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CFA Institute

Level III

Fixed-Income Active Management: Credit Strategies

2020 Exam

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Contents and Introduction

1. Introduction
2. Investment-Grade and High-Yield Corporate Bond Portfolios
3. Credit Spreads
4. Credit Strategy Approaches
5. Liquidity Risk and Tail Risk in Credit Portfolios
6. International Credit Portfolios
7. Structured Financial Instruments

2 Investment-Grade and High-Yield Corporate Bond Portfolios

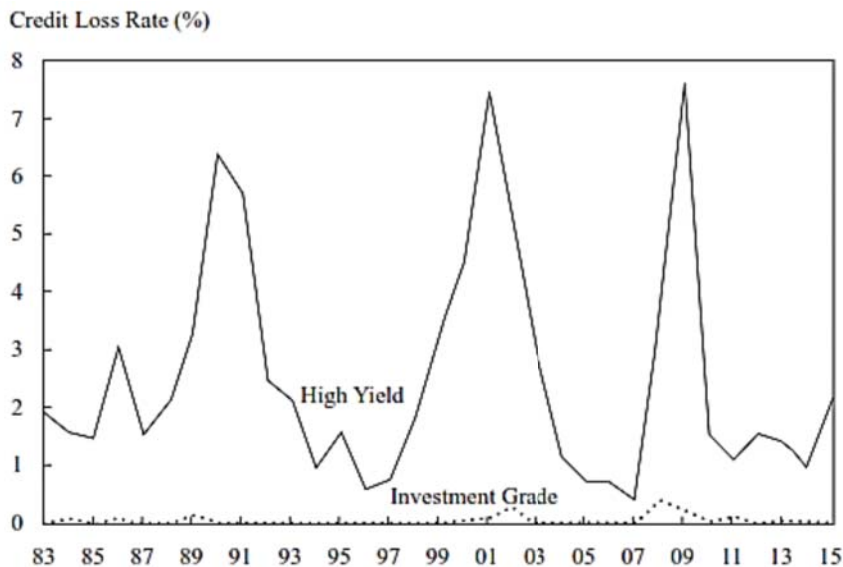
1. Credit Risk
2. Credit Migration Risk and Spread Risk
3. Interest Rate Risk
4. Liquidity and Trading

2.1 Credit Risk

Credit risk is the risk of loss caused by a counterparty's or debtor's failure to make a promised payment.

- Default risk
- Loss severity (also called loss given default)
- Credit loss rate

Annual Credit Loss Rates for Corporate Bonds, 1983–2015



Source: Moody's Investors Service.

High-yield bonds:

High credit risk → Low credit ratings

High variability of credit loss rate

Key consideration: credit risk

Investment grade bonds:

Low default risk → High credit rating

Considerations: interest rate risk, spread risk, and credit migration

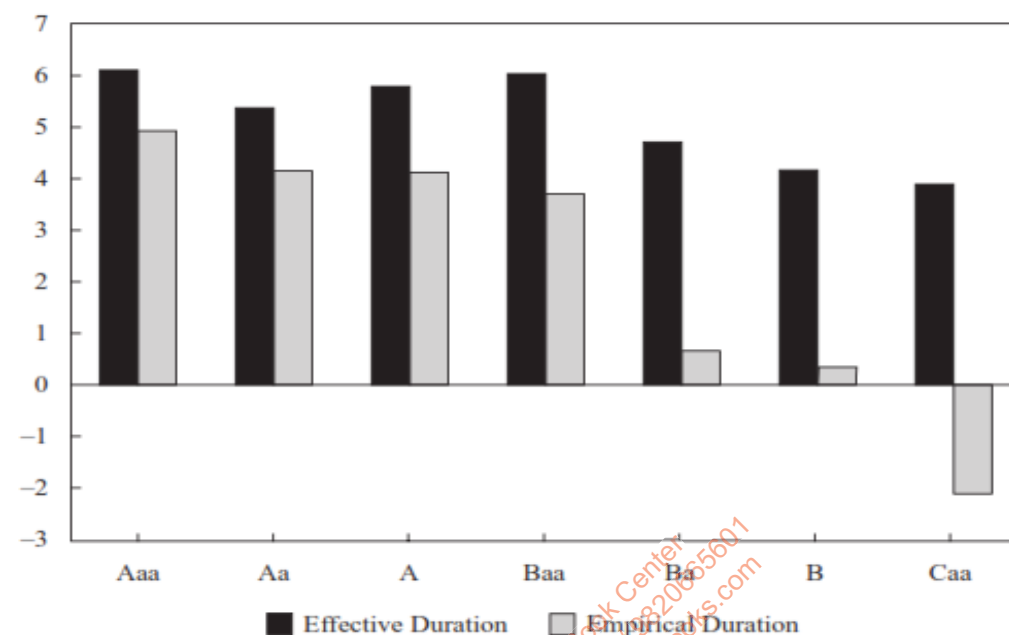
2.2 Credit Migration Risk and Spread Risk

- Credit migration risk: risk that credit quality deteriorates
 - One or more rating agencies might downgrade a company's bonds
 - As bonds become riskier spreads widen (spread risk)
 - For investment grade bonds, spread volatility is more relevant than default risk
- Spread duration measures the effect of a change in spread on a bond's price
 - Approximate percentage increase in bond's price if spread decreases by 1%
 - Ex: $P = 99.60$; spread duration = 4.70; credit spread decreases by 20 bps. *New price = 100.54*
- For non-callable fixed rate bonds spread duration \approx modified duration; for floaters the two duration measures can be quite different
 - Spread risk in an investment grade portfolio should be measured by spread duration, not modified duration
- With high-yield bonds there is an emphasis on credit risk and market value of position

2.3 Interest Rate Risk

- Investment grade portfolio's have greater exposure to interest rate risk than high-yield portfolios
 - Credit spreads have a negative correlation with risk-free interest rates
- Empirical duration is a measure of interest rate sensitivity that is determined from market data
- High yield portfolio managers have a greater focus on credit risk relative to interest rate risk and yield curve dynamics
- When credit spreads are tight, high yield bonds have greater interest rate sensitivity

Effective Duration and Empirical Duration by Rating Category



Source: Barclays Capital and Wellington Management.

2.4 Liquidity and Trading

- Liquidity: ability to purchase or sell an asset quickly and easily at a price close to fair market value
- Liquidity is positively correlated with:
 - Bond's issue size
 - Size of market in which bond is traded
 - Bond dealer inventory size
- Investment grade bonds are more liquid than high yield bonds
- High-yield bonds have wider bid-ask spreads → turnover is more expensive
- Investment grade bonds are quoted spreads over benchmark government bonds while high-yield bonds are generally quoted in price terms

3 Credit Spreads

Credit spreads are based on:

- likelihood of default
- probable loss given default
- credit migration risk
- market liquidity risk

The major credit spread measures are:

- Benchmark Spread
- G-Spread
- I-Spread
- Z-Spread
- Option-Adjusted Spread

Excess return: additional return for purchasing a credit security

Benchmark Spread, G-Spread and I-Spread

Benchmark spread = yield on credit security – yield on benchmark bond

- Benchmark bond should have similar duration and little or no credit risk

G-spread is the spread over an actual or interpolated government bond

- Easy to calculate and understand
- Calculated in the same way by different investors
- Indicates way to hedge the interest rate risk of credit securities
- Provides a mechanism to estimate prices changes for option-free, fixed rate securities

I-spread is the spread over the relevant swap rate

Important considerations when evaluating G-spread and I-spread

- Swap curves are smoother than government bond yields
- Government bond yield curves are impacted by supply demand for specific bonds
- Benchmark rate is most helpful when it represents a credit risk-free rate
- If I-spread is calculated but government bonds are used to hedge this exposure, then realized spread will differ from calculated spread

Example 2: Using G-Spread to Calculate Interest Rate Hedges and Price Changes

On 31 March 2016, a portfolio manager gathers information for the following bonds:

1. Citigroup 3.75% due 16 June 2024
2. US Treasury 1.5% due 31 March 2023 (on-the-run 7-year Treasury note)
3. US Treasury 1.625% due 15 February 2026 (on-the-run 10-year Treasury note)

Price, yield, and effective duration measures for the three bonds are as follows:

	Price	Yield	Effective Duration
Citigroup 3.75% due 16 June 2024	103.64	3.24%	7.0
US Treasury 1.5% due 31 March 2023	99.80	1.53%	6.7
US Treasury 1.625% due 15 February 2026	98.70	1.77%	9.1

Later, the portfolio manager observes that the 7-year Treasury note's yield falls from 1.53% to 1.43% while the 10-year Treasury note yield remains unchanged.

Based on the interest rate changes, what is the portfolio manager's estimate of the price change in the Citigroup bond?

Z-Spread and Option-Adjusted Spread

Benchmark spread, the G-spread, and I-spread are useful for pricing and hedging credit securities
Z-spread and option-adjusted spread are used to compare relative value across credit securities

Z-spread is the yield spread that must be added to each point of the implied spot yield curve to make the present value of a bond's cash flows equal its current market price

OAS is the constant spread that, when added to all the one-period forward rates on the interest rate tree, makes the arbitrage-free value of the bond equal to its market price

Z-spread is useful for comparing bonds **without** embedded options

OAS is useful for comparing bonds with different features

- Depends on assumptions regarding future interest rate volatility
- Realized spread is likely to be different from OAS
- Appropriate measure for portfolio level spread
- Portfolio OAS is based on weighted average of OAS of individual bonds

Example 3: Using Credit Spread Measures

The Charter Communications 5.75% bond issue due 15 January 2024 has the following call schedule:

Callable on or after	At a Price of
15 July 2018	102.875
15 July 2019	101.917
15 July 2020	100.958
15 July 2021	100

On 11 April 2016, the bond issue is trading at a price of 104. Spread measures are as follows:

G-Spread	367
I-Spread	369
Z-Spread	371
OAS	297

Based on the information given, explain why the OAS differs from the other spreads, what the difference in spread implies, and why OAS is the best measure of relative value for the Charter Communications bond.

Example 4: OAS of a Portfolio

A portfolio consists of investments in two bond issues, Bond A and Bond B. The following table shows relevant information on the bonds in this portfolio. Calculate the portfolio's OAS.

	Face Value (US\$)	Price	Accrued Interest	OAS (bps)
Bond A	1 billion	95	1.5	125
Bond B	2 billion	97	2.0	150

3.2 Excess Return

- Excess return is the return of a bond after interest rate risk has been hedged
 - Interest rate risk and credit-related risks are managed separately
- Credit spread is equal to excess return if there is no change in the security's yield or in interest rates, and if the security does not default during the holding period
- $XR \approx (s \times t) - (\Delta s \times SD)$ assuming no default losses
- $EXR \approx (s \times t) - (\Delta s \times SD) - (t \times p \times L)$

Example 5: Calculating Excess Return

A corporate bond has a spread duration of five years and a credit spread of 2.75% (275 bps).

1. What is the approximate excess return if the bond is held for six months and the credit spread narrows 50 bps to 2.25%? Assume the spread duration remains at five years and that the bond does not experience default losses.
2. What is the instantaneous (holding period of zero) excess return if the spread rises to 3.25%?
3. Assume the bond has a 1% annualized expected probability of default and expected loss severity of 60% in the event of default. What is the expected excess return if the bond is held for six months and the credit spread is expected to fall to 2.25%?

4 Credit Strategy Approaches

Possible credit strategy statements:

“Construct and manage a portfolio that maximizes return within a set of risk limits”

“Construct and manage a portfolio that outperforms a given benchmark by $x\%$ using only investment-grade bonds”

Two broad approaches:

1. Bottom-Up Approach
2. Top-Down Approach

4.1 The Bottom-Up Approach

The bottom-up approach is based on the assessment of the relative value of individual issuers or bonds

- Called the 'security selection strategy'
- Appropriate for analyzing companies that have comparable credit risk

Step 1: Establish universe of eligible bonds and divide into industry sectors

- Starting point can be benchmark vendor's sector classification
- Determine whether classifications are overly broad or inaccurate

Example 6: An investor is conducting a relative value analysis on bond issuers in the retail sector. He is trying to decide whether the global clothing retail sector is a sufficiently granular (narrowly defined) sector for his analysis. Through his research, he has determined the following:

- Large clothing retailers are diversified across Europe, Asia, and the Americas.
- Small clothing retailers tend to sell into only one of these three regions.
- Clothing retailing is a cyclical business, and the three regions differ substantially in their economic growth cycles.

Describe considerations that the investor may use in determining how to divide the retail sector.

The Bottom-Up Approach (Cont...)

Step 2: Identify bonds with the “best” relative value within each sector.

Evaluate compensation for credit-related risk against the expected magnitude of the credit-related risks

- If credit-related risks are similar → buy bond with higher spread
- If credit-related risks are different, is additional spread worth it?

Consider:

- Historical default rate information based on credit rating categories
- Average spread level for each sector and credit rating

$$\text{EXR} \approx (s \times t) - (\Delta s \times \text{SD}) - (t \times p \times L)$$

Other factors:

- Liquidity
- Portfolio diversification
- Risk

Example 7: Using Expected Excess Return in Relative Value Analysis

An investor has gathered the following information on four bonds she is considering for purchase →

She uses the following historical information on annual default rates to estimate the probability of default. She assumes a 40% recovery rate on any defaults (that is, a 60% expected loss severity).

Bond	Spread Duration	Yield	Z-Spread (bps)	Credit Rating
W	2	3.5%	200	Baa2
X	5	4.0%	100	A2
Y	5	5.5%	225	Ba2
Z	5	6.5%	350	B2

Credit Rating	Average Annual Default Rates
A1	0.24%
A2	0.27%
A3	0.31%
Baa1	0.36%
Baa2	0.43%
Baa3	0.61%
Ba1	1.20%
Ba2	1.28%
Ba3	2.37%
B1	2.93%
B2	3.19%
B3	3.65%

The investor has a six-month holding period.

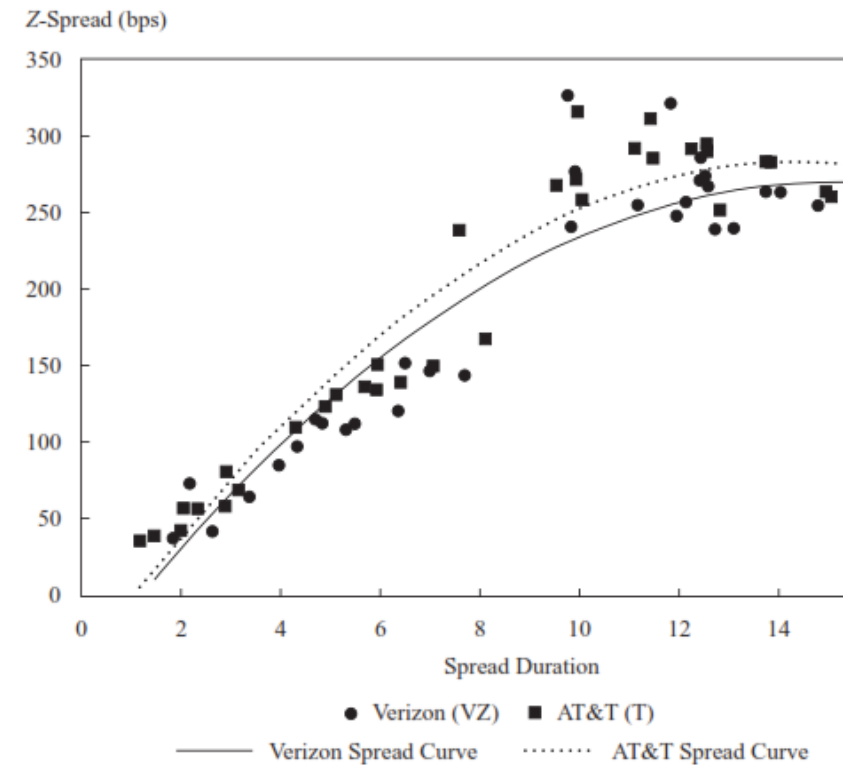
1. Based on expected excess return, determine which bond the investor is most likely to buy if she expects that spreads will remain unchanged.
2. If the investor expects that spreads will narrow by 50 bps during the holding period, determine which bond the investor is most likely to buy. If the choice of bond has changed from Question 1, explain why.
3. Explain why an investor considers factors other than expected excess return in relative value decisions.

Spread Curves

- Spread curve: fitted curve of credit spread versus spread duration or maturity for a given issuer
- At a given spread duration, pick bond with higher spread if credit worthiness is the same
- Can also evaluate bonds that are significantly above or below the fitted spread curves

Other Considerations

- Bond structure
- Issuance date
- Supply
- Issue size



Example 8: Using Spread Curves in Relative Value Analysis

At the end of 2016, an analyst is about to conduct a relative value analysis of the following bonds issued by a single company. All of these bonds are available in the market at the time he is conducting his analysis:

Bond	Coupon	Maturity	Time to Maturity (years)	Credit Ratings	Issue Size	Duration	Price	Yield	Credit Spread (bps)
A	2.40%	12/31/2018	2	A2/A	2,000,000,000	2.0	100	2.40%	40
B	3.50%	12/31/2021	5	A2/A	1,500,000,000	4.6	100	3.50%	50
C	8.00%	9/30/2022	5.7	Ba1/BB+	50,000,000	4.7	109.5	6.02%	299
D	5.00%	12/31/2046	30	A2/A	1,000,000,000	15.8	100	5.00%	100

1. Evaluate whether the analyst should include Bond C in the relative value analysis.

The company is issuing a new 10-year bond with the following features:

E	4.00%	12/31/2026	10	A2/A	3,000,000,000	8.2	100	4.00%	80
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2. Explain how the analyst may compare the relative value of the company's new issue with that of the outstanding bonds.

Bottom-Up Portfolio Construction

Models for coming up with position sizes can be based on market value or spread duration

▫ Suppose that one sector in an investor's benchmark consists of European retail companies. If the European retail sector constitutes 8% of the investor's benchmark based on market value, then she may target an 8% weighting in those European retailers that she has determined to be most attractively valued. If the portfolio has a market value of £50,000,000, then an 8% weighting will imply purchasing £4,000,000 worth of European retailers.

Now suppose that the portfolio's benchmark has a weighted-average spread duration of 4.0, and the European retailers in the benchmark have a weighted-average spread duration of 5.0. Then, measured by spread duration, the European retailers constitute 10% $[(5.0 \times 8\%)/4.0]$ of the benchmark. Using this spread duration metric, the investor would target a 10% weighting in European retailers.

Use market value if default risk is an important consideration, otherwise spread duration is better

If a given sector has many attractively valued bonds → higher sector weight relative to benchmark

Obtaining desired bonds might be challenging; hence investors use alternatives such as:

- Substitution
- Indexing
- Cash

4.2 The Top-Down Approach

The top-down approach to credit strategy focuses on macro factors such as: economic growth; overall corporate profitability; default rates; risk appetite; changes in expected market volatility; changes in credit spreads; interest rates; industry trends; and currency movements

- Overweight attractively priced sectors
- Sector divisions with top-down analysis tend to be relatively broad

Determine desired credit quality based on expectations for credit cycle and credit spread changes

Approaches for measuring credit quality in a top-down approach:

- Average credit rating
- Average OAS
- Average spread duration
- Duration times spread

Expected excess return formula can be used in a top-down context

Example 9: Top-Down Excess Returns

An investor has gathered information and formed expectations for four bond indexes. Each index contains bonds within a single, unique rating category.

Index Rating Category	Current OAS in bps (s)	Expected OAS in One Year, in bps	Expected Credit Loss Rate (p × L)	Spread Duration (SD)
A	244	118	0.00%	5.6
Baa	334	206	0.04%	6.1
Ba	571	370	0.08%	4.4
B	736	510	0.31%	3.9

The investor has a one-year holding period. He intends to purchase bonds of a single rating category and is choosing among the categories represented by the four indexes. Based on expected excess return, determine which rating category the investor is most likely to choose. (Assume that the spread duration does not change during the one-year holding period.)

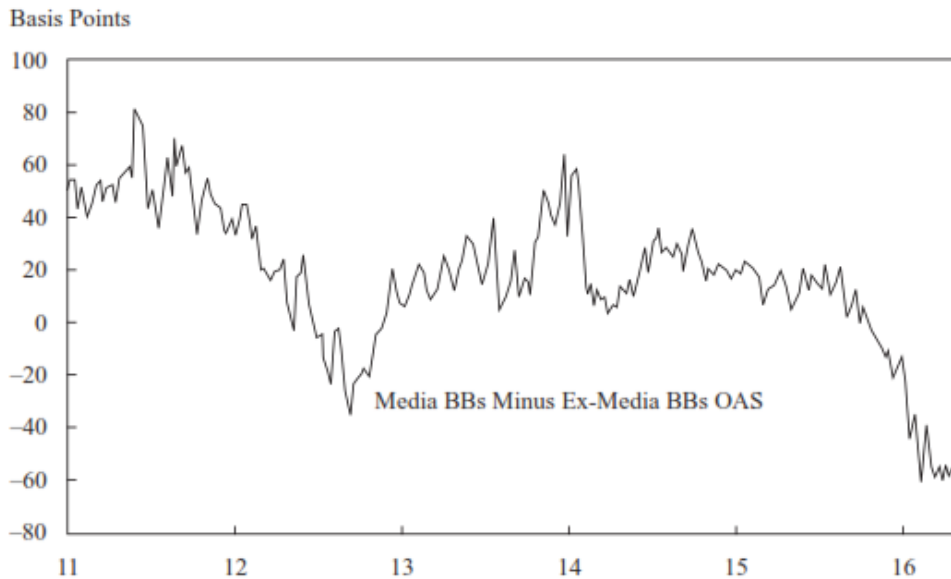
Industry Sector Allocation

Industry sector allocation can be based on macro views, regression analysis and ratio analysis.

Macro view example: Economic slowdown in emerging markets → decline in demand for oil and industrial metals → lower bond valuations

Regression analysis example: average spread of high yield bonds in a particular industry sector versus average spread of investment grade bonds in the same sector.

Ratio analysis example:
Compare sector spreads and
sector leverage



Source: Deutsche Bank.

Interest Rate Measurement and Management in a Top-Down Strategy

- Measuring interest rate exposure
- Managing interest rate exposure without derivatives
- Managing interest rate exposure with derivatives
- Volatility management

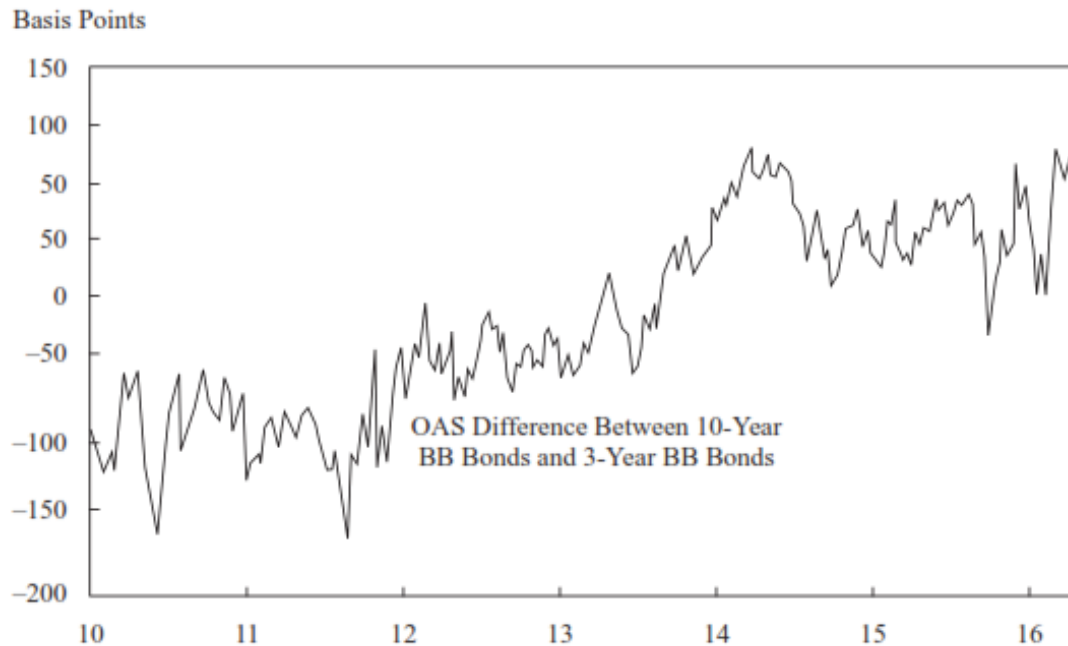
Country and Currency Exposure

- Currency and/or country views are often implemented using a top-down approach, through the use of credit securities or derivatives.
- If interest rate differential between two countries will change → buy credit securities in the currency where yields will fall and sell credit securities where yields will rise
- More common to use forwards and futures

Spread Curves in Top-Down Approach

Many different views related to spread curves; examples:

- Two spread curves will converge or diverge
- Particular credit spread curve will flatten or steepen



Source: Deutsche Bank.

4.3 Comparing the Bottom-Up and Top-Down Approaches

Bottom-Up Approach	Top-Down Approach
Advantage: Easier to gain informational advantage in individual companies or bonds	Advantage: Sizable portion of credit returns can be attributed to macro factors
Challenge: Difficult to earn substantial returns from bottom-up security selection without exposing the portfolio to macro factors	Challenge: Difficult to gain information advantage

Example 10: Choosing a Credit Strategy

A credit investor has conducted extensive research on the European chemicals and consumer staples industries. He is constructing a portfolio of bonds issued by companies in these industries. The investor seeks to outperform a benchmark consisting of bonds issued by European chemicals and consumer staples companies.

Evaluate whether a top-down or bottom-up approach is most appropriate for this investor.

4.4 ESG Considerations in Credit Portfolio Management

Some fixed-income mandates include a requirement that the portfolio consider environmental, social, and governance (ESG) factors in the investment process.

Different ways of incorporate ESG considerations:

- Relative value considerations
- Guideline constraints
- Portfolio-level risk measures
 - Monitoring of exposures to ESG-related risk factors
 - Targeting an average ESG portfolio score

Positive impact investing opportunities

5 Liquidity Risk and Tail Risk in Credit Portfolios

Liquidity: ability to purchase or sell an asset quickly and easily at a price close to fair market value.

- Liquidity Risk
 - Measures of Secondary Market Liquidity in Credit
 - Structural Industry Changes and Liquidity Risk
 - Management of Liquidity Risk
- Tail Risk
 - Assessing Tail Risk in Credit Portfolios
 - Managing Tail Risk in Credit Portfolios

5.1 Liquidity Risk

Measures of secondary market liquidity

- Trading volume
- Spread sensitivity to fund outflows; example: spread widening / percentage outflow
- Bid-ask spreads

Structural industry changes and liquidity risk

- Increased dealer reluctance to maintain large bond inventories after 2008-09 crisis
- Increased distribution of investment grade and high yield bonds

Management of liquidity risk

- Percentage of cash in portfolio
- Managing position sizes
- Holding liquid non-benchmark bonds
- Making use of CDS index derivatives
- Making use of ETFs

5.2 Tail Risk

Tail risk is the risk that there are more actual events in the tail of a probability distribution than probability models would predict

Assessing tail risk

- Historical scenario analysis
- Hypothetical scenario analysis
- Correlation is scenario analysis

Managing tail risk in credit portfolios

- Portfolio diversification
 - Advantage: cost effective
 - Disadvantage: difficult to identify attractively valued investment opportunities that can protect against every tail risk
- Tail risk hedges

6 International Credit Portfolios (1/2)

Bloomberg Barclays Global Credit Index: 15,000+ securities, 14 currencies, 114 countries.

Credit portfolio managers can improve returns through geographic diversification.

Relative value opportunities arise when there are country or regional differences in:

- Credit cycles
- Credit quality
- Sector composition
- Market factors

6 International Credit Portfolios (2/2)

Differences between credit markets in emerging market countries and credit markets in developed countries:

- Concentration in commodities and banking
- Government ownership
- Credit quality

Global liquidity considerations

Currency risk in global credit portfolios

Legal risk

7 Structured Financial Instruments (1/2)

Structured financial instruments are backed by a pool of assets; repackage risks

Advantages of using structured financial instruments in credit portfolios

- Multiple tranches with different risk and return profiles (potential for high returns)
- Potential for relative value opportunities
- Possibility of more-targeted exposure to a certain market or sector
- Improved portfolio diversification

Mortgage backed securities (MBS) offer:

- Liquidity
- Exposure to real estate
- Exposure to expected changes in interest rate volatility
- Useful tool for investing based on views of the credit cycle and the real estate cycle

Asset-backed securities

7 Structured Financial Instruments (2/2)

A CDO is a security backed by a diversified pool of one or more debt obligations

Diversification benefit is low

Benefits of including CDOs in a credit portfolio:

- Relative value
- Exposure to default correlations
- Leveraged exposure to credit

Covered bonds: debt obligation issued by a financial institution, usually a bank, and backed by a segregated pool of assets called a “cover pool”

- Investors have recourse to financial institution and assets in the covered pool
- Lower credit risk → lower yields

Example 11: Structured Financial Instruments

Describe how an investor may benefit from adding structured financial instruments to a credit portfolio.

Solution:

In credit portfolios, structured financial instruments may provide several benefits when added to a credit portfolio. One potential benefit is the possibility of higher portfolio returns of structured financial instruments compared with corporate credit securities; potential relative value opportunities may exist for structured financial instruments because of different features, valuation, and risk exposures compared with corporate credit securities. Another benefit of structured financial instruments is the possibility of more-targeted exposure to a certain market or sector. For example, if an investor wants exposure to the real estate sector, structured financial instruments provide investment opportunities that may be more difficult to implement through corporate credit. Finally, structured financial instruments improve the diversification to a credit portfolio.

Summary 1/3

- High-yield bonds have relatively high credit loss rates which implies high credit risk.
- Investment-grade bonds have relatively low credit loss rates, therefore the focus is on other risks such as credit migration risk and spread risk.
- Spread duration measures the effect of a change in spread on a bond's price. It is the approximate percentage increase in bond's price if spread decreases by 1%.
- For non-callable fixed rate bonds, spread duration \approx modified duration; for floaters the two duration measures can be quite different.
- Investment grade portfolios have greater exposure to interest rate risk than high-yield portfolios. This is due to the fact that credit spreads have a negative correlation with risk-free interest rates. A measure used to confirm this fact is empirical duration which is a measure of interest rate sensitivity that is determined from market data.
- Investment grade bonds are more liquid than high yield bonds.

- Credit spreads are based on:
 - likelihood of default
 - probable loss given default
 - credit migration risk
 - market liquidity risk
- Excess return is the return of a bond after interest rate risk has been hedged.
- Credit spread is equal to excess return if there is no change in the security's yield or in interest rates, and if the security does not default during the holding period.

Spread Measure	Description	Comment
Benchmark spread	Yield on credit security – yield on benchmark bond	
G-spread	Yield on credit security – yield on government bond	<ul style="list-style-type: none"> • Actual or interpolated govt. bond; • Indicates way to hedge interest rate risk;
I-spread	Yield on credit security – swap rate	Swap curves are smoother than government bond yields;
Z-spread	Constant spread that must be added to each point of the implied spot yield curve to make the present value of a bond's cash flows equal its current market price	Works for bonds without embedded options;
OAS	Constant spread that, when added to all the one-period forward rates on the interest rate tree, makes the arbitrage-free value of the bond equal to its market price	<ul style="list-style-type: none"> • Depends on assumptions regarding future interest rate volatility; • Realized spread is likely to be different from OAS; • Appropriate measure for portfolio-level spread; • Portfolio OAS is based on weighted average of OAS of individual bonds.

$$XR \approx (s \times t) - (\Delta s \times SD)$$

→ assuming no default losses

$$EXR \approx (s \times t) - (\Delta s \times SD) - (t \times p \times L)$$

Summary 2/3

- The bottom-up approach (security selection strategy) is based on the assessment of the relative value of individual issuers or bonds; appropriate for analyzing companies that have comparable credit risk.

Step 1: Establish universe of eligible bonds and divide into industry sectors.

Step 2: Identify bonds with the “best” relative value within each sector.

- Considerations: spread versus risk, bond structure, issuance date, supply and issue size
- Spread curve: fitted curve of credit spread versus spread duration or maturity for a given issuer.
 - At a given spread duration, pick bond with higher spread if credit worthiness is the same.
 - Evaluate bonds that are significantly above or below the fitted spread curves.
- With portfolios, position sizes can be based on market value or spread duration; use market value if default risk is an important consideration, otherwise spread duration is better.
- If a given sector has many attractively valued bonds, then we can give it a higher sector weight relative to benchmark.
- Other factors to consider include: liquidity, portfolio diversification, risk.
- The top-down approach to credit strategy focuses on macro factors such as: economic growth; overall corporate profitability; default rates; risk appetite; changes in expected market volatility; changes in credit spreads; interest rates; industry trends; and currency movements.
 - Here we overweight attractively priced sectors (sector divisions tend to be relatively broad).
 - Industry sector allocation can be based on macro views, regression analysis and ratio analysis.
- Determine desired credit quality based on expectations for credit cycle and credit spread changes.
- Approaches for measuring credit quality in a top-down approach:
 - Average credit rating
 - Average OAS
 - Average spread duration
 - Duration times spread

- Measures of secondary market liquidity
 - Trading volume
 - Spread sensitivity to fund outflows; example: spread widening / percentage outflow
 - Bid-ask spreads
- Structural industry changes and liquidity risk
 - Increased dealer reluctance to maintain large bond inventories after 2008-09 crisis
 - Increased distribution of investment grade and high yield bonds
- Management of liquidity risk
 - Percentage of cash in portfolio
 - Managing position sizes
 - Holding liquid non-benchmark bonds
 - Making use of CDS index derivatives
 - Making use of ETFs
- Tail risk is the risk that there are more actual events in the tail of a probability distribution than probability models would predict.
- Assessing tail risk:
 - Historical scenario analysis
 - Hypothetical scenario analysis
 - Correlation in scenario analysis
- Managing tail risk in credit portfolios:
 - Portfolio diversification
 - Advantage: cost effective
 - Disadvantage: difficult to identify attractively valued investment opportunities that can protect against every tail risk.

Summary 3/3

- **Advantages of using structured financial instruments in credit portfolios:**
 - Multiple tranches with different risk and return profiles (potential for high returns)
 - Potential for relative value opportunities
 - Possibility of more-targeted exposure to a certain market or sector
 - Improved portfolio diversification
- **Mortgage backed securities (MBS) offer:** liquidity, exposure to real estate, exposure to expected changes in interest rate volatility; useful tool for investing based on views of the credit cycle and the real estate cycle.
- **CDO:** security backed by a diversified pool of one or more debt obligations; do not offer much diversification but there are other potential benefits: relative value; exposure to default correlations and leveraged exposure to credit.
- **Covered bonds:** debt obligation issued by a financial institution, usually a bank, and backed by a segregated pool of assets called a “cover pool”; investors have recourse to financial institution and assets in the covered pool. This additional protection results in lower credit risk and therefore lower yields.
- **Credit portfolio managers can improve returns through geographic diversification.**
- Relative value opportunities arise when there are country or regional differences in:
 - Credit cycles
 - Credit quality
 - Sector composition
 - Market factors
- **Differences between credit markets in emerging and developed countries:**
 - Concentration in commodities and banking
 - Government ownership
 - Credit quality
- **Additional factors to consider:**
 - Global liquidity considerations
 - Currency risk in global credit portfolios
 - Legal risk