

**MUNI**

# **Fix Income Mananagement**

ACP, FIIN

**Ludek Benada**

**benada@mail.muni.cz**

Masaryk University

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# Fix Income Mananagement

- Liability-Based Mandates (ALM)
- Total Return Mandates

# Liability-Based Mandates

- Cash Flow Matching
- Duration Matching
- Contingent Immunization ( $PV_{assets} > PV_{liabilities}$ )
- Horizon Matching ( $CF\_matching + Duration\_matching$ )

## Total Return Mandates

- The main task is not to match future liabilities
- Focus on total or relative return



Outperforme a **Benchmark**  
*(Active return, Active risk ...tracking error)*

# Total Return Mandates

- Pure Indexing (BBGAI)
- Enhanced Indexing (modest outperformance over Index)
- Active Management

# TRM - Overview

Figure: Total Return Mandates

	Pure Indexing	Enhanced Indexing	Active Management
Objective	Match benchmark return and risk as closely as possible	Modest outperformance (generally 20 bps to 30 bps) of benchmark while active risk is kept low (typically around 50 bps or lower)	Higher outperformance (generally around 50 bps or more) of benchmark and higher active risk levels
Portfolio weights	Ideally the same as benchmark or only slight mismatches	Small deviations from underlying benchmark	Significant deviations from underlying benchmark
Risk factor matching	Risk factors are matched exactly	Most primary risk factors are closely matched (in particular, duration)	Large risk factor deviations from benchmark (in particular, duration)
Turnover	Similar to underlying benchmark	Slightly higher than underlying benchmark	Considerably higher turnover than the underlying benchmark

*Fixed Income Analysis, CFA Institute, 4th Ed.*

## Question

What is the best Fix-income instrument for immunization?

## Question

Buy and hold an AAA Zero Bond.

*(Price & Reinvestment Risk)*



# What cause Price & Reinvestment Risk?

Yield curve

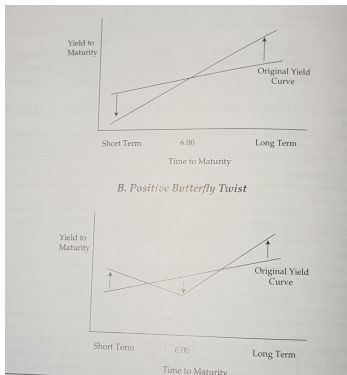
# The shape of YC can damage the immunization

## Examples:

- Shifts
- Twists

# Illustration of Shift & Twist

Figure: Shift and Positive Butterfly Twist



*Fixed Income Analysis, CFA Institute, 4th Ed.*

## Movements in the yield curve

- upward steeping shift (bear steeper)
- upward flattening (bear flattener)
- downward steepener (bull steepener)
- downward flattener (bull flattener)

## Possible change in the shape of YC

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Upward & Parallel  
Upward & Steepening  
Upward & flattening

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Downward & Parallel  
Downward & Steepening  
Downward & flattening

+ *Twist*

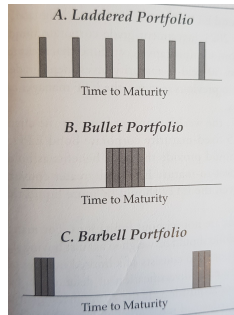
## FIM by non parallel shifts or twist

### Ladder, Bullet, Barbell

*Task - customize "diversification" should provide balanced position between Cash Flow Reinvestment and Market price volatility.*

# Illustration of Fix Income Strategies

Figure: Bonds strategies



*Fixed Income Analysis, CFA Institute, 4th Ed.*

## Practical examples

- Bullet vs. Barbell *(Excel)*
- Basic calculation on bonds *(R)*



Děkuji za pozornost

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