

## **Syllabus for PRINCIPLES OF BANKING AND FINANCE (Third and Fourth Semesters)**

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### **I. Course organization**

The course “Principles of banking and finance” is an introductory course on banking and financial markets for students. The course is taught both in Russian and in English, because 1) most students will work in Russia and must know the tendencies and the peculiarities of the Russian banking system and financial markets; 2) students need to pass a respective exam of the LSE.

The course applies analytical approach, aimed at developing the economic way of thinking, makes the careful step-by-step introduction of different analytical models, and uses a number of applications and examples from different banking systems.

**Course objectives.** The objective of the course is to acquaint students with the principles of the financial theory, traditional and modern financial assets, types of financial intermediaries and the ways of their functioning in the modern financial markets.

The study of banking and financial markets has become one of the most interesting topics in economics. Financial markets are changing rapidly, and new financial instruments appear almost daily. The once staid financial industry has become highly dynamic. Well-functioning international trade and financial markets have created an integrated world economy in which events in one country’s financial markets have a major impact on financial markets in other countries. The development of the economic systems are determined by the international capital flows, channeled by banks and other financial intermediaries.

The course’s analytical framework uses a few basic economic principles to organize students’ thinking about bank management and the structure of financial markets. The basic principles are a transactions cost and asymmetric information approach to financial structure, profit maximization, basic supply and demand analysis to explain behavior in financial markets, and aggregate supply and demand analysis.

We aim to prepare students to study more complicated courses of the financial management and BORA. As a result, they must be given the principles of the investor’s behavior, of the banking regulation; taught the types of financial risks and the basic methods of their assessment and management. The seminars are based both on the detailed analysis of the banking practice and the analysis of the case-studies.

The course includes 60h of lectures and 60h of seminars.

## II. Syllabus for the course “Principles of banking and finance”

### Part I. Principles of Finance

#### 1. Financial markets.

Consumption and investment without capital market (one person/one-good economy). Production possibility frontier. The condition of the optimal allocation (utility maximization).

Consumption with capital markets. Interest rate as the price of deferred consumption or the rate of return on investment. Fisher separation theorem. The condition of the optimal allocation (utility maximization). Types of consumers.

An exchange economy that uses market prices (interest rates) to allocate resources across time will be seen to be superior to an economy without the price mechanism. The comparison between a world without capital markets and a world with capital markets shows that no one is worse off and at least one individual is better off in a world with capital markets.

*Essential reading:*

- 1 Copeland, T.E., Weston, J.F. Financial Theory and Corporate Policy. Addison-Wesley Publishing Company, 1998, Ch. 1
- 2 Buckle, M., Thompson, J. The UK financial system: theory and practice. Manchester University Press, 1998, Ch. 1,2.

#### 2. Capital Budgeting and Valuation

Methods of project's valuation. Cash Flows. The concept of present value. Discount rate. NPV. IRR and required rate of return. Payback period.

The investor face a problem to value adequately financial and real projects, choosing the most profitable one. Most frequently the projects are compared using the discounted cash flows methods, such as NPV and IRR. But they have certain limitations.

*Essential reading:*

1. Brealey, R.A., Myers S.C. Principles of Corporate Finance. Mc-Graw Hill/Irwin, 2003, Ch. 3-5
2. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 3, 10.

#### 3. Risk and return

Mathematical characteristics of risk and return. Risk-adjusted return. Risk-free instruments.

Utility maximization. Risk-return trade-off. Individual risk-aversion. Risk-averse, risk-neutral and risk-seeking investors. Risk premium. The risk and return of the portfolio. Correlation of returns.

Benefits of diversification. Systematic and non-systematic risks. Mean-variance portfolio theory.

Higher return is usually a payment for higher risk. The degree of risk, the investor allows, depends on his subjective parameter of the risk-aversion, determining by his preferences. Adding additional assets to her portfolio, an investor could minimize risk, measured by standard deviation of portfolio returns, keeping the return constant.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 3,4.
2. Фрэнк Дж. Фабозци. Управление инвестициями. Инфра-М, Москва 2000, Гл. 4
3. Уильям Ф. Шарп, Гордон Дж. Александер, Джеффри В. Бэйли. Инвестиции. Инфра-М, Москва 2001, Гл. 8

#### **4. Asset pricing models**

Introduction of a risk-free asset: the capital market line. CAPM and securities market line. Assessment of beta. Single- and multi-factor models. Factor-replicating portfolios. Arbitrage. APT. Theoretical and empirical validation of APT.

In order to compose a utility-maximizing portfolio an investor must combine a risk-free asset with a market portfolio. The market requires from an investor to determine a fair price of the assets and to add the ones to the portfolio which market price is less than a fair price.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 4.
2. Уильям Ф. Шарп, Гордон Дж. Александер, Джеффри В. Бэйли. Инвестиции. Инфра-М, Москва 2001, Гл. 9, 10, 12.

#### **5. Financial Markets, Securities and Derivatives**

Classification of the financial markets. Money and capital markets. Primary and Secondary Markets. Debt and Equity Instruments. Common and Preferred Stocks. Coupon and Discount Bonds. Valuation of Financial Assets: Fair Price. DCF Models. Gordon Growth Model. Yield Curve. Derivatives: Forwards, Futures, Options, Swaps.

Money market securities are very short-term debt securities. They are usually highly marketable and have relatively low credit risk. Their low maturities and low credit risk ensure minimal capital gains or losses. These securities trade in large denominations, but may be purchased indirectly through money market funds. Capital market is a place where firms and banks borrow funds for financing their long-term investment projects, issuing both bonds or stocks.

Bonds with the same term to maturity have different interest rates. The relationship among these interest rates is called the risk structure of interest rates, although risk, liquidity, and income tax rules all play a role in determining the risk structure. A bond's term to maturity also affects its interest rate, and the relationship among interest rates on bonds with different terms to maturity is called the term structure of interest rates.

The investors use derivatives both to hedge their risk exposure and to gain profit from speculative transactions. The market of derivatives grows rapidly, adding bringing every year new instruments to the forefront.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 1, 2, 9.
2. Уильям Ф. Шарп, Гордон Дж. Александер, Джеффри В. Бэйли. Инвестиции. Инфра-М, Москва 2001, Гл. 14, 15, 18, 20, 21.
3. Buckle, M., Thompson, J. The UK financial system: theory and practice. Manchester University Press, 1998, Ch. 9, 10, 13, 14.

## **6. Efficient markets**

Operational and informational efficiency. Excess return. Weak, semi-strong, strong efficiency.

Rational expectations. Random walk theory.

Weak-form market efficiency. Technical analysis: filters, moving averages, relative strength, Semistrong-form market efficiency. Small-firm effect, neglected firm effect, low price-earnings ratio, calendar effects.

Strong-form market efficiency. Insider trading.

Speculative bubbles. Herd behavior.

Rational expectations theory implies that there could be systemic positive error in forecasting returns and that all market participants are quite effective. As a result no strategy could steadily overcome buy-and-hold strategy. Market efficiency tests verify whether investor, using strategies, based on past prices and volumes (weak-form efficiency), all public information (semistrong-form efficiency) and all available information, including confidential (strong-form efficiency) could overcome the market.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 10.
2. Фрэнк Дж. Фабоцци. Управление инвестициями. Инфра-М, Москва 2000, Гл. 13.
3. Buckle, M., Thompson, J. The UK financial system: theory and practice. Manchester University Press, 1998, Ch. 11.

## **Part II. Principles of Banking**

### **1. Economic analysis of financial structure**

Why do financial intermediaries exist? Transaction costs. Asymmetric information: adverse selection and moral hazard, principal-agent problem. Maturity, size and risk transformation.

Economy of scale and economy of scope. The ways to minimize principal-agent costs: collateral, guarantees, capital requirements, self-regulation, credit bureaus.

The financial system is among the most heavily regulated sectors of the economy. Governments regulate financial markets primarily to promote the provision of information and to ensure the soundness of the financial system.

Debt contracts are typically extremely complicated legal documents that place substantial restrictions on the behavior of the borrower. In all countries, bond and loan contracts are typically long legal documents with provisions (called restrictive covenants) that restrict and specify certain activities that the borrower can engage in.

Collateral is a prevalent feature of debt contracts for both households and businesses. Collateralised debt (which is also known as secured debt) is the predominant form of household debt and is widely used in business borrowing as well.

An important feature of financial markets is that they have substantial transactions and information costs. An economic analysis of how these costs affect financial markets provides answers to these puzzles.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 14, 16.

## **2. Financial intermediaries.**

Direct and indirect finance. Banks. S&L institutions. Co-operative banks. Mutual funds. Pension funds. Insurance companies. Term structure of liabilities.

The problem of excess regulation. Disintermediation.

Indirect finance, which involves the activities of financial intermediaries, is many times more important than direct finance, in which businesses raise funds directly from lenders in financial markets. Direct finance involves the sale to households of marketable securities such as stocks and bonds. Direct finance is far less important than indirect finance. Banks are the most important source of external funds used to finance businesses. Statistics confirm that banks have the most important role in financing business activities.

Only large, well-established corporations have access to securities markets to finance their activities. Individuals and smaller businesses that are not well established almost never raise funds by issuing marketable securities. Instead, they obtain their financing from banks.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 2, 9.

2. Фрэнк Дж. Фабоцци. Управление инвестициями. Инфра-М, Москва 2000, Гл. 8-11.

3. Buckle, M., Thompson, J. The UK financial system: theory and practice. Manchester University Press, 1998, Ch. 2.

### **3. Bank management. Retail, wholesale and investment banking.**

Retail banking: current account and time deposits, microfinancing, consumer loans, mortgages, asset-backed securities, payment and credit cards.

Wholesale banking: large-scale loans, trade financing, loan commitments, commercial and standby letters of credit, asset management, syndicated loans, arrangement and underwriting of corporate bonds.

Investment banks: structure of transactions, risk sharing, syndicated loans, arrangement and underwriting of bonds.

The balance sheet of commercial banks can be thought of as a list of the sources and uses of bank funds. The bank's liabilities are its sources of funds, which include deposits, time deposits, borrowings from other banks and companies, and bank capital. The bank's assets are its uses of funds, which include reserves, cash items in process of collection, deposits at other banks, securities, loans, and other assets (mostly physical capital).

Banks make profits through the process of asset transformation. They borrow short (accept deposits) and lend long (make loans). When a bank takes in additional deposits, it gains an equal amount of reserves; when it pays out deposits, it loses an equal amount of deposits.

At present-time one could register the shift of banking activities towards wider use of off-balance sheet instruments. The corporate appetite for long-term funds is satisfied both through loans (loan commitments and syndicated loans) and through issuing of long-term bonds. Banks cooperate often to share risks and to lend large-scale funds.

*Essential reading:*

1. Buckle, M., Thompson, J. The UK financial system: theory and practice. Manchester University Press, 1998, Ch. 3, 4, 11.

### **4. Risk management and internal control in banking.**

Asset-side and liability-side liquidity risks. Liquidity gaps. Liquidity management and the role of reserves. Asset-liability management. Purchase of funds. Treasury.

Interest rate margin. Interest rate risk. Fixed- and floating-rate assets and liabilities. Interest rate gaps.

Credit risk. Types of credit risk (industrial, regional and country risks). Diversification of loan portfolio.

Currency risk. Long and short open positions.

Capital adequacy. Economic capital.

Although more liquid assets tend to earn lower returns, banks still desire to hold them. Specifically, banks hold excess and secondary reserves because they provide insurance against the costs of a deposit outflow. Banks manage their assets to maximize profits by seeking the highest returns possible on loans and securities while at the same time trying to minimize risk and making adequate provisions for liquidity. Large banks now actively seek out sources of funds by issuing liabilities such as negotiable CDs or by actively borrowing from other banks and companies. Banks manage the amount of capital they hold to prevent bank failure and to meet bank capital requirements set by

the regulatory authorities. However, they do not want to hold too much capital because by so doing they will lower the returns to equity holders.

The concepts of adverse selection and moral hazard explain many credit risk management principles involving loan activities: screening and monitoring, establishment of long-term customer relationships and loan commitments, collateral and compensating balances, and credit rationing.

With the increased volatility of interest rates banks become more concerned about their exposure to interest-rate risk. Gap and duration analyses tell a bank if it has more rate-sensitive liabilities than assets (in which case a rise in interest rates will reduce bank profits and a fall in interest rates will raise bank profits). Banks manage their interest-rate risk not only by modifying their balance sheets but also by trading interest-rate swaps, financial futures, and options for financial instruments.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 22.
2. Anthony Saunders. Financial institutions management. McGraw-Hill Higher Education, 2000, Ch. 4-6.

## **5. Banking regulation**

Banking supervision and inspection (on-sight and off-sight regulation). Capital adequacy ratio. The Basel accords on risk-based capital requirement (Basel I and Basel II). Liquidity ratios. Open currency positions. CAMEL+COM. Disclosure requirements. Free banking. Government safety net. Deposit insurance.

The concepts of asymmetric information, adverse selection, and moral hazard help explain the four types of banking regulation: deposit insurance, restrictions on bank asset holdings and capital requirements, chartering and bank examination, and the separation of the banking and securities industries. It is particularly problematic to regulate banks engaged in international banking because they can readily shift their business from one country to another.

Just as financial institutions change in response to regulation, regulatory authorities change their regulations in response to financial innovations.

The increased integration of financial markets across countries and the need to make the playing field level for banks from different countries led to the Basel accord in June 1998 to standardize bank capital requirements internationally. The purposes of the agreement were (1) to promote world financial stability by coordinating supervisory definitions of capital, risk assessments, and standards for capital adequacy across countries and (2) to link a bank's capital requirements systematically to the riskiness of its activities, including various off-balance-sheet forms of risk exposure.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 18.
2. Buckle, M., Thompson, J. The UK financial system: theory and practice. Manchester University Press, 1998, Ch. 17, 18.

## 6. Comparison of Financial Systems

Bank-based and market-based systems. Islamic banking. Emerging markets. Financial crises: banking, currency and debt crises. The peculiarities of the Russian banking systems.

The principles of the financial market organization differ much throughout the world. The financial intermediation in continental Europe and Japan is based on universal commercial banks, whereas in the USA and Great Britain their role is rather modest. Emerging markets are characterized by the active interference of state-owned banks in the financial intermediation, large concentration of assets and capital, marked volatility of the business environment. This requires the use of different approaches towards risk analysis and regulation of banking.

*Essential reading:*

1. Mishkin F., Eakins S. Financial Markets and Institutions. Addison-Wesley Publishing Company, 2003, Ch. 16.
2. Allen, F., Gale, D. Comparing financial systems. MIT Press, 2001, Ch. 1, 2, 3.

### III. Break-down of coursework

N	Name of topic	Total (hours)	Lectures	Seminars	Homework
1.	Financial Markets	18	4	4	10
2.	Capital budgeting and valuation	20	4	6	10
3.	Risk and return	24	6	6	12
4.	Asset pricing models	24	6	6	12
5.	Financial Markets and Securities	28	8	6	14
6.	Efficient markets	22	6	6	10
7.	Economic analysis of financial structures	40	10	10	20
8.	Bank management. Retail, wholesale and investment banking	24	6	6	12
9.	Risk management and internal control in banking	22	6	6	10
10.	Banking regulation	24	6	6	12
11.	Comparison of financial systems	24	6	6	12
	<b>TOTAL:</b>	270	68	68	134

### IV. Intermediate and final exams.

Students should pass the 2 intermediate mocks written exam in the end of each semester. The final exam will be held by the LSE. Each exam includes the list of 8 questions, from which the students will be asked to answer 4. Some questions may contain both numerical and essay-based parts. Each intermediate exam accounts for 20% of the final grade. Homework grades and graded received at classes account for 10% of the final grade. The rest of the final grade will be determined by the results of the final exam.

**Useful Internet resources:**

1. [www.imf.org](http://www.imf.org)
2. [www.worldbank.org](http://www.worldbank.org)
3. [econ.lse.ac.uk](http://econ.lse.ac.uk)
4. [www.bis.org](http://www.bis.org)
5. [www.nber.org](http://www.nber.org)
6. [www.thebanker.com](http://www.thebanker.com)