



AEFMA Financial Markets Certificate

Stand: 01 September 2017

The AEFMA Financial Markets Certificate – An Overview

The AEFMA Financial Markets Certificate (FMC) serves as the basic training for the professional training and development program of the Allied European Financial Markets Association (AEFMA) Germany. The goal of the AEFMA Financial Markets Certificate is to provide candidates with specialized knowledge of the structure and functioning of various financial markets, e.g. money market, capital market, foreign exchange market. This includes the mathematical and economic functioning of the financial products traded on those markets.

Candidates who successfully complete the AEFMA Financial Markets Certificate will be able to trade the products covered in the curriculum.

Course participants should also be able to apply the prevailing code of conduct to their specific professional situations.

How AEFMA's professional training and development program is structured

The training and development system of the AEFMA Germany consists of two certificates: the AEFMA Financial Markets Certificate and, in addition to that, the Certified Expert in Treasury and Markets.

The AEFMA Financial Markets Certificate represents the first stage of the AEFMA professional training and development system. It includes the financial-mathematics and product-based training in the areas of foreign exchange, money market, and capital market.

Partially building on the AEFMA Financial Markets Certificate, the AEFMA Certified Expert in Treasury and Markets provides candidates comprehensive product and management knowledge .

The Target Group of the AEFMA Training Program

The AEFMA professional training and development programme was developed for the following professional groups:

- Money, interest rate and foreign exchange traders as well as Sales traders
- Risk managers
- Bank treasurers
- Corporate treasurers
- Staff members in middle office, back office and operations departments
- Institutional investors (investment funds, pension funds, other financial intermediaries)
- Risk controllers (market risk and model validation)
- Portfolio managers
- Asset-liability managers
- Students of business and finance
- University instructors

Qualifications and Training Goals

The AEFMA Financial Markets Certificate covers the most important products traded in foreign currency, money and capital markets and seeks to explain the functioning of these products both to those who are just beginning their careers and to experienced market participants in a way that is as practice-oriented as possible. The AEFMA Financial Markets Certificate qualifies those who successfully complete the course to handle with confidence the financial products covered in the course. The AEFMA Financial Markets Certificate aims in particular to explain the most common products of the foreign exchange and debt capital markets and covers the calculation of interest income, net present value of bonds and the usage of options in this markets. Besides covering money market products, the course also emphasizes understanding the derivatives used in conjunction with these products. Those who complete the course will also be able to choose from among various alternatives the most favourably priced product that is suitable for his or her purposes.

Aside from learning the the pure mechanics of how financial products function and necessary mathematics, the AEFMA Financial Markets Certificate also familiarizes successful candidates with the product-specific settlement processes and the corresponding regulatory framework.

In addition to understanding how financial products and their settlement processes work, candidates will also learn, as part of the voluntary self-regulatory process, how to apply a code of conduct to various situations in the financial market.

Learning Objectives

- **Know & Understand:** Candidates will be able to put the knowledge they have gained into practice and communicate that knowledge.
- **Apply:** Candidates will be able to put what they have learned into practice for specific tasks.
- **Analyse and Evaluate:** Candidates will be able to evaluate information critically and accordingly draw conclusions and make decisions.

I. Basic Financial Mathematics

Candidates for the AEFMA Financial Markets Certificate should understand the principles of the time value of money and be able to calculate short-term interest rates and interest income as well as forward interest rates. Additionally, candidates should be able to apply these interest rates and interest income in calculating payments and in evaluating alternative short-term financing and investment alternatives. They should know what information is represented by a yield curve and know the terminology used to describe the basic form and movement of a curve. Candidates should also be familiar with classical theories that can be used to explain changes in the yield curve structure. Candidates should also know how to depict a forward yield curve and understand the relationship between yield curves and forward yield curves.

II. Monetary Policy

Candidates for the AEFMA Financial Markets Certificate should understand the principles of the European Central Bank's (ECB's) monetary policy and of the Eurosystem, and should be able to understand the functioning of monetary policy in the euro area and the functioning of policy tools , e.g. tender processes, monetary policy strategies, and minimum reserve requirements.

III. Money Markets

Candidates for AEFMA Financial Markets Certificate should both know how the money markets function and understand the differences and commonalities of the most important cash money market instruments. Candidates should also understand how these instruments, as collateralized and uncollateralized refinancing instruments, function for banks. In addition, candidates should know which interest calculation conventions apply to the individual instruments, how their price quotation functions, and how interest charges are calculated. In this process, candidates will become familiar with the purpose and functioning of the money market rate fixing and IBORs.

Uncollateralized Money Market Instruments

- Explain the money market and classify time deposits, commercial paper, certificates of deposits and repurchase agreements
- Distinguish between securitised and unsecuritised money market instruments
- Distinguish between negotiable and non-negotiable money market products
- Differentiate between discount, accrual, and coupon instruments
- Apply generally accepted market standards and interest calculation conventions
- Differentiate between the various sub-markets that make up the European money market

Collateralized Money Market Instruments

- Define the differences and commonalities between classic repurchase agreements, sell-and-buy-backs, securities lending agreements with regard to their legal, economic, and operational characteristics
- Calculate the collateral for repurchase agreements
- Valuate classic repurchase agreements, sell-and-buy-backs as well as securities lending agreements
- Price classic repurchase agreements, sell-and-buy-backs as well as securities lending agreements in the secondary market
- Calculate current and future cash flows of repurchase agreements, sell-and-buy-backs as well as securities lending agreements on the basis of the collateral provided

IV. Money Market Derivatives

Candidates should understand how interest rate derivatives work in the money market and how to use them as an hedging instruments for interest rate risks. In this context, candidates will learn about the three main money market derivative groups: forwards and forward rate agreements (FRAs), money market futures, and overnight index swaps (OIS).

Forwards and Forward Rate Agreements

- Explain the functioning of and specific terminology regarding forward-forward loans and the functioning of the interest rate risk that such instruments represent.
- Explain the functioning of and terminology of FRAs, the use of quoted prices, select the correct contract, decide whether to buy or sell, identify the fixing rate and calculate the interest settlement amount
- Show why FRAs, money market futures and money market swaps are derivatives on forward-forward positions, and explain the advantages of derivatives in this context
- Demonstrate how FRAs are used to hedge interest rate risk

Money Market Futures

- Explain the functioning of and specific terminology related to money market futures, identify the fixing price and calculate the minimum margin payments, select the correct contract, use quoted prices, decide whether to buy or sell
- Distinguish between exchange-traded and non-exchange-traded instruments
- Discuss the contract specifications of 3-month EURIBOR and other IBOR futures
- Demonstrate how money market futures are used to hedge interest rate risk
- Explain how FRAs can be hedged with money market futures and how prices for FRAs and interest rate swaps are determined

Overnight Index Swaps

- Explain the functioning of and the specific terminology related to interest rate swaps in the money market, including overnight index swaps (OIS),
- Chose the correct contract, decide whether to buy or sell, use quoted prices, identify the fixing rate and calculate the interest settlement amount
- Determine the overnight indexes for the euro, pound sterling, Swiss Franc and US dollar

V. Bond markets and their derivatives

Candidates should be able to explain the bond markets and the instruments traded there from the financing and investment perspective and differentiate these from other debt instruments. Candidates will learn in detail about how fixed-interest instruments function, how they are quoted, and how their net present value and interest rate risk are determined. Candidates will master various yield methods and will be able to employ the yield terms to calculate the fair value of fixed-interest instruments. This includes the confident use of interest rate swaps including their use in conjunction with bond positions. This includes both the markets for government and agency bonds, corporate debt, mortgage bond, Pfandbriefe, and European covered bonds. In addition, candidates will be able to understand credit derivatives and how they function. The objective of the training is to enable candidates to differentiate between market and borrower risks and trade the latter. Additionally, candidates should be able to hedge bond positions using bond futures.

Swaps

- Describe the basics elements of interest rate swaps and their mathematical and economic functioning
- Value and use interest rate swaps in accordance with market standards
- Calculate interest rate sensitivities
-

Tenor Basis Swaps

- Describe the basics elements of interest rate swaps and their mathematical and economic functioning
- Value and use tenor basis swaps in accordance with market standards
- Calculate the interest rate sensitivities of tenor basis swaps

Cross Currency Swaps

- Explain the basics of cross currency swaps and their mathematical and economic functioning
- Value and use cross currency swaps in accordance with market standards
- Calculate the interest rate and currency risks of cross-currency swaps

Bonds

- Differentiate between debt and equity capital markets and understand that financial products can be a source of financing, and instruments of investment, as well as trading instruments
- Differentiate between domestic, foreign, and eurobond markets
- Recognize and differentiate between various types of bonds e.g. government bonds, corporate bonds and covered bonds
- Describe the effects of credit risk on bond yields and swap rates
- Understand price and yield quotes in the bond market (clean and dirty price) and how to calculate accrued interest
- Understand bond quotes vs. benchmark yields, swaps and on an asset-swap basis
- Determine the net present value of coupon and zero-coupon bonds as well as their yield to maturity (YTM) and understand the relationship between YTM, zero-coupon yield and par yield
- Explain the relationship between price, coupon and yield for fixed-interest instruments
- Describe and calculate the market risks of fixed-interest debenture bonds as well as their duration and basis point value

Bond Futures

- Classify bond futures (BUND, BOBL, SCHATZ, BTP etc.)
- Demonstrate how bond futures are used to hedge bond positions

Credit Derivatives

- Describe credit derivatives, mainly credit default swaps, and how they work
- Value and trade in credit derivatives
- Describe the settlement and documentation process for credit derivatives
- Explain how to hedge credit, counterparty, and portfolio risks using credit derivatives

VI. Foreign Exchange

Candidates should develop an understanding of the basic trading terminology for spot market transactions, master the use of spot rates, and internalize the main risks attached to spot and forward transactions and be familiar with the specific types of intermediation. Candidates should understand the relationship between interest rates and forward FX rates and be able to calculate them, and be able to set and apply forward FX rates. Candidates should also be able to describe the fundamental nature of forward FX transactions, currency swaps, and forward-forward swaps, and they also should know the basic principle behind NDFs. Candidates should be able to hedge currency risks through the use of simple forward currency transactions and they should be able to use currency swaps when rolling spot positions, when hedging forward currency transactions, and when engaging in covered interest rate arbitrage. Moreover, candidates should be familiar with settlement modalities.

Foreign Exchange

- Explain the organization of the foreign exchange market and its participants such as voice brokers, market makers, etc.
- Explain the principles of market making, what makes it attractive, and what risks it entails
- Classify the basic trading terminology of spot foreign exchange trading
- Differentiate between transaction currency and quote currency as well as between "big figures" and "pips"
- Explain the composition of ISO codes for various currencies and be able to associate these codes with countries
- Describe the function of electronic and algorithmic trading and critique with their advantages and risks
- Determine the correct transaction currency and apply a bid and ask price as a market maker or a market user
- Choose the best spot price in the transaction or quote currency for the buyer or seller of an amount
- Determine reciprocal exchange rates

- Derive cross rates from currency pairs
- Describe the relationship between the spot price, the forward foreign exchange rate, the forward points, and the interest rates, as well as the concept of interest rate parity and possibility of covered interest arbitrage.
- Derive a forward foreign exchange rate from a spot rate and interest rates, and from a spot rate and the forward points, and vice versa
- Explain the use of spot transactions and custodian accounts to hedge a forward forex transaction
- Describe the structure, characteristics and price quotation of NDFs and how they are valued
- Determine broken-date forward foreign exchange prices using linear interpolation
- Describe the settlement of foreign exchange transactions and the complications involved
- Value foreign exchange positions
- Give the basic definition and explain the functioning of currency futures

Cross Currency Swaps

- Explain the structure and mechanism of a currency and a forward-forward swap and understand the basic terminology
- Demonstrate how to Use a currency swap to hedge forward exchange rates
- Explain the use of tom/next and overnight currency swaps when rolling a spot position and when hedging forward foreign exchange transactions
- Calculate a tom/next rate from a spot rate and the tom/next forward points, and calculate a rate for a value date today from a spot rate and the tom/next and overnight forward points
- Explain the use of currency swaps when creating synthetic forex long and short positions and in the covered interest arbitrage
- Describe the settlement of foreign exchange transactions and the complications involved
- Evaluate currency swaps

VII. Options

Candidates should develop an understanding of the basics of options and master the specific terminology. They should also have knowledge of the main categories and types of options, how options are written in the market, and how the option value changes with the price of the underlying. Candidates will know the various determinants of an option price and can calculate them approximately. In addition, candidates should be able to measure the risk related to options and execute a delta hedge. Candidates should be able to recognize the basic options strategies

and understand their suitability. They will be able to use FX options and interest rate swaptions to hedge positions.

Option Basics

- Describe the organisation of the options market and its participants
- Define an option and its parameters, such as strike price, market price, underlying assets, option premium and expiration date
- Differentiate between call and put options and describe the payout profiles of short and long positions
- Explain and understand the terms in the money, at the money, out of the money, delta, gamma, vega, theta and rho
- Explain the various option styles such as European, American, Bermuda, Asian (average rate) options, digital and barrier options
- Calculate and identify the main determinants of the option premium
- Differentiate between upfront premium and forward premium
- Describe the intrinsic value and time value of an option and an option premium
- Describe how exchange-traded and non-exchange-traded options are quoted and when the premium is usually paid
- Explain various options pricing models
- Calculate and interpret all five "greeks" and explain the concept of delta hedging
- Use the option's payout profile to hedge underlyings with different payout profiles
- Explain how options can be used to synthesize a position in the underlying

Currency Options

- Classify the terminology used to specify currency options
- Explain how long and short strategies, such as straddles or strangles are created, and explain the purpose of these strategies
- Explain the quotation of currency options and the execution of delta hedges
- Describe the settlement of currency options

Interest Rate Options

- Explain the terminology of caps and floors and how they function
- Explain the quotation of caps and floors and determine premiums
- Define swaptions and differentiate between caps and floors
- Differentiate between swaptions with an upfront premium and a forward premium and determine the difference between cash-settled swaptions and swaptions settled by physical delivery

- Describe and determine the effect of negative interest rates on the net present value and settlement of caps, floors and swaptions

VIII. Legal and Regulatory Framework

Candidates should acquire an understanding of the rationale for global, US and European market regulations, their application under the law by market oversight authorities, their basic functioning and impact, and their be familiar with their legal basis. Accordingly, candidates should acquire a comprehensive understanding of Basel III liquidity requirements embodied in the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) and also in the European Market Infrastructure Regulation (EMIR), the Markets in Financial Instruments Directive (MIFID) and the Capital Requirements Regulation (CRR). In addition, candidates should be familiar with the basic elements and objectives of the Internal Capital Adequacy Assessment Process (ICAAP) and of the Internal Capital Adequacy Assessment Process (ILAAP). Candidates will learn the basic elements of US financial market regulation, Dodd-Frank, and how they differ from the regulation of European markets. Finally, candidates should learn the basic elements and principles of the Securities Financing Transactions Regulation (SFTR).

- Describe the impact of the LCR and NSFR on credit institutions and financial markets
- Calculate the LCR and NSFR
- Differentiate between financial markets with / without EMIR and MIFID regulatory regimens
- Describe contents and implications of EMIR and MIFID
- Describe the objectives, components, and best practices of ICAAP and ILAAP
- Distinguish between ICAAP and ILAAP
- Describe the contents and implications of the Dodd-Frank Act
- Differentiate between US and European regulation – Dodd Frank, Basel III, CRR, EMIR
- Describe the contents and implications of the SFTR
- Name the products included under the regulatory term "SFTR"
- Explain the collateralization of capital and loan securities of the various SFTs (repos, rev-repos, collateral swaps, securities loans)

IX. Risk Management

Candidates will understand the relationship between a bank's business model and its risk and know how effective risk management has a positive impact on economic performance. Candidates will be able to explain the relevant types of risk such as market risk, credit risk, liquidity risk, operational risk and regulatory risk as well and reputational and legal risk. Candidates will also understand the relationship between the various types of risks and certain activities and departments within a bank. Candidates will learn the methods and processes for measuring and managing these risks.

Credit Risk

- Describe the various types of credit risk: default risk, settlement risk, issuer risk, Counterparty risk
- Measure credit risks Calculate CS01
- Manage credit risk: loan authorizations and lending decisions, controls and limits, aggregation by various parameters
- Explain the methods of reducing credit risk: collateral, termination clauses, reset clauses, cash-settlement, netting agreements
- Name the basic elements of capital adequacy requirements for credit risk: Probability of Default (PD), Exposure at Default (EAD), Loss Given Default (LGD) and correlation
- Name the capital requirements to cover credit risk under Basel III

Market Risk

- Describe the various types of market risk: interest rate risk, equity risk, currency risk, commodity risk
- Measure market risks, and apply risk-reduction measures: Describe the basic elements of Value at Risk (time period, confidence level, computation, VaR limits, expected shortfall), risks factors and probability distribution of losses, variance-covariance methods, historical simulation, Monte Carlo simulation
- Describe the basic elements of capital requirements for credit risk:
- Limit structures in trading

Liquidity Risk

- Describe the various liquidity risks: refinancing risk, market illiquidity
- Understand how cash-pooling functions
- Analyze and explain the refinancing strategy
- Explain the lessons learned from crises in liquidity management, off-balance-sheet contingent liabilities, valuation of securities/collateral, intraday liquidity risks and cross-border liquidity transfers, identify and mitigate stress scenarios, explain early-warning indicators, liquidity coverage ratio and net stable funding ratio

Operational Risk

- Explain the origins of operational risk: processes, people, events
- Understand the mechanisms and controls for managing risks
- Explain best-practice procedures

Reputational and Legal Risks, Regulatory Risk

- Understand why legal and reputational risks evolve
- Explain regulatory risk
- Describe measures and strategies to avoid legal and reputational risks

X. Processing & Bank Operations

Candidates will be familiar with the organizational necessity to separate activities (front and back office), they can describe comprehensively the operational steps of a transaction from when it is struck to reconciliation, and they have mastery of the specific terminology of the settlement process. Candidates are able to identify operational risks along the entire settlement process and they understand the need for measures to address operational risk. They are familiar with the various documents for various financial instruments and with settlement standards, and they can differentiate between settlement of internal accounts and nostro accounts. Candidates can describe the characteristics of transaction confirmations and transaction communication and they can explain the procedures followed in clearing and netting.

Operations & Organisation

- Explain operational risk and the need to separate front-office and back-office activities
- Formulate the KYC process and its importance, and the process of opening an account
- Describe straight-through processing (STP)
- Describe the basic steps from the closing of a transaction, broker communication, recording and confirmation of a transaction and clearing, to settlement and reconciliation of the nostro accounts

- Name the specific terminology of the settlement process
- Differentiate between the responsibilities of front, middle and back office
- Explain how the banking book and the trading book are valued
- Describe a new product process

Recording of Transactions

- Name the tasks of the transaction recording process
- List the relevant items of information to be recorded in the case of various transactions such as FX, securities etc.

Confirmation of Transactions

- Explain the rationale for transaction confirmations
- Differentiate between internal and external confirmations
- Describe the use of various communication networks such as SWIFT
- Explain the relevant information included in SWIFT transactions such as IBAN, BIC, participants etc.
- Describe the advantages and disadvantages of a trade confirmation platform
- Explain the matching of confirmations

Clearing

- Explain the rationale for clearing and its core functions and the basic principle behind central counterparty clearing houses
- Describe the importance of reporting of transactions under Dodd-Frank
- Explain margining

Netting

- Define netting
- Describe the differences between continuous linked settlement, netting ,and delivery versus payment
- Differentiate between bilateral and multilateral netting as well as novation and close-out netting and describe how they function
- Explain the motives for netting and its risks

Settlement

- Distinguish between physical delivery and cash settlement
- Understand the need for transaction documentation and explain the various documents for financial market instruments

- Name the relevant documents for derivatives such as the ISDA Master Agreement and Credit Support Annex (CSA)
- Explain bilateral and central collateral management for derivatives
- Describe the use of various communications networks such as SWIFT
- Explain the relevant items of information for SWIFT transactions such as IBAN, BIC, participants etc.
- Differentiate between internal accounts and nostro/vostro accounts and explain the differences in settlement
- Explain the meaning of cut-off times
- Define and use Standard Settlement Instructions (SSI) and name their advantages and risks
- Explain and differentiate the various gross and net settlement funds transfer systems such as Target, Chaps, Fedwire, RTGS etc.

Reconciliation

- Describe the requirements and responsibilities of reconciliation of nostro accounts
- Name the chronological order of reconciliation
- Follow proper procedure in the case of incongruent amounts
- Calculate brokerage

Settlement Risks

- Explain settlement, credit and liquidity risks
- Describe money laundering guidelines and procedures to be followed by staff

X. Code of Conduct

All members of AEFMA are required to adhere to generally accepted codes of conduct regardless of their area of specialization. AEFMA, as a provider of training programs and in the spirit of self-regulation, considers it its duty to convey these generally accepted codes of conduct to its members so that they are able to apply them in their areas of specialization.