

# Overview of Fixed-Income Portfolio Management

## 1. INTRODUCTION

Fixed income markets incorporate:

- i. Publicly traded securities (such as commercial papers, notes, bonds)
- ii. Non-publicly traded securities (such as loans and privately placed securities)

## 2. ROLES OF FIXED INCOME SECURITIES IN PORTFOLIOS

### 2.1 Diversification Benefits

Fixed income when combined with other asset classes

- provide diversification benefits.
- may significantly lower portfolio risk

Note: Correlations among asset classes or volatility of asset class returns may  $\Delta$  overtime or due to  $\Delta$  in capital market dynamics.

### 2.2 Benefits of Regular Cash Flows

Fixed-income investments often provide regular cash-flow streams that can be sued to fund the projected future liabilities by matching the timing and amount of those liabilities.

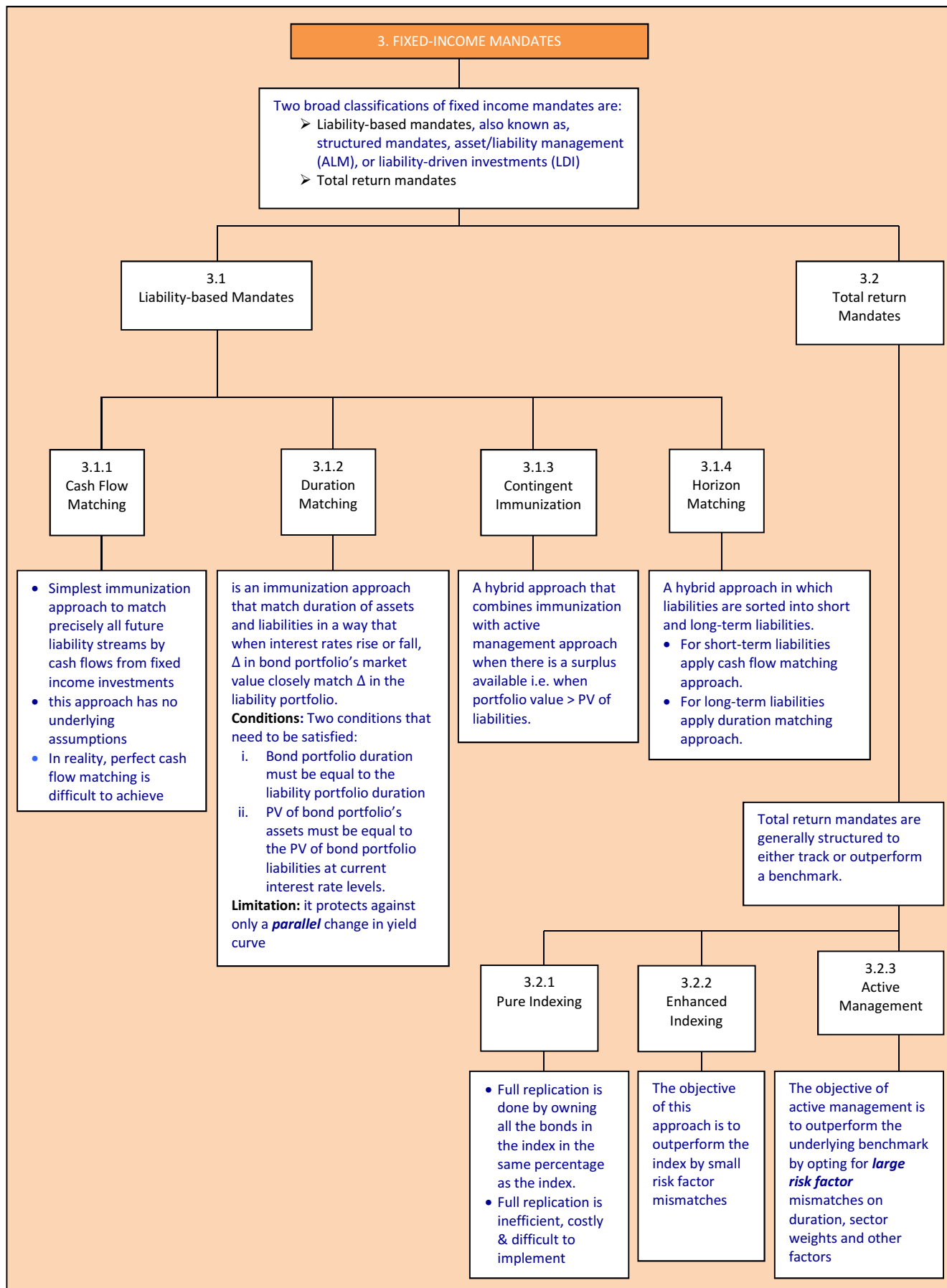
### 2.3 Inflation Hedging Potential

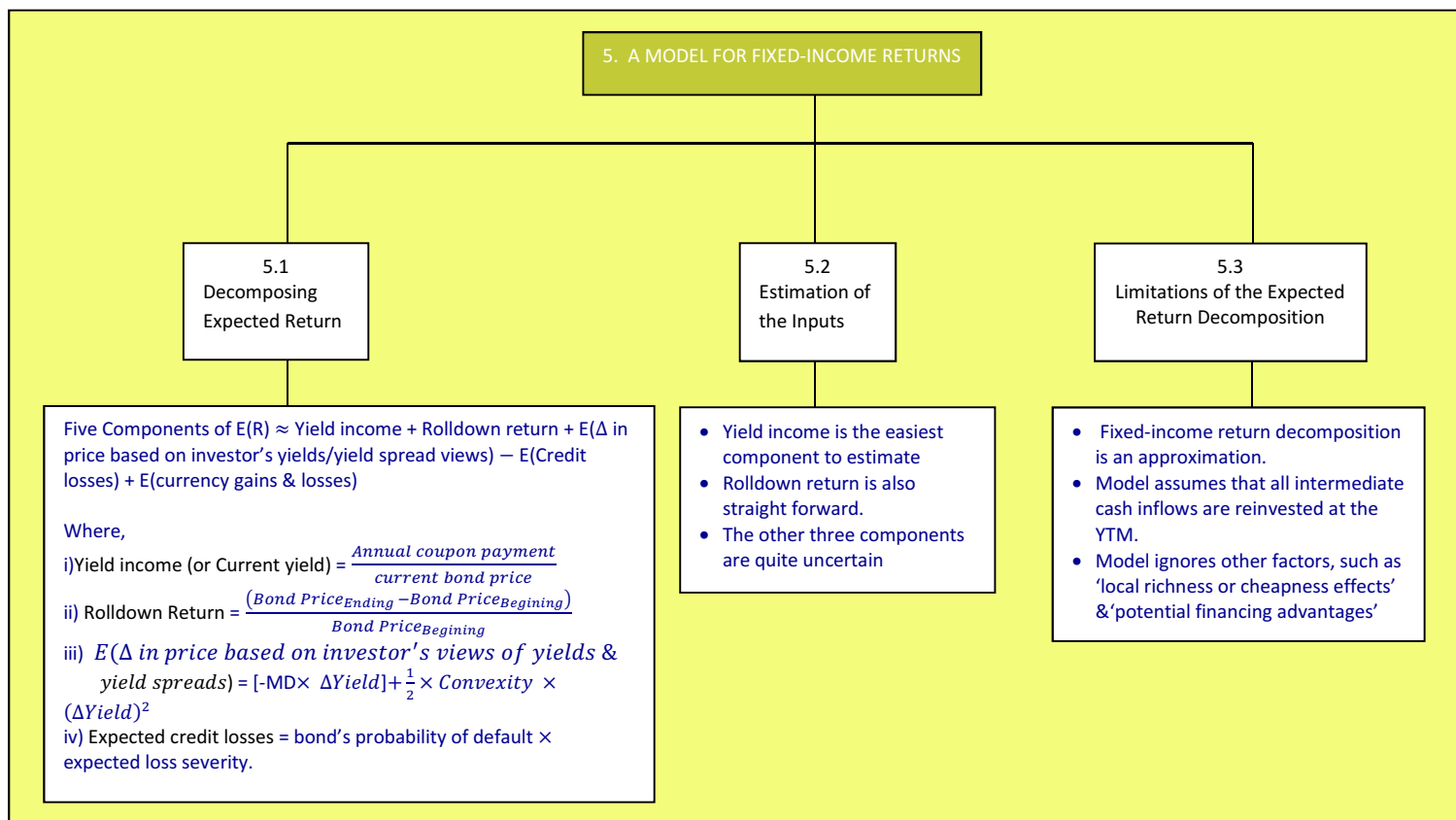
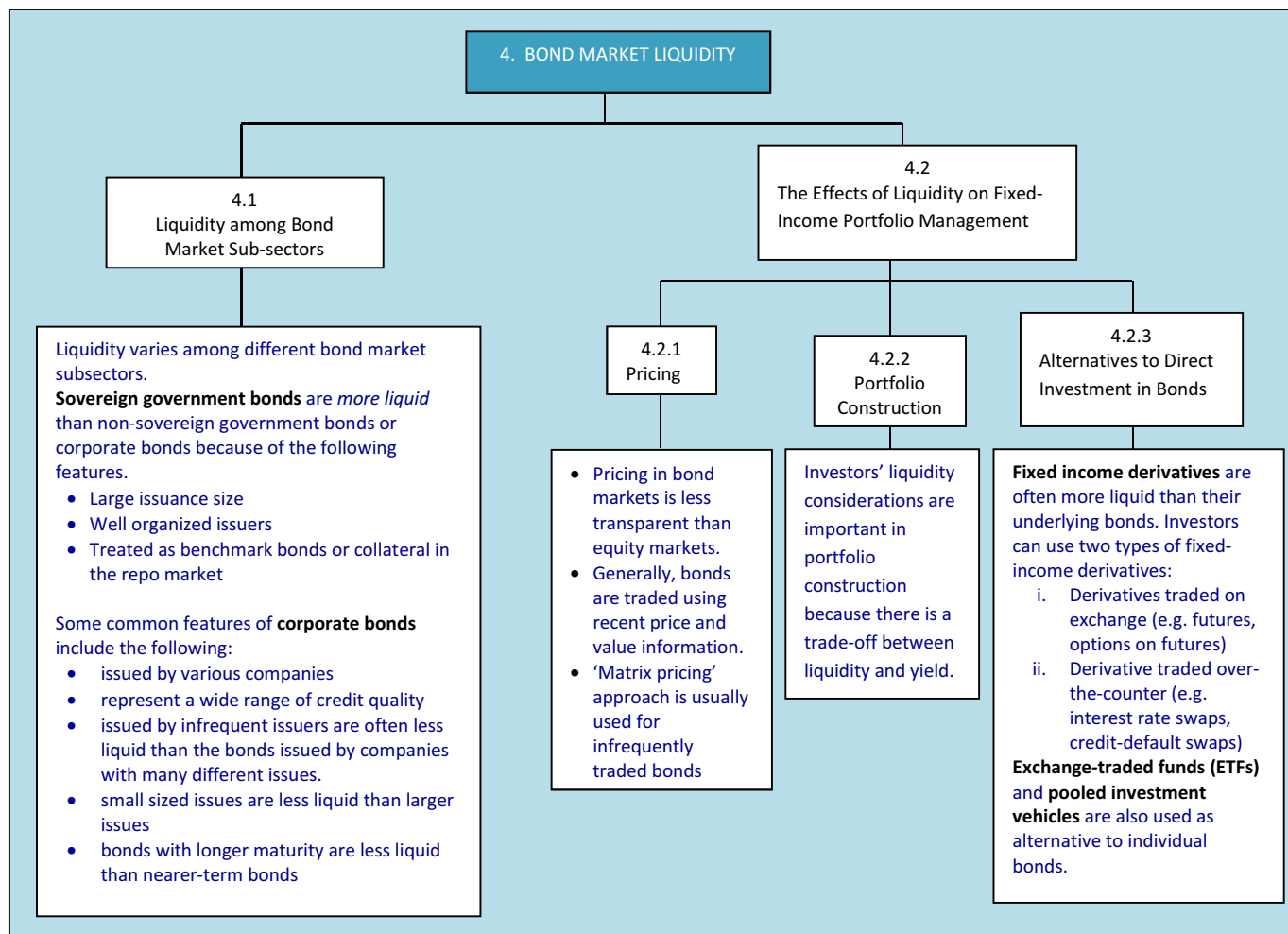
Inflation-linked bonds:

- provide inflation-hedging benefits.
- are suitable for investors with long-investment horizon
- can result in superior risk-adjusted real portfolio returns
- Their return has two components: Real return plus additional return (directly linked to inflation rate).
- Their return volatility is relatively lower than conventional bonds & equities.

#### Various Bonds and Inflation Protection

	Fixed-coupon bonds	Floating-coupon bonds	Inflation-linked bonds
Coupon	Inflation unprotected	Inflation protected	Inflation protected
Principal		Inflation unprotected	





6. LEVERAGE

6.1  
Using Leverage

$$\begin{aligned} \text{Leverage Portfolio Return } r_p &= \frac{\text{Portfolio Return}}{\text{Portfolio Equity}} \\ &= \frac{[r_I \times (V_E + V_B) - (V_B \times r_B)]}{V_E} \end{aligned}$$

To recognize the significance of leverage on returns, the above equation can be decomposed into two portions:

$$r_p = r_I + \frac{V_B}{V_E} (r_I - r_B)$$

If  $r_I > r_B$  leverage  $\uparrow$  the portfolio return  
If  $r_I < r_B$  leverage  $\downarrow$  the portfolio return

6.2  
Methods for Leveraging  
Fixed-Income Portfolios

6.3  
Risks of Leverage

Leverage can significantly  $\uparrow$  the magnitude of losses even for moderate valuation declines.

6.2.1 Future  
Contracts

- Futures contracts are important source of leverage
- $\text{Leverage}_{\text{Futures}} = \frac{\text{Notional Value} - \text{Margin}}{\text{Margin}}$  (where margin is invested equity)

6.2.2 Swap  
Agreements

- Interest rate swaps are equivalent to long-short bond portfolio.
- **fixed-rate payer** effectively short a fixed-rate bond and long a floating rate bond and the value of the swap for the fixed rate payer  $\uparrow$  when interest rates  $\uparrow$ .
- **fixed-rate receiver** effectively long a fixed rate bond and short a floating-rate bond and the value of the swap for the fixed-rate receiver  $\uparrow$  when interest rates  $\downarrow$ .

6.2.3 Structured  
Financial Instruments

- Structured financial instruments are constructed to redistribute risk.
- Inverse floater is a type of structured financial instrument whose coupon rate has an inverse relationship to the market interest rate e.g. Coupon rate = 15% - (1.5 x Libor<sub>3-month</sub>)

6.2.4  
Repurchase  
Agreements

- an important source of short-term financing.
- Repos are kind of collateralized loans.
- In a repurchased agreement, security owner (borrower) sell a security for cash and agrees to repurchase it from the lender at a specific future date and an agreed on price
- Repo agreements may be **cash driven** or **security driven**.
- On the basis of settlement, repos can be categorized as **bilateral** repos or **tri-party** repos.

6.2.5  
Security  
Lending

- Two motives of security lending are i) to facilitate short selling & ii) for collateralized borrowing or financing.
- In a short selling, short seller borrows the security from someone else and then sells the security and receives immediate payment. The short seller later returns the security.
- In financing-motivated loan, a bond owner lends securities to investor and receives cash.
- Unlike repos, security lending transactions are open-ended

