

# Lecture 1

## Introduction

**E5104 – Economics of Innovation**

**Bernhard Ganglmair**



## Contact Information

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Office Hours:	by email appointment

## Meetings

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February 17	hybrid
February 24	hybrid
March 3	online
March 10	hybrid
March 17	online
March 24	hybrid
March 31	hybrid
April 7	online
April 28	hybrid
May 5	hybrid
May 12	online
May 19	online
June 2	hybrid

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## Readings

- New and unpublished textbook by Bronwyn Hall and Christian Helmers

*"The Economics of Innovation and Intellectual Property"*  
*Oxford University Press*

- Draft chapters on Ilias
- Occasionally complemented by research articles and handbook chapters

# Grading Policy

- Assignments (50%)
  - Five assignments due 1 week after posting
  - Submitted in PDF format, type-written, via email to `ganglmair@uni-mannheim.de`
- Term paper (50%)
  - Empirically examine a question related to the economics of innovation
  - Length: 10–15 pages
  - Submit 1-page proposal by **May 12, 2022**
  - Term paper due on **July 15, 2022**

# Assignment 1

- An ongoing assignment throughout the semester
- 2 one-page comments with feedback on two textbook chapters (singles-spacing, 12pt, 2cm margins)
  - What was the most memorable piece of information?
  - What was particularly interesting?
  - Was the line of reasoning confusing?
  - Were items missing? Which items could use more space, what was too detailed?
  - ...
- Be critical but constructive. Show that you have carefully read the chapter.
- I will share the (anonymous) feedback with the textbook authors
  - Submit with a cover page with your name, title of the chapter, date
  - Do not put your name on the page with your comments and feedback

# **What is innovation?**

# What is Innovation?

- Introduction of new ideas or new ways of doing things
  - we innovate every day
  - many of these our innovations are minor and maybe new only to the person herself
  - others might be major, but maybe not at the core of economics (e.g., universal suffrage)
- Our focus:
  - innovation with a direct impact on the economy
  - innovation that increases the productivity of members of the economy
  - innovation that improves or expands the goods and services available

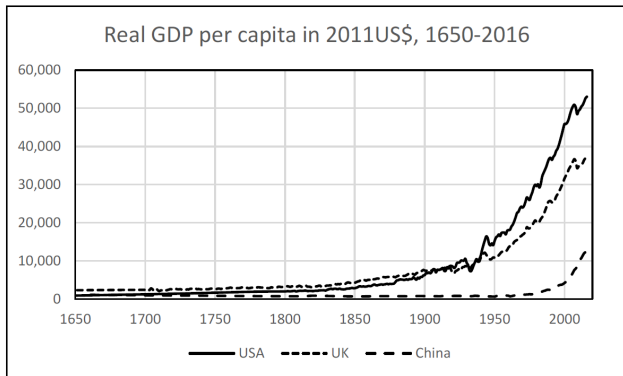


# Why Study Innovation?

- Macroeconomists:
  - understand the sources of economic growth and how innovation contributes to growth
- Microeconomists:
  - How does the process? What motivates people?
- Business economists and lawyers:
  - develop strategies to increase profits or defend against competitors
- Policy makers:
  - information to help them choose and design government policy in this area

# Innovation and Economic Growth

Figure 1: GDP per capita for US, UK, and China



Source: Maddison Growth Project Database (2018)

- Only one half to two thirds accounted for by increases in physical capital stock and education levels of workers
- Rest: attributed to technical change, new and improved methods of production (greater output obtained from the same inputs)

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# The Innovative Process

- Much in economics: traditional notion of supply and demand
- Supply of innovation dependent on supply of inventors (culture, risk-taking attitudes, tolerance for novelty, financial motives)
- Demand driven by willingness of firms and consumers to pay for innovation
- But also: market structure (e.g., competition) matters in subtle ways
- Does the supply-demand framework work?
  - Not necessarily: Arrow's disclosure paradox
  - Knowledge and ideas are non-rivalrous and non-excludible

# Innovation Strategy

- Innovation becomes more and more important for the competition strategies of firms
- Competitive strategy directed toward creating area or niche in which firm can capture supra-normal or *supra-competitive profits*
  - create cheaper production processes
  - create new or improved goods
  - create a standard or dominant platform for services  
(quasi-monopolization → antitrust concern)
- Important: understand the interaction between economic forces and technology
- Important: IP strategy to prevent dissipation by imitation (but, again, → antitrust concern)

# Innovation Policy

- Positive externalities – undersupply of invention and knowledge by the market
- Policy intervention to encourage production of ideas and knowledge
- Examples: grants, subsidies, intellectual property
- Which kind of activity do we encourage:
  - scientific research has very positive externalities and should be shared by all
  - research that merely generates refinements to an existing product may have fewer benefits to a wider audience
- Need for range of policy solutions