

Dr. Hakon Albers  
Chair of Empirical Macroeconomics  
Department of Economics, University of Halle-Wittenberg  
Universitätsring 3, D-06108 Halle  
Room: 207  
Email: [hakon.albers@wiwi.uni-halle.de](mailto:hakon.albers@wiwi.uni-halle.de)  
<https://iw.wiwi.uni-halle.de/>

# Syllabus for ‘Empirical Economics with R’

## Winter Term 2023/24

### Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Schedule and deadlines</b>	<b>2</b>
<b>3</b>	<b>Topic assignment and topics</b>	<b>3</b>
3.1	Topic assignment . . . . .	3
3.2	List of topics and key references . . . . .	4
<b>4</b>	<b>Formal issues</b>	<b>8</b>
4.1	Prerequisites and language . . . . .	8
4.2	Exam requirements . . . . .	8
4.3	Withdrawing from the seminar . . . . .	8
4.4	Presentation . . . . .	8

## 1 Introduction

R is a powerful open-source software, which researchers use in a variety of academic disciplines. You can download and use R for free.<sup>1</sup> The goal of this course is to learn some basics in R, apply this software to some problem on your own, and give a presentation in the area of empirical economics.

We will start from the scratch and learn some basics in R. With this “starter kit” of knowledge you can begin to develop your own presentation on a topic you choose. This presentation must contain elements that you produce with the software R (one table and one figure are required). This means that you have to write own R-code or adapt existing code to the problem you want to solve. We will learn how to export figures and tables from R to data formats which are suitable for integration in a presentation. We also review some empirical methods and how to implement the latter in R. You will give your own presentation in one of our meetings (see Section 2 for details).

While one focus is to learn the software and a small set of methodologies, the other focus is on the topics we cover.

## 2 Schedule and deadlines

The seminar takes places in person weekly 10:15 to 11:45 in room 222 (exception: 12. October in room ‘Großer Pool’). The coursework starts 12th October 2021 (detailed timetable in table below).

After a short introductory session, we will directly start with the introduction to the software R. Once we got familiar with the software, the students’ presentations start. The exact date of your presentation will be fixed after the topic assignment.

Keep track of the following **deadline: 20.10.2023, 23:59**. Task: handing in the desired topic. The topics are assigned as soon as possible following the procedure outlined in Section 3.1. Once the topic is assigned the official working period starts.

---

<sup>1</sup>[www.r-project.org](http://www.r-project.org).

**Table 1:** Meetings and topics

<b>Week</b>	<b>Date</b>	<b>Topic</b>
<b><i>Introduction to R</i></b>		
1	12.10.2023	Introduction to seminar, formal enrollment, Introduction to R
2	19.10.2023	Introduction to R
3	26.10.2023	Introduction to R
4	02.11.2023	Introduction to R
5	09.11.2023	Introduction to R
6	16.11.2023	Introduction to R, How to present empirical results
7	23.11.2023	Open session**, students' questions on topic 1 *
<b><i>Start of student presentations</i></b>		
8	30.11.2023	Introduction to R, presentation topic 1, students' questions on topics 2, 3 *
9	07.12.2023	Presentations topics 2, 3 & students' questions on topics 4, 5*
10	14.12.2023	Presentations topics 4, 5 & students' questions on topics 6, 7*
11	21.12.2023	Presentations topics 6, 7 & students' questions on topics 8, 9*
<b>Christmas Break</b>		
12	11.01.2024	Presentations topics 8, 9 & students' questions on topics 10, 11*
13	18.01.2024	Presentations topics 10, 11 & students' questions on topics 12, 13*
14	25.01.2024	Presentations topics 12, 13 & students' questions on topics 14, 15*
15	01.02.2024	Presentations topics 14, 15 & Conclusion

\* Mandatory for those students who present these topics next time.

You must prepare: preliminary table of contents of presentation and one figure and one table. You must be able to discuss the current state of your work with the instructor. This is also the possibility to get help tailored to your needs.

\*\* You can work in the classroom on your problem, discuss with fellow students, and ask questions.

### 3 Topic assignment and topics

To ensure that most topics are assigned *and* your preferences are accounted for, the topic assignment works as follows.

#### 3.1 Topic assignment

You provide me with a **preference ranking for at least 10 topics** that are listed below.<sup>2</sup> For this purpose, please fill in the **excel** file I uploaded on StudIP and send it to me

<sup>2</sup>It is important that you rank these topics; otherwise I cannot give any weight to your second-best choice etc. It is likely that some students want to work on the same topic. Thus, invest some time to identify

(hakon.albers@wiwi.uni-halle.de; see deadline in Section 2 above). I assign topics by preference. In case, more than one student wants to work on a particular topic, there is random assignment among students with the same preference.

### **3.2 List of topics and key references**

Students can choose a topic from the list below (there are more topics than students can enroll).

#### ***Innovation and growth***

##### *A Growth and ideas*

Ha, J. and Howitt, P. (2007). Accounting for trends in productivity and R&D: A Schumpeterian critique of semi-endogenous growth theory. *Journal of Money, Credit and Banking*, 39(4):733–774

##### *B Culture and innovation*

Gorodnichenko, Y. and Roland, G. (2017). Culture, institutions, and the wealth of nations. *Review of Economics and Statistics*, 99(3):402–416

##### *C Agricultural innovation*

Madsen, J. B. and Islam, M. R. (2016). Exploring the widening food gap: An international perspective. *Agricultural Economics*, 47(6):645–659

#### ***Knowledge diffusion***

##### *D International diffusion*

Islam, M. R. and Madsen, J. B. (2018). Knowledge diffusion and agricultural development. *Agricultural Economics*, 49(2):265–276

##### *E Regional diffusion*

Bode, E. (2004). The spatial pattern of localized R&D spillovers: an empirical investigation for Germany. *Journal of Economic Geography*, 4(1):43–64

#### ***Human capital and economic development***

##### *F Human capital and Industrialization*

Becker, S. O., Hornung, E., and Woessmann, L. (2011). Education and catch-up in the Industrial Revolution. *American Economic Journal: Macroeconomics*, 3(3):92–126

---

several topics you are interested in.

G *Human capital and innovation*

Cinnirella, F. and Streb, J. (2017). The role of human capital and innovation in economic development: evidence from post-Malthusian Prussia. *Journal of Economic Growth*, 22(2):193–227 (without section 7)

H *Human capital and the fertility decision*

Becker, S. O., Cinnirella, F., and Woessmann, L. (2013). Does women’s education affect fertility? Evidence from pre-demographic transition Prussia. *European Review of Economic History*, 17(1):24–44

and section 7 from

Cinnirella, F. and Streb, J. (2017). The role of human capital and innovation in economic development: evidence from post-Malthusian Prussia. *Journal of Economic Growth*, 22(2):193–227

***Agriculture and food in economic development***

I *The impact of food price shocks on human capital*

Baten, J., Crayen, D., and Voth, H.-J. (2014). Numeracy and the impact of high food prices in industrializing Britain, 1780–1850. *Review of Economics and Statistics*, 96(3):418–430

J *Long-run trends in commodity prices*

Jacks, D. S. (2019). From boom to bust: a typology of real commodity prices in the long run. *Cliometrica*, 13(2):201–220

K *Food price shocks and inflation*

Peersman, G. (2022). International Food Commodity Prices and Missing (Dis)Inflation in the Euro Area. *Review of Economics and Statistics*, 104(1):85–100

L *The impact of food price shocks on fertility*

Dribe, M. and Scalone, F. (2010). Detecting deliberate fertility control in pre-transitional populations: Evidence from six German villages, 1766–1863. *European Journal of Population*, 26(4):411–434

M *The impact of food price shocks on mortality*

Pfister, U. and Fertig, G. (2020). From Malthusian disequilibrium to the post-Malthusian era: The evolution of the preventive and positive checks in Germany, 1730–1870. *Demography*, 57(3):1145–1170

## N *Price volatility and growth*

van der Ploeg, F. and Poelhekke, S. (2009). Volatility and the natural resource curse. *Oxford Economic Papers*, 61(4):727–760

## ***Regional growth***

### O *Regional innovation*

Alecke, B., Mitze, T., Reinkowski, J., and Untiedt, G. (2012). Does firm size make a difference? Analysing the effectiveness of R&D subsidies in East Germany. *German Economic Review*, 13(2):174–195

### P *Railways and regional growth: the historical case of Prussia*

Hornung, E. (2015). Railroads and growth in Prussia. *Journal of the European Economic Association*, 13(4):699–736

### Q *How recent history shapes current regional patterns of economic activity: the German reunification*

Redding, S. J. and Sturm, D. M. (2008). The costs of remoteness: Evidence from German division and reunification. *American Economic Review*, 98(5):1766–1797

### R *How ancient history shapes current regional patterns of economic activity: the Limes*

Wahl, F. (2017). Does European development have Roman roots? Evidence from the German limes. *Journal of Economic Growth*, 22(3):313–349

## ***Trade and market integration***

### S *The long way towards a common market*

Albers, H. and Pfister, U. (2021). Climate change, weather shocks, and price convergence in pre-industrial Germany. *European Review of Economic History*, 25(3):467–489

### T *Medieval trade and path dependencies in development*

Wahl, F. (2016). Does medieval trade still matter? Historical trade centers, agglomeration and contemporary economic development. *Regional Science and Urban Economics*, 60:50–60

## ***States and economic development***

### **U** *State capacity and long-run growth*

Dincecco, M. and Katz, G. (2016). State capacity and long-run economic performance. *Economic Journal*, 126(590):189–218

### **V** *Democracy and growth*

Acemoglu, D., Naidu, S., Restrepo, P., and Robinson, J. A. (2019). Democracy does cause growth. *Journal of Political Economy*, 127(1):47–100

## ***Inequality and growth***

### **W** *Capital and inequality*

Piketty, T. and Zucman, G. (2014). Capital is back: Wealth-income ratios in rich countries 1700–2010. *Quarterly Journal of Economics*, 129(3):1255–1310

### **X** *Inequality in the long-run: the case of Germany*

Bartels, C. (2019). Top incomes in Germany, 1871–2014. *Journal of Economic History*, 79(3):669–707

## ***Poverty outside of Europe***

### **Y** *Historical determinants of poverty in Africa*

Nunn, N. and Puga, D. (2012). Ruggedness: The blessing of bad geography in Africa. *Review of Economics and Statistics*, 94(1):20–36

### **Z** *Transport infrastructure and regional growth in Africa*

Jedwab, R. and Moradi, A. (2016). The permanent effects of transportation revolutions in poor countries: Evidence from Africa. *Review of Economics and Statistics*, 98(2):268–284

## 4 Formal issues

Please consider the following requirements and notes.

### 4.1 Prerequisites and language

There are no mandatory prerequisites but some basic knowledge in statistics and econometrics (multiple linear regression model with cross-sectional data) is an advantage. The course is recommended for students in their 5th or 6th semester. I do not assume any knowledge on R. Please use your own laptop. If this is not possible, please contact me via e-mail.

English is the seminar language and the language of examination.

### 4.2 Exam requirements

The final grade consists of the weighted average of participation in the classroom (30% of final grade), and your presentation (70% of final grade). Overall, you earn 5 ECTS with this course.

### 4.3 Withdrawing from the seminar

You can only withdraw from the seminar via the examination office. Once the topic is assigned, the official working period starts.

### 4.4 Presentation

Main task: The student presents the main insights of the key reference, her/his R-code, and the output in ca. 20 minutes. You should be prepared to answer questions on your presentation by both the instructor and other fellow students. The presentation must contain:

- the key reference(s) assigned to the topic,...
- content from at least two additional academic references (other journal articles, hand-book chapters), and ...
- one self-prepared figure and one self-prepared table related to the topic. Both elements must be prepared with the software R. Be ready to explain your R-code that produces the figure (either within slides or in a separate code file; both is fine).

You have to deliver data, code and slides at the day of the presentation.