

**Chapter 4****Portfolio Management  
of Bonds**

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**Major sectors of the U.S. Dollar  
Bond Market at Year-End 2000**

sector	Nominal Value Outstanding (billions)	Percentage of Total
U.S. government	\$3,357	21%
Mortgage-backed securities	2,492	15
Corporate	4,523	28
Municipal	1,568	10
Foreign	1,685	10
Asset-backed securities	742	5
Other government agencies	1,825	11
<b>Total</b>	<b>\$16,192</b>	<b>100%</b>

Source: Federal Reserve Flow of Fund; Salomon Smith Barney, "How Big Is the World Bond Market?"  
April 7,2000, for foreign bond levels,

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## Basic Characteristics of Bonds

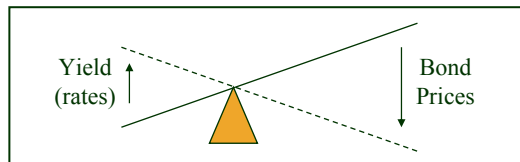
- Par Value
- Coupon
- Maturity
- Call Provision

## Element of Bond Analysis

- Current Yield
- Yield to Maturity
- Price
- Yield Curve
- Yield Spread
- Duration

## Bonds: Relationship Between Yield and Price

- There is an inverse relationship between yield and price



- Value of the bond today
  - Depends on the interest rate (yield) used to discount each year's cash flows back to the present
  - Will change as the yield demanded by investors changes

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## Yield Spreads

- Yield required increases as risks increase
  - In general
    - bond yield = risk-free yield + risk premium
    - = treasury yield + yield (risk) spread

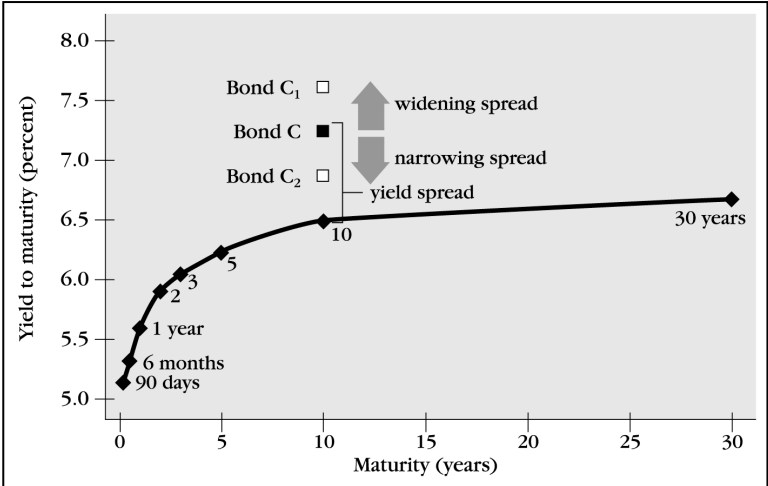
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# Yield Spreads



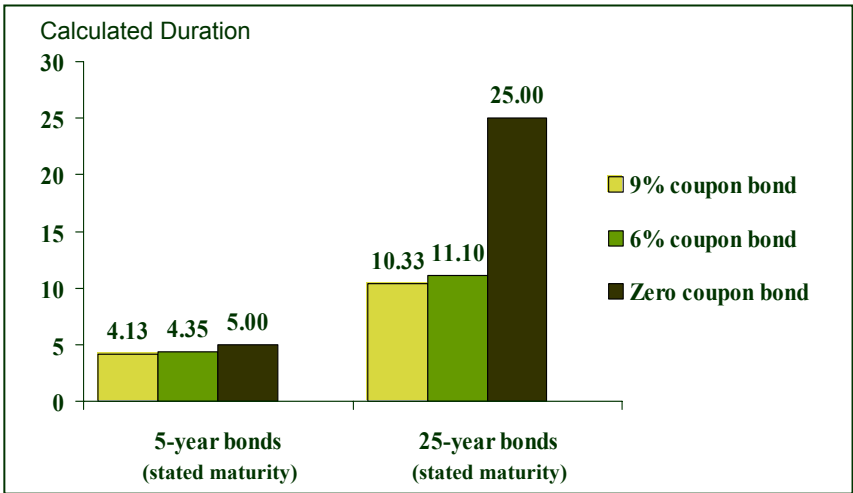
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# Duration as a Measure of Comparability



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## Risks of Bond Investment

- **Market risk**
  - Addresses inverse relationship between interest rates and bond prices
- **Reinvestment risk**
  - Relates to variability in bond returns that result from fluctuations in the interest rate at which interim cash flows are invested
- **Credit risk**
  - Threat that the issuer of a bond may default

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## Risks of Bond Investment (cont.)

- **Call risk**
  - Relates to risk an investor faces when buying a bond with an embedded call option attached
- **Event risk**
  - Involves circumstances unforeseen at the time of purchase that can have a large adverse effect on bond prices

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## Benchmarks

- **Market Index**: a hypothetical portfolio of bonds designed to represent a segment of the bond market.  
e.g. Lehman Brothers bond indices,  
Salomon Smith Barney bond indices.

## Benchmarks (cont.)

- **Competitive Universe**: a set of bond funds with similar investment objectives  
e.g. Lipper, Morningstar, and Micropal
- Index bond funds are relatively small.

## Types of Investment Strategies

- **Duration Management (Market Timing):** alter the average duration of the portfolio depending on the PM's outlook for the interest rates.

It is a powerful tool. However, the market efficiency makes it hard for any one fund manager to predict interest rates correctly and consistently.

## Illustrations of two common yield curve strategies

### Bullet strategy

Portfolio concentrated in a single maturity range



Average Maturity  
is 10 years.

### Barbell strategy

Portfolio concentrated in two "extreme" maturities

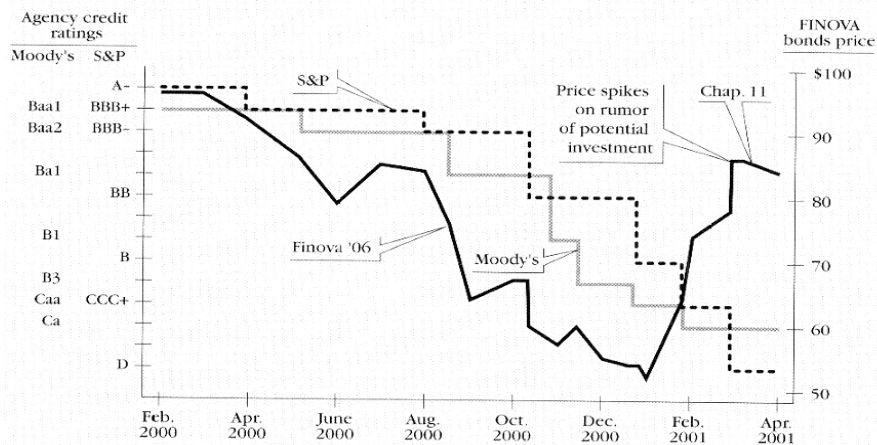


Average Maturity  
is 10 years.

## Types of Investment Strategies (cont.)

- **Credit Selection:** overweight the bonds of certain issuers and underweight the bonds of others depending on their credit perspectives.

## FINOVA group bonds with a 7.25% coupon rate and maturity date of 7/12/2006 versus credit ratings





## 1990-2000 Returns of investment grade bonds versus high yield bonds

Year	Merrill Lynch Domestic Master	Merrill Lynch High Yield Master II
1990	9.1	-4.36
1991	15.85	39.17
1992	7.58	17.44
1993	10.02	16.69
1994	-2.82	-1.03
1995	18.52	20.46
1996	3.58	11.27
1997	9.65	13.27
1998	8.87	2.95
1999	-0.96	2.52
2000	11.73	-5.12

資料來源：Bloomberg/Merrill Lynch Index system

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## Types of Investment Strategies (cont.)

- **Prepayment Prediction:** Study the patterns of prepayments and create models to predict how quickly MBS with different coupons will be retired.

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## Roles of Investment Professionals

- **Portfolio Manager**  
makes buy and sell decisions for the fund
  - Investment guideline
  - Performance
  - Risk
  - Liquidity

## Roles of Investment Professionals (cont.)

- **Credit Analyst:**  
tries to exploit the lags between changes in issuers' credit quality and changes in their public credit ratings.

## Roles of Investment Professionals (cont.)

- **Quantitative Analyst:**

researches the structural aspects of bonds, such as valuing yield spreads, estimating duration, and modeling the prepayment behavior of MBS.

tries to quantify the risks and expected rewards associated with portfolio strategies.

## Roles of Investment Professionals (cont.)

- **Trader:**

executes trades for funds

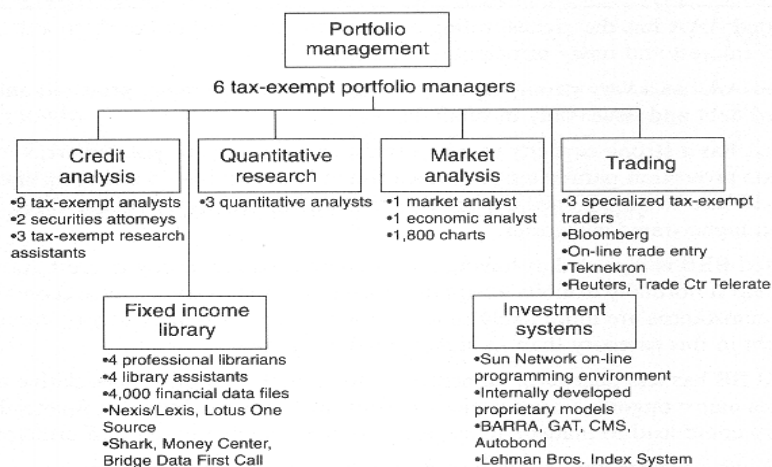
makes decisions about which dealers to trade with and how to obtain most favorable selling & buying prices.

## Summary of results of AIMR/Russell Reynolds compensation survey for mutual fund company respondents

Position	2001 Median Compensation				90th Percentile
	Salary	Bonus	Noncash	Total	
Head of fixed income	\$180,000	\$185,000	\$120,000	\$388,000	\$3,035,000
Portfolio manager, domestic fixed income	140,000	100,000	35,000	317,500	987,000
Portfolio manager, global fixed income	125,000	150,000	10,000	315,000	854,000
Securities analyst, domestic fixed income	98,000	62,500	9,000	166,250	375,000
Securities analyst, global fixed income	110,000	53,000	1,000	197,500	330,000

Source: Association for Investment Management and Research, 2001 Investment Management Compensation Survey 2003/10/14 Prof. Shean-Bii Chiu 22

## Trustworthy tax-exempt fixed-income resources



Source: The mutual fund business, Robert C. Pozen, 1998, p.208 2003/10/14 Prof. Shean-Bii Chiu

## Trustworthy Municipal bond Fund

Fund Manager: Anne Preston

The Municipal Bond Fund's objective is to obtain a high level of current tax-exempt income consistent with preservation of capital. The Fund generally acquires longer-term (20-40yrs) tax-exempt bonds which have credit characteristics consistent with rating agencies' definitions of "A" or better, although it may purchase bonds with BBB credit characteristics. Net assets: \$1,005,604,218

Categories	12/31/94	12/31/93
State general obligations	7.1	3.5
Local general obligations	6.1	4.7
Special tax	9.4	6.0
Lease rental	8.3	8.2
Water, sewer, & gas utilities	7.2	10.3
Electric utilities	16.6	21.4
Ind. revenue/pollution control	1.8	3.6
Transportation	10.2	6.0
Health care	14.8	20.5
Universities/student loans	4.1	6.9
Housing	3.2	3.5
Pooled loans/other	1.7	0.2
Escrowed/special oblig./pre-ref.	4.8	3.8
Total municipal bonds	95.3	98.6
Short-term obligations	6.9	2.1
Receivables less liabilities	2.1	(0.8)
	100.0%	99.9%
Net assets (\$000)	1,005,604	1,258,068
Net asset value (\$)	7.36	8.69
Weighted-average years to maturity	17.0	21.4
Duration	8.8	8.6

Source: The mutual fund business, Robert C. Pozen, 1998, p.209

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## Trustworthy Municipal bond Fund (cont.)

Categories	12/31/94	12/31/93
<i>Ratings breakdown (Expressed as a % of total net assets)</i>		
AAA	40.3	36.7
AA	23.9	25.0
A	25.7	27.7
BBB	12.2	11.4
	102.1%	100.8%
<i>Maturity distribution (Expressed as a % of total net assets)</i>		
Years		
0-1	6.9	2.1
1-5	3.2	2.4
5-10	6.7	3.1
10-15	16.3	8.2
15-20	32.2	22.0
20+	36.8	63.0
	102.1%	100.8%
<i>Top 5 states by % of net assets</i>		
CA	12.9	CA 14.1
NY	11.6	PA 8.6
MA	8.8	NY 8.5
TX	8.6	MA 5.9
IL	5.7	WA 5.6

\* Hypothetical: For description purposes only.

Source: The mutual fund business, Robert C. Pozen, 1998, p.210

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## Standard & Poor's - dit-LUX Internationaler Rentenfonds

Issued: January 2002

### dit-LUX INTERNATIONALER RENTENFONDS AF

Luxembourg domiciled FCP (Standard & Poor's FS no: EL 987095)

<b>Management Group:</b>	dam
<b>Fund manager:</b>	<b>Jürgen Jann</b> (since launch)
<b>Launch date and current fund size:</b>	June 1997, €14m
<b>Standard &amp; Poor's Fund Management Rating:</b>	<b>A</b>
<b>Volatility Rating:</b>	<b>S4</b>

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## Standard & Poor's - dit-LUX Internationaler Rentenfonds (cont.)

### STANDARD & POOR'S

#### Sources of return

	low emphasis	average emphasis	high emphasis
Portfolio Duration			
Credit Spreads			
Country Sectors			
Yield Curve Positioning			
Currency Exposure			
Alt. Fix Income			
Derivatives			
Trading Strategies			
Quant. Value Techniques			

**Performance 12 months to 1.11.2001  
and cumulative over 5 years (or from launch)**

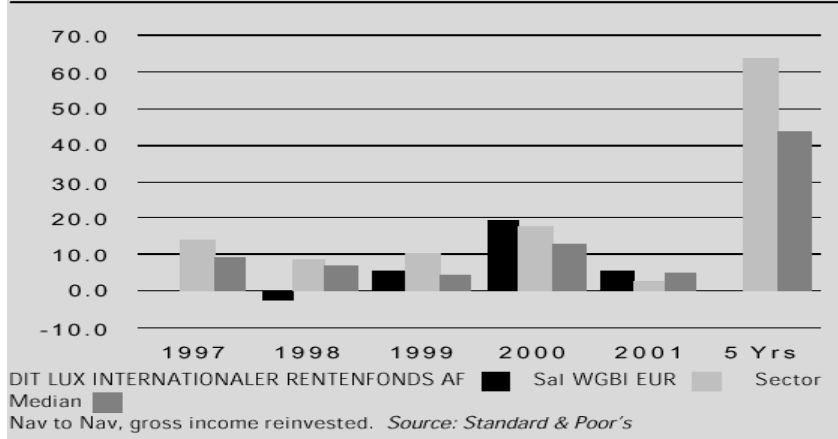
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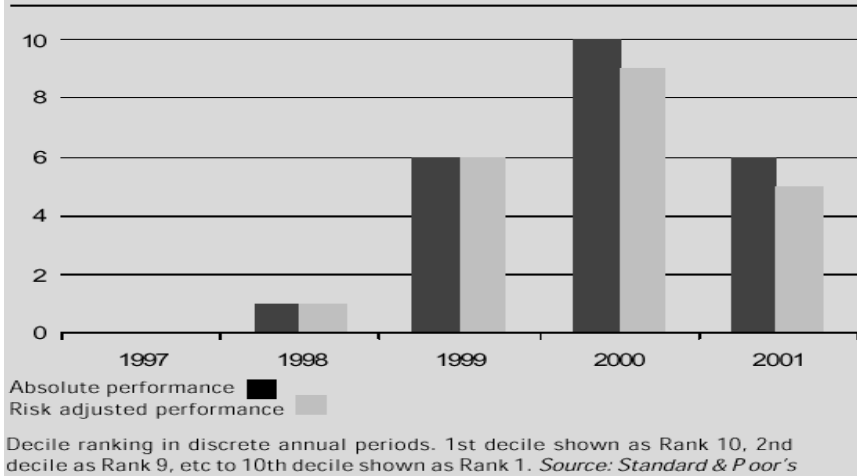
## Standard & Poor's - dit-LUX Internationaler Rentenfonds (cont.)

**Performance 12 months to 1.11.2001 and cumulative over 5 years (or from launch)**



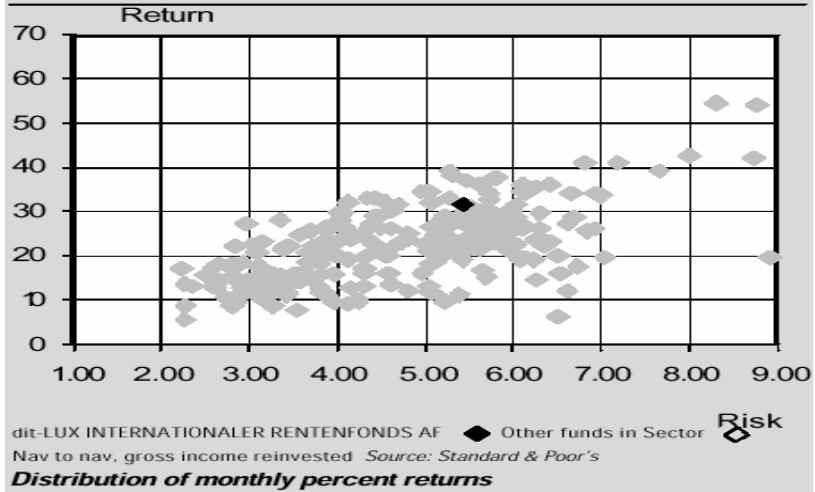
## Standard & Poor's - dit-LUX Internationaler Rentenfonds (cont.)

**Absolute & risk adjusted performance decile**



## Standard & Poor's - dit-LUX Internationaler Rentenfonds (cont.)

**Risk Return 1996-2001**



## Standard & Poor's - dit-LUX Internationaler Rentenfonds (cont.)

**Performance summary**

	2001	3 years	5 years
Sharpe Ratio	0.0	0.9	-
R <sup>2</sup>	0.8	0.7	-
Alpha	0.3	0.2	-
Beta	0.7	0.8	-
Standard Deviation	5.3	5.4	-
Information Ratio	0.7	-0.1	-



## Standard & Poor's - dit-LUX Internationaler Rentenfonds (cont.)

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### Standard & Poor's Opinion

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*dit-LUX INTERNATIONALER RENTENFONDS AF is a no-load total return bond fund positioned at the higher risk end of the group's range. The fund invests primarily in highly rated international government and agency bonds and its mandate permits performance enhancement through exposure to emerging market debt and / or corporate bonds. While the investment approach is top-down and team-driven, fund manager, Jürgen Jann, a senior member of the international bond team, runs the fund in a relatively aggressive and opportunistic manner. Added value comes primarily from currency allocation and the level of investment in emerging markets, which can range from 10 to 25% of the portfolio.*

*At present, the fund manager has a high degree of discretion as there are no set limits on credit ratings, single issuer concentration or tracking error. However it is doubtful this amount of latitude will survive the move towards a common more structured and formal investment process when dit's portfolio managers are integrated into Allianz Dresdner Asset Management's 30-strong fixed income team. The emphasis on risk controls is also expected to increase with an impact on management style in the short to medium term.*

*The fund's above average performance, coupled with Jann's experience and strong team backing enable the fund to achieve an A fund management rating, with an S4 volatility rating.*