



Institute of Financial Markets of Pakistan

Fixed Income Securities Certification

Summary of the Syllabus

OBJECTIVE OF THE EXAMINATION

The IFMP Fixed Income Securities Certification Exam covers the basic concepts of fixed income securities, financial intermediaries and their mechanisms, available instruments of fixed income securities and trading avenues, risks and returns.

TARGET AUDIENCE

IFMP Fixed Income Securities Certification Programme is for all the professionals dealing in fixed income securities in the capital market of Pakistan.

SYLLABUS STRUCTURE

The curriculum is divided into elements and these are broken down into a series of learning objectives. Each learning objective begins with one of the following prefixes: ***know***, ***understand***, ***be able to calculate*** and ***be able to apply***. These words indicate the different levels of skill to be tested. Learning objectives prefixed:

- ***know*** require the candidate to recall information such as facts, rules and principles
- ***understand*** require the candidate to demonstrate comprehension of an issue, fact, rule or principle
- ***be able to calculate*** require the candidate to be able to use formulae to perform calculations
- ***be able to apply*** require the candidate to be able to apply their knowledge to a given set of circumstances in order to present a clear and detailed explanation of a situation, rule or principle

EXAMINATION SPECIFICATION

Each examination paper is constructed from a specification that determines the weightings that will be given to each element. The specification is given below.

It is important to note that the numbers quoted may vary slightly from examination to examination as there is some flexibility to ensure that each examination has a consistent level of difficulty. However, the number of questions tested in each element should not change by more than plus or minus 2.

Examination Specification 100 multiple choice questions		
Element number	Element	Questions
1	Introduction to Fixed Income Markets	10
2	Bonds - Features and Structure	10
3	Issuance, Trading and Funding	10
4	Fixed Income Instruments in Pakistan	10
5	Credit Analysis	10
6	Securitization	10
7	Derivatives in Fixed Income Securities	10
8	Portfolio and Risk Management	10
9	Valuations	20
	Total	100

ASSESSMENT STRUCTURE

This will be a 150 minutes examination of 100 multiple choice questions. All questions will carry equal marks. There will be no negative marking.

SUMMARY OF THE SYLLABUS

ELEMENT 1

INTRODUCTION TO FIXED INCOME MARKETS

On Completion, the candidate should:

- 1.1 Know the introduction to fixed income securities
- 1.2 Be able to describe the basic features of a fixed-income security
- 1.3 Understand and explain the overview of global fixed-income markets
- 1.4 Be able to explain legal, regulatory, and tax considerations
- 1.5 Be able to differentiate between government debt market and private debt capital market

ELEMENT 2

BONDS - FEATURES AND STRUCTURE

On Completion, the candidate should:

- 2.1 Describe basic features and types of a bond
- 2.2 Be able to explain yield measures
- 2.3 Describe functions of a bond indenture. Compare affirmative and negative covenants and identify examples
- 2.4 Understand the structure of a bond's cash flows
- 2.5 Understand and explain the contingency provisions of bonds
- 2.6 Understand and explain the concept of clean and dirty bond prices
- 2.7 Understand and explain the convention between money market and bond market

ELEMENT 3

ISSUANCE, TRADING AND FUNDING

On Completion, the candidate should:

- 3.1 Know how the bond markets are classified
- 3.2 Describe in detail the characteristics, credit quality and types of sovereign bonds
- 3.3 Explain types of bonds other than sovereign bonds
- 3.4 Describe the types of corporate debt available for borrowing
- 3.5 Describe the four types of structures financial instruments
- 3.6 Understand and explain the sources of funding available to banks

ELEMENT 4

FIXED INCOME INSTRUMENTS IN PAKISTAN

On Completion, the candidate should:

- 4.1 Describe the growth of fixed income market in Pakistan
- 4.2 Understand and explain the classification of bond market in Pakistan
- 4.3 Discuss the types of fixed income financial instruments in Pakistan
- 4.4 Know the differentiation between bond instruments and nss instruments
- 4.5 Describe types of corporate debt securities issued in Pakistan

ELEMENT 5
CREDIT ANALYSIS

On Completion, the candidate should:

- 5.1 Understand the basics of credit analysis
- 5.2 Understand and explain the concept of traditional credit analysis
- 5.3 Know credit risk and its components
- 5.4 Know about the credit rating agency, its factors and risks
- 5.5 Understand the metrics used to measure credit risk
- 5.6 Understand and explain credit scoring and credit ratings, including why they are called ordinal rankings
- 5.7 Understand and explain strengths and weaknesses of credit ratings
- 5.8 Understand the relationship between the credit risk and capital structure of the firm
- 5.9 Understand the impact of credit spreads on risk and return
- 5.10 Understand and explain the special considerations of High Yield, Sovereign, and Municipal Credit Analysis

ELEMENT 6
SECURITIZATION

On Completion, the candidate should:

- 6.1 Discuss the features of Asset-backed securities
- 6.2 Know the introduction to securitization
- 6.3 Explain benefits of securitization for economies and financial markets
- 6.4 Know how securitization works including the parties to the process and the roles they play
- 6.5 Able to compare the credit analysis required for asset-backed securities to analysis of corporate debt
- 6.6 Know the types and characteristics of residential mortgage-backed loan and securities, and explain the cash flows and credit risk for each type
- 6.7 Understand and explain the characteristics and risks of commercial mortgage-backed securities
- 6.8 Understand and explain the types and characteristics of non-mortgage asset-backed securities, including the cash flows and credit risk of each type
- 6.9 Describe collateralized debt obligations, including their cash flows and credit risk

ELEMENT 7

DERIVATIVES IN FIXED INCOME SECURITIES

On Completion, the candidate should:

- 7.1 Describe the purpose of benchmarking securities
- 7.2 Discuss LIBOR scandal 2012
- 7.3 Know about the benchmark rates
- 7.4 Describe the derivative products used in Pakistan
- 7.5 Understand and explain the relationships among spot rates, forward rates, yield to maturity, expected and realized returns on bonds, and the shape of the yield curve
- 7.6 Understand the forward pricing and forward rate models and calculate forward and spot prices and rates using those models
- 7.7 Understand and explain interest rate swap
- 7.8 Understand and explain the swap rate curve, and why and how market participants use it in valuation
- 7.9 Able to calculate and interpret the swap spread for a default-free bond
- 7.10 Understand and explain Z-spread
- 7.11 Understand and explain TED and Libor–OIS spreads
- 7.12 Understand a binomial interest rate tree framework
- 7.13 Understand the process of calibrating a binomial interest rate tree to match a specific term structure
- 7.14 Understand a Monte Carlo forward-rate simulation and its application
- 7.15 Understand fixed-income securities with embedded options
- 7.16 Understand and explain the relationships between the values of a callable or puttable bond, the underlying option-free (straight) bond, and the embedded option
- 7.17 Understand and explain how interest rate volatility affects the value of a callable or puttable bond
- 7.18 Understand and explain the calculation and use of option-adjusted spreads

- 7.19 Understand and explain how interest rate volatility affects option-adjusted spreads
- 7.20 Understand and explain the determinants of the term structure of credit spreads
- 7.21 Able to calculate and interpret the present value of the expected loss on a bond over a given time horizon

ELEMENT 8

PORTFOLIO AND RISK MANAGEMENT

On Completion, the candidate should:

- 8.1 Know the introduction to portfolio management
- 8.2 Be able to describe the fixed income portfolio management process
- 8.3 Describe the key elements of portfolio management
- 8.4 Understand and explain the portfolio protection and risk-return tradeoff
- 8.5 Understand the assumptions concerning the evolution of spot rates in relation to forward rates implicit in active bond portfolio management
- 8.6 Understand different types of risks
- 8.7 Be able to describe the sources of return
- 8.8 Understand the two measures of interest rate risk on fixed-rate bonds
- 8.9 Understand how yield volatility affects the investment horizon
- 8.10 Be able to describe what causes the YTM to change
- 8.11 Understand how a convertible bond is valued in an arbitrage-free framework. Also compare the risk–return characteristics of a convertible bond with the risk–return characteristics of a straight bond and of the underlying common stock
- 8.12 Understand and explain probability of default, loss given default, expected loss, and present value of the expected loss, and describe the relative importance of each across the credit spectrum
- 8.13 Understand and explain structural models of corporate credit risk, including why equity can be viewed as a call option on the company’s assets
- 8.14 Understand and explain reduced form models of corporate credit risk, including why debt can be valued as the sum of expected discounted cash flows after adjusting for risk
- 8.15 Understand and explain assumptions, strengths, and weaknesses of both structural and reduced form models of corporate credit risk

ELEMENT 9
VALUATION

On Completion, the candidate should:

9.1 Be able to calculate the following:

- Present Value
- Future Value
- Effective Yield

9.2 Be able to calculate the following:

- Simple Interest
- Compound Interest
- Convention and Conversion
- Interest Frequency

9.3 Be able to calculate the discount amount

9.4 Be able to calculate the interpolated interest rates for broken dates

9.5 Know a common interest rate encountered in forward rate agreements

9.6 Know the calculation of price of a treasury bill

9.7 Know the calculation of price of a certificate of deposit

9.8 Know the calculation of price of a commercial paper

9.9 Understand the types of repos

9.10 Know how to determine the forward rate

9.11 Know how to determine the forward swap rate

9.12 Understand the maturity structure of interest rates

9.13 Understand the concept of riding the yield curve

9.14 Understand traditional theories of the term structure of interest rates and describe the implications of each theory for forward rates and the shape of the yield curve

9.15 Understand and explain how a bond's exposure to each of the factors driving the yield curve can be measured and how these exposures can be used to manage yield curve risks

9.16 Understand the concept of yield spreads

- 9.17 Understand and explain the maturity structure of yield volatilities and their effect on price volatility
- 9.18 Understand and explain what is meant by arbitrage-free valuation of a fixed-income instrument
- 9.19 Able to calculate the arbitrage-free value of an option-free, fixed-rate coupon bond
- 9.20 Understand pathwise valuation in a binomial interest rate framework and calculate the value of a fixed-income instrument given its cash flows along each path
- 9.21 Understand and explain how changes in the level and shape of the yield curve affect the value of a callable or puttable bond
- 9.22 Able to calculate and interpret the components of a convertible bond's value
- 9.23 Able to calculate and interpret effective duration of a callable or puttable bond
- 9.24 Able to compare effective durations of callable, puttable, and straight bonds
- 9.25 Able to compare effective convexities of callable, puttable, and straight bonds
- 9.26 Able to calculate the value of a capped and floored floating-rate bond

Recommended Readings

The next section of this study guide covers a brief extract from some of the below mentioned documents. Candidates are advised to study the respective documents (in detail and original) which are available free-to-download from IFMP's website and / or the respective organization's websites.

1. Anti-Money Laundering Act, 2010
2. Anti-Money Laundering Ordinance, 2007
3. Anti-Money Laundering Regulations, 2008
4. Anti-Money Laundering Rules, 2008
5. Broker Agents Registration Rules, 2001
6. CDC Act, 1997
7. CDC Regulations
8. Code of Corporate Governance, 2012
9. Commodity Exchange and Futures Contracts Rules, 2005
10. Directive to Brokers on Conduct of Business, 2003
11. Income Tax Ordinance, 2001
12. NCCPL Procedure, 2003
13. NCCPL Regulations, 2003
14. PSX Rule Book
 - Bond Automated Trading System (BATS) Regulations
 - Cash Settled Future Contract Regulations
 - Deliverable Future Contract Regulations
 - Investor Protection Fund Regulations
 - Karachi Automated Trading System (KATS) Regulations
 - Listing of Companies and Securities Regulations
 - Regulations Governing System Audit of Brokers of Exchange
 - Short Selling Regulations
 - TREC Holders Default Management Regulations
15. Regulations Governing Over the Counter Market, 2009
16. SECP Act, 1997
17. Securities Act, 2015
18. Securities Brokers (Licensing and Operations) Regulations, 2016
19. Securities (Leveraged Markets and Pledging) Rules, 2011
20. Stock Exchange Members (Inspection of Books and Record) Rules , 2001
21. Securities & Exchange Rules, 1971
22. Voluntary Pension System Rules, 2005