



# ACI

FINANCIAL MARKETS ASSOCIATION EST.1955

# ACI Dealing Certificate

## Syllabus

**Effective 11 September 2017**

*“Setting the benchmark in  
certifying the financial  
industry globally”*

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# SYLLABUS

## ACI Dealing Certificate

**Examination delivered in English and German**

### Introduction

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The ACI Dealing Certificate is a foundation programme that allows candidates to acquire a working knowledge of the structure and operation of the major foreign exchange and money markets as well as their core products (cash, forwards and derivatives), and the basic skills required for competent participation, including the ability to apply the fundamental mathematics used in these markets.

The programme is designed for the following groups:

- Recent entrants and junior dealers (0-18 month's experience) in the dealing room
- Middle office and operations personnel
- Compliance and risk officers

The ACI Dealing Certificate is a precursor to the ACI Diploma.

In addition to the topics outlined below, candidates will be expected to be up-to-date with the latest events and changes in the markets.

# 1. Basic Interest Rate Calculations

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**Overall Objective:** To understand the principles of the time value of money. To be able to calculate short-term interest rates and yields, including forward-forward rates, and to use these interest rates and yields to calculate payments and evaluate alternative short-term funding and investment opportunities. Candidates should know what information is plotted in a yield curve, the terminology describing the overall shape of and basic movements in a curve, and the classic theories which seek to explain changes in the shape of a curve. They should also know how to plot a forward curve and understand the relationship between a yield curve and forward curves.

**At the end of this section, candidates will be able to:**

- calculate present value and future value using the arithmetic techniques of discounting and compounding for both a money market instrument terminated at maturity and one that is rolled over at maturity
- calculate simple interest rates using different day count and annual basis conventions
- identify the day count and annual basis conventions for the euro, sterling, Swiss franc, US dollar and Japanese yen
- fix same-day, next-day, spot and forward value dates, and maturities under the modified following business day convention and end/end rule
- fix the conventional frequency and timing of payments by cash money market instruments, including those with an original term to maturity of more than one year
- calculate broken dates and rates through linear (straight line) interpolation
- define EURIBOR, LIBOR and EONIA
- convert interest rates and yields between the money market basis and bond basis in currencies for which there is a difference
- convert interest rates and yields between annual and semi-annual compounding frequencies
- calculate a forward-forward rate from two mismatched cash rates
- calculate a cash rate from a series of forward-forward rates for consecutive periods
- calculate the value of a discount-paying money market instrument from its discount rate (straight discount) and convert a discount rate directly into a true yield
- plot a yield curve, describe its shape and the basic changes in its shape using market terminology, and outline how the Pure Expectations Theory, Liquidity Preference Theory and Market Segmentation Hypothesis explain the shape of the curve

## 2. Cash Money Markets

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**Overall Objective:** To understand the function of the money market, the differences and similarities between the major types of cash money market instrument and how they satisfy the requirements of different types of borrower and lender. To know how each type of instrument is quoted, the quotation, value date, maturity and payment conventions that apply and how to perform standard calculations using quoted prices. Given the greater inherent complexity of repo, a good working knowledge is required of its nature and mechanics.

**At the end of this section, candidates will be able to:**

- define the money market
- describe the main features of the basic types of cash money market instrument - i.e. interbank deposits, bank bills or bankers' acceptances, treasury or central bank bills, commercial paper, certificates of deposit and repos - in terms of whether or not they are securitised, transferable or secured; in which form they pay return (i.e. discount, interest or yield); how they are quoted; their method of issuance; minimum and maximum terms; and the typical borrowers/issuers and lenders/investors that use each type
- use generally-accepted terminology to describe the cashflows of each type of instrument
- understand basic dealing terminology
- distinguish between and define what is meant by domestic, foreign and euro-(offshore) money markets, and describe the principal advantages of euromarket money instruments
- describe the differences and similarities of classic repos and sell/buy-backs in terms of their legal, economic and operational characteristics
- define initial margin and margin maintenance
- list and outline the main types of custody arrangements in repo
- calculate the value of each type of instrument using quoted prices, including the secondary market value of transferable instruments
- calculate the present and future cashflows of a repo given the value of the collateral and an agreed initial margin
- define general collateral (GC) and specials
- describe what happens in a repo when income is paid on collateral during the term of the repo, in an event of default and in the event of a failure by one party to deliver collateral

### 3. Foreign Exchange

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**Overall Objective:** To understand and be able to apply spot exchange rate quotations. To understand basic spot FX dealing terminology and the role of specialist types of intermediary. To recognise the principal risks in spot and forward FX transactions. To calculate and apply forward FX rates, and understand how forward rates are quoted. To understand the relationship between forward rates and interest rates. To understand time options. To be able to describe the mechanics of outright forwards, FX swaps and forward-forward FX swaps, explain the use of outright forwards in taking currency risk and explain the use of FX swaps in rolling spot positions, hedging outright forwards, creating synthetic foreign currency assets and liabilities, and in covered interest arbitrage. To display a good working knowledge and understanding of the rationale for NDFs. To be able to recognise and use quotes for precious metals, and demonstrate a basic understanding of the structure and operation of the international market in precious metals.

**At the end of this section, candidates will be able to:**

- identify the base currency and the quoted currency in standard exchange rate notation
- select which currency should be the base currency in any currency pair
- recognise the ISO codes for the currencies of the countries affiliated to ACI - The Financial Markets Association
- distinguish between the "big figures" and the "points/pips"
- apply a bid/offer spot exchange rate as price-maker and price-taker to convert either a base or quoted currency amount
- select the best of several spot rates for the buyer or seller of an amount of base or quoted currency
- understand basic spot FX dealing terminology
- calculate cross-rates from pairs of exchange rates where the common currency is the base currency in both rates, where the common currency is the base currency in only one rate and where the common currency is the base currency in neither rate
- calculate and explain the reciprocal rate of an exchange rate
- define the function of market-making and explain the incentives to make markets and the particular risks of market-making
- outline what a voice-broker does and distinguish voice-brokers from principals
- outline what an automatic trading system (ATS) or electronic broker does in spot FX
- calculate a forward FX rate from a spot FX rate and interest rates
- calculate an outright forward FX rate from a spot rate and the forward points, and vice versa
- explain the relationship between the outright forward rate, the forward points, the spot rate and interest rates, including the concept of interest rate parity, and the possibility and concept of covered interest arbitrage
- fix forward value dates for standard periods and list those periods
- describe the structure and mechanics of an FX outright, and outline how an outright forward can be hedged with a spot transaction and deposits
- describe the structure and mechanics of an FX swap, and outline how it can be used in place of deposits to hedge an FX outright and the advantages
- use generally-accepted terminology to specify an FX swap
- outline the applications of FX swaps in creating synthetic foreign currency asset and liabilities, and in covered interest arbitrage
- describe forward-forward FX swaps,
- outline the application of tom/next and overnight FX swaps in rolling over spot positions and hedging value-tomorrow and value- today outright rates, and calculate

a value-tomorrow rate from a spot rate and tom/next points, and a value-today rate from a spot rate, tom/next points and overnight points

- calculate broken-dated forward FX rates through linear interpolation
- calculate forward cross-rates
- define an NDF and explain its rationale
- describe the structure and the features of NDFs as well as their pricing and valuation
- define a time option and explain its reasoning
- list the commodities called precious metals (gold, silver, platinum and palladium) and give their ISO codes
- describe the conventional method of quoting gold in the international market in US dollars per ounce
- apply a bid/offer spot price as price-maker and price-taker to calculate the value of a given weight of precious metals
- distinguish between precious metals trading for physical delivery and book entry
- distinguish between the spot, forward and derivative markets in precious metals
- outline the mechanics and role of the London gold price fixing
- explain the role of gold lending/borrowing and define the gold offered forward rate or lease rate

## 4. Forward-forwards, FRAs and Money Market Futures & Swaps

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**Overall Objective:** To understand the mechanics of and how to use money market interest rate derivatives to hedge interest rate risk.

**At the end of this section, candidates will be able to:**

- describe the mechanics and explain the terminology of a forward-forward loan or deposit, and the interest rate risk created by such instruments
- explain how FRAs, money market futures and money market swaps are derivatives of forward-forward positions, and outline the advantages of derivatives
- describe the mechanics and terminology of FRAs, use quoted prices, select the correct contract, decide whether to buy and sell, identify the settlement rate and calculate the settlement amount
- explain how FRAs can be used to hedge interest rate risk
- describe the mechanics and terminology of money market futures, use quoted prices, select the correct contract, decide whether to buy and sell, identify the settlement rate and calculate variation margin payments
- explain how money market futures can be used to hedge interest rate risk
- give the contract specifications of the Eurodollar, 3-month Euribor, short sterling, euro-Swiss franc and Japanese Euroyen futures
- outline the principal differences between OTC instruments like FRAs and exchange-traded instruments like futures, and describe how a futures exchange and clearing house works
- describe the mechanics and terminology of money market interest rate swaps, including overnight indexed swaps (OIS), use quoted prices, select the correct contract, decide whether to buy and sell, identify the settlement rate and calculate settlement amounts
- explain how swaps can be used to hedge interest rate risk
- explain how money market futures can be used to hedge and price FRAs and money market swaps
- identify the overnight indexes (OI) for euro, sterling, Swiss francs and US dollars

## 5. Options

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**Overall Objective:** To understand the fundamentals of options. To recognise the principal classes and types, and understand the terminology, how they are quoted in the market, how their value changes with the price of the underlying asset and the other principal factors determining the premium, how the risk on an option is measured and how they are delta hedged. To recognise basic option strategies and understand their purpose.

**At the end of this section, candidates will be able to:**

- define an option, and compare and contrast options with other instruments
- define strike price, market price, the underlying, premium and expiry
- calculate the cash value of a premium quote
- describe how OTC and exchange-traded options are quoted, and when a premium is conventionally paid
- define call and put options
- explain the terminology for specifying a currency option
- describe the pay-out profiles of long and short positions in call and put options
- describe the exercise rights attached to European, American, Bermudan and Asian (average rate) styles of option
- define the intrinsic and time values of an option, and identify the main determinants of an option premium
- explain what is meant by in the money, out of the money or at the money
- define the delta, gamma, theta, rho and vega
- interpret a delta number
- outline what is meant by delta hedging
- outline how to construct long and short straddles and strangles, and explain their purpose
- outline how options can be used to synthesise a position in the underlying asset
- define an interest rate guarantee
- describe the function of cap and floor options, and how they are used to produce long and short collars



## 6. Principles of Asset & Liability Management

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**Overall Objective:** To understand the fundamentals of Asset & Liability Management as a practice of managing and hedging risks that arise due to mismatches between the asset side and the liability side of the balance sheets of a bank. To explain how main risk factors like funding and liquidity risk, market risk (FX, Interest Rate, Equity, Commodity, etc.), credit risk, leverage risk, business risk and operational risk are interrelated and how they affect the balance sheet of a financial institution. To describe common risk management and hedging techniques which help control these effects and to understand how these techniques are used to set up a state-of-the-art ALM approach.

**At the end of this section, candidates will be able to:**

- define the meaning and the general concepts of ALM
- describe the impact of main risk factors on the asset and the liability side of the balance sheet: Impact of Interest Rate Risk, Currency Risk, Liquidity Risk and Credit Risk
- understand the importance of an efficient and reliable organizational infrastructure delivering the necessary data with accuracy and frequency in order to manage ALM Risks
- describe the organisational and infrastructure set up of ALM in a bank:
  - ALM information systems (Management Information System, Information availability and accuracy)
  - ALM organisation (Structure and responsibilities, ALM Committee, Role of Controlling, Level of top management involvement)
  - ALM process (Risk parameters, Risk identification, Risk measurement, Risk management, Risk tolerance levels)
- understand the use of Gap management: interest and duration mismatches
- explain Asset and liability management techniques: Cash Flow Management, Duration Management, Gap Limits
- describe the use of different types of interest rate and FX derivatives for implementing hedging techniques against ALM risks
- describe the use of Credit Risk Transfer Instruments for Balance Sheet Management: Credit Derivatives and Asset Securitizations
- explain the impact of Basel III (Liquidity Coverage Ratio, Net Stable Funding Ratio, Leverage Ratio) on the structure of a bank's balance sheet
- explain the concept of funds transfer pricing as a means to ensure that funding and liquidity costs & benefits are transparently allocated to respective businesses and products
- describe the interaction between bank capital and leverage and the role of economic and regulatory capital
- describe the formulation of Liquidity Stress Test Scenarios and the use in ALM

## 7. Principles of Risk

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**Overall Objective:** To understand why risk is inherent in banks business models and why effective risk management is a key driver for banks success. Candidates will be able to describe major risk groups: credit, market, liquidity, operational, legal, regulatory, and reputation risk. They will understand the significance of risk groups for different banking businesses and units. Candidates will also get an overview about methods and procedures needed to manage these risk types and extend their understanding to different risk/return profiles of shareholders, regulators and debt providers.

**At the end of this section, candidates will be able to:**

- Understand the following aspects of Market Risk:
  - Types of market risk (Interest Rate, Equity, Currency, Commodity)
  - Market Risk in the Trading Book : How it arises and accounting impact
  - The use of Risk Measures: key concepts of Value at Risk (holding periods, confidence levels, VaR calculation, Limitations of VaR, Expected Shortfall)
  - the use of quantitative techniques (Risk Factors and Loss Distributions, Variance-Covariance Method, Historical Simulation , Monte Carlo)
  - Limit structures in the dealing room
  - Capital treatment of market risk under Basel III
- Understand the following aspects of Credit Risk:
  - Categories of credit risk: lending, issuer, settlement, counterparty credit risk
  - Managing credit risk: Limits and safeguards, Credit approval authorities and transaction approval process, Aggregating exposure limits by customers, sectors and correlations
  - Credit mitigation techniques: collateral; termination clauses, re-set clauses, cash settlement, netting agreements
  - Documentation: covenants, ISDA / CSA and other collateral
  - Fundamentals of credit risk capital measurement: probability of default (PD), exposure at default (EAD), loss given default (LGD) and correlation
  - Capital treatment of credit risk under Basel III (Standardised approach, Foundation and advanced internal ratings based approaches, Regulatory capital treatment for derivatives)
- Understand the following aspects of Operational Risk:
  - Sources of operational risk; systems, people, processes and external events
  - Reasons for banks to control operational risk: legal and regulatory requirements
  - Best practice management procedures
- Understand the following aspects of Legal, Regulatory and Reputation Risk:
  - Sources of reputation risk and relationship to other risk groups
- Understand the following aspects of Liquidity Risk:
  - Objectives and importance of a funding strategy
  - Lessons learned from crises in liquidity risk management; Off-balance sheet contingencies, complexity, collateral valuation, intra-day liquidity risks and cross-border liquidity, Measuring and managing stress scenarios, Early warning indicators of liquidity risk
  - Liquidity coverage ratio and Net stable funding ratio

## Examination Procedure

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**Format:** The examination lasts 2 hours and consists of 70 multiple-choice questions. The **overall pass level** is 60% (42 correct answers), assuming that the minimum score criteria for each of the topic baskets is met. There is a **minimum score criteria** of 50% for each Topic Basket.

**Calculators:** Some questions will require the use of a calculator. A basic one will be provided on the computer screen. You may also use your own hand-held calculator, provided it is neither text programmable nor capable of displaying graphics with a size more than 2 lines.

	<b>Topic Basket</b>	<b>Number of questions</b>	<b>Minimum of correct answers</b>	<b>Minimum score level</b>
<b>1</b>	Basic Interest Rate Calculations	6	3	50%
<b>2</b>	Cash Money Market	6	3	50%
<b>3</b>	Cash Money Market Calculations	6	3	50%
<b>4</b>	Foreign Exchange	12	6	50%
<b>5</b>	Foreign Exchange Calculations	6	3	50%
<b>6</b>	Forward-forward, FRAs and Money Market Futures & Swaps	12	6	50%
<b>7</b>	Options	6	3	50%
<b>8</b>	Asset & Liability Management	8	4	50%
<b>9</b>	Principles of Risk	8	4	50%
	Total	70		

## Grades

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Pass	60% - 69.99%
Merit	70% - 79.99%
Distinction	80% and above

## Examination Fee

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Euro 250.00, all taxes included

# ACI DEALING CERTIFICATE

## Reading List and Internet Links

### General

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- **The FX Global Code** available at: [www.globalfx.org/docs/fx\\_global.pdf](http://www.globalfx.org/docs/fx_global.pdf)
- **The Foreign Exchange and Money Markets: Theory, Practice and Risk Management** written by Bob Steiner. ISBN: 0750650257 Publisher: Financial Times Prentice Hall
- **A Guide to the ACI Dealing Certificate** written by Lex van der Wielen. Publisher: The Financial Markets Academy (€70.00) available from <http://www.tfma.nl>
- **The ACI Dealing Certificate and How to Pass it** written by Philip J L Parker ACIB, ISBN 978-90-802323-9-6. (£40.00) available from [www.lywood-david.co.uk/mmtw4.htm](http://www.lywood-david.co.uk/mmtw4.htm)
- **Mastering Treasury Office Operations** written by Denis Nolan and Gordon Amos. ISBN 0 273 635794 Publisher - Pearson Education (£90.00). [www.pearsoned.co.uk](http://www.pearsoned.co.uk)
- **Treasury Operations Handbook** written by Philip J L Parker ACIB, ISBN 978-1-4461-9450-8. Publisher [www.lulu.com](http://www.lulu.com) 2010 (£35.00) available from [www.lywood-david.co.uk/mmtw4.htm](http://www.lywood-david.co.uk/mmtw4.htm)
- **The ACI Dealing Certificate Study Guide** available from the ACI Global Education Centre online <http://aci.frankfurt-school.de>

### Repos

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- **Mastering Repo Markets** written by Bob Steiner ISBN10: 0273625896 ISBN13: 9780273625896

### Derivatives

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- **Mastering Derivatives Markets** A Step-by-Step Guide to the Products, Applications and Risks. 4th Edition. By Francesca Taylor. Dec 2010, Paperback, 432 pages (£50.00). ISBN13: 9780273735670; ISBN10: 0273735675 [www.pearsoned.co.uk](http://www.pearsoned.co.uk)