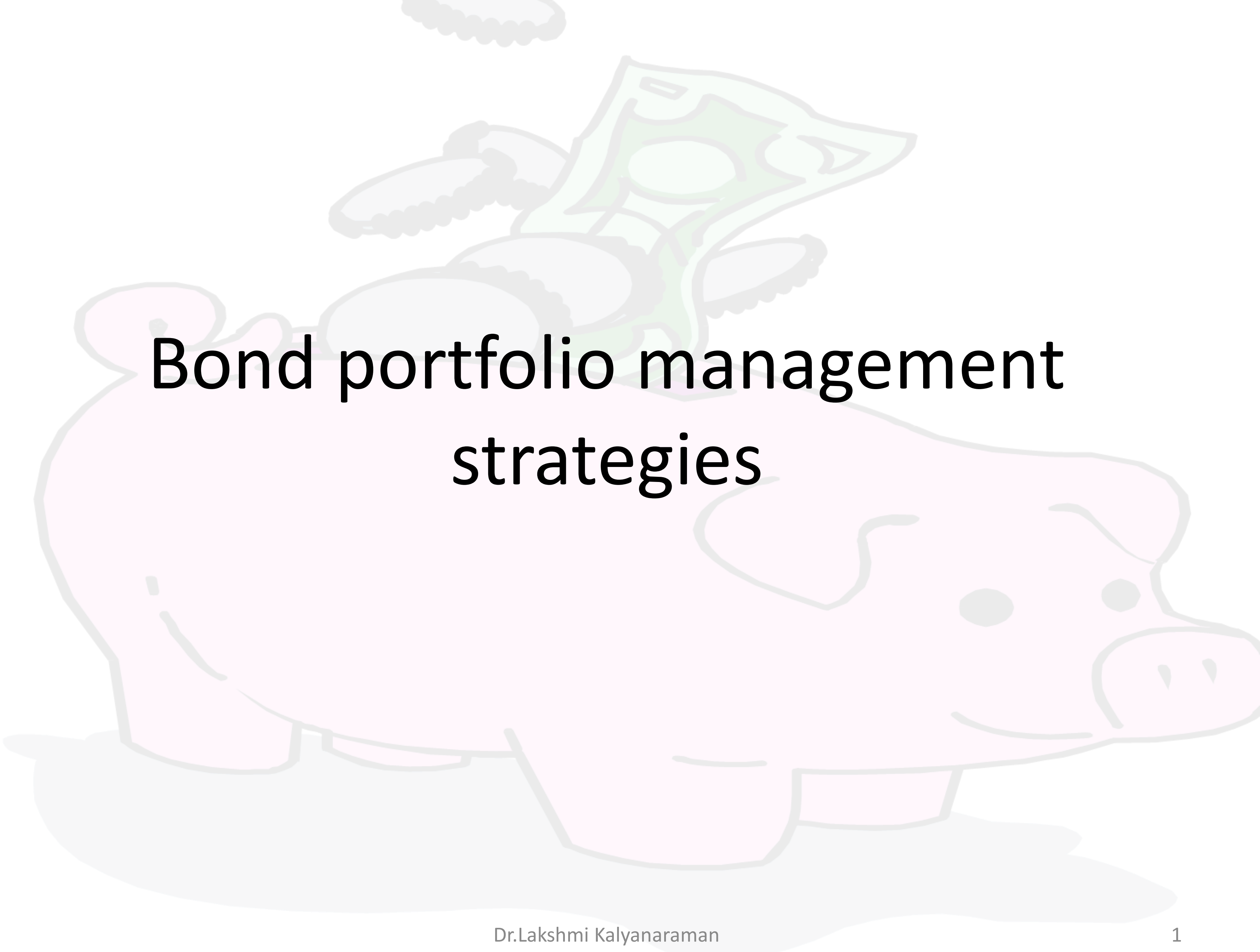


Bond portfolio management strategies

BOND PORTFOLIO INVESTMENT STRATEGIES

Passive management strategies

- a. Buy and hold
- b. Indexing

Active management strategies

- A. Interest rate anticipation
- B. Valuation analysis
- C. Credit analysis
- D. Yield spread analysis
- E. Sector/Country analysis
- F. Prepayment/ option analysis
- G. Other (e.g., liquidity, currency, anomaly capture)

Core-plus management strategies

- A. Enhanced indexing
- B. Active/passive ‘plus’ sectors

Matched-funded strategies

- A. Dedicated: exact cash match
- B. Dedicated: optimal cash match
- C. Classical immunization
- D. Horizon matching

Contingent & Structured Strategies

- A. Contingent immunization
- B. Structured management

PASSIVE INVESTMENT STRATEGIES

Passive management strategies

- 1. Buy-and-hold strategy
- 2. Indexing strategy

Buy-and-Hold Strategy

- A manager selects a portfolio of bonds based on the objectives and constraints of the client with the intent of holding these bonds to maturity

Buy-and-Hold Strategy

- Find securities with desired levels of
- Credit quality
- Coupon rate
- Term to maturity or duration
- Bond indenture provisions such as call and sinking fund features

Buy-and-Hold Strategy

- Strategy does not restrict the investor to accept whatever the market has to offer not
- Does it imply that selectivity is unimportant

- Attractive high yielding issues with desirable features and quality standards are actively sought

Buy-and-Hold Strategy

- Thus, successful buy-and-hold investors use their knowledge of market and security characteristics to seek out attractive realized yields.

Buy-and-Hold Strategy

- Bond maturity/duration characteristics should approximate investment horizon to reduce
- Price and reinvestment risk

Buy-and-Hold Strategy

- In case of stock portfolio, manager can employ a ‘pure’ buy-and-hold
- In case of bond portfolio, bonds mature.
- Funds from matured issue to be reinvested.

Buy-and-Hold Strategy

- Managers form ***Bond Ladder***
- Divide investment funds evenly across the portfolio into instruments that mature at regular intervals

Buy-and-Hold Strategy

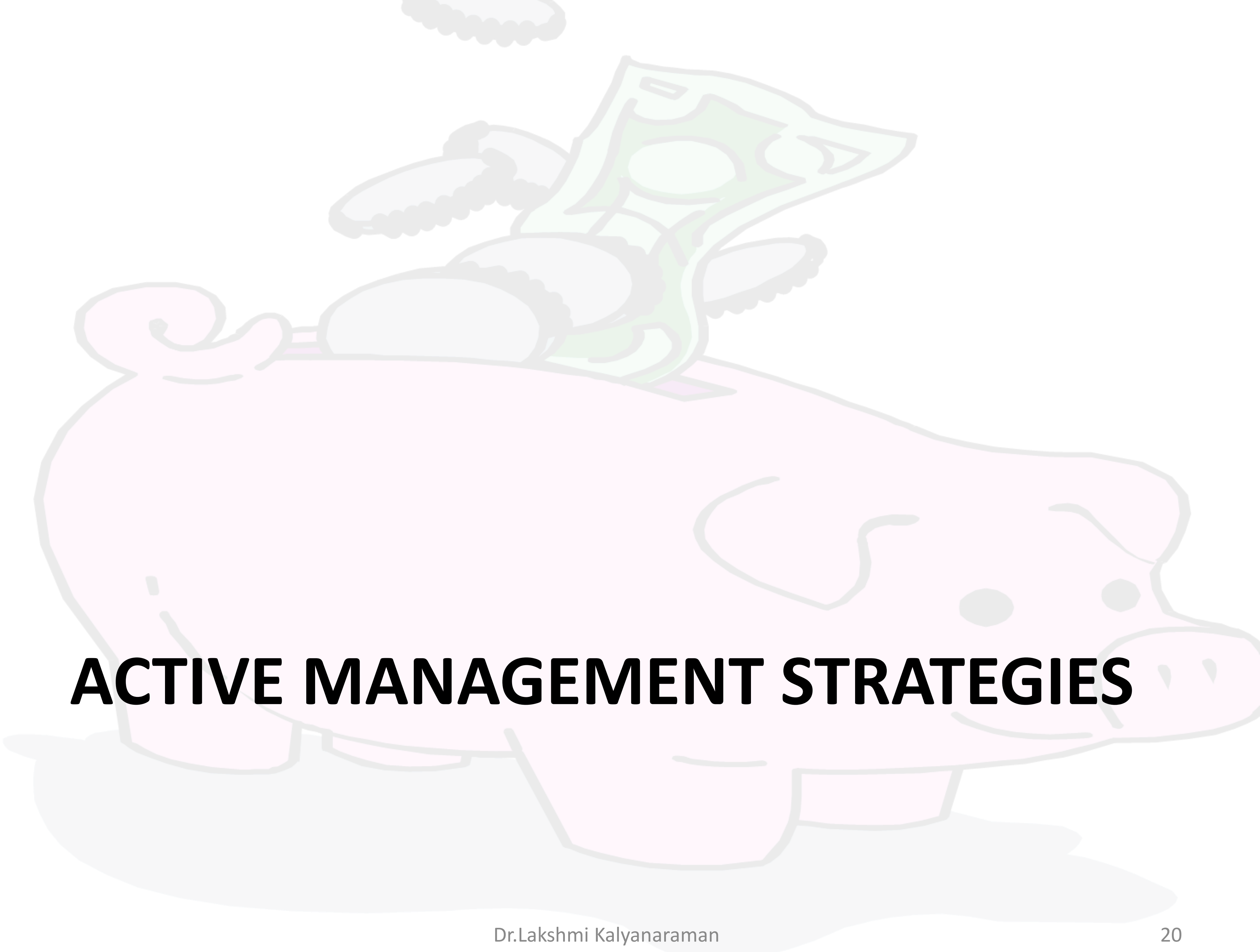
- For example, a manager with an intermediate term investment focus, instead of investing all of her funds in a five-year zero coupon security
- Which will become a four-year security after one year
- Could follow a laddered approach

Buy-and-Hold Strategy

- Buy equal amounts of bonds maturing in annual intervals between one and nine years
- Hold each bond to maturity
- But reinvest the proceeds from a maturing bond into a new instrument with a maturity at the far end of the ladder, i.e. invest in a new nine-year issue

Indexing Strategy

- Objective is to construct a portfolio of bonds that will equal the performance of a specified bond index
- Full replication and stratified sampling
- Tracking error measured as the standard deviation of the difference in returns produced by the managed portfolio and the index over time



ACTIVE MANAGEMENT STRATEGIES

Active management strategies

- Produce superior risk-adjusted returns i.e. alpha compared to the index against which her investment performance is measured.

Potential sources of alpha

- 1. Scalability: How large a position can be taken
- 2. Sustainability: How far into the future the strategy can be successfully employed
- 3. Risk-adjusted performance
- 4. Extreme values: How exposed the strategy is to the chance of a large loss

Interest-rate anticipation

- Riskiest active management strategy
- Relies on uncertain forecasts of future interest rates

Bond duration

- Measurement of how long in years it takes for the price of a bond to be repaid by its internal cash flows.
- Bonds with higher durations are more risky and have higher price volatility than bonds with lower duration.

Interest-rate anticipation

- ***Objective***:
- Preserve capital when interest rate increases
- Achieve attractive capital gains when interest rates are expected to decrease
- ***Strategy:***
- Alter the portfolio duration
- Reduce when interest rate is expected to increase
- Increase when interest rate is expected to fall

Interest-rate anticipation

- ***Risk:***
- When duration shortened, opportunity for capital gains lost if interest rates decline instead of expected rise
- When interest rate at peak, likely that yield curve is downward sloping, bond coupons will decline with maturity.
- Investor is sacrificing current income by shifting from high-coupon short bonds to longer-duration bonds.

Interest-rate anticipation

- At the same time, portfolio is purposely exposed to greater price volatility that could work against the portfolio if an unexpected rise in yields occurs.

Interest-rate anticipation

- Once expected future interest rates are determined, procedure relies largely on technical matters
- If you expect interest rates to rise, you want to preserve capital by reducing the duration of your portfolio.
- Popular choice is high-yielding short-term obligations, such as treasury bills.

Interest-rate anticipation

- Though primary concern is to preserve capital, you would nevertheless look for the best return possible with maturity constraint.
- Liquidity is also important because after interest rates increase, yield may experience a period of stability before they decline, and you would want to shift positions quickly to benefit from higher income and/or capital gains.

Interest-rate anticipation

- When interest rates are anticipated to decline, you restructure the portfolio to take advantage of potential for capital gains and holding period returns.
- Increase the duration.

Valuation analysis

- Portfolio manager attempts to select bonds on their intrinsic value
- Buy undervalued
- Sell or ignore overvalued

Credit analysis

- Involves detailed analysis of the bond issuer to determine expected changes in its default risk
- Rating changes due to
- Internal changes in entity e.g. important financial ratios
- External environment i.e. changes in the firm’s industry and economy

Credit analysis

- Necessary to project rating changes prior to the announcement by rating agencies because market adjusts rather quickly to rating changes.

Yield spread analysis

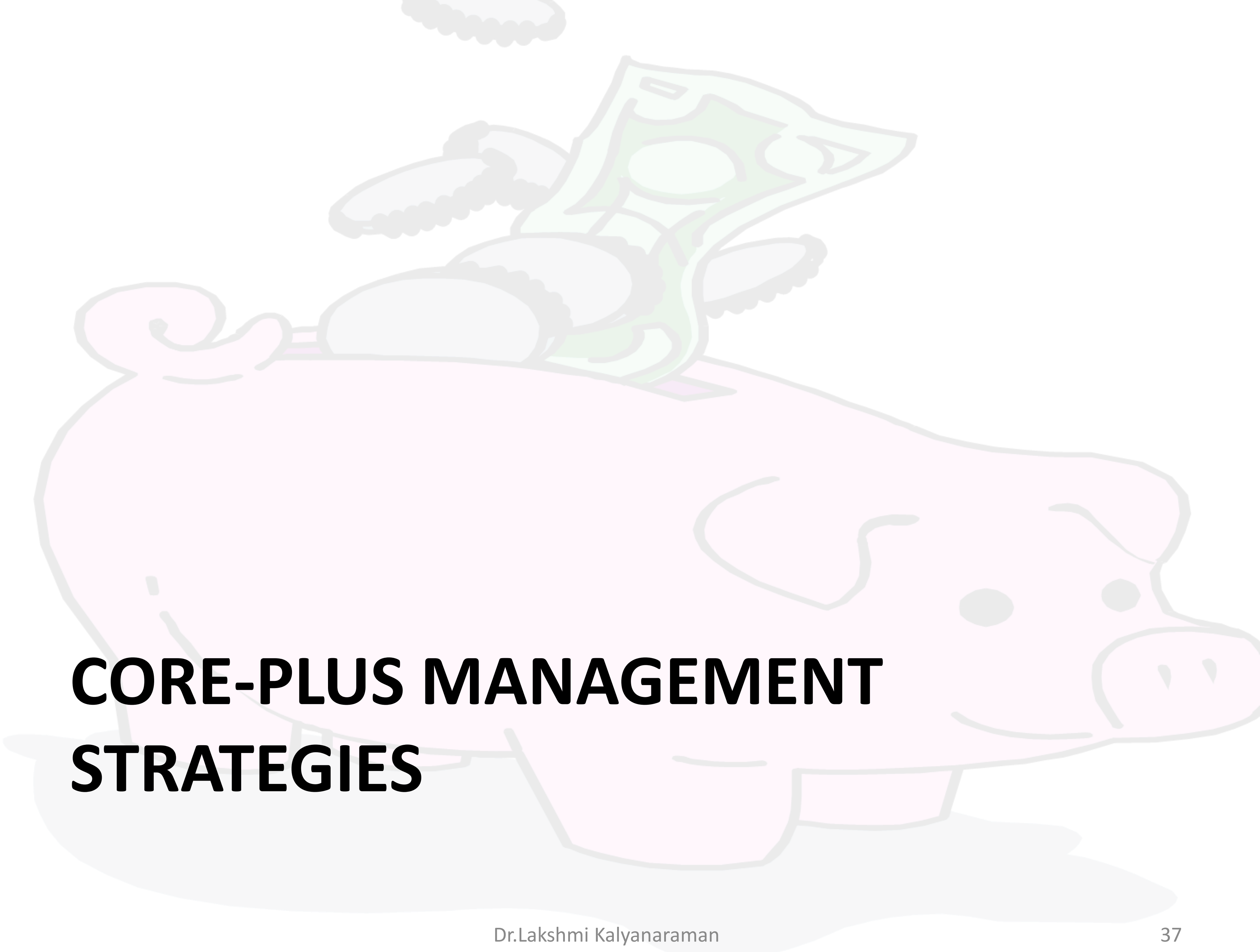
- Assumes normal relationships exist between the yields for bonds in alternative sectors
- E.g. spread between high-grade versus low-grade industrial or between industrial and utility
- When an abnormal relationship occurs, bond manager executes various sector swaps.

Yield spread analysis

- Spread widens during periods of economic uncertainty and recession because investors require higher risk premium
- Spread declines during periods of economic confidence and expansion

Bond swaps

- Involve liquidating a current position and simultaneously buying a different issue in its place with similar attributes but having a chance for improved return



CORE-PLUS MANAGEMENT STRATEGIES

Core-plus management strategies

- Combines the two styles
- Form of ***enhanced indexing***
- Places a significant part (i.e. 70 to 80%) of the available funds in a passively managed portfolio of high-grade securities reflecting a broad representation of the overall bond market

Core-plus management strategies

- Rest of the portfolio would be managed actively in one or several additional "plus" sectors, where it is felt that there is a higher probability of achieving positive abnormal rates of return because of potential inefficiencies

MATCHED-FUNDING MANAGEMENT STRATEGIES

Matched-funding management strategies

- Form of ***asset-liability management***
- Bond characteristics are coordinated with those of the liabilities the investor is obligated to pay

Dedicated portfolios

- Dedication refers to bond portfolio management techniques that are used to service a prescribed set of liabilities.
- Two alternatives:
- 1. Pure cash-matched dedicated portfolio
- 2. Dedication with reinvestment

Dedicated portfolios

- ***Pure cash-matched dedicated portfolio***:
- Most conservative
- Develop a stream of payments from coupons, sinking funds and maturing principal payments that exactly match the specified liability schedules.

Dedicated portfolios

- ***Dedication with reinvestment***:
- Like pure cash-matched technique
- But allows that bonds and other cash flows do not have to exactly match the liability stream
- Any inflows that precede liability claims can be reinvested at some reasonably conservative rate

Dedicated portfolios

- Portfolio manager considers a wider set of bonds that may have higher return characteristics
- Assumption of reinvestment within each period and between periods also will generate a higher return for the asset portfolio
- As a result, net cost of portfolio will lower.

Immunization strategies

- A portfolio manager (after client consultation) may decide that the optimal strategy is to immunize the portfolio from interest rate changes
- The immunization techniques attempt to derive a specified rate of return during a given investment horizon regardless of what happens to market interest rates

Immunization strategies

- Components of Interest Rate Risk
- Price Risk
- Coupon Reinvestment Risk
- If Duration > Investment horizon, investor faces net price risk
- If Duration < Investment horizon, investor faces net reinvestment risk
- If Duration = Investment horizon, investor is immunized.

Classical Immunization

- Immunization is neither a simple nor a passive strategy
- An immunized portfolio requires frequent rebalancing because the modified duration of the portfolio always should be equal to the remaining time horizon (except in the case of the zero-coupon bond)

Classical Immunization

- Duration characteristics
  - Duration declines more slowly than term to maturity, assuming no change in market interest rates
  - Duration changes with a change in market interest rates
  - There is not always a parallel shift of the yield curve
  - Bonds with a specific duration may not be available at an acceptable price

Matched-Funding Techniques

- Horizon matching
  - Combination of cash-matching dedication and immunization
  - Important decision is the length of the horizon period

Contingent Procedures

- A form of structured active management
  - Constrains the manager if unsuccessful
- Contingent immunization
  - duration of portfolio must be maintained at the horizon value
  - cushion spread is potential return below current market
  - safety margin
  - trigger point

Implications of Capital Market Theory and the EMH on Bond Portfolio Management

- Bonds and Total Portfolio Theory
- Bonds and Capital Market Theory
- Bond Price Behavior in a CAPM Framework
- Bond-Market Efficiency