



CHARTERED INSTITUTE FOR
SECURITIES & INVESTMENT

Risk in Financial Services

Effective from 11 August 2020

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Objective of the examination

The objective of the examination is to ensure that candidates have a broad understanding of the general principles of risk in business, the key risks that arise within the financial services industry, the influence of corporate governance, regulation and codes of conduct, and the approaches that are typically used to identify, reduce and manage specific aspects of risk.

The examination will test candidates' knowledge and understanding of the following elements:

- Principles of Risk Management
- International Risk Regulation
- Operational Risk
- Credit Risk
- Market Risk
- Investment Risk
- Liquidity Risk
- Model Risk
- Risk Oversight and Corporate Governance
- Enterprise Risk Management (ERM)

Candidate Update

Candidates are reminded to check the 'Candidate Update' area of the Institute's website (www.cisi.org) on a regular basis for updates that could affect their examination as a result of industry change.

Syllabus Structure

The unit is divided into **elements**. 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**, **be able to apply**, **be able to distinguish** or **be able to identify**. These words indicate the different levels of skills to be tested. Learning objectives prefixed:

- **know** require the candidate to recall information such as facts, rules or 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
- **be able to distinguish** require the candidate to be able to compare and contrast two or more issues, situations, rules or principles
- **be able to identify** require the candidate to be able to apply their knowledge of rules or principles in order to categorise one or more issues from a given situation

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	Principles of Risk Management	14
2	International Risk Regulation	7
3	Operational Risk	15
4	Credit Risk	15
5	Market Risk	15
6	Investment Risk	11
7	Liquidity Risk	10
8	Model Risk	3
9	Risk Oversight and Corporate Governance	5
10	Enterprise Risk Management (ERM)	5
Total		100

Assessment Structure

A 2 hour examination of 100 multiple choice questions.

Candidates sitting the examination by Computer Based Testing will have, in addition, up to 10% additional questions as trial questions that will not be separately identified and do not contribute to the result. Candidates will be given proportionately more time to complete the test.

Summary Syllabus

Element 1 Principles of Risk Management

- 1.1 Introduction to Risk in Business
- 1.2 Specific Risks in Financial Services
- 1.3 Emerging considerations for the Financial Services industry

Element 2 International Risk Regulation

- 2.1 The Bank for International Settlements
- 2.2 Basel Regulatory Capital
- 2.3 Regulatory Risk
- 2.4 Other Relevant Regulations

Element 3 Operational Risk

- 3.1 Definitions of Operational Risk
- 3.2 Operational Risk Policy
- 3.3 Operational Risk Framework
- 3.4 Operational Risk Identification
- 3.5 Operational Risk Assessment and Measurement
- 3.6 Managing Operational Risk

Element 4 Credit Risk

- 4.1 Identification of Credit Risk
- 4.2 Credit Risk Measurement
- 4.3 Credit Risk Management

Element 5 Market Risk

- 5.1 Identification of Market Risk
- 5.2 Market Risk Management

Element 6 Investment Risk

- 6.1 The Measurement of Investment Returns
- 6.2 Identification, Measurement and Management of Investment Risk

Element 7 Liquidity Risk

- 7.1 Identification of Liquidity Risk
- 7.2 Measurement of Liquidity Risk
- 7.3 Management of Liquidity Risk

Element 8 Model Risk

8.1 Overview of Model Risk

Element 9 Risk Oversight and Corporate Governance

9.1 Risk Governance within Financial Services Organisations

9.2 Risk Culture and Leadership

Element 10 Enterprise Risk Management (ERM)

10.1 Overview of Enterprise Risk Management (ERM)

Element 1 Principles of Risk Management

1.1 Introduction to Risk in Business

On completion, the candidate should:

- 1.1.1 *understand* the processes typically used to identify, reduce and manage specific aspects of risk
- 1.1.2 *understand* the key elements of risk management and the differences between risk and uncertainty
- 1.1.3 *know* the key external sources of risk and their potential impact on a business:
 - economic
 - political
 - competitive environment, social and market forces
 - technological including cyber security
 - shocks and natural events
 - external stakeholders and third parties
 - Environmental, Social, and Governance (ESG) risks
- 1.1.4 *understand* how the key external sources of risk are typically assessed
- 1.1.5 *know* the key internal drivers of risk:
 - strategic
 - operational
 - financial
- 1.1.6 *understand* how the key internal drivers of risk are typically assessed
- 1.1.7 *understand* the overlapping and interactive nature of external and internal risk drivers
- 1.1.8 *understand* the following risk concepts:
 - risk culture and conduct risk

- risk appetite
- inherent (gross) risk
- residual (net) risk
- risk profile
- risk mitigation

1.1.9 *understand* how risk management protects and adds value to an organisation and its stakeholders

1.2 Specific Risks in Financial Services

On completion, the candidate should:

1.2.1 *know* the specific key risks in financial services as defined by the Bank for International Settlements

1.2.2 *understand* the nature of systemic risk and recovery and resolution planning within financial services

1.3 Emerging considerations for the Financial Services industry

On completion, the candidate should:

1.3.1 *know* potential benefits and problems associated with disruptive innovation in:

- Fintech
- RegTech
- Crypto Assets

Element 2 International Risk Regulation

2.1 The Bank for International Settlements

On completion, the candidate should:

- 2.1.1 *understand* the role of the Bank for International Settlements within the financial services industry
- 2.1.2 *know* the purposes for which the Basel Committee on Banking Supervision was established, and the drivers it introduced to calculate the capital adequacy of banks
- 2.1.3 *understand* the high level international guidelines and supervisory standards established by the Basel Committee

2.2 Basel Regulatory Capital

On completion, the candidate should:

- 2.2.1 *know* the purpose, key features and implementation implications of Basel:
 - Pillars 1, 2 and 3
 - Sound Practice Principles
 - Capital Adequacy Assessment Process (ICAAP)
- 2.2.2 *understand* the key principles of home-host state regulation

2.3 Regulatory Risk

On completion, the candidate should:

- 2.3.1 *understand* the main differences between statutory and principles-based approaches to financial regulation
- 2.3.2 *understand* the responsibility of the national regulator to implement supervision measures to address country-specific risks
- 2.3.3 *understand* the main features of the regulatory framework from the perspective of regulatory risk and implementation:
 - consumer protection
 - business standards
 - regulatory standards
- 2.3.4 *understand* the purpose and process of risk based regulatory reviews and risk assessment visits

2.4 Other Relevant Regulations

On completion, the candidate should:

- 2.4.1 *understand* the importance of considering other legislation within the processes of risk identification and management

Element 3 Operational Risk

3.1 Definitions of Operational Risk

On completion, the candidate should:

3.1.1 *know* the definition of operational risk according to the Basel Committee on Banking Supervision

3.1.2 *know* the Basel operational risk event types and what forms they take:

- Internal Fraud
- External Fraud
- Employment Practices and Workplace Safety
- Clients, Products, & Business Practice
- Damage to Physical Assets
- Business Disruption & Systems Failures
- Execution, Delivery & Process Management

3.1.3 *know* where and how the Basel operational risk event types typically arise

3.1.4 *understand* the implications of financial crime in terms of appropriate risk management, both internally and externally

3.1.5 *be able to distinguish* operational risk from:

- other forms of risk
- further risks that arise as a consequence of operational risk

3.2 Operational Risk Policy

On completion, the candidate should:

3.2.1 *understand* the following areas that are addressed by an operational risk policy and what they are designed to achieve:

- identification of key officers
- define clear roles and responsibilities

- segregation of duties
- cross functional involvement and agreement

3.3 Operational Risk Framework

On completion, the candidate should:

3.3.1 *understand* the key aims of the operational risk management function:

- identification and assessment of risks
- management of risks
- reduction of potential impact and likelihood of occurrence

3.3.2 *know* the stages of an operational risk management framework:

- identification
- measurement
- management and control
- management information
- monitoring
- escalation
- remediation

3.4 Operational Risk Identification

On completion, the candidate should:

- 3.4.1 *understand* the purpose of identifying and categorising risks
- 3.4.2 *understand* the self-assessment (self-certification) method of identifying operational risks
- 3.4.3 *be able to apply* risk categorisation to simple, practical examples of normal activity and change-related projects:
 - people
 - processes
 - systems
 - external events

3.5 Operational Risk Assessment and Measurement

On completion, the candidate should:

- 3.5.1 *understand* the main reasons for assessing and measuring operational risk, and the difficulties involved
- 3.5.2 *know* the basic terms used in the assessment and measurement of operational risk
- 3.5.3 *understand* the following methods of assessing operational risk:
 - impact and likelihood assessment
 - scenario analysis
 - bottom-up analysis
- 3.5.4 *understand* the Key Risk Indicators (KRI) method of measuring operational risk
- 3.5.5 *understand* how historical loss data can be used in measuring operational risk
- 3.5.6 *understand* the practical constraints of implementing an operational risk management framework

3.6 Managing Operational Risk

On completion, the candidate should:

3.6.1 *know* the purpose of a risk register (risk log) and its core features:

- objectives
- description of risk
- risk ranking
- lead person or department
- action plan
- target and completion dates
- sources of assurance and oversight
- mitigating controls

3.6.2 *understand and be able to distinguish* between the following methods for reducing operational risk exposure:

- risk transfer
- risk avoidance
- risk mitigation
- risk acceptance

3.6.3 *know* the common methods for operational risk mitigation:

- controls
- business continuity and contingency planning
- outsourcing
- insurance
- information and cyber security
- physical security
- financial reserves
- risk awareness training

- data protection

3.6.4 *understand* how historical loss data can be used in managing operational risk

Element 4 Credit Risk

4.1 Identification of Credit Risk

On completion, the candidate should:

4.1.1 *understand* the key components of credit risk and how they arise:

- counterparty risk
- issuer risk
- concentration risk

4.1.2 *know* the main areas of exposure of counterparty, systematic and issuer risk within banking, securities and investment functions

4.1.3 *understand* credit risk boundary issues as identified within Basel

4.2 Credit Risk Measurement

On completion, the candidate should:

4.2.1 *understand* the following techniques for measuring credit risk and what they are designed to achieve:

- credit exposure
- credit risk premium
- credit ratings

4.2.2 *understand* the role and influence of credit rating agencies

4.2.3 *understand* the merits and limitations of using credit ratings to assess credit-worthiness of companies and financial instruments

4.2.4 *understand* the key issues relating to counterparty credit risk and applications in practice:

- probability of default (PD)

- loss given default (LGD)
- exposure at default (EAD)
- recovery rates (RR)
- credit events
- maturity
- wrong way risk
- non-performing assets

4.2.5 *know* the basic principles of setting credit limits for trade book and loan product risk management

4.2.6 *understand* the main limitations of credit risk measurement

4.3 Credit Risk Management

On completion, the candidate should:

4.3.1 *understand* the following examples of credit risk mitigation, and how they may be typically applied:

- underwriting standards
- guarantees
- credit limits
- netting
- collateral
- diversification
- insurance / credit derivatives
- credit default swaps
- collateralised debt obligations
- loan sales and securitisation
- central counterparties

4.3.2 *be able to calculate* a simple margin or collateral adequacy calculation

4.3.3 *understand* the role and sound practice features of an effective credit risk management function

4.3.4 *understand* the role of reporting and escalation tools of credit risk management

4.3.5 *know* the Basel key stages of credit risk policy development, modelling and control:

- development
- validation
- approval
- implementation
- review
- post-implementation monitoring

4.3.6 *understand* the methods used to manage credit risk:

- credit scoring systems
- factor inputs: financial, non-financial and extraordinary
- stress testing
- segmentation
- external ratings
- setting limits or caps
- internal credit rating
- provisioning and impairment
- key statistics and key performance indicators

4.3.7 *understand* the purpose and methods of controlling concentration risk:

- single name entity
- country, sector and industry risk

4.3.8 *understand* the purpose and principles of controlling trading book risk:

- Value-at-Risk (VaR)
- confidence levels

Element 5 Market Risk

5.1 Identification of Market Risk

On completion, the candidate should:

5.1.1 *know and be able to identify* the different types of market risk:

- volatility risk
- market liquidity risk
- currency risk
- basis risk

- interest rate risk
- commodity risk
- equity risk

5.1.2 *understand* the boundary issues that can arise between different types of market risk

5.1.3 *be able to apply* an understanding of market risk to simple, practical situations

5.2 Market Risk Management

On completion, the candidate should:

5.2.1 *understand* the following techniques and their application in managing market risk:

- hedging
- market risk limits
- diversification
- electronic trading

5.2.2 *understand* the role and sound practice features of an effective market risk management function

5.2.3 *know* the key measures of dispersion and variance:

- range and inter-quartile range
- median
- mean and quartile deviation
- variance
- standard deviation

5.2.4 *understand* the relevance and application of measures of dispersion and variance within risk analysis

5.2.5 *understand* the terms distribution analysis, confidence intervals, normal distribution and fat tailed distribution, and how they are used within risk analysis

5.2.6 *know* the following concepts used in risk measurement and control:

- probability
- volatility
- regression
- correlation coefficients alpha and beta
- optimisation

5.2.7 *understand* the Value-at-Risk (VaR) approach to managing market risk:

- VaR limit setting and monitoring for bank trading positions
- VaR as a portfolio measure of risk
- validation and back testing

5.2.8 *know* the three different approaches to VaR:

- historical simulation
- parametric
- monte carlo

5.2.9 *understand* the underlying purposes, principles and application of the main types of scenario and stress testing:

- extreme event
- risk factor
- external factor

Element 6 Investment Risk

6.1 The Measurement of Investment Returns

On completion, the candidate should:

6.1.1 *understand* the basic concepts and measurement of investment related returns:

- nominal returns
- real returns
- total returns
- holding period return

6.1.2 *understand* the effects of compound interest and the time value of money

6.1.3 *understand* how the rates of return from the main asset classes vary

6.2 Identification, Measurement and Management of Investment Risk

On completion, the candidate should:

6.2.1 *understand* the main investment risks and their implications for investors and investment selection:

- currency risk
- interest rate risk
- issuer risk
- equity risk
- commodity risk
- property risk
- liquidity risk

6.2.2 *understand* how asset and portfolio investment risk is calculated

6.2.3 *understand* the significance of alpha, beta and key investor ratios

6.2.4 *understand* the key features and relevance of illiquid assets in relation to investment risk:

- venture capital
- private equity
- property

6.2.5 *understand* the concept of correlation of performance between asset classes

6.2.6 *understand* the concept of tracking error

6.2.7 *know* the key features of an investment mandate and its role in risk mitigation

6.2.8 *understand* the main methods used to mitigate investment portfolio risk:

- systematic and non-systematic risk
- optimisation and diversification
- portfolio hedging

- short selling
- risk transfer

6.2.9 *understand* how timely and accurate monitoring, management and reporting of investments can enhance the risk management process

Element 7 Liquidity Risk

7.1 Identification of Liquidity Risk

On completion, the candidate should:

7.1.1 *understand* the basic constituents of liquidity risk and how they can arise within the contexts of credit, market, investment and operational risk:

- maturity ladder
- actual and contractual cash receipts
- asset liquidity risk
- funding liquidity risk

7.1.2 *understand* the potential impact of liquidity risk within an individual firm and across the wider financial system

7.2 Measurement of Liquidity Risk

On completion, the candidate should:

7.2.1 *understand* the importance of funding liquidity risk analysis:

- liquidity gap analysis
- stress testing
- expected future funding requirement

7.2.2 *know* the uses and limitations of the key measures of asset liquidity risk:

- bid-offer spread
- market depth
- immediacy
- resilience

7.3 Management of Liquidity Risk

On completion, the candidate should:

7.3.1 *understand* the main ways in which liquidity risk can be managed:

- liquidity limits
- counterparty credit limits
- scenario analysis
- liquidity at risk
- diversification
- behavioural analysis
- funding methods

7.3.2 *be able to calculate* a simple example of a cash netting agreement

7.3.3 *understand* the concept and implications of market dislocation

Element 8 Model Risk

8.1 Overview of Model Risk

On completion, the candidate should:

8.1.1 *know* the benefits and limitations of modelling

8.1.2 *know* the major models utilised in operational, credit, market and liquidity risks

8.1.3 *understand* the principles of effective governance of risk modelling

Element 9 Risk Oversight and Corporate Governance

9.1 Risk Governance within Financial Services Organisations

On completion, the candidate should:

9.1.1 *understand* the general roles, responsibilities and relationships between the principal oversight functions and the role of senior management:

- board of directors
- risk committee
- regulatory oversight

9.1.2 *understand* the principles of the three lines of defence

9.1.3 understand the key challenges of implementing risk governance structure, policies and procedures:

- appropriate authority and autonomy
- segregation of duties
- relationship of risk managers to the business

9.2 Risk Culture and Leadership

On completion, the candidate should:

9.2.1 *know* the main factors determining a firm's risk and control culture:

- ownership and involvement
- governance and policies
- risk appetite / risk tolerance
- transparency
- integrity, ethics and social responsibility
- individual accountability (eg Senior Management and Certification Regime)
- education and development

9.2.2 *understand* how appropriate management of these factors can add value and reduce risk

Element 10 Enterprise Risk Management (ERM)

10.1 Overview of Enterprise Risk Management (ERM)

On completion, the candidate should:

10.1.1 *know* the definitions of enterprise risk and ERM

10.1.2 *understand* how enterprise risk relates to the process of corporate governance and board responsibilities

10.1.3 *understand* how industry regulation and sound practice have combined to influence the development and implementation of ERM programmes

10.1.4 *understand* the main goals and challenges of establishing and implementing an ERM programme in relation to:

- exception-based escalation
- aggregation
- accountability

10.1.5 *know* the most relevant business functions that participate in an ERM programme