



Course and Examination Fact Sheet: Autumn Semester 2019

10,383: Topics in Economics

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Decentral - Oral examination (individual) (50%)

Decentral - Oral examination (individual) (50%)

Attached courses

Timetable -- Language -- Lecturer

[10,383,1.00 Topics in Economics](#) -- Englisch -- [Föllmi Reto](#), [Koeniger Winfried](#)

Course information

Course prerequisites

Solid courses in macroeconomics at the Master level, such as Advanced Macroeconomics 1 and 2.

Students who plan to take this course as an *optional* course and *without an examination* should not register via the bidding system. They should register directly with the lecturer.

Students who plan to take this course as a *regular* course or as an *optional* course *with an examination* should register via the bidding system. Enrolment in a course is binding: students have to attend the course and take the exam.

Course content

The course covers two important topics in macroeconomics. The first topic is inequality and growth. The second topic is the analysis of dynamic stochastic equilibrium models with incomplete markets.

The first part of the lecture focuses on two main questions. First, how does the distribution of income and wealth evolve in a market economy? Under which conditions does the gap between rich and poor people tend to increase or decrease over time? In that context, we review central propositions of Piketty's influential book, "Capital in the 21st century".

Second, we study the impact of heterogeneity (through income inequality or different types of firms) on central economic phenomena: International Trade, economic growth, and structural change. These strands of literature have gained in importance as firm-level datasets have become available. Their results shed new light how much countries gain quantitatively from opening up to trade.

The second part of the lecture introduces students to dynamic stochastic equilibrium models with incomplete markets which have become workhorse models for the analysis of monetary and fiscal policy. Unless one is willing to make very restrictive assumptions about the underlying environment, equilibria in these models need to be approximated numerically by dynamic programming. Students will thus learn some numerical methods required for dynamic programming. We then apply these methods within the macroeconomic workhorse model with incomplete markets.

Qualification: Students will be guided to the frontier of macroeconomic research to perceive why heterogeneity matters for macroeconomic outcomes. They will identify sources of inequality and understand the heterogeneous effects of fiscal or monetary policy. Students will learn the methods to perform policy analysis within this research field in their own research projects.

Course objectives: The goals of the course are to provide an introduction to the macroeconomic literature on heterogeneity across consumers and firms and incomplete markets. Further, students (i) should understand the methods to build models with heterogeneity and (ii) know empirical procedures to test them. Finally, they will be able to solve a dynamic program and to apply these methods to a problem of their interest.

The main **learning outcomes** are that students understand the macroeconomic workhorse models with heterogeneity and incomplete markets, that students can start to write code to solve that model, that students are able to interpret the numerical output and that students are able to evaluate economic policies within that model.



Course structure

The first part of the course on inequality and growth is structured in the following way:

1. Introduction; empirical motivation: inequality-growth, Kuznets-curve, evolution of top incomes
2. Savings, growth and Piketty's law of capitalism: Neoclassical theory of distribution, dynamics of distribution with perfect markets
3. Product market imperfections and firm heterogeneity: Innovations and growth, heterogeneous firms and international trade

The second part of the course on dynamic models with incomplete markets is structured as follows:

1. Dynamic programming: introduction and some solution methods
2. Application to models with exogenously incomplete market: stylized facts and puzzles, the life-cycle model with exogenous market incompleteness, liquidity constraints, precautionary savings, computation of equilibrium, joint analysis of durable and non-durable consumption, household debt and bankruptcy
3. Models with endogenous market incompleteness: limited commitment and asymmetric information

Course literature

Part 1:

Bertola, Foellmi, Zweimüller, *Income Distribution in Macroeconomic Models*, Princeton University Press, Paperback 2014.

Further papers see detailed syllabus in Fall.

Part 2:

The following books give an accessible introduction and background to some of the covered topics.

Bagliano, Fabio-Cesare and Giuseppe Bertola: *Models for Dynamic Macroeconomics*, Oxford University Press, 2004, chapter 1.

Bertola, Giuseppe, Richard Disney and Charles Grant: *The Economics of Consumer Credit*, MIT Press, 2006.

Davis, Morris: *Macroeconomics*, Cambridge University Press, 2009, chapter 3.

Deaton, Angus: *Understanding Consumption*, Oxford University Press, 1992.

Gollier, Christian: *The Economics of Risk and Time*, MIT Press, 2001.

Jappelli, Tullio and Luigi Pistaferri: *The Economics of Consumption*, Oxford University Press, 2017.

Krueger, Dirk, Kurt Mitman and Fabrizio Perri, *Macroeconomics and Household Heterogeneity*, Handbook of Macroeconomics, vol. 2A, chapter 11, Elsevier, 2016.

Piazzesi, Monika and Martin Schneider, *Housing and Macroeconomics*, Handbook of Macroeconomics, vol. 2B, chapter 19, Elsevier, 2016.

Below are further readings for each topic of the lecture:

1. Dynamic programming

Carroll, Christopher D. (2006): The Method of Endogenous Gridpoints for Solving Dynamic Stochastic Optimization Problems, *Economics Letters*, vol. 91, 312-320.

Clausen, Andrew and Carlo Strub (2016): A General and Intuitive Envelope Theorem, Manuscript, University of Edinburgh.

Druehdahl, Jeppe and Thomas Jorgensen (2017): A General Endogenous Grid Method for Multi-Dimensional Models with Non-Convexities and Constraints, *Journal of Economic Dynamics & Control*, issue 74, 87-107.

Hintermaier, Thomas and Winfried Koeniger (2010): The Method of Endogenous Gridpoints with Occasionally Binding Constraints among Endogenous Variables, *Journal of Economic Dynamics & Control*, vol. 34, 2074-2088.



Judd, Kenneth L. (1998): *Numerical Methods in Economics*, MIT Press, Cambridge, Massachusetts.

Ljungqvist, Lars and Thomas J. Sargent (2013): *Recursive Macroeconomic Theory*, MIT Press, Cambridge, Massachusetts.

Rendahl, Pontus (2015): Inequality Constraints and Euler Equation Based Solution Methods, *Economic Journal*, vol. 125, 1110-1135.

Stokey, Nancy L. and Robert E. Lucas (1989): *Recursive Methods in Economic Dynamics*. Harvard University Press, Cambridge, Massachusetts.

2. Application to models with exogenously incomplete markets

Aiyagari, S.Rao (1994): Uninsured Idiosyncratic Risk and Aggregate Savings, *Quarterly Journal of Economics*, vol.109, 659-684.

Attanasio, Orazio (1999): Consumption, *Handbook of Macroeconomics*, vol. 1B, chapter 11, 741-812.

Attanasio, Orazio and Steve Davis (1996): Relative Wage Movements and the Distribution of Consumption, *Journal of Political Economy*, vol. 1227-1262.

Attanasio, Orazio and Guglielmo Weber (2010): Consumption and Saving: Models of Intertemporal Allocation and their Implications for Public Policy, *Journal of Economic Literature*, vol. 48, 693-751.

Carroll, Christopher D. (1997): Buffer-Stock Saving and the Life Cycle/ Permanent Income Hypothesis, *Quarterly Journal of Economics*, vol. 112, 1-55.

Deaton, Angus (1991): Saving and Liquidity Constraints, *Econometrica*, vol. 59, 1221-1248.

Fernández-Villaverde, Jesús and Dirk Krueger (2011): Consumption and Saving over the Life Cycle: How Important are Consumer Durables?, *Macroeconomic Dynamics*, vol. 15, 725-770.

Gourinchas, Pierre-Olivier and Jonathan A. Parker (2002): Consumption over the Life Cycle, *Econometrica*, vol. 70, 47-89.

2.1 Household debt and bankruptcy

Athreya, Kartik (2002): Welfare Implications of the Bankruptcy Reform Act of 1999, *Journal of Monetary Economics*, vol. 49, 1567-1595.

Chatterjee, Satyajit, Dean Corbae, Makoto Nakajima and José-Víctor Ríos-Rull (2007): A Quantitative Theory of Unsecured Credit with Risk of Default, *Econometrica*, vol. 75, 1525-1589.

Livshits, Igor, James MacGee and Michele Tertilt (2007): Consumer Bankruptcy: a Fresh Start, *American Economic Review*, vol. 97(1), 402-418.

Hintermaier, Thomas and Winfried Koeniger (2016): Debt Portfolios and Homestead Exemptions, *American Economic Journal: Macroeconomics*, vol. 8, 103-141.

Mitman, Kurt (2016): Macroeconomic Effects of Bankruptcy and Foreclosure Policies, *American Economic Review*, vol. 106(8), 2219-2255.

3. Endogenous incomplete markets

Ábrahám, Árpád and Nicola Pavoni (2005): The Efficient Allocation of Consumption under Moral Hazard and Hidden Access to the Credit Market, *Journal of the European Economic Association*, vol. 3, 370-381.

Ábrahám, Árpád, Sebastian Koehne and Nicola Pavoni (2011): On the First-Order Approach in Principal-Agent Models with Hidden Borrowing and Lending, *Journal of Economic Theory*, vol. 146, 1331-1361.

Bertola, Giuseppe and Winfried Koeniger (2015): Hidden Insurance in a Moral-Hazard Economy, *Rand Journal of Economics*, vol. 46, 777-790.

Broer, Tobias, Marek Kapicka and Paul Klein (2017): "Consumption Risk Sharing with Private Information and Limited Enforcement," *Review of Economic Dynamics*, vol. 23, 170-190.

Cole, Harold, and Narayana Kocherlakota (2001): Efficient Allocations with Hidden Income and Hidden Storage, *Review of*



Economic Studies, vol. 68, 523-542.

Golosov, Mikhail, and Aleh Tsyvinski (2007): Optimal Taxation with Endogenous Insurance Markets, Quarterly Journal of Economics, vol. 122, 487-534.

Krueger, Dirk and Fabrizio Perri (2006): Does Income Inequality Lead to Consumption Inequality? Evidence and Theory, Review of Economic Studies, vol. 73, 163-193.

Pauly, Mark V. (1974): Overinsurance and Public Provision of Insurance: The Roles of Moral Hazard and Adverse Selection, Quarterly Journal of Economics, vol. 88, 44-62.

Rogerson, William P. (1985): Repeated Moral Hazard, Econometrica, vol. 53, 69-76.

Additional course information

The course is offered in the second half of the semester in six 4-hour lectures.

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

Decentral - Oral examination (individual) (50%)

Remark

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Examination-aid rule

Open Book

Students are free to choose aids but will have to comply with the following restrictions:

- At such examinations, all the pocket calculators of the Texas Instruments **TI-30 series** are admissible. Any other pocket calculator models are inadmissible.
- In addition, any type of communication, as well as any electronic devices that can be programmed and are capable of communication such as electronic dictionaries, notebooks, tablets, PDAs, mobile telephones and others, are inadmissible.
- Students are themselves responsible for the procurement of examination aids.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - Oral examination (individual) (50%)

Remark

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Examination-aid rule

Open Book

Students are free to choose aids but will have to comply with the following restrictions:

- At such examinations, all the pocket calculators of the Texas Instruments **TI-30 series** are admissible. Any other pocket



- calculator models are inadmissible.
- In addition, any type of communication, as well as any electronic devices that can be programmed and are capable of communication such as electronic dictionaries, notebooks, tablets, PDAs, mobile telephones and others, are inadmissible.
 - Students are themselves responsible for the procurement of examination aids.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

Examination content

content covered in class and in the lecture notes

Examination relevant literature

First part of the lecture: lecture notes, book by Bertola et al. See course literature

Second part of the lecture: W. Koeniger, lecture notes; see also the corresponding parts of the course literature.

Please note

Please note that this fact sheet alone is binding and has priority over any other information such as StudyNet (Canvas), personal databases or faculty members' websites and information provided in their lectures, etc.

Any possible references and links within the fact sheet to information provided by third parties are merely supplementary and informative in nature and are outside the University of St.Gallen's scope of responsibility and guarantee.

Documents and materials that have been submitted no later than the end of term time (CW51) are relevant to central examinations.

Binding nature of the fact sheet:

- Information about courses and examination time (central/decentral) and examination type starting from the beginning of the bidding on 22 August 2019
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for decentral examinations after the 4th semester week on 14 October 2019
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for central examinations as from the starting date for examination registration on 4 November 2019

Please consult the fact sheet again after these deadlines have expired.