Syllabus

MACROECONOMICS
2019-2020

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Abstract

Macroeconomics is a two-semester compulsory course designed for the first-year students of the ICEF Master of Science programme in financial economics. It provides an overview of modern macroeconomics at the advanced level. The course is taught in English.

Macroeconomics course has three parts. Part I is taught by Professor Nikitin in the first semester. Its emphasis is on analytical tools of modern dynamic macroeconomics and on the long-run issues, such as the economic growth. Students will learn standard 'workhorse' models of modern macroeconomics, including the infinitely-lived representative agent framework and the overlapping-generations framework, as well as some of the standard applications to fiscal policy and social security. Students will be also familiarized with the main ideas of endogenous growth theory, ways to introduce money in dynamic optimizing macroeconomic models and some of the long-run findings from these models, including the optimum quantity of money (the Friedman rule).

Part II of the course is taught by Professor Gebauer in the second semester. It deals with the analysis of the short-run macroeconomic phenomena. It introduces the Real Business Cycle approach and the New Keynesian approach to the problem of economic fluctuations. It also familiarizes students with models of Search and Matching.

Part III of the course is taught by Professor Peiris and gives an introduction to open economy issues.

Prerequisites:

Students are expected to be familiar with microeconomics and macroeconomics at the intermediate level, calculus of several variables, basic statistics and econometrics.

Learning Objectives and Outcomes:

1) To give a broad overview of substantive issues of modern macroeconomics;
2) To teach analytical tools and methods of macroeconomic analysis to enable students to continue their education at a Ph.D. level and to read research papers in the area;
3) To enable students to conduct applied analysis of macroeconomic policy while working for government agencies, think tanks, central banks or the private sector;
4) To give students the essential knowledge for applied courses, including financial economics.

At the end of the course, students should possess or have improved the:

- Ability to reflect (evaluate and process) the mastered scientific methods and ways of activity.
- Ability to conduct professional, including research activities in the international environment

- Ability to summarize and critically evaluate research in Economics and related disciplines
- Ability to improve and develop their intellectual and cultural level, to build a trajectory of professional development and career.

The student should be able to apply professional knowledge and skills acquired while studying the course in practical areas, including academic research, work in financial institutions, industry, state governance.

Methods of Instruction

The following methods and forms of study are used in the course:

- lectures
- classes
- written home assignments
- teachers' consultations
- self study

Lectures are designed to help students to understand the main concepts of the course. The classes are used to equip students with problem solving skills, and to discuss applications of the theory to policy issues. The home assignments have two goals: they prepare the students for the exams, and they are used to monitor the students' progress in the course.

Grading System and Knowledge Assessment

The final grade for the course G is based upon the grade for Part I of the course G_I (50%) and the combined grade for Part II and Part III G_{II+III} (50%):

$G = 0.5*G_I + 0.5*G_{II+III}$
The grading system for each part is provided below.

Sample materials for knowledge assessment are available in ICEF Information system at https://icef-info.hse.ru.
The final grades are also transferred to 10- and 5-points grades in accordance with the ICEF Grading Regulations (par.3).
Retakes are organized in accordance with the HSE Interim and Ongoing Assessment Regulations (incl. Annex 8 for ICEF). Grade determination after retakes is done in accordance with ICEF Grading Regulations (par. 5).

Grade for Part I

The grade for Part I G_I is based upon the homework assignments results (10%), course participation (5%), the midterm test (25%) and the final exam (60%):

$G_I = 0.1*G_{ha} + 0.05*G_{partic} + 0.25*G_{mid} + 0.6*G_{exam}$

Passing the final exam is necessary to get a passing mark for the course.

The participation grade will be a grade assigned by the lecturer at the end of the semester. It will be based on the amount and level of discussions on the topics the students engage in in class. This means that mere attendance is not enough.

Grade for Part II and Part III

The combined grade for Part II and Part III of the course G_{II+III} is based on Part II assessment (75% of combined grade G_{II+III}) and Part III assessment (25% of combined grade G_{II+III}).

The following marks are entering G_{II+III} from Part II assessment: homework assignment results $G_{II,\,ha}$ (10%), course participation $G_{II,\,partic}$ (5%), the midterm test $G_{II,\,mid}$ (15%) and the final exam $G_{II,\,exam}$ (45%). The participation grade will be a grade assigned by the lecturer at the end of the semester. It will be based on the amount and level of discussions on the topics the students engage in in class. This means that mere attendance is not enough.

The following part of the grade is due to Part III: homework assignment results $G_{III,\,ha}$ (10%) and the midterm test $G_{III,\,mid}$ (15%).

Overall, the formula for the combined grade for Part II and Part III G_{II+III} is the following:

$$G_{II+III} = 0.1*G_{II,\,HA} + 0.05*G_{II,\,partic} + 0.15*G_{II,\,mid} + 0.45*G_{II,\,exam} + 0.1*G_{III,\,HA} + 0.15*G_{III,\,mid}$$

Passing the final exam is necessary to get a passing mark for the course.

Reading list

Required reading

- Romer, David. Advanced Macroeconomics. 4th edition. McGraw Hill, 2012.

Optional reading

- Jones, Charles I. Introduction to Economic Growth. 2d edition. W.W. Norton, 2002.
- Blanchard, Olivier and Fischer, Stanley. Lectures on Macroeconomics. MIT Press, 1993.
- Obstfeld, Maurice and Kenneth Rogoff. Foundations of International Macroeconomics. The MIT Press, 1996.
- Barro, Robert and Xavier Sala-i-Martin. Economic Growth. 2d edition. The MIT Press, 2004.
- Gong, G and Semmler W. Stochastic Dynamic Macroeconomics. Theory and Empirical Evidence. 1st edition. Oxford, 2006.

Special Equipment and Software Support:

Laptop, projector, Internet connection, MS Word, MS Excel

Course plan:

Part I:

1. Introduction to economic growth. Solow model with endogenous growth, extensions and applications. Empirical tests.

2. Lucas critique and its impact on macroeconomic modeling.

3. Dynamic optimizing macroeconomic models: an introduction and applications.
   3.1. Two-period model. The Euler equation. Application to the current account in an open economy.
   3.2. Infinitely-lived representative agent framework. Cass-Koopmans optimal growth model in continuous time.
   3.3. Overlapping-generations framework and the Diamond model. Applications to fiscal policy and social security.
   3.4. Ricardian equivalence: theory and evidence.

4. Endogenous growth. Advanced topics.

5. Money in dynamic optimizing macroeconomic models.
   5.1. Sidrauski model. Superneutrality, Tobin effect and the Friedman rule.

6. Social infrastructure, predation and protection in macroeconomic models.

Part II:

1. Business Cycle dynamics. The issues of business cycle movements definition. Statistical ways of economic dynamics decomposition into short- and long-run dynamics. Stylized facts about short-run movements.

This section introduces Business Cycles, definitions and methods as well as lays the ground for the next section. We discuss statistical ways of decomposition and their merits as well as the derivation of "Stylized Facts".

Journal readings:

- Blanchard, O., and Quah, D. The Dynamic Effects of Aggregate Demand and Supply Disturbances. The American Economic Review, Vol. 79, No. 4, pp. 655-673, 1989.
- Prescott, E.C. Theory Ahead of Business Cycle Measurement. FRB of Minneapolis Working Paper.
- Stock, J., and Watson, M. Business Cycle Fluctuations in U.S. Macroeconomic Time Series. NBER Working Paper 6528, 1998.
- Stock, J., and Watson, M. Vector Autoregressions. Journal of Economic Perspectives, 15-4, pp. 101-115, 2001.

2. The Real Business Cycle (RBC) models.
   2.1. RBC basic model. Set-up and solution of agents' problems.
   2.2. Solving RBC models. Methods of exact solution. Log-linear approximations.
   2.3. Empirics of the standard RBC model.

This section introduces the canonical RBC model which was designed to account for the stylized Business Cycle Facts from the previous section. It was the first class of Dynamic Stochastic General Equilibrium models and was hugely influential. Here, we discuss the basic model, ways to solve it and how to empirically evaluate the model. We conclude with a discussion of the flaws of this approach.

Journal readings:

- King, R., and Rebelo, S. Resuscitating Real Business Cycles. NBER Working Paper 7534, 2000.
- Rebelo, S. Real Business Cycle Models: Past, Present and Future. NBER Working Paper 11401, 2005.
- Rotemberg J., and Woodford, M. Real-Business-Cycle Models and the Forecastable Movements in Output, Hours, and Consumption, The American Economic Review, Vol. 86, No. 1, pp. 71-89, 1996.
- Gali, J., and Rabanal, P. Technology shocks and aggregate fluctuations: How well does the RBC Model Fit Postwar U.S. Data?. NBER Macroeconomics Annual, 2004.

3. The New Keynesian models.
   3.1. Foundations for nominal frictions. Taylor Staggering and Lucas Model of Imperfect Information. Fischer's contracting wage model.
   3.2. The Model of Monopolistic Competition.
   3.3. Calvo pricing. New Keynesian Phillips Curve.

The lack of nominal frictions in classic RBC models has led people to think about how to model nominal rigidities. Some approaches are based on informational asymmetries and others on the assumption that prices simply cannot always adjust. Here we discuss various models and their implications and finish by deriving the New Keynesian Phillips Curve which essentially resurrects the relationship between Inflation and Employment that was presumed by proponents of classical Keynesianism.

Journal readings:

- Fischer, S. Long-term Contracts, Rational Expectations, and the Optimal Money Supply. Journal of Political Economy, 85(1), 1977.
- Roberts, J. New Keynesian Economics and the Phillips Curve. Journal of Money, Credit and Banking, Vol. 27, No. 4, Part 1, pp. 975-984, 1995.

4. Search-Theoretic Models.
   4.1. The Diamond-Mortensen-Pissarides Model of Unemployment. The matching-function, Beveridge Curve, Nash-Bargaining.
   4.2. The Hosios Condition of Efficiency.
   4.3. Competetive Search Equilibrium. Search Clubs, Wage Posting.

Search theory is a powerful, and relatively new approach to many aspects of economic study. Researchers recognizing that the classical market where supply immediately clears demand is not always the appropriate approach, like to use search frictions as a tool to model markets like the labour market. In this section, we start with a comprehensive look at the classical Diamond-Mortensen-Pissarides framework and its' extensions. We establish what is needed for efficiency and then how directed search may sidestep some of these issues.

Journal readings:

- Pissarides, C. Equilibrium Unemployment Theory, 2nd Edition. MIT Press Books, Ed. 1, Vol. 1, 2000.
- Diamond, P. Wage Determination and Eciency in Search Equilibrium. Review of Economic Studies, Vol. 49, pp. 217-229, 1982.
- Mortensen, D. T., and Pissarides, C. A. Job Creation and Job Destruction in the Theory of Unemployment. Review of Economic Studies, 61(3), 1994.

- Blanchard, O., and Diamond, P. The Aggreagate Matching Funciton. NBER Working Papers 3175, National Bureau of Economic Research, 1989.
- Hosios, A. On the Efficiency of matching and Related Models of Search and Unemployment. Review of Economic Studies, Vol. 57, pp. 279- 298, 1990.
- Moen, E. R. Competetive Search Equilibrium. Journal of Political Economy, vol. 105(2), pp. 385-411, 1997.

4.4. Extensions and Applications of Search Models.
4.5. Going beyond Labour Applications. Search Model in monetary economics

If time permits, Parts 4.4. and 4.5. of the course are going to be an eclectic selection of applications of search models. It may contain additional papers than the ones listed below and will be an effort to bring the students into contact with the more recent contributions.

Journal readings:

- Acemoglu, D., and Shimer, R. Holdups and Efficiency with Search Frictions. International Economic Review, 40, 1999.
- Alvarez, F., and Veracierto, M. Fixed-Term Employment Contracts in an Equilibrium Search Model. NBER Working Papers 12791, 2006.
- Rogerson, R., and Shimer, R., and Wright, R. Search-Theoretic Models of the Labor Market: A Survey. Journal of Economic Literature, Vol. 43, No. 4, pp. 959-988, 2005.
- Kiyotaki, N., and Wright, R. A Search-Theoretic Approach to Monetary Economics. American Economic Review, 83 (1), pp. 63–77, 1993.

Part III:

1. International Accounting, Risk Sharing and Business Cycles.

Here we will look at the basics of national accounting for open economies and examine stylized facts about the world economy. We will construct a formal model that reflects the accounting relationships. We will also study the Russian and Brazilian crisis. These lectures will provide a motivation for the theoretical frameworks that will follow.

2. International Exchange Economies, Risk Sharing and Incomplete Markets.

We will first extend the basic asset pricing result of Arrow-Debreu to an international context and examine the predictions for risk sharing. We will extend this analysis first to International CAPM and then see how market incompleteness and default affect the results.

3. Financial Stability, Macro/Micro-prudential policy and international spillovers.

We will cover banking regulations, financial stability and international spillover of risk through the banking system.

4. Russia as an Open Economy and Review.

The post-soviet Russian experience will be examined through the lens of the course material covered. We will go through the material in the course and discuss how various aspects considered tie in together.

	Topic	Total hours	Contact hours		Self-study
			Lectures	Seminars	
	Part I				
1	Introduction to economic growth	32	10	4	18
2	Lucas critique	7	1	1	5
3	Dynamic optimizing macroeconomic models	44	12	8	24
4	Endogenous growth	26	9	2	15
5	Money in dynamic optimizing models	14	2	2	10
6	Social infrastructure, predation and protection in macroeconomic models	9	2	1	6
	Total	132	36	18	78
	Part II				
1	Business Cycles	6	2	1	3
2	Real Business Cycle models	22	6	4	12
3	New Keynesian models	22	6	4	12
4	Search-Theoretic Models	28	10	3	15
	Total	78	24	12	42
	Part III				
1	International Accounting, Risk Sharing and Business Cycles	18	4	2	12
2	International Exchange Economies, Risk Sharing and Incomplete Markets	18	4	2	12
3	Financial Stability, Macro/Micro-prudential policy and international spillovers	9	2	1	6
4	Russia as an Open Economy and Review	9	2	1	6
	Total	54	12	6	36