the period of the products guaranty. The risk of a rent increase can be transferred to the landlord by a long-term lease. The risk of a price increase in construction costs can be transferred to the builder by having a guaranteed price in the contract.

- **Hedging price risks**: Hedging is a technique for transferring the risk of unfavorable price fluctuations to a speculator by purchasing and selling futures contracts on an organized financial market, such as in the Istanbul Stock Exchange or New York Stock Exchange.

Techniques of Managing Risk

- **Incorporation of a Business Firm:** Incorporation is another example of risk transfer. If a firm is a sole proprietorship, the owner's personal assets can be attached by creditors for satisfaction of debts. If a firm incorporates, personal assets cannot be attached by creditors for payment of the firm's debts.

- **Insurance**: For most people, insurance is the most practical method for dealing with major risks. Although private insurance has several characteristics, three major characteristics should be emphasized.

First, risk transfer is used because a pure risk is transferred to the insurer.

Secondly, the pooling technique is used to spread the losses of the few over the entire group so that average loss is substituted for actual loss.

Thirdly, the risk may be reduced by application of the law of large numbers by which an insurer can predict future loss experience with greater accuracy.

Any Question?

Thank You

Questions Bank

1. Differentiate between Refinancing risk and reinvestment risk.
2. Explain market risk
3. Differentiate between firm-specific credit risk and systematic credit risk
4. What is off-balance-sheet risk?
5. Explain the distinction between foreign exchange risk and country/sovereign risk
6. Clearly explain the difference between economies of scale and economies of scope
7. What is Technology risk and how is it related to operational risk?
8. Describe Risk control, and list the six (6) techniques of risk control.
9. Briefly explain the following
    a. Avoidance
    b. Loss Prevention
    c. Loss Reduction
10. Differentiate between Duplication and separation in risk control.
11. Briefly explain the three (3) techniques of risk financing.

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